



Alternate Assessment with Alternative Achievement Standards: *Technical Manual: Science*

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http://www.iowa.gov/educate/index.php?option=com_content&task=view&id=461&Itemid=1576



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CHAPTER 1: OVERVIEW OF THE ASSESSMENT SYSTEM

Statement of core beliefs and guiding philosophy

Mission:

Iowa champions excellence in education through superior leadership and service. Citizens of Iowa are committed to high levels of learning, achievement and performance for all students, so they will become successful members of their community and the workforce.

Goals:

- All children will enter school ready to learn.
- All K-12 students will achieve at high levels, prepared for success beyond high school.
- Iowans will pursue higher education that results in an improved quality of life supported by better economic opportunities through high skill employment.

Expected Outcomes

- Increase the proficiency of all students in reading, math, and science.
- Increase the K-12 graduation rate.
- Increase the number of 4-year-olds accessing quality preschool programs.

Assessments and Accountability

All students must take a variety of achievement tests every year to determine how much and how well they are learning. Iowa's assessment system has been fully approved by the United States Department of Education.

Figure 1 depicts Iowa's vision for assessment for all students with Individual Education Programs (IEPs). Students with disabilities are provided with fair and meaningful measurement to promote high achievement.

Iowa has or is developing the continuum of tests allowable to States under *No Child Left Behind* (NCLB). States must have a general assessment at Grades 3-8 and 11 for reading and math, and a Science assessment at one grade within grade bands 3-5, 6-8, and 9-12. Iowa assesses Science at Grades 5, 8, and 11. States must also have an alternate assessment with alternate achievement standards, at the same grades assessed with the general assessment.

For the general district-wide assessment, schools in Iowa use the Iowa Tests of Basic Skills (ITBS,) for grades 1-8 and Iowa Tests of Educational Development (ITED) for Grades 9-12. As part of the State's accountability workbook, schools report performance at Grades 3-8 and 11, in Reading and Math, and Grades 5, 8, and 11 in Science. Students with disabilities participate in the general test, with or without accommodations, as determined by the IEP team.

States may also have up to 3 alternate assessments. An optional alternate assessment for States is an alternate assessment for students working in grade level content at grade level performance. The test format is alternate but the achievement standards are the same as the grade level achievement standards applied to the general test. Iowa does not have this option nor are there plans to pursue this option.

A second optional alternate assessment is for students functioning below grade level and not likely to achieve grade level achievement standards in the period covered in their IEP. This alternate assessment must be aligned to State Standards and Benchmarks at the same level of the general test. Performance is judged against modified academic achievement standards. Iowa is developing this alternate assessment with modified academic achievement standards (AA-MAS). Districts are allowed to have as many students with IEPs participate in this AA-MAS (as determined by IEP teams), although proficiency for Adequate Yearly Progress (AYP) purposes is limited to 2% of the general population.

A third required alternate assessment is for students with significant cognitive disabilities. Students with significant cognitive disabilities have historically been excluded from large-scale assessment and the general curriculum (Ysseldyke, Thurlow, McGrew, & Shriner, 1994). The requirement for alternate assessment with alternate achievement standards (AA-AAS) provides IEP teams with an alternative test for students whose academic skills are significantly lower than performance represented by grade level achievement standards.

Alignment of All Tests to Grade Level Content

All tests in the assessment sequence are aligned with Iowa's Core Content Standards and Benchmarks (included in Chapter 4). A logical test sequence from least-to-most reduction in grade level content construct is used. The assumption for IEP teams is that all students access grade level content standards, but that students are tested against different achievement standards.

The testing sequence for students with disabilities is: general test without accommodations, general test with accommodations, AA-MAS without accommodations, AA-MAS with accommodations, AA-AAS administered under accommodated conditions.

Standards-based IEPs

In order to ensure that all students access grade level content standards, IEP goals are aligned with the State Core Content Standards and Benchmarks. IEP teams determine if students need IEP goals in academic areas, and the grade level content standard to which IEP goals are aligned. Teachers of students tested in the alternate assessments (modified or alternate achievement standards) shall be surveyed about the extent to which the enacted curriculum is implemented, beginning in 2010.

Participation Guidelines

Participation Guidelines are evolving as Iowa develops the AA-MAS. At present, there are guidelines to IEP teams on identifying students for participation in the AA-AAS. Eventually,

participation guidelines will also represent seamless decision-making toward more ambitious performance standards, as students demonstrate more performance toward grade level content.

Formative Assessment

Data on IEPs must be evaluated frequently, and instructional changes made long before the child fails to perform proficiently on the large-scale test. Teachers in Iowa are required to graph IEP goals. IEPs contain a goal representative of growth expected over an IEP period, and data against the IEP goal. IEPs also contain decision-rules on when IEP services should be reviewed based on student performance against the goal line.

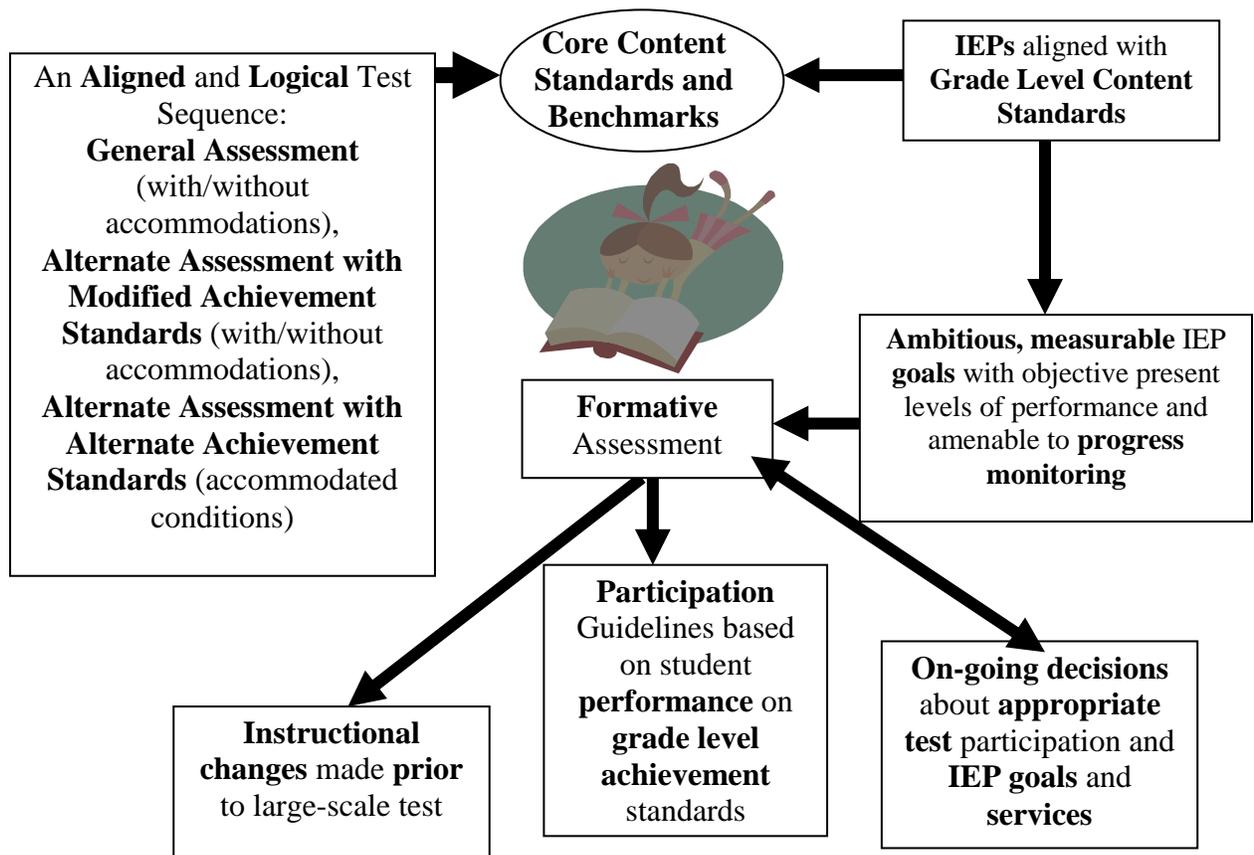


Figure 1. Promoting High Achievement for Students with Disabilities through Fair and Meaningful Measurement

Purposes of the Alternate Assessment System

The AA-AAS is part of the No Child Left Behind legislation and the Individuals with Disabilities Education Act. The Alternate Assessment must measure student performance in Reading and Math, and for some students, Science. While the alternate assessment is developed

to meet requirements of federal legislation, the purpose of the IAA is to assess educational performance in reading, mathematics, and science. Relatedly, the alternate assessment has overarching purposes of (a) Ensures access to the general curriculum (b) Sets high expectations and challenges students (c) Communicates progress towards acquiring academic skills (d) Improves instruction (d) Assists in IEP development and (e) Measures growth over time. Desired characteristics of the Iowa Alternate Assessment are: (1) equity in breadth and depth of coverage, (2) technical adequacy, (3) efficiency, (4) meaningfulness for students, teachers and parents, and (5) sustainability over time.

Using Information from the AA-AAS

The results of the Iowa Alternate Assessment are used by 4 major constituents.

- a. The Federal Government. Results are summative, and are included in the performance calculation for Indicator 3 of the State’s performance plan.
- b. The Iowa Department of Education. Results are summative. There are 3 major data elements used. First, student characteristics are rated. Second, student performance is rated. Third, teacher perception of the process is gathered.
- c. Teachers. Results are summative and formative. Teachers understand the alignment of the student’s IEP to the items captured on the rating scale; teachers can examine changes in total score in Reading and Math. Teachers can also examine the extent to which more skills are mastered, students’ abilities to respond independently, and greater access to the general curriculum as evidenced by fewer items marked “not taught” over time. Results are formative in that, over the course of the school year, data are gathered on skills reflected on some items on the rating scale, and instruction is modified based on data.
- d. Parents. Results are summative. Parents understand the kinds of skills demonstrated by their children in academic content areas, have assurances that students with severe disabilities are provided access to the general curriculum, and can assess student performance growth over time by examining changes in scores year-to-year within grade span, changes in performance levels between grade spans, greater independence or mastery of responses, increased accuracy in responses, or more instruction in academic content representative of the grade level content standards but reduced in complexity.

Consequences of Participating in Alternate Assessment

Students participating in alternate assessment receive instruction on content aligned with grade level content standards. Performance is judged against alternate achievement standards. This judgment is fair because students with the most significant disabilities will not demonstrate performance in the same way as nondisabled or less disabled peers. Participation in alternate assessment is determined by the IEP team, and is reviewed annually. Participation in alternate assessment does not impact any decision pertaining to constellation of services needed as part of a Free Appropriate, Public Education as mandated by the Individuals with Disabilities Education Act.

Parent Notice of Consequences of Participation in Alternate Assessment

By September 30th, teachers are required to share with parents the Parent's Guide to Alternate Assessment:

(http://www.iowa.gov/educate/index.php?option=com_content&task=view&id=461&Itemid=1576).

The Parent's Guide has been amended for 2009-2010 to include the following:

16. What are consequences of participating in alternate assessment?* Students participating in alternate assessment receive instruction on grade level content that is reduced in complexity. Students receive access to the general curriculum, and are allowed to demonstrate their performance on content aligned to grade level standards. IEP teams review participation annually, and it is expected that as students become more proficient on more skills, that students would be considered for exit from the alternate assessment against alternate achievement standards, into the general assessment. Students must participate in alternate assessment because participation ensures that the general curriculum is taught to students with severe disabilities. The consequences of participating in alternate assessment, beyond access to and participation in the general curriculum, is that some students who historically have received a parallel or a different "functional" curriculum may now have part of their school day devoted to instruction aligned to grade level content that all students in their school receive. Participation in alternate assessment does not preclude a student from receiving a regular diploma.

The Parent's Guide in its current form (2007-2009 school years) was:

PARENT GUIDE TO THE IOWA ALTERNATE ASSESSMENT
BASED ON ALTERNATE ACHIEVEMENT STANDARDS
2008-2009

This guide provides information on Iowa's Alternate Assessment for parents. A question-and-answer format is used to summarize information. While the document was designed for parents, others involved with alternate assessment might also find some of the information relevant. Steve Maurer is the alternate assessment lead. He can be reached at steve.maurer@iowa.gov or at 515-281-3576.

- 1. What is an alternate assessment?** An alternate assessment is an assessment designed for a small number of students with disabilities who are unable to participate in the regular grade level state assessment (ITBS/ITED) even with appropriate accommodations.
- 2. Why must Iowa have an alternate assessment?** *No Child Left Behind (NCLB)* requires that all students, even those with the most significant cognitive disabilities, have access to the general education curriculum. For accountability purposes, all students in grades 3-8 and at a high school grade must be assessed on performance against grade level state content standards. In addition, the *Individual*

with Disabilities Act (IDEA) also requires students with disabilities to participate in the statewide assessment system and that the student's IEP contain a statement of how the student will participate in the statewide assessment process. Alternate assessment allows students who cannot participate in the general assessment, to be assessed more equitably given their current performance.

3. **What is the purpose of the Iowa Alternate Assessment (IAA)?** The IAA assesses educational performance in reading, mathematics, and science, and promotes access to the general education curriculum.
4. **Who participates in the Iowa Alternate Assessment?** Students with the most significant cognitive disabilities. The IEP team, which includes parents, makes this decision based on state participation guidelines. Students in grades 3-8 and 11 participate in the reading and math alternate assessment and students in grades 5, 8, and 11 participate in the science alternate assessment. All students with disabilities must be included in statewide assessments. The IEP team plays a role in deciding how a student with the most significant cognitive disabilities will take the statewide assessment. The decision should be based on educational needs and parents should be active in this decision process. If the parents and their child's IEP team decide that the child will take an alternate assessment based on alternate achievement standards, the IEP must contain a statement about why the student cannot participate in the regular assessment, and how the particular alternate assessment selected is appropriate for the child.
5. **What is the Iowa Alternate Assessment process?** The Iowa Alternate Assessment has several steps:
 - Teachers describe student characteristics using a general survey
 - Teachers rate students using rating scales that focus on reading, math, and science, and are aligned with the Iowa Core Content Standards and Benchmarks (material covered in the ITBS/ITED)
 - Teachers use evidence gathered as part of the student's school program to support the ratings
 - Teachers review results with building administrators and parents
 - Teachers complete a survey about the process and supports needed to better meet needs of students
6. **Is the IEP the curriculum for a student with the most significant cognitive disabilities?** Students should be exposed to the range of skills representative of the general curriculum including academic, social, and adaptive skills. The IEP represents skills that the IEP team has prioritized for the student, that require ongoing monitoring and are evaluated annually. Hence, while the IEP certainly represents educational priorities and supports to achieve those educational priorities for the individual student, it does not represent the entire range of curriculum; nor does it represent the academic standards upon which a curriculum should be based.

7. Can my child's IEP be used as the alternate assessment? This question has been so prevalent, that the answer to the question is actually part of the guidance on alternate assessment that states receive from the federal government, and the answer is, "no, progress on IEP cannot be used as the alternate assessment." The rationale is that IEP goals are individual to each child and are developed for the purpose of: (a) reporting progress to parents, and (b) making decisions about programs and services a child receives. Because IEP goals are often not aligned with state academic content standards (Iowa Core Content Standards and Benchmarks), IEP goals cannot be used to measure whether schools are meeting accountability goals for Adequately Yearly Progress (AYP) under NCLB. Learning functional skills may be an important component of your child's IEP, but it is also critical that your child have access to the general curriculum and that your child's academic achievement be counted for AYP purposes.

8. Why is Iowa's Alternate Assessment based on alternate achievement standards? Students have the right to be assessed fairly. The Iowa alternate assessment measures student progress on Iowa's Core Content Standards and Benchmarks at a reduced complexity, and is judged against a different definition of proficiency than the ITBS/ITED. Student's participation will most likely be supported by assistive technology, adaptations, and prompting and cueing strategies.

9. What are Content Standards and Benchmarks? Content Standards and Benchmarks define what students should know and be able to do. For NCLB purposes, the Iowa Core Content Standards and Benchmarks describe what students should be doing in grades 3-8 and 11, in reading, mathematics, and science. An example of a Content Standard in Grade 6 Math is, "Students can understand and apply a variety of math concepts." A benchmark for that same standard is, "students can understand and apply concepts of geometry and measurement."

10. What are Achievement Standards? Achievement Standards have 3 components: performance levels, performance descriptors, and cut scores.

- **What are Performance Levels?** Performance Levels label each level of achievement. In Iowa, we have three performance levels: Basic, Proficient, and Advanced.
- **What are Performance Descriptors?** Performance Descriptors built by consensus, are written to reflect high expectations of what children know and can do both within a grade level and between grades.
- **What are Cut Scores?** Numerical scores that separate the different levels of performance. For example, on a 40-item rating scale on which items can be rated 0 points, 1 point, 2 points, or 3 points, basic performance might be represented by scores ranging from 0-50, proficient performance represented by scores ranging from 51-100, and advanced performance represented by scores ranging from 101 and higher. Each grade (3-8 and 11) and each content area (reading and math) (grade 5, 8, and 11 for science) has cut scores developed by panels of general education teachers, special education teachers, and parents.

11. What is a rating scale? These scales in reading, mathematics, and science are a list of academic skills for each grade and content area tested. The skills are aligned with the Core Content Standards and Benchmarks, but are reduced in complexity and are easier concepts than what is covered in the Iowa Tests. Over the course of several months, a teacher gathers information that results in a rating of the student's achievement of these skills and knowledge. These scores are based on alternate achievement standards which NCLB allows states to develop to determine proficiency of students with the most significant cognitive disabilities.

12. How do parents get an opportunity to review these rating scales? Ask teachers to share them with you or go to the Department of Education website and review them online.

13. Can parents refuse to have their child included in the alternate assessment? No. All students must be assessed under *NCLB*. Students with IEPs are assessed through either general or alternate assessments as determined by the IEP team. If the local school district has a policy allowing parents to request the district to not test students, this policy should extend to parents of children with disabilities. Parents of enrolled students need to know that if their child does not take the alternate assessment, they are counted as exclusions under *NCLB*, which could eventually cause problems for districts in making adequate yearly progress under *NCLB*.

14. Can I see a copy of my child's alternate assessment results and keep a copy so that I can compare his progress from year-to-year? Teachers should have a report for parents that summarize each child's performance on the Iowa Alternate Assessment, for that academic year.

15. When does the alternate assessment need to be administered? The testing period is from the start of the school year to March 31st.

16. What are consequences of participating in alternate assessment?* Students participating in alternate assessment receive instruction on grade level content that is reduced in complexity. Students receive access to the general curriculum, and are allowed to demonstrate their performance on content aligned to grade level standards. IEP teams review participation annually, and it is expected that as students become more proficient on more skills, that students would be considered for exit from the alternate assessment against alternate achievement standards, into the general assessment. Students must participate in alternate assessment because participation ensures that the general curriculum is taught to students with severe disabilities. The consequences of participating in alternate assessment, beyond access to and participation in the general curriculum, is that some students who historically have received a parallel or a different "functional" curriculum may now have part of their school day devoted to instruction aligned to grade level content that all students in their school receive. Participation in alternate assessment does not preclude a student from receiving a regular diploma.

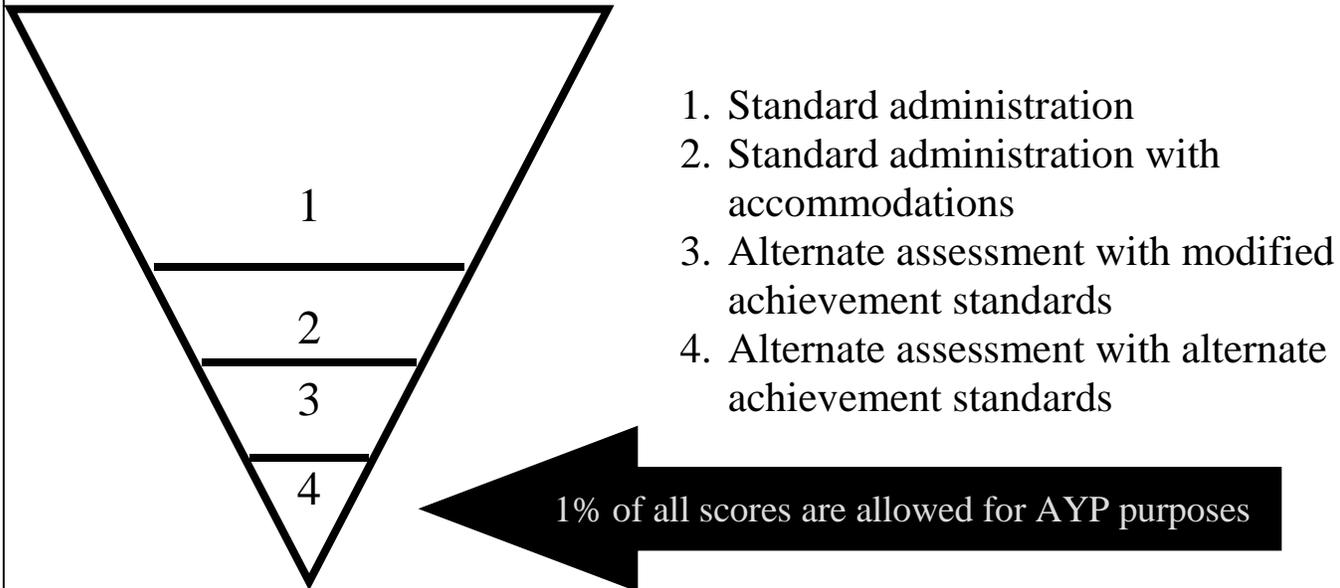
* Proposed modification for 2009-2010 school year.

For additional information about the alternate assessment, please go to the Department website at:

<http://www.iowa.gov/educate/content/view/461/926/1/5>

CHAPTER 2: GUIDANCE TO IEP TEAMS ON PARTICIPATION

No Child Left Behind further strengthens the position put forth in previous legislation that all students must be included in district- and state-wide assessments. In Iowa, students with disabilities may participate in district-wide assessments in several different ways.



The first way is standard participation with no accommodations. This is the way students without disabilities take part in assessment. The second way is participation with accommodations. Accommodations are changes in testing materials or procedures that permit the student with disabilities to have equal opportunities to demonstrate what they have achieved.

The third method for participation is under development, and is alternate assessment with modified achievement standard. This test is for students not achieving and grade level and are not likely to achieve grade level standards in one year. Participation guidelines for the alternate assessment with modified academic achievement standards (AA-MAS) will be published in a separate technical manual anticipated in 2010.

The fourth method for participating in large-scale testing for purposes of No Child Left Behind is Alternate Assessment with Alternate Achievement Standards (AA-AAS). Alternate assessment results in reading and math must be submitted for students who meet the participation guidelines in grades 3-8, and 11. A science assessment is required for submission at grades 5, 8, and 11. Scores for 1% of the population can be counted as proficient for AYP purposes. The following guidelines should assist Iowa IEP teams in determining which students will participate in AA-AAS

Alternate Assessment – Alternate Achievement Standards Student Participation

Student Characteristics

The student has characteristics of a severe disability, including significant deficits in language and communication and adaptive behaviors. The student requires very intensive, highly specialized instruction in order to acquire knowledge, make generalizations, and/or demonstrate skills across natural environments (home, school, community, and/or workplace). Students in alternate assessment will generally be those students who are classified as Level 3. However, some students with that classification will take part in the general assessment (probably with accommodations) and some students with disabilities who have other level classifications may take part in the alternate assessment although this would be rare.

What this really wants IEP teams to discuss is:

- *Does this student generally exhibit the learning characteristics of a student with a significant cognitive disability? These would generally show up in how the student communicates, how he/she responds to the environment, and how he/she learns. These behaviors would be expected to be significantly different from most typical peers if a student was eligible to participate in the IAA. While there is not a “fixed” score to determine if a student participates, the IAA is targeting students who would score significantly lower than typical peers on standardized tests of knowledge and cognition (or may achieve a valid score at all). Of course this isn’t automatic. A student who tests within that range and might still be included in general assessment in one or more content areas. The same applies for adaptive behavior.*
- *When discussing generalization across natural environments, once the student has been taught vocabulary in reading, does he/she know them across other settings in the school? If the student does not generalize skills, does he/she need the instruction in multiple settings to learn the skill in each setting itself?*

Instructional Program

The schools or school district’s content standards and benchmarks guide the student’s curriculum. Use of alternate achievement standards (NCLB, 2001) allows districts to extensively modify expected performance levels to allow the student to demonstrate what he or she knows and is able to do while still receiving instruction on grade level, general curriculum content. It is important to remember that the student’s IEP may address other skills that are important for that particular individual but the student’s curriculum is the same as the grade level curriculum for all students.

What this really wants IEP teams to discuss is:

- *Has the grade level content been significantly changed in terms of the expectations for this student's performance? Does this student's performance within the general curriculum look significantly different from the performance of typical peers? This does not refer to students who might just be performing at a lower grade level but rather, students whose performance is clearly not comparable to typical peers even though they are accessing the same grade level content.*
- *Has the grade level content been significantly changed in terms of delivery? The grade level content has been significantly reduced in complexity, viewed in terms of alternate achievement standards, and may use non-typical means to make the information accessible.*

Assessment

The student is generally unable, even with accommodations, to demonstrate knowledge and skills on district-wide assessments used for the majority of students

Exclusionary Factors

Participation decisions should NOT be based primarily on:

- a. Poor attendance
- b. English language learner status
- c. Social, cultural, and economic difference
- d. Disruptive behavior
- e. Student reading level
- f. Expectations of poor performance
- g. Amount of time receiving special education services
- h. Low achievement in general education
- i. Categorical disability level
- j. Performance tied solely to a level, label, or cut score
- k. Location where the child receives services

What this really wants IEP teams to discuss is:

- *Has the student missed a lot of school and that is the cause of the low achievement?*
- *Are cultural/social and economic issues the cause of the low achievement?*
- *Is the decision about assessment participation based upon past behavior and academic performances or expectations?*
- *Is the student's learning disability, emotional/behavioral disability, hearing disability, or visual disability, rather than cognition, impacting the ability to learn?*
- *Is the past history of special education participation (disability label, type of services delivery, placement, etc.) affecting the decision?*

(If the answer to any of these questions is "Yes" then the student should probably not be in the AA-AAS.)

All assessment decisions for a particular student are made by the IEP team. No one member may make decisions for the team nor is any member's opinion more important than the opinion of anyone else. The IEP team decision should be documented during the IEP process.

In some instances, it may be decided that a student should participate in general assessment in one content area but alternate in the other two. In these cases that decision should be noted on the IEP and specified as to which assessment will be administered for each content area.

CHAPTER 3: WHAT IS THE CONTENT?

Science Content Standards:

- A. Students can understand and apply skills used in scientific inquiry.
- B. Students can understand concepts and relationships in life science.
- C. Students can understand concepts and relationships in Earth/space sciences.
- D. Students can understand concepts and relationships in physical science.

Grades 3-5 Benchmarks:

- A. Students can understand and apply skills used in scientific inquiry.
 - 1. Students can understand and apply the processes and skills of scientific inquiry.
 - 2. Students can analyze and interpret scientific information.
- B. Students can understand concepts and relationships in life science.
 - 1. Students can understand structures of living things.
 - 2. Students can understand life cycles.
 - 3. Students can understand environmental interaction and adaptation.
- C. Students can understand concepts and relationships in Earth/space sciences.
 - 1. Students can understand ideas about Earth's composition and structure.
 - 2. Students can understand changes in and around Earth.
 - 3. Students can understand concepts relating to the universe.
- D. Students can understand concepts and relationships in physical science.
 - 1. Students can understand and apply concepts related to mechanics, forces, and motion.
 - 2. Students can understand and apply the concept of energy.
 - 3. Students can understand and identify properties and changes of matter.

Grades 6-9 Benchmarks:

- A. Students can understand and apply skills used in scientific inquiry.
 - 1. Students can understand and apply the processes and skills of scientific inquiry.
 - 2. Students can analyze and interpret scientific information.
- B. Students can understand concepts and relationships in life science.
 - 1. Students can understand structures of living things.
 - 2. Students can understand life cycles.
 - 3. Students can understand environmental interaction and adaptation.
- C. Students can understand concepts and relationships in Earth/space sciences.
 - 1. Students can understand ideas about Earth's composition and structure.
 - 2. Students can understand changes in and around Earth.
 - 3. Students can understand concepts relating to the universe.
- D. Students can understand concepts and relationships in physical science.
 - 1. Students can understand and apply concepts related to mechanics, forces, and motion.
 - 2. Students can understand and apply the concept of energy.
 - 3. Students can understand and identify properties and changes of matter.

Grades 10-12 Benchmarks:

- A. Students can understand and apply skills used in scientific inquiry.
 - 1. Students can understand and apply the processes and skills of scientific inquiry.
 - 2. Students can analyze and interpret scientific information.
- B. Students can understand concepts and relationships in biological science.
 - 1. Students can make inferences and predictions from data.
 - 2. Students can analyze scientific investigations.
 - 3. Student can analyze and evaluate the adequacy and accuracy of information.
- C. Students can understand concepts and relationships in Earth/space sciences.
 - 1. Students can make inferences and predictions from data.
 - 2. Students can analyze scientific investigations.
 - 3. Student can analyze and evaluate the adequacy and accuracy of information.
- D. Student can understand concepts and relationships in physical science.
 - 1. Students can make inferences and predictions from data.
 - 2. Students can analyze scientific investigations.
 - 3. Student can analyze and evaluate the adequacy and accuracy of information.

CHAPTER 4: TEST AND ITEM DEVELOPMENT

Test Development

History of AA-AAS in Iowa

The alternate assessment for Iowa districts from 2001-2006 consisted of a body of evidence documenting student performance in one reading and one mathematics standard. This body of evidence or portfolio included evidence of a review of work (to demonstrate age appropriateness of content), a task administered to the student (to reflect cognitive complexity), and a graph summarizing the teacher's observation of student performance over time. Student proficiency was judged based on (a) a judgment that assessment utilized age appropriate and curriculum-based material, (b) the number of standards and benchmarks for which evidence was gathered, and (c) the extent to which self-determination and generalization was present in the evidence. In the portfolio system, performance was based on teachers' ability to aggregate evidence. High numbers of students (90% or more) were judged proficient or advanced simply due to breadth of content covered.

As NCLB requirements for AA-AAS Peer Review were reviewed by the Assessment Team at the Iowa Department of Education (IDE) in 2005-2006, several emerging beliefs led to the IDE wanting more evidence of an efficient assessment system in which data were useful to teachers. The decision to enhance the AA-AAS was validated somewhat in the summers of 2005 and 2006. In both of these years, stakeholder groups met to discuss alternate assessment. In 2005, scoring rules were discussed, while in 2006, performance level descriptors (PLDs) and scoring rules were discussed.

Qualitative summaries from 2005 and 2006 and from other input provided the IDE by school administrators and school teachers suggested to the IDE that: (a) alternate assessment was expensive in terms of teacher time and scoring cost, and (b) data on the technical adequacy of the AA-AAS would be difficult other than inter-scorer reliability, given the nature of the portfolio method.

In July of 2006, the IDE reviewed the professional literature and evaluated the merits and demerits of standard tasks, portfolios, and rating scales, the common methods being used in Alternate Assessment. Standard tasks were determined too expensive to develop with sufficient parallel forms and instructional materials. Portfolios were judged insufficient for breadth of coverage, scoring reliability, and construct validity. Rating scales were judged insufficient for construct validity and scorer accuracy.

In the portfolio system, breadth was a score-able item in which 3 points were earned if more than one content standard had evidence submitted for review. The IDE did not feel that breadth should be scored because all students should have access to all core content standards. The IDE decided to use rating scales to define the breadth of the core content standards, with items developed to align with all benchmarks. In the portfolio system, depth was scored on a 3 point rubric to indicate better alignment with age-appropriate material. The IDE agreed that age-appropriateness was an important construct but should not be assessed in a student's large scale

test performance because students in the general assessment do not receive extra “points” for grade level alignment. Instead, the IDE required teachers to evidence that instructional materials had a grade level curricular link. In the portfolio system, student performance was scaled so that more performance resulted in higher ratings. The IDE maintained this focus in the rating scales with supporting evidence format that now represents the AA-AAS.

Finally, the IDE had conversations about how to validate the AA-AAS. The IDE wanted a mix of both traditional psychometric data, like internal consistency reliability, with the flexibility proposed in the literature (Gong & Marion, 2006). The consequences of participation in assessment, and the effect on instructional practices, were targeted for evaluation.

To assist with evaluation of the merit of ideas being proposed, Iowa developed a National Advisory Committee (NAC). Iowa’s NAC asked questions, pointed out problem areas, proposed solutions, and served as critical friends in the enhancement process. While not all members were equally active, those agreeing to serve on the NAC were: Dr. Sandra Alper (University of Northern Iowa), Mike Burdge (ILSSA), Jean Clayton (ILSSA), Thomas Delaney (North Central Regional Resource Center), Dr. Steve Elliot (Vanderbilt University), Rachel Quenemoen (National Center for Educational Outcomes), and Dr. Gerald Tindal (University of Oregon). The NAC was active in 2006-2007, with 2 on-site meetings in Iowa. The NAC has reviewed information since but has not met formally nor been asked to provide formal feedback.

Selection of Rating Scale Method

From the professional literature and from guidance provided at the Seminars for Inclusive Assessment, the IDE decided to use rating scale items to define the breadth of the alternate assessment.

Starting with grade level content standards, we used several sources in Science to operationalize skills aligned with the content standard but accessible to students with severe cognitive disabilities. We used professional judgment to select the skills that could be rated.

The “Integrating Standards into Classrooms” website (<http://www.integratingstandards.com/index.html>) was used to generate standards, benchmarks, and items reflective of skills commonly taught in grades K-8, corresponding to Iowa’s Science Core Content Standards and Benchmarks. The original distribution contained 332 items with the percentages of items to standards reflected in Table 1.

Table 1.
Percentage of Science Skills Aligned with CCSBs (N=332 Skills)

Standard	Total
Standard 1: Understands and applies principles of scientific inquiry	38.25%
Standard 2: Understands and applies the basic concepts of life science	24.40%
Standard 3: Understands and applies the basic concepts of Earth science	20.48%
Standard 4: Understands and applies the basic concepts of physical science	16.87%
Grand Total	100.00%

The Iowa Testing Distribution of Science Items in Grades 5, 8, and 11 as judged in the *Buros* study, is depicted in Table 2.

Table 2.
Distribution of Items in the General Assessment at Grades 5, 8, and 11

	Grade 5		Grade 8		Grade 11	
	Items	%	Items	%	Items	%
Standard 1: Understands and applies principles of scientific inquiry	15	36%	23	41%	52	64%
Standard 2: Understands and applies the basic concepts of life science	11	26%	10	18%	11	14%
Standard 3: Understands and applies the basic concepts of Earth science	8	19%	8	14%	4	5%
Standard 4: Understands and applies the basic concepts of physical science	8	19%	15	27%	14	17%

We wanted a distribution of rating scale items that approximated the general test. Hence, the 332 potential items in the alternate assessment Science framework were deleted using the following rules:

1. The desired distribution was Standard 1 40%, Standard 2 20%, Standard 3 20%, Standard 4 20%.
2. Total of items targeted for piloting was 40-50
3. The row of Standard, Benchmark, and Item was maintained first. Standard, Interval Benchmark 1, 2, 3, 4, etc., and then Grade Level Benchmark (a)
4. Similar Standards and Benchmarks were deleted.

The resulting distribution for 138 items across the 4 Science Standards is summarized in Table 3.

Table 3.
Iowa Alternate Assessment Reduced Item Pool for Format 2 Piloting

Standard	Total
Standard 1: Understands and applies principles of scientific inquiry	34.78%
Standard 2: Understands and applies the basic concepts of life science	25.36%
Standard 3: Understands and applies the basic concepts of Earth science	20.29%
Standard 4: Understands and applies the basic concepts of physical science	19.57%

Items were then sorted by Standard. For Standard 1, at each grade, 1 item at Interval Benchmark 4 or 5 was deleted. For Standard 2, 1 item at Interval Benchmark 2 was deleted for each grade. For Standard 3, 1 item at Interval Benchmark 3 was deleted for each grade, and for Standard 4, the highest (3, 4, or 5) Interval Benchmark was deleted for each grade. This sequence of deletion was intended to maintain lower cognitive complexity at Standard 1, and then maintain a range of cognitive complexities with Standards 2-4. One hundred four items remained. Items were then sorted by Standard and Interval Benchmark. Common items, for example, “summarizes results” or “evaluates hypothesis,” were deleted so that only 1 occurrence of the grade level standard remained.

Seventy-one items remained. Items were sorted by Grade, Standard, and Interval Benchmark. Grade level standards were reviewed and judged by a science content specialist as to ease of measurement or operationalization. The Interval Level Benchmarks representing more

cognitively complex skills were deleted first. Then, grade level standards judged difficult to operationalize were deleted. The remaining set of 52 items for piloting had the following distribution to Science standards (Table 4).

Table 4.
Percentage of Item-to-Standard Representation for Piloting

Standard	Count	Total
Standard 1: Understands and applies principles of scientific inquiry		26.92%
Standard 2: Understands and applies the basic concepts of life science		25.00%
Standard 3: Understands and applies the basic concepts of Earth science		23.08%
Standard 4: Understands and applies the basic concepts of physical science		25.00%
Grand Total		100.00%

Teachers then gathered evidence and rated student performance. We maintained the items that had some distribution of ratings, and we eliminated items in which all students were rated 0% for their performance (the skill was taught but no students in the pilot demonstrated any measureable performance on the skill).

We then used the alignment study to evaluate breadth of content and cognitive complexity, and had 5 Science teachers (general and special education) rewrite skills and add skills until we achieved a pool of items that were re-aligned and judged as sufficient.

CHAPTER 5: RATING PROCEDURES AND THE MECHANICS FOR GENERATING STUDENT SCORES

Teachers are trained using Iowa's fiber-optic network. The presenter, at a central location, transmits video and audio to satellite locations. Every school district in Iowa has at least 1 satellite location in the school district. In addition, city governments or county seats often have additional satellite locations. County seats and schools with the highest population of students in alternate assessment are targeted for live communication. In addition, the session(s) are recorded and disseminated to Iowa's regional educational centers, Area Education Agencies. Each AEA has an Iowa Alternate Assessment Contact who is responsible for getting information to teachers on administration, scoring, and reporting, and on the timelines associated with alternate assessment administration.

Information is also disseminated to Iowa's Alternate Assessment Contacts, the Special Education Directors of Iowa's Area Education Agencies, and the Special Education Directors of Iowa's 8 largest school districts (those with more than 1 high school). In person meetings are used to disseminate information to these audiences, with email follow-up and information posting to the Alternate Assessment web of Iowa's Department of Education site.

Teachers are trained on:

1. Purpose of Alternate Assessment
 - a. Why alternate assessment is needed
 - b. Promoting High Achievement for Students with Disabilities through Fair and Meaningful Measurement
 - c. Access to Grade Level Content
 - d. Performance on Alternate Achievement Standards
2. Participation Guidelines
 - a. IEP team decision
 - b. Annual determination
 - c. For most significantly disabled students
3. Describing Student Characteristics
 - a. Who the anticipated participants are for the given school year
 - b. What general characteristics teachers observe in students
4. Scope of the Rating Scale Items
 - a. Academic Content, Grade Spanned
 - b. Reduced in Complexity
5. Selecting Rating Scales
 - a. Based on student's grade placement
 - b. Review content of items
 - c. Collaborate with general educators to obtain materials to base instruction
 - d. Teach the concept
 - e. Record performance

6. Gathering Data
 - a. Teach items throughout the school year
 - b. Generate and maintain student performance evidence
 - c. Base ratings on at least 4 trials
 - d. Report last data point
 - i. If data point is not representative of “true” performance, gather more evidence
 - ii. Use mastered or not taught check boxes as appropriate
7. Considerations in Rating
 - a. Use naturally occurring, year-long instruction to generate evidence
 - i. Do not have “alternate assessment day”
 - b. Report the most recent performance for reliability purposes
 - i. Gather more evidence if needed for score accuracy
 - c. Use any accommodation allowed on the child’s IEP
8. What do Ratings Represent?
 - a. Access to the general curriculum
 - b. Student performance on tasks reduced in complexity but aligned to grade level content
 - c. Performance on instruction that has occurred throughout the year, not at one point in time
 - d. Fair and meaningful assessment of student performance
9. Instructional Supports
 - a. There are supports on the DE website and from DE staff, on how to modify instructional materials to make grade level content accessible to students with severe cognitive disabilities
10. When and How to Report Results
 - a. March 31 of a given school year
 - b. On line data entry system
 - c. Provide parents with a copy of the student report
11. Assurance Process
 - a. Building Administrator must review evidence and attest that the ratings are accurate and that the procedure was followed with integrity
 - b. A district designee can be used in place of the building administrator
 - c. There is information on the website for teachers to give to administrators about the assurance process
 - d. Students without assurance forms are considered exclusions
 - e. Students for whom the administrator attests the process was not followed with integrity or that ratings are not supported by data, are exclusions
 - f. The assurance process, when best implemented, will represent ongoing conversations between the teacher and building administrator around:
 - i. High expectations of performance on academic tasks
 - ii. Collaboration with general educators on grade level content and adaptations
 - iii. Academic instruction for students with severe cognitive disabilities occurs throughout the day and throughout the school year, as would be found for nondisabled students

- iv. Assistive technology needs
 - v. Instruction in the least restrictive environment
 - vi. Evidence of progress monitoring for formative decision-making
 - vii. Review of performance data for summative decision-making
12. Other Exclusions
- a. No evidence that the general curriculum was taught
13. Expectations of teachers
- a. Read all information from the Department
 - b. Go to the Department website
 - c. Implement the process with integrity
 - d. Use AEA Contacts for questions

The alternate assessment process begins when school starts in August or September, and concludes on March 31st. Teachers teach the skills embedded in the alternate assessment and gather student performance over time. Teachers report the most recent percentage accuracy after at least 4 opportunities to respond. Because the rating scale is based on performance of 0-25%, 26-74%, and 75% and higher, at least 4 trials are needed to rate performance. Teachers are instructed to continue teaching and assessing until performance can be reliably rated.

Teachers select the items they will teach and rate. At present time there are no rules for minimum numbers of items needed to be rated, although the IDE is considering requiring at least 15 items to be rated for all students, because at least 15 items would need to be rated with some degree of performance, to represent proficient performance.

Teachers may accommodate the instruction as outlined in the IEP, and performance rated is representative of accommodated conditions. Students requiring hand-over-hand prompting receive scores of “1” on items for which hand-over-hand prompting or errorless learning (“point here”) was used to generate performance. Students who receive hand-over-hand learning on all rating scale items cannot be rated proficient: students must demonstrate some independent performance that is measured by teachers, before reaching the proficient band of performance.

Parent Reports

There are two means for sharing results with parents. First, teachers may choose to share rating scale ratings and supporting evidence parents formatively across the school year at parent conferences, and then at year’s end in a summative conference share the completed rating scales with parents.

A second method is to use the report format in the on-line data entry, scoring, and reporting system, to generate the formats included in the pages that follow. These formats provide a report for each grade and content area. The report has performance level descriptors and the student’s score in that content area.

It is important for teachers to consider follow-up with parents on the student’s performance. Format for these follow-up conversations would typically be at a conference. Parent focus group

data has repeatedly indicated that conferencing with the teacher is parents' preferred method for reviewing test results. The conversation might include:

- Number of items taught and performance on those items
- Change in number of items fully prompted to items with independent responses
- Change in numbers of items taught
- Change in numbers of items mastered
- Quality of work produced by the child
- Skills to be targeted for instruction over the course of the next school year
- Levels of independence to be targeted for improvement over the course of the next school year

Performance Level Descriptors and Cut Score Reports for Parents

For each of Grades 3-8 and 11, in Reading and Math, and each of Grade 5, 8, and 11 (Science), during Standard Setting, panelists developed performance level descriptors for basic, proficient, and advanced performance. Cut scores at each grade and proficiency level were also developed. Parent reports were developed using the information from Standard Setting. For each grade, parent reports for each content level, are presented.



Iowa Alternate Assessment Parent Report Performance Level Descriptors and Cut Scores Grade 5

Reading

Basic	Proficient	Advanced
Demonstrates a limited understanding of or ability to: <ul style="list-style-type: none"> • identify characters, setting and sequence of events (plot) • use context clues to understand some words • draw conclusions • identify text features • connect story or text to personal experiences • infer character feelings and traits • identify author's point of view • identify main idea of a passage 	Demonstrates a satisfactory understanding of or ability to: <ul style="list-style-type: none"> • identify characters, setting and sequence of events (plot) • use context clues to understand some words • draw conclusions • identify text features • connect story or text to personal experiences • infer character feelings and traits • identify author's point of view • identify main idea of a passage 	Demonstrates a thorough understanding of or ability to: <ul style="list-style-type: none"> • identify characters, setting and sequence of events (plot) • use context clues to understand some words • draw conclusions • identify text features • connect story or text to personal experiences • infer character feelings and traits • identify author's point of view • identify main idea of a passage
0-50	51-64	65+

Mathematics

Basic	Proficient	Advanced
<ul style="list-style-type: none"> • Perform two out of four operations with whole numbers • Identify needed information for solving multiple step problems • Recognize equivalents using numbers and objects ($5 = ?$ objects) • When given choices, estimate – guess the quantity and check the amount 	<ul style="list-style-type: none"> • Perform three out of four operations with whole numbers • When given choice of strategies, solve multiple step problems • Recognize equivalents using numbers sentences ($3 + x = 5$) • Use methods of estimation to round whole numbers – guess and check 	<ul style="list-style-type: none"> • Perform all four operations with whole numbers • Identifying strategy and solve multiple step problems • Solve multi-step equations with variables ($3 + 1 + x = 5$) • Use methods of estimation to round whole numbers and fractions or decimals
0-60	61-110	111+

Science

Basic	Proficient	Advanced
<p>Concrete: respond to, reproduce</p> <p>Inquiry</p> <ul style="list-style-type: none"> • Ask a question about objects, organisms, and events in the environment • Plan and conduct a simple investigation • Employ simple equipment and tools to gather data and extend the senses • Use data to construct a reasonable explanation • Communicate investigations and explanations <p>Life Science</p> <ul style="list-style-type: none"> • structures of living things • life cycles • environmental interaction and adaptation <p>Earth Science</p> <ul style="list-style-type: none"> • Earth’s composition and structure • Changes in and around Earth • Solar system <p>Physical Science</p> <ul style="list-style-type: none"> • Mechanics, contact forces, and motion • Types of Energy • Properties and characteristics of matter 	<p>Representation: recall and apply</p> <p>Inquiry</p> <ul style="list-style-type: none"> • Ask a question about objects, organisms, and events in the environment • Plan and conduct a simple investigation • Employ simple equipment and tools to gather data and extend the senses • Use data to construct a reasonable explanation • Communicate investigations and explanations <p>Life Science</p> <ul style="list-style-type: none"> • structures of living things • life cycles • environmental interaction and adaptation <p>Earth Science</p> <ul style="list-style-type: none"> • Earth’s composition and structure • Changes in and around Earth • Solar system <p>Physical Science</p> <ul style="list-style-type: none"> • Mechanics, contact forces, and motion • Types of Energy • Properties and characteristics of matter 	<p>Abstract: analyze, problem solve, synthesis</p> <p>Inquiry</p> <ul style="list-style-type: none"> • Ask a question about objects, organisms, and events in the environment • Plan and conduct a simple investigation • Employ simple equipment and tools to gather data and extend the senses • Use data to construct a reasonable explanation • Communicate investigations and explanations <p>Life Science</p> <ul style="list-style-type: none"> • structures of living things • life cycles • environmental interaction and adaptation <p>Earth Science</p> <ul style="list-style-type: none"> • Earth’s composition and structure • Changes in and around Earth • Solar system <p>Physical Science</p> <ul style="list-style-type: none"> • Mechanics, contact forces, and motion • Types of Energy • Properties and characteristics of matter
0-35	36-59	60+



Iowa Alternate Assessment Parent Report Performance Level Descriptors and Cut Scores Grade 8

Reading

Basic	Proficient	Advanced
<p>Demonstrates a limited understanding of or ability to:</p> <ul style="list-style-type: none"> • understand stated information • interpret information in new contexts • draw conclusions, use inferences and/or deduce meaning • recognize style and structure • identify main idea • interpret nonliteral language in text • identify author’s point of view and/or purpose <p style="text-align: center;">0-50</p>	<p>Demonstrates a satisfactory understanding of or ability to:</p> <ul style="list-style-type: none"> • understand stated information • interpret information in new contexts • draw conclusions, use inferences and/or deduce meaning • recognize style and structure • identify main idea • interpret nonliteral language in text • identify author’s point of view and/or purpose <p style="text-align: center;">51-79</p>	<p>Demonstrates a thorough understanding of or ability to:</p> <ul style="list-style-type: none"> • understand stated information • interpret information in new contexts • draw conclusions, use inferences and/or deduce meaning • recognize style and structure • identify main idea • interpret nonliteral language in text • identify author’s point of view and/or purpose <p style="text-align: center;">80+</p>

Mathematics

Basic	Proficient	Advanced
<ul style="list-style-type: none"> • Determine if an event is likely or unlikely to happen (probability) • When using the commutative property, (3+2=2+3) student recognizes the equations are balanced • Determine one of the four: mean, mode, median or range • Determine if a number sentence is equal or not equal <p style="text-align: center;">0-70</p>	<ul style="list-style-type: none"> • Indicate probability in numeric form (e.g. 1 out of 6 chance) • Demonstrate balanced equations using the commutative property • Determine two of the four: mean, mode, median or range • Complete equations and inequalities using the symbols <, >, or = <p style="text-align: center;">71-120</p>	<ul style="list-style-type: none"> • Use probability concepts to answer questions • Apply commutative property to balance equations • Determine three of the four: mean, mode, median or range • Solve equations and inequalities using the symbols <, >, or = <p style="text-align: center;">121+</p>

Science

Basic	Proficient	Advanced
<p>Concrete: respond to, reproduce</p> <p>Inquiry</p> <ul style="list-style-type: none"> • Identify questions that can be answered through scientific investigations • Design and conduct a scientific investigation • Use appropriate tools and techniques to gather, analyze and interpret data • Develop descriptions, explanations, predictions and models using evidence • Recognize and analyze alternative explanations and predictions <p>Life Science</p> <ul style="list-style-type: none"> • structures and function of living things • characteristics of living systems • environmental interaction, diversity, change, and adaptation <p>Earth Science</p> <ul style="list-style-type: none"> • Earth's composition and structure • Changes in and around Earth • Mechanics of the solar system <p>Physical Science</p> <ul style="list-style-type: none"> • Mechanics, contact forces, and motion • Energy transfer • Properties and characteristics of matter 	<p>Representation: recall and apply</p> <p>Inquiry</p> <ul style="list-style-type: none"> • Identify questions that can be answered through scientific investigations • Design and conduct a scientific investigation • Use appropriate tools and techniques to gather, analyze and interpret data • Develop descriptions, explanations, predictions and models using evidence • Recognize and analyze alternative explanations and predictions <p>Life Science</p> <ul style="list-style-type: none"> • structures and function of living things • characteristics of living systems • environmental interaction, diversity, change, and adaptation <p>Earth Science</p> <ul style="list-style-type: none"> • Earth's composition and structure • Changes in and around Earth • Mechanics of the solar system <p>Physical Science</p> <ul style="list-style-type: none"> • Mechanics, contact forces, and motion • Energy transfer • Properties and characteristics of matter 	<p>Abstract: analyze, problem solve, synthesis</p> <p>Inquiry</p> <ul style="list-style-type: none"> • Identify questions that can be answered through scientific investigations • Design and conduct a scientific investigation • Use appropriate tools and techniques to gather, analyze and interpret data • Develop descriptions, explanations, predictions and models using evidence • Recognize and analyze alternative explanations and predictions <p>Life Science</p> <ul style="list-style-type: none"> • structures and function of living things • characteristics of living systems • environmental interaction, diversity, change, and adaptation <p>Earth Science</p> <ul style="list-style-type: none"> • Earth's composition and structure • Changes in and around Earth • Mechanics of the solar system <p>Physical Science</p> <ul style="list-style-type: none"> • Mechanics, contact forces, and motion • Energy transfer • Properties and characteristics of matter
0-40	41-69	70+



Iowa Alternate Assessment Parent Report Performance Level Descriptors and Cut Scores Grade 11

Reading

Demonstrates a limited understanding of or ability to:

- understand stated information
- interpret information in new contexts
- draw conclusions, use inferences and/or deduce meaning
- recognize style and structure
- identify main idea
- interpret nonliteral language in text
- identify author’s point of view and/or purpose

0-50

Demonstrates a satisfactory understanding of or ability to:

- understand stated information
- interpret information in new contexts
- draw conclusions, use inferences and/or deduce meaning
- recognize style and structure
- identify main idea
- interpret nonliteral language in text
- identify author’s point of view and/or purpose

51-79

Demonstrates a thorough understanding of or ability to:

- understand stated information
- interpret information in new contexts
- draw conclusions, use inferences and/or deduce meaning
- recognize style and structure
- identify main idea
- interpret nonliteral language in text
- identify author’s point of view and/or purpose

80+

Mathematics

- Recognize an example of the commutative property
- Identify a number sentence for a real world problem involving an unknown
- Recognize two dimensional geometric attributes (area, perimeter, parallel lines, etc.)
- Identifies mathematical concepts in consumer situations (money, time, measurement, graphs/tables)

0-60

- Using the commutative property, find the unknown ($3+2 = \underline{\quad} + 3$)
- Create a number sentence for a real world problem involving an unknown
- Recognize two dimensional and three dimensional geometric attributes
- Uses mathematical reasoning in consumer situations (money, time, measurement, graphs/tables)

61-109

- Use commutative property to solve real-world problems
- Create and solve a number sentence for a real world problem involving an unknown
- Apply geometric attributes to real world situations (interpreting maps and graphs)
- Uses mathematical reasoning in advanced consumer situations (discounts, total costs, time, measurement, graphs/tables)

110+

Science

Concrete: respond to, reproduce	Representation: recall and apply	Abstract: analyze, problem solve, synthesis
<p>Inquiry</p> <ul style="list-style-type: none"> Identify questions and concepts that guide scientific investigations Design and conduct experiment (choosing proper equipment, safety equipment, use information from other sources outside the investigation) Use technology and mathematics to improve investigations and communication (interpreting graphical information) Formulate and revise scientific explanations and models using logic and evidence. Communicate and defend a scientific argument <p>Life Science</p> <ul style="list-style-type: none"> Adequacy and accuracy of information about life science Predictions from data from life science Scientific investigations in life science <p>Earth Science</p> <ul style="list-style-type: none"> Adequacy and accuracy of information about Earth/space science Predictions from data from Earth/space science Scientific investigations in Earth/space science <p>Physical Science</p> <ul style="list-style-type: none"> Adequacy and accuracy of information about physical science Predictions from data from physical science Scientific investigations in physical science 	<p>Inquiry</p> <ul style="list-style-type: none"> Identify questions and concepts that guide scientific investigations Design and conduct experiment (choosing proper equipment, safety equipment, use information from other sources outside the investigation) Use technology and mathematics to improve investigations and communication (interpreting graphical information) Formulate and revise scientific explanations and models using logic and evidence. Communicate and defend a scientific argument <p>Life Science</p> <ul style="list-style-type: none"> Adequacy and accuracy of information about life science Predictions from data from life science Scientific investigations in life science <p>Earth Science</p> <ul style="list-style-type: none"> Adequacy and accuracy of information about Earth/space science Predictions from data from Earth/space science Scientific investigations in Earth/space science <p>Physical Science</p> <ul style="list-style-type: none"> Adequacy and accuracy of information about physical science Predictions from data from physical science Scientific investigations in physical science 	<p>Inquiry</p> <ul style="list-style-type: none"> Identify questions and concepts that guide scientific investigations Design and conduct experiment (choosing proper equipment, safety equipment, use information from other sources outside the investigation) Use technology and mathematics to improve investigations and communication (interpreting graphical information) Formulate and revise scientific explanations and models using logic and evidence. Communicate and defend a scientific argument <p>Life Science</p> <ul style="list-style-type: none"> Adequacy and accuracy of information about life science Predictions from data from life science Scientific investigations in life science <p>Earth Science</p> <ul style="list-style-type: none"> Adequacy and accuracy of information about Earth/space science Predictions from data from Earth/space science Scientific investigations in Earth/space science <p>Physical Science</p> <ul style="list-style-type: none"> Adequacy and accuracy of information about physical science Predictions from data from physical science Scientific investigations in physical science
0-50	51-79	80+

CHAPTER 6: STANDARD SETTING

Standard Setting for the Iowa Alternate Assessment

Standard Setting has been done in 2005, 2006, and 2007. The 2005 standard setting resulted in performance levels for Grades 4, 8, and 11 (reading and math only), hence 2006 was needed to add performance level descriptors for grades 3, 5, 6, and 7, and for science.

The standards developed in 2006 had merits and demerits. The merits were that these (2006) standards resulted in better content coverage and higher expectations of student performance, and focused more on student performance as an indicator of proficiency rather than on teacher behaviors (numbers of evidences submitted for scoring, for example). The demerits of the standards developed in 2006 were (a) the performance levels were tied to a measurement methodology, (b) the performance levels were not sufficiently distinct within a grade to clearly differentiate basic from advanced performers, and (c) the performance descriptors were not sufficiently distinct between grades to clearly differentiate skills of 3rd graders from skills of 4th graders.

The week of June 21st, 2007, a Standard Setting workshop was conducted to achieve three goals:

- Develop performance level descriptors for each proficiency level for each content area and grade level
- Set alternate academic achievement standards
- Refine scoring rubric for 2007 and beyond

The institute was facilitated by Steve Maurer and Marty Ikeda of the State of Iowa Alternate Assessment Team.

Standard Setting Procedure

The DE worked with its National Advisory Committee and reviewed, amongst others, the following publications and presentations:

Arnold, N. (2003). *Washington Alternate Assessment System Technical Report on Standard Setting for the 2002 Portfolio*. (Synthesis Report 50). Minneapolis, MN: University of Minnesota, National Center on Educational Outcomes. Retrieved June 30, 2006, from the World Wide Web: <http://education.umn.edu/NCEO/OnlinePubs/Synthesis52.html>.

Cizek, G. J., Bunch, M. B., & Koons, H. (2004). *Setting performance standards: contemporary methods*. National Center for Measurement in Education.

Gong, B. (2007). Designing content targets for alternate assessments in science: reducing depth, breadth, and/or complexity. Web seminar on “Best practices in teaching and testing for students with significant cognitive disabilities.”

Marion, S. (2006). *Establishing cutscores on alternate assessment on alternate achievement standards*. CCSSO Large-scale assessment conference. San Francisco, CA.

Rigney, S. (2004). Accountability for students with disabilities under NCLB (ppt). Delivered at Title I Directors Meeting.

Rigney, S. (2005). Setting alternate achievement standards (ppt). Delivered at NCEO Teleconference.

Sheinker, J., & Erpenbach, W. J. (2007). *Alternate assessments for students with significant cognitive disabilities-strategies for states' preparation for and response to peer review*. Council of Chief State School Officers.

Zieky, M., & Perie, M. (2006). *A primer on setting cut scores on tests of educational achievement*. ETS.

After reviewing this information, and in consultation with national experts, the State of Iowa Alternate Assessment Team developed a standards setting process, training, and training materials. Given the rating scale format, number of items, and volumes of evidence for review, a Modified Angoff approach (Zieky & Perie, 2006) was selected to set cut scores.

The group conducting the review of the standards consisted of special educators and general educators all with many years of teaching experience. General educators in the group had content expertise in reading, mathematics, or science. The group was also reflective of elementary, middle, and high school levels as well as urban and rural populations. This group was representative of the urban-rural nature of Iowa and are depicted in Table 5.

Table 5.
Participants in Standard Setting*

Name	Affiliation	Position	Name	Affiliation	Position
Kris Taphorn	AEA	Consultant	Kathy Kvamme-Promes	LEA	Teacher HS (SpEd)
Carol Hamilton	LEA	Teacher MS (SpEd)	Mary Craven	LEA	Teacher K-2 (SpEd)
Renee Cantrell	LEA	Teacher K-6 (SpEd)	Emily Thatcher	LEA	Teacher MS (SpEd)
Deb Gilmore	LEA	Teacher K-5 (SpEd)	Erin Payne Christiansen	LEA	Teacher HS (SpEd)
Linda Porter	AEA	Consultant	Lori Rose	AEA	Teacher MS (SpEd)
Kim Heitshusen	LEA	Teacher (SpEd)	Sarah Loots	LEA	Teacher K-5 (SpEd)
Pat Bayles	LEA	Teacher (SpEd)	Carrie Barglof	LEA	Teacher MS (SpEd)

Name	Affiliation	Position	Name	Affiliation	Position
Dianne Hinders	AEA	Consultant	Cynthia Knight	DE	Math Consultant
Tammie Boone	LEA	Teacher HS (SpEd)	Lynnette Dunn	LEA	Teacher MS (SpEd)
Jean Triplett	LEA	Gen Ed MS Reading	Dennis Inman	LEA	Science all grades
Marsha Fisher	LEA	4 th Grade Gen Ed	Charlotte McCullough	LEA	Gen Ed HS Math
Jennifer Stater	LEA	Gen Ed MS Language Arts	Allison Lair	LEA	Gen Ed HS Language Arts
Anita Meador	LEA	Gen Ed HS Reading	Kari Pingel	LEA	Gen Ed Elem. Science
Krista Hampton	LEA	Gen Ed Elem. Math	Megan Wetzell	LEA	Gen Ed Elem. Math
Kami Clark	LEA	Gen Ed Elem. Reading	Jessica Gogerty	LEA	Gen Ed Secondary Science
Mary Jane McCollum	LEA	Gen Ed MS Language Arts	Rachella Davis	LEA	Gen Ed. Elementary Math
Deborah Hill	Parent				

*AEA = Area Education Agency, LEA=Local Education Agency, DE=Department of Education, HS= High School, MS=Middle School, Elem.=Elementary School, Gen Ed = Teacher whose assignment is general education, SpEd = Teacher whose assignment is students with disabilities (moderate, severe, or severe/profound not specified in the table).

The objectives for the week were reviewed with participants. Participants were provided with a summary of the students in the Iowa Alternate Assessment. Examples of performance level descriptors from 2006 (Iowa) and from other states, were provided to participants. Instructions on clarifying the kinds of skills constituting basic, proficient, and advanced performance, both within and between grades, was provided.

Participants engaged in a pre-test on their knowledge and skills relative to the standard setting process in 8 areas: (a) What kinds of students should be considered for participation in Alternate Assessment?, (b) the characteristics of students in 2006-2007 who participated in alternate assessment; (c) the alternate assessment process; (d) the development of the alternate assessment rating scales, (e) what evidence supporting ratings looked like for 2006-2007, (f) descriptions of basic, proficient, and advanced performers, (g) describing how performance ought to change between grade levels, and (h) how cut scores are derived using judgment and evidence.

At the beginning of the week, participants ratings (1-5 scale with 1= no knowledge and 5 = high degree of knowledge), the average ratings on each were as depicted in the “pre” column in Table 10. After completing the week, participants’ knowledge, on average, was rated at “high degree of knowledge” on all areas covered, supporting the efficacy of the training materials and training process.

Table 6.
Average ratings of knowledge at pre- and post-Standard Setting, June 2007

Item	N	Average Rating Pre	Average Rating Post
Participation Criteria	31	4	5
Characteristics	31	4	5
Process	31	4	5
Scale Development	31	3	5
Quality of Evidence	31	3	4
Performance Levels with grades	31	3	5
Performance Levels between grades	31	3	5
Derivation of cut scores	31	2	5

The participants created 3 groups of approximately 12. Groups reviewed the core content standards and benchmarks, discussed the kinds of skills under each standard and benchmark that would reflect basic, proficient, and advanced performance of a student with a severe cognitive disability. Participants reviewed descriptors from Iowa (2006) and from other states, and developed strengths and weaknesses of the descriptions.

Participants reviewed the learner characteristics of student's in Iowa's alternate assessment in 2006-2007, to understand the level of functioning of students. General educators paired with special educators to complete the Standard Setting process.

Participants first circled the items on each rating scale for each grade (5, 8, or 11) on which a barely proficient student would perform. Participants then estimated the likely level of performance in percent accuracy, for the barely proficient student. A score representing the predicted performance of the barely proficient learner was generated by each participant. The process was replicated for a student rated who would be considered at the cusp between proficient and advanced.

Item difficulty statistics were reviewed with the group as a whole, as was the percentage of students in the 2006-2007 alternate assessment who would have scored at each level. Each group reached consensus on cut-scores within and between grades that appeared fair given the performance level descriptors and the percentage of students at each performance level.

The first set of cut scores, by team, and the distribution of students in the assessment at each cut score, are presented in Table 7.

Table 7.
Cut Scores for Barely Proficient and Barely Advanced Learner at Each Grade, Science

Grade	Barely Proficient					Barely Advanced				
	Team 1	Team 2	Team 3	Median	% distribution 2006	Team 1	Team 2	Team 3	Median	% distribution 2006
5	31	35	36	35	40	46	59	67	59	13
8	35	38	59	38	70	41	72	82	72	7
11	43	52	60	52	65	53	87	102	87	5

The participants examined the data and came to consensus on the cut scores that would be fair to students, settling on scores that approximated the median scores. The teams felt that the scores were fair because (a) the percent proficient at Grade 5 for 2006-2007 would approximate the general test's score, (b) the raw score had to go up through the grades to maintain proficiency, and (c) the advanced scores represented real application of Science and were conservative: a student would need to demonstrate many skills at high levels of accuracy to be advanced.

The performance level descriptors and cut scores as selected by the Science group for Grades 5, 8, and 11, are presented in Tables 8-10.

Table 8.
Grade 5 Science Performance Descriptors and Cut Scores

Basic	Proficient	Advanced
<p>Concrete: respond to, reproduce</p> <p>Inquiry</p> <ul style="list-style-type: none"> • Ask a question about objects, organisms, and events in the environment • Plan and conduct a simple investigation • Employ simple equipment and tools to gather data and extend the senses • Use data to construct a reasonable explanation • Communicate investigations and explanations <p>Life Science</p> <ul style="list-style-type: none"> • structures of living things • life cycles • environmental interaction and adaptation <p>Earth Science</p> <ul style="list-style-type: none"> • Earth’s composition and structure • Changes in and around Earth • Solar system <p>Physical Science</p> <ul style="list-style-type: none"> • Mechanics, contact forces, and motion • Types of Energy • Properties and characteristics of matter 	<p>Representation: recall and apply</p> <p>Inquiry</p> <ul style="list-style-type: none"> • Ask a question about objects, organisms, and events in the environment • Plan and conduct a simple investigation • Employ simple equipment and tools to gather data and extend the senses • Use data to construct a reasonable explanation • Communicate investigations and explanations <p>Life Science</p> <ul style="list-style-type: none"> • structures of living things • life cycles • environmental interaction and adaptation <p>Earth Science</p> <ul style="list-style-type: none"> • Earth’s composition and structure • Changes in and around Earth • Solar system <p>Physical Science</p> <ul style="list-style-type: none"> • Mechanics, contact forces, and motion • Types of Energy • Properties and characteristics of matter 	<p>Abstract: analyze, problem solve, synthesis</p> <p>Inquiry</p> <ul style="list-style-type: none"> • Ask a question about objects, organisms, and events in the environment • Plan and conduct a simple investigation • Employ simple equipment and tools to gather data and extend the senses • Use data to construct a reasonable explanation • Communicate investigations and explanations <p>Life Science</p> <ul style="list-style-type: none"> • structures of living things • life cycles • environmental interaction and adaptation <p>Earth Science</p> <ul style="list-style-type: none"> • Earth’s composition and structure • Changes in and around Earth • Solar system <p>Physical Science</p> <ul style="list-style-type: none"> • Mechanics, contact forces, and motion • Types of Energy • Properties and characteristics of matter
0-35	36-59	60+

Table 9.
Grade 8 Science Performance Descriptors and Cut Scores

Basic	Proficient	Advanced
<p>Concrete: respond to, reproduce</p> <p>Inquiry</p> <ul style="list-style-type: none"> • Identify questions that can be answered through scientific investigations • Design and conduct a scientific investigation • Use appropriate tools and techniques to gather, analyze and interpret data • Develop descriptions, explanations, predictions and models using evidence • Recognize and analyze alternative explanations and predictions <p>Life Science</p> <ul style="list-style-type: none"> • structures and function of living things • characteristics of living systems • environmental interaction, diversity, change, and adaptation <p>Earth Science</p> <ul style="list-style-type: none"> • Earth's composition and structure • Changes in and around Earth • Mechanics of the solar system <p>Physical Science</p> <ul style="list-style-type: none"> • Mechanics, contact forces, and motion • Energy transfer • Properties and characteristics of matter 	<p>Representation: recall and apply</p> <p>Inquiry</p> <ul style="list-style-type: none"> • Identify questions that can be answered through scientific investigations • Design and conduct a scientific investigation • Use appropriate tools and techniques to gather, analyze and interpret data • Develop descriptions, explanations, predictions and models using evidence • Recognize and analyze alternative explanations and predictions <p>Life Science</p> <ul style="list-style-type: none"> • structures and function of living things • characteristics of living systems • environmental interaction, diversity, change, and adaptation <p>Earth Science</p> <ul style="list-style-type: none"> • Earth's composition and structure • Changes in and around Earth • Mechanics of the solar system <p>Physical Science</p> <ul style="list-style-type: none"> • Mechanics, contact forces, and motion • Energy transfer • Properties and characteristics of matter 	<p>Abstract: analyze, problem solve, synthesis</p> <p>Inquiry</p> <ul style="list-style-type: none"> • Identify questions that can be answered through scientific investigations • Design and conduct a scientific investigation • Use appropriate tools and techniques to gather, analyze and interpret data • Develop descriptions, explanations, predictions and models using evidence • Recognize and analyze alternative explanations and predictions <p>Life Science</p> <ul style="list-style-type: none"> • structures and function of living things • characteristics of living systems • environmental interaction, diversity, change, and adaptation <p>Earth Science</p> <ul style="list-style-type: none"> • Earth's composition and structure • Changes in and around Earth • Mechanics of the solar system <p>Physical Science</p> <ul style="list-style-type: none"> • Mechanics, contact forces, and motion • Energy transfer • Properties and characteristics of matter
0-40	41-69	70+

Table 10.
Grade 11 Science Performance Descriptors and Cut Scores

Basic	Proficient	Advanced
<p>Concrete: respond to, reproduce</p> <p>Inquiry</p> <ul style="list-style-type: none"> Identify questions and concepts that guide scientific investigations Design and conduct experiment (choosing proper equipment, safety equipment, use information from other sources outside the investigation) Use technology and mathematics to improve investigations and communication (interpreting graphical information) Formulate and revise scientific explanations and models using logic and evidence. Communicate and defend a scientific argument <p>Life Science</p> <ul style="list-style-type: none"> Adequacy and accuracy of information about life science Predictions from data from life science Scientific investigations in life science <p>Earth Science</p> <ul style="list-style-type: none"> Adequacy and accuracy of information about Earth/space science Predictions from data from Earth/space science Scientific investigations in Earth/space science <p>Physical Science</p> <ul style="list-style-type: none"> Adequacy and accuracy of information about physical science Predictions from data from physical science Scientific investigations in physical science <p>0-50</p>	<p>Representation: recall and apply</p> <p>Inquiry</p> <ul style="list-style-type: none"> Identify questions and concepts that guide scientific investigations Design and conduct experiment (choosing proper equipment, safety equipment, use information from other sources outside the investigation) Use technology and mathematics to improve investigations and communication (interpreting graphical information) Formulate and revise scientific explanations and models using logic and evidence. Communicate and defend a scientific argument <p>Life Science</p> <ul style="list-style-type: none"> Adequacy and accuracy of information about life science Predictions from data from life science Scientific investigations in life science <p>Earth Science</p> <ul style="list-style-type: none"> Adequacy and accuracy of information about Earth/space science Predictions from data from Earth/space science Scientific investigations in Earth/space science <p>Physical Science</p> <ul style="list-style-type: none"> Adequacy and accuracy of information about physical science Predictions from data from physical science Scientific investigations in physical science <p>51-79</p>	<p>Abstract: analyze, problem solve, synthesis</p> <p>Inquiry</p> <ul style="list-style-type: none"> Identify questions and concepts that guide scientific investigations Design and conduct experiment (choosing proper equipment, safety equipment, use information from other sources outside the investigation) Use technology and mathematics to improve investigations and communication (interpreting graphical information) Formulate and revise scientific explanations and models using logic and evidence. Communicate and defend a scientific argument <p>Life Science</p> <ul style="list-style-type: none"> Adequacy and accuracy of information about life science Predictions from data from life science Scientific investigations in life science <p>Earth Science</p> <ul style="list-style-type: none"> Adequacy and accuracy of information about Earth/space science Predictions from data from Earth/space science Scientific investigations in Earth/space science <p>Physical Science</p> <ul style="list-style-type: none"> Adequacy and accuracy of information about physical science Predictions from data from physical science Scientific investigations in physical science <p>80+</p>

Validation of Cut Scores Based on Distribution of Basic, Proficient, and Advanced Scores, 2005-2007

In this section, the percentage of students who were basic or proficient on the alternate achievement standards, from 2005-2007, is summarized. The body of evidence method is reflected in the 2005 distribution. The rating scale with supporting evidence is reflected in the 2006 and 2007 summaries. Science data were not available prior to 2006, and are not reported. The rating scale method has resulted in lower numbers of students reported proficient or higher, in reading and math.

*Table 11.
Percentage of Students Scoring Basic or Proficient in Reading, 2005-2007*

Grade	2005 ¹		2006 ²		2007 ²	
	Basic	Proficient	Basic	Proficient	Basic	Proficient
3	Not Tested		47.9%	52.1%	22.1%	77.9%
4	21%	79%	48.4%	51.6%	30.9%	69.1%
5	Not Tested		44.8%	55.2%	29%	71%
6	Not Tested		43.7%	56.3%	28.6%	71.4%
7	Not Tested		49.2%	50.8%	36.9%	63.1%
8	18%	82%	56.3%	43.7%	39.4%	60.6%
11	14%	86%	50.2%	49.8%	47.1%	52.9%

¹Body of Evidence Method, ²Evidence-Based Rating Scale Method

*Table 12.
Percentage of Students Scoring Basic or Proficient in Math, 2005-2007*

Grade	2005 ¹		2006 ²		2007 ²	
	Basic	Proficient	Basic	Proficient	Basic	Proficient
3	Not Tested		60.5%	39.5%	33.3%	66.7%
4	17%	83%	56.3%	43.7%	32.7%	67.3%
5	Not Tested		52%	48.0%	39%	61%
6	Not Tested		53.8%	46.2%	35%	65%
7	Not Tested		60.4%	39.6%	36.4%	63.6%
8	19%	81%	63.7%	36.3%	47.4%	52.6%
11	18%	82%	57.3%	42.7%	39.2%	60.8%

¹Body of Evidence Method, ²Evidence-Based Rating Scale Method

With the body of evidence method, about 20% of portfolios earned scores in the “basic” range, while about 80% of the portfolios earned scores in the “proficient” range. In 2006, when all items required supporting evidence, depending on grade level and content area, between about 45% and about 65% of students demonstrated performance in the basic range (with about 45% to 65% demonstrating proficient or higher performance). In 2007, when options for performance credited for mastered content were presented, depending on grade level and content area, between 22% and 47% of students earned basic scores, meaning that between 53% and 78%

earned proficient scores. Additional data analyses are being conducted to correlate student profile data with performance scores as a means of validating the cut scores, and to examine students not proficient in 2006 who were proficient and advanced in 2007. In addition, the numbers of students earning proficient or higher scores based primarily on “mastered” items (items that do not require supporting evidence) is being investigated, as is the extent to which students earning proficient or higher scores in 2007 based on mastered content were reported basic in 2006 based on all items needing supporting evidence. Based on a review of the data, policy decision around administration and scoring will be made for 2009-2010.

We have received reports from teachers that performance level descriptors and cut scores are not reflective of what students are doing in the classroom. We can use the student profile data to generate information about students likely to be advanced (have receptive and expressive communication, are in school, are reading paragraphs or chapters, are manipulating numbers), proficient (have receptive and expressive language, are in school, are reading words, have computation level skills), and basic (low receptive or expressive language, are not in school, are identifying letters or lower, are identifying numbers or lower), and use discriminant function to predict scores of basic, proficient and advanced levels. We can also use the student performance data to identify the kinds of skills that students who are basic, proficient, or advanced were engaged in, and with what level of accuracy. Now that teachers are more familiar with academic instruction and at examining student performance, we also will have teachers meet to discuss what constitutes basic, proficient, and advanced performance, in each grade, and in each content area. We will use this information to re-write performance levels and cut scores, with targeted completion in summer of 2010.

CHAPTER 7: ALIGNMENT

The item pool was aligned to the core content standards and benchmarks using a Webb Alignment procedure. The Webb Alignment procedure is an acceptable method for alignment. Iowa's participation in the Large Scale group of the Council of Chief State School Officers (CCSSO) provided information on the acceptability of the Webb alignment procedure. In addition, there is an emerging literature that the Webb framework can be used to judge alignment of alternate assessments (CCSSO, 2006; Roach, Elliott, and Huang).

In a Webb alignment study, expert panelists first rate the cognitive complexity of the Core Content Standards and Benchmarks. Depth of Knowledge for Students with Disabilities is represented on a continuum from: Stage 1-Responds to items, through Stage 6-demonstrates extended reasoning. The continuum used in the Iowa Alternate Assessment Webb Alignment Studies were: Stage 1-Responds to items, Stage 2-Reproduces, replicates, or copies materials, stage 3-Recalls information verbally or through selection, Stage 4—Procedures/ Applications of skills, stage 5—Problem Solving, stage 6—Extended Reasoning.

The Webb analysis provides seven pieces of information useful for judging adequacy alignment of one's test instrument to one's standards and benchmarks.

- Categorical Concurrence means that the content reflected in the standards and benchmarks is also reflected in the test items. In a Webb alignment study, Categorical Concurrence is reflected if 6 items are aligned with each standard.
- Depth-of-Knowledge Consistency means that the depth-of-knowledge (DOK) within the items is as demanding cognitively as the DOK represented by the benchmarks.
- Range of Knowledge means that at least 50% of the benchmarks under a given content standard have at least 1 item aligned with that benchmark.
- Balance of Representation extends range of knowledge to examine the extent to which items are distributed across benchmarks (beyond a more general range of knowledge index of how many benchmarks have at least 1 corresponding item?).
- Interclass correlation is an index of how well scorers agreed as a whole. Indices of 0.7 are considered adequate while indices of 0.8 are considered good. (CCSSO, 2006).
- Pairwise comparison is the average agreement in scoring across all combinations of pairs of scorers. Pairwise agreement of .6 is considered acceptable (CCSSO, 2006).
- Item alignment matrix summarizes the number of reviewers aligning an item to a benchmark, and the degree of match between the DOK of the item and the DOK of the benchmark.

Dr. Bradley Niebling of Iowa's Heartland Area Educational Agency, and Dr. Andrew Roach of Georgia State University, assisted with the alignment work. There were four reviewers. Gary Rippentrop is a middle school general science teacher. Emily Thatcher is a teacher of students with severe disabilities. Elaine Baughman is a teacher of students with severe disabilities. Tammie Boone is a teacher of students with severe disabilities. The Microsoft Powerpoint slides used in training are included in Appendix B.

After judging the complexity of the Benchmarks at each grade span, each judge individually rates the primary and secondary benchmark to which each item aligns, and the cognitive complexity represented by the verbs or requirements to complete each item.

The initial alignment work (Table 13) was used to modify the item pool so that more acceptable levels were obtained of Categorical Concurrence, Depth-of-Knowledge Consistency, Range of Knowledge, Balance of Representation, interclass correlations, and pairwise comparisons. Proof that the alignment institute occurred is provided in Appendix B, in which the Science reports that result from the Webb Computerized Alignment Tool are included. These reports are the data used to rewrite items in the second alignment study that resulted in the item pool included in Appendix A.

*Table 13.
Initial Results from Alignment Institute*

Grade Span	Content Area	Categorical Concurrence	Depth-of-Knowledge Consistency	Range of Knowledge	Balance of Representation	Interclass Correlation	Pairwise Comparison
3-5	Reading	Yes	No	Yes	No	.94	.60
3-5	Math	Yes-all standards	Yes on 3 of 4 standards (all but Standard A)	Yes-all standards	Yes-all standards	.94	.61
5	Science	Yes-all standards	No-all standards	Yes-all standards	Yes-all standards	.81	.58
6-8	Reading	Yes	Yes	Weak	Weak	.94	.59
6-8	Math	Yes-all standards	Standard A- No Standard B- Yes Standards C and D-Weak	Yes-all standards	Yes-all standards	.89	.52
8	Science	Standards A, B, and D-Yes Standard C-No	No-all standards	Yes-all standards	Yes-all standards	.59	.52
9-12	Reading	Yes	No	Yes	No	.93	.54
9-12	Math	Yes-all standards	No-All Standards	Yes-all standards	Yes-all standards	.90	.57
11	Science	Standards A, B, and D-Yes Standard C-No	No-all standards	Standards A, B, and D-Yes Standard C- No	Yes-all standards	.58	.51

The results of the initial alignment work were used to eliminate items impacting balance of representation, and to reword items to reflect increased depth-of-knowledge consistency with Iowa's Core Content Standards and Benchmarks.

*Table 14.
Alignment Indices Obtained After Items were Eliminated*

Grade Span	Content Area	Categorical Concurrence	Depth-of-Knowledge Consistency	Range of Knowledge	Balance of Representation	Interclass Correlation	Pairwise Comparison
3-5	Reading	Yes	Yes	Yes	Yes	.96	.73
3-5	Math	Yes-all standards	Yes-all standards	Yes-all standards	Yes-all standards	.95	.63
5	Science	Yes-all standards	Standards A and D-Yes Standard B-No Standard C-Weak	Yes-all standards	Yes-all standards	.95	.73
6-8	Reading	Yes	Yes	Yes	Yes	.96	.75
6-8	Math	Yes-all standards	Standard A-Weak Standards B, C, and D-Yes	Yes-all standards	Yes-all standards	.93	.62
8	Science	Yes-all standards	Standards A, B, and D-No Standard C-weak	Yes-all standards	Yes-all standards	.90	.70
9-12	Reading	Yes	Yes	Yes	Yes	.93	.64
9-12	Math	Standards A, B, and C-Yes Standard D-No	Standards A and C-No Standard B Yes Standard D-Weak	Yes-all standards	Yes-all standards	.94	.62
11	Science	Yes-all standards	Standard D-Yes Standards A, B, and C-Weak	Yes-all standards	Yes-all standards	.96	.89

In reading and math, the Webb alignment criteria are met in all areas. In science, some standards are better reflected in the item pool than others. The re-alignment process resulted in very acceptable levels of rater-agreement. Overall, the data suggest that the item pool of the rating scales are aligned to the Core Content Standards and Benchmarks.

As additional evidence of alignment, Performance Level Descriptors were also aligned to the Core Content Standards and Benchmarks, and panelists were asked, “do the item pools sufficiently approximate the performance levels to adequately measure the performance described?” Each content groups reported consensus that the item pools at each grade span adequately captured performance described at each grade level.

The Iowa Alternate Assessment rating scales are aligned, at each grade span, to corresponding grade-spanned benchmarks. The Iowa Alternate Assessment ratings scales were judged as sufficiently aligned to each grade level's performance level descriptors. The performance level descriptors were aligned to the Core Content Standards and Benchmarks.

CHAPTER 8: VALIDITY

Validity is the extent to which a test measures what it purports to measure. Validity is established dynamically, through thoughtful gathering of evidence about both the content of the measure, but also the consequences of test data.

Content Validity of the IAA

Content Validity has been established as described previously, through item development, alignment, and standard setting. Items were developed to reflect academic skills of reading, math, and science. Items were aligned to grade level standards and span grade level benchmarks. The alignment data corroborate that items are aligned to the core content standards and benchmarks. Performance level descriptors developed in standard setting were written to align with core content standards and benchmarks. The items in the item pool were judged by the panels to align with the performance level descriptors.

In 2006-2007, 105 rating scales were reviewed. The extent to which supporting evidence was academic in nature and age appropriate, was judged. Eighty-four percent of rating scales were judged as having supporting evidence that was academic in nature. The ratings on the scales would be considered valid, but a plan for providing additional support to teachers to craft instructional activities that philosophically were more age appropriate, was developed. However, the age appropriate nature of the tasks developed by teacher suggests that the IAA has content validity beyond the rating scale items. In addition, 87% of the rating scales reviewed were judged as having evidence that was academic in nature (not functional). A plan for improving these data was also developed, but this finding also supports content validity of the IAA process.

Construct Validity of the IAA

From an exploratory perspective, the data from 2006-2007 were factor analyzed by grade and by grade span. If the skills represented in the grade-spanned item pool factor analyze differently, then there is additional evidence of how performance changes as children move up the grade spectrum. Principal axis extraction with direct oblimin rotation (with eigenvalues of greater than 1), were used in the analysis, due to the likelihood that factors were highly correlated.

Table 15.
Results of Exploratory Factor Analysis in Science

Grade	N	Factor 1 Eigenvalue	% variance	Factor 2 Eigenvalue	% variance	Factor 3 Eigenvalue	% variance	Factor 4 Eigenvalue	% variance	Factor 5 Eigenvalue	% variance
5	92	11.09	50.41	2.60	11.83	1.54	7.01	1.35	6.13	Na	NA
8	214	15.08	71.82	1.38	6.56	Na	na	Na	Na	NA	NA
11	179	11.13	65.52	1.34	7.90	1.02	6.02	Na	Na	Na	NA

For Grade 5 in Science, a 4-factor structure accounted for 75.38% of the variance in Science. The 4 factors identified were using tools/measurement in science, physical science, scientific inquiry, and differentiation of 2 items.

For Grade 8 in Science, a 2-factor structure accounted for 78.38% of the variance in Science. The 2 factors identified were: answering questions about science in all areas, and labeling or identifying items associated with science.

For Grade 11 in Science, a 3-factor structure accounted for 79.43% of the variance in Science. The factors were: general science competence, scientific inquiry and experimentation, and using measurement tools associated with science.

Factor Analysis Summary. Factor analyses accounted for over 70% of the variance of each construct at each grade. As a whole, these data suggest that the rating scale structure, even though grade spanned, is sensitive to performance differences at each grade level, and that the performance depicted in the rating scales are academic in nature.

The factor structure and item means suggest that the item pool is accessible to severally impaired learners, yet is still sufficiently challenging for the least disabled students participating in alternate assessment.

In science, the factor structures were more limited, but were statistically discernable. Science factors also tended to load on items of reduced cognitive complexity: identification or labeling, for example. Teachers reported that science in particular presents problems due to the cognitive complexity of the constructs. In addition, depending upon a district's curriculum, benchmarks may not be targeted at the grade level of a given student. Hence, there may not be sufficient variance in items due to curricular differences across the state rather than true differences in student performance that confounded the factor analysis. Nevertheless, all content areas at all grades, could be analyzed using factor analysis, and interpretable factors were obtained.

Construct Validation Work in 2007-2008

Seven raters were asked to review evidence submitted for 323 cases selected at random (20% of cases). Teachers of students selected for review were asked to submit all evidence for 2 items in reading, 4 items in Math (1 for each Standard), and 2 items in Science (1 for Standard 1, 1 for a standard of the teachers' choice).

The seven raters were part of Iowa's Teacher Cadre, all experienced with Alternate Assessment, participants in the Alignment Institute, and Standard Setting efforts. The raters were asked to rate whether the evidence provided supported the rating of the student on that specific item. In

addition, the raters were asked to judge, over all the items reviewed, if the construct was maintained, if sufficient data were present to accurately judge student performance, and if the performance in the evidence samples, on average, matched the ratings of the student on the items reviewed.

After rating each of the items on which evidence was submitted, the rater was asked to rate (a) was the construct maintained in the evidence? (b) were 3 instructional trials evident in the data, and (c) did the performance in the evidence reflect the performance reported for the student on that item? Responses to the questions are summarized in Table 16.

*Table 16.
Rater Responses on Construct Relevance, Instructional Sufficiency, and Performance Match*

Area Reviewed	Percent of Cases Evidenced
Construct Maintained	90%
Instructional Sufficiency	74%
Performance Match	88%

The data in Table 16 suggested that too few instructional trials were used to report performance, and additional technical assistance was developed for 2008-2009. However, the data also suggest that the kinds of instructional activities generated by teachers maintained the construct being rated, and that teachers were accurate in how performance was reported on the rating scale.

Concurrent Validity of the IAA

We took the student profile and designated a rating on the student profile for each item on a 0-4 scale. We used 9 items: mode of communication (1 point for self injurious through switch communication, 2 points for single word communication, 3 points for sentence strip or verbal skills 1-2 words, 4 points for signed or verbal conversational skills), receptive language (1 point for not attending or understanding not known, 2 points for presentation of objects or pictures, 3 points for 1-2 word understanding, 4 points for understanding signed or spoken words), content of communication (1 point for function, 2 points for request, 3 points for socially interactive), social interactions (0 for not observable, 1 for avoidance or facial/physical expressions such as smiling or rapid breathing, 2 for social interactions less than 1 minute, 3 for social interactions that are sustained, 4 for social interactions sustained and initiated), fine motor (1 for does not tolerate assistance, 2 for with prompting, 3 for independent writing of shapes not identifiable, 4 for writing identifiable shapes, letters, or words), reading (0 for no awareness, 1 for attends or segments, 2 for reads words, 3 for readings sentences without comprehension, 4 for reads and comprehends regardless of grade level of material), math (0 for no awareness of numbers, 1 for identifies numbers, 2 for calculates with a calculator, 3 for calculates but does not solve problems, 4 for applies math to solve problems), attendance (1 for instruction at special facility or shortened school day, 2 for attendance 1-2 days per week, 3 for attendance of 3 days, 4 for attendance 4-5 days per week), and health (1 for significant health issues impacting availability for instruction, 2 for available for instruction 25% of the day, 3 for available for instruction 50% of the day, and 4 for available for instruction for 75% of the day or more).

The 9 items summed to a total of 36 points. We judged the skills rated 3 or higher as likely representative of advanced performance, so a student scoring 27 or higher on these 9 items of the student profile were likely to be earn advanced ratings on the actual rating scale. Students scoring scores of 2 on all items or a combination of 2s and 3s, were likely to be the proficient students (18-26 total on this subset of the student profile), and students scoring combinations of 1s and 2s or lower on these items (0-17 total) were likely basic. The student profile data were available for 1722 students (of 1844, meaning the sample sufficiently represents the population). We calculated the internal consistency of this reduced set of items as a criterion measure, and the resulting Cronbach's alpha was 0.88. We also ran an exploratory factor analysis on the item pool and found a 2 factor structure: the first 7 items from language through math skill loaded on factor 1 (academic, communication, and social competence), while the last 2 items (attendance and alertness) loaded heavily on factor 2 (health impact). Hence, this reduced set of items on the student profile have construct relevance and can be used as a criterion measure.

We correlated the ratings on the student profile with ratings obtained. The student profile score and rating scale scores were correlated at statistically significant levels, and the proportion of variance accounted for in science by the student profile rating was 36%. The N for the Science correlations was limited due to Grades 5, 8, and 11 rated in Science (N=697), while reading, math, and total correlations had Ns of 1689-1722 depending on the relation explored.

	Student Profile Score	Science Rating	Reading Rating	Math Rating
Student Profile Score	1.00	.64**	.68**	.75**
Science Rating	.64**	1.00	.74**	.84**
Reading Rating	.68**	.74**	1.00	.90**
Math Rating	.75**	.84**	.90**	1.00

** $p < 0.01$

We also correlated the predicted performance level with the obtained performance level, and found:

	Student Profile Proficiency	Reading Proficiency	Math Proficiency	Science Proficiency
Student Profile Proficiency	1.0	.50**	.60**	.56**
Reading Proficiency	.50**	1.0	.75**	.68**
Math Proficiency	.60**	.75**	1.0	.77**
Science Proficiency	.56**	.68**	.77**	1.0

** $p < .01$

Lastly, we used discriminate function to evaluate the extent to which the obtained and expected distributions were similar. Sixty-one percent of cases were correctly classified, and the deviations from expected performance were reasonable: students predicted basic often received ratings that reached proficient levels, but not often reaching advanced levels, students predicted to be proficient were sometimes “undertaught,” but often received ratings of both proficient and advanced levels, and students who were predicted to be advanced most often at least earned proficient or higher ratings.

Collectively, the data suggest that the student profile and the rating scales are assessing similarly, but that the rating scales allow for teachers to instruct and “break” the predicted performance levels—the assessment is sensitive to instruction but is also sensitive to the extent to which teachers teach the content.

Consequential Validity of the IAA

Consequential validity around fair and meaningful assessment practices was the lens through which Iowa examined validity of the Alternate Assessment. A series of questions was posed to craft a research agenda against which evidence for validity is accumulated, and from which enhancements to the assessment process is made.

1. What is the purpose of the IAA? The purpose of the IAA is to ensure that students with the most significant cognitive disabilities are fully included in Iowa’s accountability system and have access to challenging instruction, linked to grade level, state content standards.
2. How will the scores of the IAA be used? Determination of AYP of all school districts in Iowa.
3. What stakeholders are important to helping the state understand the consequences of the IAA? Students, teachers, administrators, AEA personnel, and parents, and National partners.
4. Intended Consequences:
 - Creating high expectations of teachers
 - Access to the general education curriculum
 - Increased collaboration with general education teachers
 - Increased awareness of the assessment by parents, school administrator, and the general public
5. Unintended Consequences:
 - Narrowing of curriculum and instruction to focus only on academics
 - Keeping IAA and IEP goals and instruction separate
 - Administrators assigning students to IAA on the belief the assessment is easier
 - Students who require a modified academic achievement assessment forced into the IAA
6. Research Questions:
 - What benefits have accrued to students from the participation in the IAA? Better instruction evidenced by teacher videos, exemplars, and success stories.

- What is the extent to which students have accessed the general education curriculum? Using Rating Scale performance scores.
- What is the impact of the IAA on student's IEP development? Will sample student IEPs to determine if goals are more academic in nature.
- What is the relationship between student performance in IAA and post-school life outcomes? Will work with our Transition Consultant to collect these data.
- What student, teacher, and instructional variables influence parents' perceptions regarding the IAA? Use of Parent Focus Group data, Administrator phone calls, and teacher survey data.
- What benefits have accrued to teachers from their participation in the IAA? Teacher survey data.
- What is the extent to which the IAA is a part of daily classroom routine? Teacher survey data.
- What is the relationship between IAA scores and the amount of time spent working on the IAA? Teacher survey data.
- To what extent do teacher and instructional variables predict IAA scores?
- Which student, teacher and instructional variables influence teachers' perceptions regarding the IAA? Teacher survey data.
- What is the impact of the IAA on teachers' daily instruction? Teacher survey data.
- To what extent are students included in the accountability process? State data indicating participation rate, use of Student Profile data.

Consequential validity has been assessed annually since 2006-2007, using teacher surveys, classroom visits, parent surveys, and reviews of evidence. These data have been valuable to determine if and where enhancements are needed to improve the reliability of the data being reported and the supports needed by Iowa's teachers, principals, and AEA Contacts to better implement academic instruction for students with severe cognitive disabilities.

As was summarized in the section on content validity, the preponderance of evidence reviewed for the Iowa Alternate Assessment was (a) academic, and (b) used grade appropriate materials.

Teacher Feedback Quantitative: Survey. The State of Iowa Alternate Assessment Team developed a 25-item teacher survey. The items corresponded to purposes and characteristics deemed critical by the SIAAT for a successful alternate assessment.

In 2006-2007, between 55% - 60% of teachers with students in the Iowa Alternate Assessment responded to a 25-item survey on alternate assessment. In 2007-2008, about 30% of teachers responded. In 2008-2009, 279 of 790 teachers completed the survey (35%). The findings for 2008-2009 will be limited to the survey items, so that we can get this manual filed for peer review. The general finding, however, is that in 2008-2009, teachers are more likely to agree that the alternate assessment is useful across many of the items surveyed, than in years past. This is substantial evidence of the validity of an evidence based rating scale system. The items are summarized in the tables below, but we now have evidence that teachers report alternate assessment is raising expectations and increasing access to the general curriculum, substantially higher in 2008-2009 than in years past. Teachers also report data are useful for IEP development, and that performance over time can be assessed. Lessons are reported as being more integrated

than in years past, and adaptations are now being rated as easier to adapt at grade level than in years past. There has been controversy in the field over “how hard” alternate assessment should be. In 2006, the guidance to the field was, “make in grade leveled.” The regulations of the Modified Assessment, which is “easier” than the general assessment, helped to clarify that the way we scaled our alternate-aligned to grade level standards but substantially reduced in difficulty, was reasonable. Teacher responses to item 9 on the survey validate our approach: in the beginning, when teachers did not know how to engage students with severe cognitive disabilities in academic instruction, they reported that the content was much too difficult. Now, 3 years in, they are more inclined to be less assertive in thinking the content is too difficult, and only modest numbers of teachers on item 10 agreed or strongly agreed the content was too easy, and on item 11 of the survey, 62% of teachers now report that the content is about right in difficulty (whereas in 2006-2007 51% of teachers reported as such). More teachers are reporting that the assessment provides them with useful information. On item 13, teachers are reporting significantly different than in years past: the data for parents are viewed much more positively by teachers as being helpful than in years past. Eighty percent of the respondents report in 2009 that parents have seen results of the assessment—a substantial increase from 2007 when 51% of teachers reported sharing data with parents. While teachers report more agreement that parents understand results of the assessment, the numbers of disagreements and of no opinions are telling in that, while teachers are engaged in the assessment process, the meaningfulness of teaching academic content to students with severe cognitive disabilities appears an elusive concept for parents, based on teachers’ perceptions. Item 16 validates that the assurance process is working: most principals are seeing results of the assessment (the other responses are likely from the larger districts in Iowa whose Alternate Assessment Coordinator serves as the assurance reviewer). As the process has been implemented and refined since 2006-2007, teachers report being less negative about the method, and more positive about the method.

As for supports needed by teachers, we are fielding substantially fewer calls about the assessment process in general, and substantially more calls about adapting grade level materials to construct relevant yet appropriate instructional levels. We have hired a 1.0 FTE consultant to support grade level curricular adaptations for use in instruction, and to support teachers to engage in instruction throughout the school year, to effect academic performance (rather than teach functional skills all year, put a test booklet in front of a student for a day, score 0, then go back to teaching functional skills).

For both years surveyed, most teachers had 1-3 students participating in the alternate assessment, and most teachers were relatively new (1-4 year’s experience) with the alternate assessment process.

General findings in 2006-2007 were:

- (a) alternate assessment is viewed as a separate process from everyday academic instruction
- (b) the item scaling is between about right and too difficult
- (c) teachers perceive the changes made this year as positive
- (d) teachers perceive the alternate assessment is not meaningful for parents
- (e) teachers perceive the alternate is amenable to being sensitive to growth

- (f) teachers need support around adequacy of evidence and the link to age- and/or grade-appropriateness

General findings in 2007-2008 were:

- (a) the assurance process significantly impacted review of alternate assessment data by building principals
- (b) the process is viewed as more integrated into daily routines and as having more impact on IEPs
- (c) teachers are viewing information generated as helpful in understanding what skills to teach
- (d) alternate assessment is providing access to the general curriculum and is increasing expectations for students
- (e) item scaling is about right or too difficult
- (f) teachers perceive the information is understandable and has meaning for parents
- (g) teachers perceptions about alternate assessment are neither more positive nor more negative than in 2006-2007
- (h) teachers need support around adequacy of evidence and the link to age- and/or grade appropriateness
- (i) teachers' comments are generally neutral, offering suggestions for improving the scaling of the assessment for more severe students, or asking for more support understanding how to make grade-appropriate academic content links and adaptations for students with severe cognitive disabilities
- (j) teachers see the need for an assessment for students who are more moderate or less severely cognitively disabled
- (k) teachers would like to see the process and timelines "ready-to-go" at the start of a school year and without any changes in the school year

Results of the teacher survey for 3 school years are provided in the tables that follow. In some instances, the table numeration is broken so that the continuity of discussion around teacher reports can be maintained. The first tables summarize general demographics of teachers in terms of numbers of participants and familiarity with assessment. The later tables summarize concepts related to consequential validity, and teacher reports on the impact alternate has had on desired outcomes.

Table 17.
Number of Students Participating in Alternate Assessment by Teacher
2008-2009 not yet added to the table

Number of students	2006-2007		2007-2008	
	Response	Percent	Response	Percent
0	1	0.32	2	0.80%
1	115	36.51	93	37.05%
2	69	21.90	53	21.12%
3	40	12.70	31	12.35%
4	26	8.25	34	13.55%
5	24	7.62	14	5.58%
6	20	6.35	8	3.19%
7	12	3.81	6	2.39%
8	4	1.27	2	0.80%
9	4	1.27	3	1.20%
10	0	0	2	0.80%
11	0	0	1	0.40%
12	0	0	1	0.40%
13	0	0	0	0
14	0	0	1	0.40%
Grand Total	315	100	251	100

Number of students participating in alternate assessment. In both 2006-2007 and in 2007-2008, the mode of numbers of students in the alternate assessment was 1 student (37% of teachers responding both years). Seventy percent of teachers had between 1 and 3 students in the alternate assessment. In 2007-2008, on average, there were fewer teachers reporting having 6 or more students in the alternate assessment.

Response Rate. In 2006-2007, there were 560 teachers who responded to the LCI. We estimate our response rate for the 2006-2007 survey was 57%. In 2007-2008, there were 715 teachers completing the Student Profile. We estimate the response rate for the 2007-2008 teacher survey at 30%. The 2008-2009 response rate was 35% (279 of 790 teachers)

Table 18.
Grades of Students for Teachers Surveyed

3	71	23%	15%
4	63	20%	14%
5	67	22%	14%
6	71	23%	12%
7	74	24%	15%
8	67	22%	14%
11	75	24%	16%
Totals	309	100%	

Table 19.
Years Engaged in Alternate Assessment

0	4	1.27	3	1.20%
1	77	24.52	54	21.51%
2	60	19.10	51	20.32%
3	41	13.06	42	16.73%
4	46	14.65		
			27	10.76%
5	50	15.92	31	12.35%
6	25	7.96	18	7.17%
7	8	2.55	12	4.78%
8	3	.96	8	3.19%
9	0	0	4	1.59%
10	0	0	1	0.40%
Totals	314	100		

Years Teachers Have Participated in Alternate Assessment. For both years surveyed, most teachers have participated in alternate assessment for 1 year (25% of responses in 2007-2007, 22% of responses in 2007-2008). The distribution in both years has the majority of teachers participating in alternate assessment between 1 year and 5 years.

Table 20.
Teacher Agreement on Consequences of Alternate Assessment

	Year	Strongly Disagree	Disagree	Agree	Strongly Agree	No Opinion	Response Total
1. Ensures access to the general curriculum.	2006-2007	11% (34)	28.16% (87)	44.98% (139)	11.97% (37)	3.88% (12)	309
	2007-2008	9.49% (24)	22.92% (58)*	52.96% (134)*	11.46% (29)	3.16% (8)	253
	2008-2009	4.66%	17.92%	55.20%	14.70%	4.66%	279
2. Has raised my expectations of students.	2006-2007	15.81% (49)	38.71% (120)	32.26% (100)	9.35% (29)	3.87% (12)	310
	2007-2008	11.07% (28)	30.43% (77)*	36.76% (93)	16.60% (42)*	5.14% (13)	253
	2008-2009	6.09%	17.92%	50.18%	19.00%	3.94%	279
3. Has resulted in changes in instruction that challenges students.	2006-2007	15.21% (47)	40.13% (124)	30.42% (94)	11% (34)	3.24% (10)	309
	2007-2008	9.09% (23)*	27.67% (70)*	43.08% (109)*	14.23% (36)*	5.93% (15)	253
	2008-2009	4.66%	17.56%	52.69%	17.20%	4.30%	279
4. Helps with IEP development.	2006-2007	18.77% (58)	36.89% (114)	33.66% (104)	7.44% (23)	3.24% (10)	309
	2007-2008	16.21% (41)	37.55% (95)	43.08% (109)*	14.23% (36)*	2.77% (7)	253
	2008-2009	7.17%	28.67%	40.86%	17.20%	3.58%	279
5. Can be useful for assessing changes in academic performance over time.	2006-2007	18.89% (58)	25.08% (77)	43.32% (133)	7.82% (24)	4.89% (15)	307
	2007-2008	13.83% (35)*	21.74% (55)	49.01% (124)*	10.67% (27)	4.74% (12)	253
	2008-2009	4.66%	14.70%	55.56%	17.20%	5.38%	279
6. Produces evidence using lessons that were already planned.	2006-2007	18.51% (57)	29.87% (92)	39.29% (121)	11.36% (35)	0.97% (3)	308
	2007-2008	12.65% (32)*	27.27% (69)	46.64% (118)*	10.28% (26)	3.16% (8)	253
	2008-2009	3.94%	22.58%	54.12%	13.98%	2.51%	279
7. Produces evidence using lessons that were developed strictly for the alternate assessment.	2006-2007	6.14% (18)	11.95% (35)	51.54% (151)	27.99% (82)	2.39% (7)	293
	2007-2008	4.40% (11)	12.00% (30)	54.40% (136)	24.00% (60)	5.20% (13)	250
	2008-2009	2.87%	14.70%	55.56%	20.79%	2.87%	279

Table 20.
Teacher Agreement on Consequences of Alternate Assessment (Continued)

		Strongly Disagree	Disagree	Agree	Strongly Agree	No Opinion	Response Total
8. is easily adapted at grade- or age-level.	2006-2007	21.64% (66)	40.33% (123)	32.46% (99)	3.61% (11)	1.97% (6)	305
	2007-2008	22.62 % (57)	34.52% (87)*	31.75% (80)	6.35% (16)	4.76% (12)	252
	2008-2009	13.26%	31.90%	40.50%	9.68%	1.79%	279
9. Has academic content that is too difficult.	2006-2007	1.97% (6)	22.95% (70)	36.07% (110)	36.07% (110)	2.95% (9)	305
	2007-2008	3.57% (9)	21.83% (55)	32.54% (82)	34.52% (87)	7.54% (19)	252
	2008-2009	3.58%	21.51%	38.58%	23.66%	9.68%	279
10. Has academic content that is too easy.	2006-2007	16.5% (50)	43.56% (132)	26.07% (79)	9.57% (29)	4.29% (13)	303
	2007-2008	22.53% (57)*	49.80% (126)*	18.18% (46)*	5.53% (14)	3.95% (10)	253
	2008-2009	14.34%	47.67%	20.43%	6.81%	7.89%	279
11. Has academic content that is about right.	2006-2007	14.19% (43)	29.04% (88)	48.18% (146)	3.63% (11)	4.95% (15)	303
	2007-2008	17.06% (43)	25.40% (64)	45.63% (115)	6.35% (16)	5.56% (14)	252
	2008-2009	6.45%	19.71%	57.35%	5.02%	7.89%	279
12. Provides teachers with information about skills to be taught and mastery of skills.	2006-2007	16.83% (51)	27.06% (82)	44.55% (135)	7.92% (24)	3.63% (11)	303
	2007-2008	13.04% (33)	21.74% (55)*	51.78% (131)*	11.46% (29)	1.98% (5)	253
	2008-2009	7.53%	13.26%	54.84%	16.13%	5.38%	279

Item	Year	Strongly disagree	Disagree	Agree	Strongly Agree	No Opinion	N
13. Provides parents with information that helps better understand their child's abilities and performance on academic tasks.	2006-2007	26.97% (82)	35.2% (107)	28.29% (86)	3.62% (11)	5.92% (18)	304
	2007-2008	19.76% (50)*	27.67% (70)*	37.55% (95)*	6.72% (17)	8.30% (21)	253
	2008-2009	8.24%	21.85%	48.03%	12.19%	6.81%	279
14. Parents of students in my class have seen results of the Iowa Alternate Assessment.	2006-2007	9.33% (28)	27.67% (83)	41.33% (124)	9.67% (29)	12% (36)	300
	2007-2008	6.10% (15)	19.11% (47)*	55.69% (137)*	12.60% (31)	6.50% (16)*	246
	2008-2009	1.16%	8.53%	61.63%	18.60%	10.08%	279
15. Parents of students in my class understand results of the Iowa Alternate Assessment.	2006-2007	16.11% (48)	37.58% (112)	24.83% (74)	2.35% (7)	19.13% (57)	298
	2007-2008	9.39% (23)*	30.20% (74)*	39.18% (96)*	4.90% (12)	16.33% (40)	245
	2008-2009	4.65%	26.74%	46.51%	6.59%	15.50%	279
16. The principal of my building has seen results of the Iowa Alternate Assessment.	2006-2007	5.07% (15)	23.99% (71)	45.95% (136)	9.12% (27)	15.88% (47)	296
	2007-2008	2.45% (6)	8.16% (20)*	56.33% (138)*	27.35% (67)*	5.71% (14)*	245
	2008-2009	.39%	4.33%	66.54%	24.41%	4.33%	279
17. Compared to last year, my perception of the Iowa Alternate Assessment has changed in a positive way (teachers new to alternate assessment use "no opinion")	2006-2007	12.33% (37)	18.33% (55)	30.33% (91)	11.33% (34)	27.67% (83)	300
	2007-2008	8.57% (21)	15.92% (39)	33.06% (81)	11.02% (27)	31.43% (77)	245
	2008-2009	3.50%	18.68%	33.07%	8.95%	35.80%	279

Item	Year	Strongly Disagree	Disagree	Agree	Strongly Agree	No Opinion	N
18. Compared to last year, my perception of the Iowa Alternate Assessment has changed in a negative way (teachers new to alternate assessment use "no opinion")	2006-2007	9.7% (29)	33.78% (101)	13.71% (41)	12.71% (38)	30.1% (90)	299
	2007-2008	11.07% (27)	38.11% (93)	11.48% (28)	4.92% (12)*	34.43% (84)	244
	2008-2009	5.14%	45.06%	7.51%	3.16%	39.13%	279
19. Compared to last year, my perception of the Iowa Alternate Assessment has not changed (teachers new to alternate assessment use "no opinion")	2006-2007	13.76% (41)	30.2% (90)	14.09% (42)	3.36% (10)	38.59% (115)	298
	2007-2008	8.30% (20)*	27.39% (66)	19.92% (48)*	3.32% (8)	41.08% (99)	241
	2008-2009	4.72%	26.77%	24.41%	3.94%	40.16%	279

Taken as a whole, the data suggest even stronger in 2008-2009 than ever before:

- (a) alternate assessment is becoming more integrated into everyday academic routines and is less often reported as a separate instructional activity
- (b) the item scaling is between about right
- (c) teachers are viewing the data as more useful in IEP planning
- (d) teachers are viewing the data as more helpful to parents and that more parents are getting results of the assessment and are understanding results of the assessment
- (e) almost all building principles are seeing the results of the assessment
- (f) teachers are much more positive about the process and the utility of the process than in years past

Table 21.
Supports Reported by Teachers as Necessary for Improving Alternate Assessment

	Year	Strongly Disagree	Disagree	Agree	Strongly Agree	No Opinion	Response Total
20. developing curricular materials.	2006-2007	6.12% (18)	35.03% (103)	34.35% (101)	18.03% (53)	6.46% (19)	294
	2007-2008	3.67% (9)	28.16% (69)	45.71% (112)	16.73% (41)	5.71% (14)	245
	2008-2009	3.10%	25.19%	46.12%	16.67%	8.91%	279
21. structuring instructional activities.	2006-2007	6.78% (20)	46.44% (137)	28.81% (85)	12.54% (37)	5.42% (16)	295
	2007-2008	5.71% (14)	42.86% (105)	35.10% (86)	9.39% (23)	6.94% (17)	245
	2008-2009	2.71%	36.43%	39.53%	10.47%	10.85%	279
22. collecting evidence linked to rating scale items.	2006-2007	4.41% (13)	34.58% (102)	39.66% (117)	16.95% (50)	4.41% (13)	295
	2007-2008	4.90% (12)	36.73% (90)	41.63% (102)	11.43% (28)	5.32% (13)	245
	2008-2009	3.49%	32.56%	41.09%	12.79%	10.08%	279
23. collecting evidence that demonstrates student performance.	2006-2007	5.08% (15)	38.64% (114)	35.25% (104)	15.93% (47)	5.08% (15)	295
	2007-2008	4.90% (12)	39.59% (97)	39.18% (96)	11.02% (27)	5.31% (13)	245
	2008-2009	3.11%	34.24%	40.08%	11.28%	11.28%	279
24. collecting evidence that is age- or grade-appropriate (+/- 2 years)	2006-2007	4.42% (13)	23.47% (69)	36.73% (108)	30.95% (91)	4.42% (13)	294
	2007-2008	2.87% (7)	23.36% (57)	46.72% (114)	21.31% (52)	5.74% (14)	244
	2008-2009	2.73%	25.39%	43.75%	19.14%	8.98%	279
25. reporting results to parents.	2006-2007	9.22% (27)	48.81% (143)	26.28% (77)	5.46% (16)	10.24% (30)	293
	2007-2008	10.79% (26)	48.96% (118)	26.97% (65)	3.73% (9)	9.54% (23)	241
	2008-2009	7.75%	55.43%	19.38%	3.10%	14.34%	279

Teacher Comments:

In 2006-2007, teachers submitted over 4000 questions to the State of Iowa Alternate Assessment Team over the course of the school year. The majority of questions were about process, timelines, and quality of evidence.

In 2007-2008, teachers were given the opportunity to write comments about the alternate assessment process. One hundred fifty-five teachers chose to respond. For reporting purposes, comments were rated on 2 scales. First, comments were rated positive/neutral/negative. A positive comment is one in which teachers wrote something like, “the system was great this year.” A negative comment was one in which teachers wrote something like, “this assessment does not make sense for my students.” A neutral comment was any other.

Second, comments were categorized as depicted in Table 22.

Table 22.
Categories and Descriptors Used to Code Teacher Comments, 2007-2008

Category	Descriptor
Technology	On-line scoring and reporting
Participation	Including Students with Severe Disabilities on Large-Scale Tests
Content	Content or Format of the test or evidence including difficulty of items
Communication	How information was delivered to teachers
PLDs	Cut scores and performance descriptors
Technical Assistance	How supported teachers felt on getting questions answered about administration or scoring
Timelines	Dates materials were due
Time	The amount of time the assessment takes to complete

Table 23
Summary of Teacher Comments, 2007-2008

Area	Negative	Neutral	Positive	Grand Total
Communication	2	6	1	9
Content	6	52	5	63
Participation	13	5	1	19
PLDs		1		1
Technical Assistance	2	28		30
Technology	1	6	1	8
Time	4	9		13
Timelines	5	6		11
Grand Total	33	113	8	154

The vast majority of comments were neutral, and primarily around wanting more options pertaining to item difficulty (different items for the most severe population) and more support (adapting materials, sharing examples and lessons). Teachers who were displeased expressed concern over the issues with technology, the content not being appropriate or fair to allow students to demonstrate what they can perform, the logic of testing students with severe disabilities on other than functional skills, the lack of technical assistance provided by the AEAs, the continued frustration at the time the assessment process takes, concern that communication continued after the assessment period was supposedly complete (and on the audit process), and on what teachers perceived was excessive or “cold” communication from the department. Most

of the teachers simply wanted some support adapting materials or understanding how to adequately assess their students given the current format.

Table 24.
Representative Teacher Comments and Coding, FFY 2007 (2007-2008)

Comment	+/-	Area
It would be extremely helpful and time saving if directions were complete, clear and correct the first time they are given to the teachers.	Neutral	Communication
I don't have any suggestions for change, other than it will be nice next year when everything is up and running and due dates aren't being pushed back as the program is getting up and running. I would also like to say I really appreciated the support _____ and _____ of _____ gave me. Their assistance was invaluable. I also appreciated the periodic updates you (Steve) provided through e-mail. Since I was new to this process this year, the technical assistance I received made it a much more manageable and enjoyable experience.	Positive	Communication
One thing that I strongly encourage is that we are given the final product guidelines right away. This year I continued to get information even after I had already turned all of the evidence in. At that point it was way too late to go back and correct anything that should have been.	Neutral	Communication
When I have had a question, I get pre-determined answers; I don't get answers from the _____. You also have changed terms...is auditing the same as Assurance Forms? I think things were clearer last year.	Negative	Communication
Allow us to use the curriculum that we are already using with our students instead of having to make the gen ed curriculum fit the students. It is pointless and does not make any sense for my students.	Negative	Content
I think the rating scale is much easier to fill out this year. I like the fact that we do NOT need to have copies of all the adapted stories we use for comprehension activities. I love that students get credit for skills they already know! That was a major frustration in the past for many of us.	Positive	Content
This does not show growth of what the student is actually doing in relation to the IEP from year to year. We are not measuring apples to apples as the IEP process has us do.	Negative	Content
An alternate version for higher functioning students needs to be created, and it should be more of an actual test booklet like the ITEDS. Trying to make and collect materials/items to show evidence for 110 items (that can be vague) is cumbersome. Otherwise, the test needs to be shortened to allow easier collection of items. It's getting better though.	Neutral	Content
Having tutorials or classes through AEA's to educate those who are new to the process. I figured it out, and maybe there were classes I just missed the memos. The AEA staff member I worked with also was unaware of the process so it was frustrating, especially since it is such an overwhelming process to collect and keep so much evidence on so many different things, plus try to keep up with what we already have going on each day.	Negative	Content
Don't have such a wide range of skill levels in the items on the rating scale. Stop changing how we do it so we can concentrate on making improvements to what we have and see results that are relevant.	Neutral	Content
I thought it was much more clear and easier to use and explain to parents and administration.	Neutral	Content
Adapt to the non-verbal severe and profound.	Neutral	Content
More on the rating scales that are for students that are the most severe.	Neutral	Content
The development of an assessment that would meet the needs of the LEVEL III population in regards to daily living skills, functional	Neutral	Content

academics, vocational skills, and recreational skills.

I do like the rating scale as opposed to how AA was done several years ago. I feel it does give guidelines as to what to teach and does give ideas for IEP goals. I still feel that it takes up a lot of my time to come up with activities that can be used as evidence and I feel I never did come up with activities that truly showed evidence of items in certain math rating scale items. I wish we did not have to show evidence of items for each of the math rating scale items. Many of the items were very difficult for lower functioning students.

Neutral Content

I think this assessment should be a shorter evaluation. If it is taking the place of taking the ITED, it shouldn't be something that needs to be done all of the school year. I also think there should be more materials prepared for teachers to use instead having to develop material ourselves.

Neutral Content

It is a waste of time. The benchmarks are good. Why can't the DE get it right. It is very inconsistent. There are much better ways to teach severe/profound.

Negative Participation

I think that the math portion of IAA is hard for students with significant disabilities but that doesn't mean that our students aren't getting math skills. Some of those skills just aren't as important to our students that can't move, talk, and can barely eye gaze. I think that IAA can tend to be just a measure of how creative a teacher can twist an activity. It doesn't mean that is what is best for the students. The older the students are, the more functional skills should be taught to our students in my opinion and most of the opinions of my parents.

Neutral Participation

This has been a HUGE waste of time.

Negative Participation

I appreciate the modifications that have made the process easier. The information going to parents is too dense and jargon-loaded, and we had to develop our own cover letter. At least in the portfolio years we could proudly point to the fact that all of our students reached proficiency. Now, our students will be relegated to the permanent status of non-proficient, and will be part of a permanent sub-group that keeps our school on The List, despite great instruction, and kids who make progress every year.

Negative Participation

Students in a Level 2 Special Education Classroom that are Level 2 and Level 3 students will NEVER be at the same level as the general education population. That is why they are in Special Education Classroom. I feel it is much more important for my students to acquire Life Skills:

Negative Participation

understanding of money, of time, how to order food when eating out, how to pay, to leave a tip, learn about our community, how to find things in our community, how to use a phone book, time management-like getting to an appointment on time, taking care of themselves-bathroom, bathing, etc. and eventually living on their own. They also need Social Skills: getting along, friendship skills, problem solving skills, to be a self advocate, how to ask for help/assistance, how to be good citizens and to be a part of their community.

I teach students with profound mental and physical disabilities, who have no concept of math, reading or science. It is frustrating to try to link the few skills they have to academic subjects. Doing activities with full physical prompting does not measure proficiency. I don't know how to improve on an assessment for this level of student without almost making an entirely different one for them.

Negative Participation

This is still testing the teachers ability to package a good assessment, not adequately assess students abilities. This test has not shown me what my MD Level II student knows and what she needs to learn to be successful and independent when she leaves high school.

Neutral Participation

Some of the objectives that were taught for the alternate assessment were

Negative Participation

way too difficult for my students. I have a true Level III room, and my students are very low functioning. They do not even know which restroom to choose when given an option let alone time to the hour on an analog clock, be able to make a text to self connection, or identify a prime number. I think the accountability is important for teachers to make sure that their students have access to the general curriculum when appropriate, but not all of the topics on the rating scale were applicable to where my students are at in life. Also, I had to do this with a kindergarten and first grade student, as our district has assessments at all grade levels, and the rating scales were not very useful in that respect.

A training session to answer How do you take 8th thru 12th grade concepts such as fact & opinion, point of view, scientific process, drawing conclusions, conducting an experiment, respond to why questions, identify purpose, identify synonyms, antonyms, homophones, multi-meaning words, summarize data, time, estimate, rounding and teach these using manipulative that we can move hand over hand with someone with a 6-18 month mentality?

Neutral Participation

To better assist teachers in completing the IAA, we need support. I like having one meeting the BEGINNING of the year so we can begin collecting data immediately. However, we need additional meetings or 68check-ins68 to answer questions, check progress, etc. I was doing many things wrong until I had assistance from an AEA staff member. I felt we were left to crumble on our own this year.

Negative Technical Assistance

There needs to be additional training for items 21-24 of this survey. It would be helpful to meet monthly with consultants from the AEAs to discuss how to develop curricular materials. It would be helpful if a standardized test that could be developed for all students who take Alternate Assessment, so teachers did not have to create the materials and assess them as well.

Neutral Technical Assistance

Sample evidence for rating scale items would be beneficial. Also a teacher direction booklet would be useful. In it, rating scales could be described in more detail to offer a better understanding of what the item is looking for in evidence.

Neutral Technical Assistance

I think it would be great if 3 levels of difficulty were developed by teachers throughout the state. We really don't get input on our developed materials. It would be more standard if these levels were available from a single source.

Neutral Technical Assistance

Make every thing you do a simple check, even with evidence. Have every form you fill out look like the content area rating scale.

Neutral Technical Assistance

I would like to see more examples of what is good evidence. How teachers actually collect evidence from low functioning students. When audited, is there any way to know if the evidence is okay or how to improve?

Neutral Technical assistance

At some point the state needs to develop the tasks/materials to be used in order to increase the validity and integrity of the assessments. Teachers are using such a wide variety of materials/lessons to provide evidence for the rating scales that the data has to be skewed in some way.

Neutral Technical Assistance

I need help with curriculum that is +/- two grade levels, especially for science. I also need to label all the evidence as it is generated next year, not just done haphazardly.

Neutral Technical Assistance

I am new to AA and I wish I had a mentor or someone that could have helped me more.

Neutral Technical Assistance

Alternate Assessment does not guide education of students, TEACHERS do. Additional age appropriate curriculum in reading, math and science are required considering reading level/ability and functionality.

Neutral Technical Assistance

Have created or developed material for all to use.

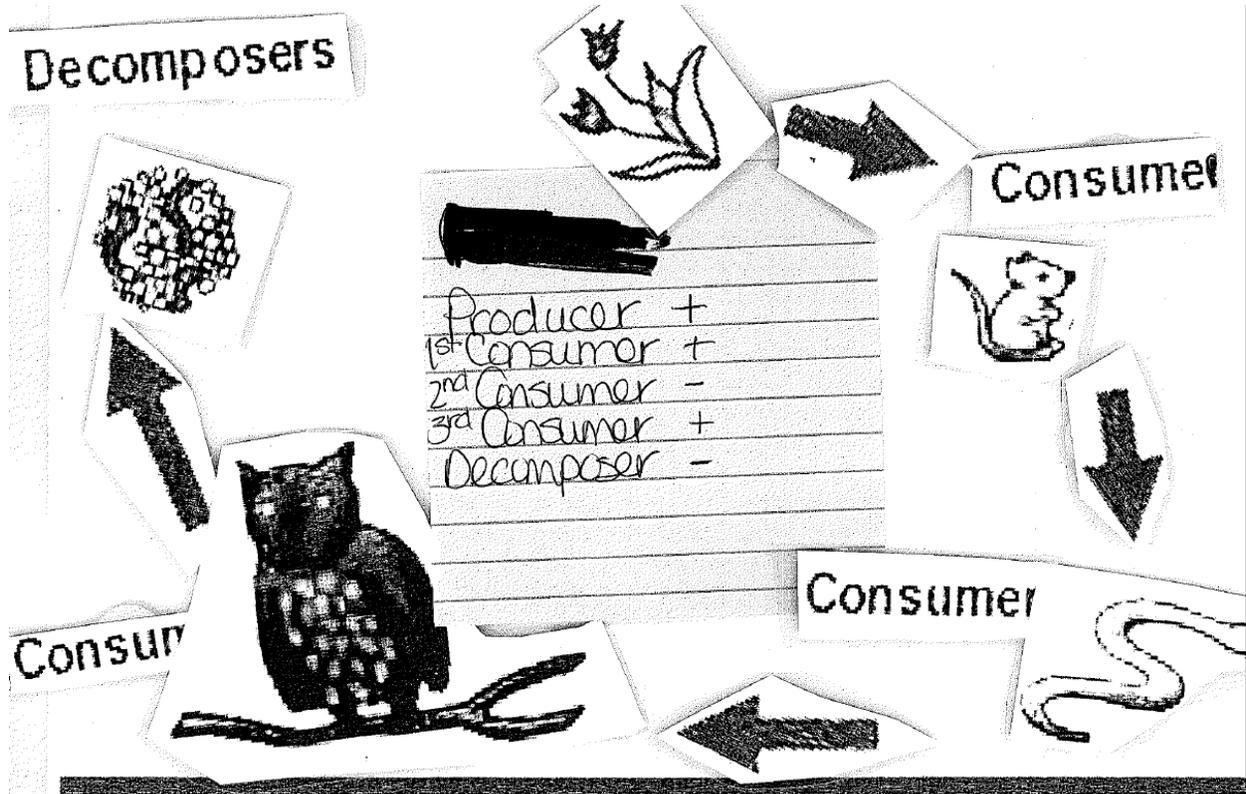
Neutral Technical Assistance

Supporting and structuring activities and lessons by example.	Neutral	Technical Assistance
The state should supply teachers with a curriculum kit for the alternate assessment with material for each of the rating scale items. Reg ed teachers have a ITBS test booklets to assess with -- they don't have to take each item and find material to match it.	Neutral	Technical Assistance
Although it has gotten easier to do the Assessments - I feel it is still very difficult to access and link to regular education with the High School level - -- classes at the High School level are so much higher in content then the severe and profound students. The regular education teachers are so busy it is hard to talk to them about linkages. Need more examples on the website to give me some ideas.	Neutral	Technical Assistance
Leave it exactly as it is this year so that people have a chance to plan and prepare to do it next year. When it changes from year to year it makes it hard to do a good job at it and to prepare for it.	Neutral	Timelines

Teacher comments are being solicited for 2008-2009. At present we have only anecdotal comments from 5-10 teachers and several district coordinators that the process in 2008-2009 was very good: data entry was automated and technology glitches were minimal. Similar to what we found in the teacher survey, anecdotal comments are that the rating scale system is difficult to do because of the instructional adaptations, but is a much fairer and accurate depiction of student performance than ever before. In addition, teachers report that students are engaged in academic tasks never dreamed possible, and that the process really raises expectations of students. Teachers have also told us they are concerned that the performance levels do not accurately describe students-we have a plan to evaluate and modify the performance level descriptors. We have learned, however, that year-to-year changes need to be carefully managed. The performance levels are very important to the system, therefore we need to be very thoughtful in how we go about understanding performance levels, and rather than rush a process in the Summer of 2009, we will begin studying the cut scores and performance levels in Summer of 2009, with intent to “roll out” the Fall of 2011.

Evidence of Grade Aligned Work in Iowa Classrooms

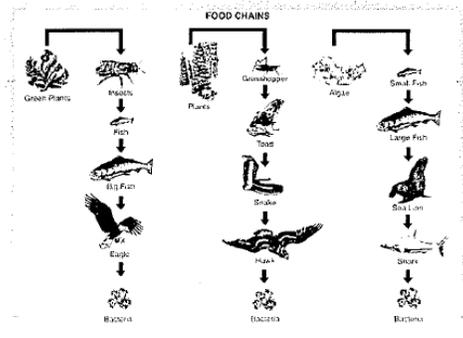
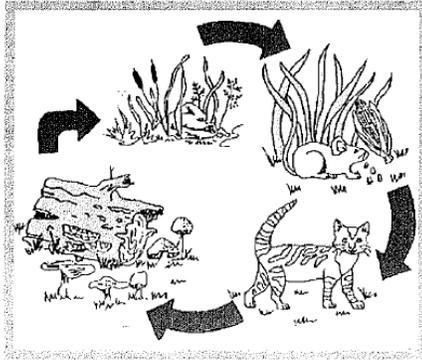
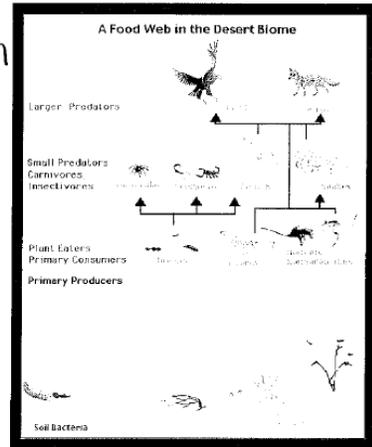
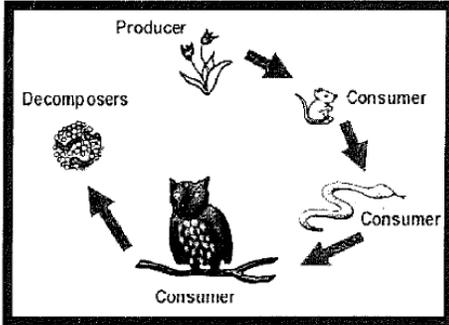
Some evidence in Science, used in student ratings, is included as part of evidence of validity. The evidence is academic, is aligned with Science, and depicts student performance.



Gen Ed Notes

Finished Story he found this page
in his notes and looked at Food Chain

1. Food chains and webs:



Sort the pictures into the appropriate categories!

PRODUCERS

flowering plant



bugs



bush



green plant



CONSUMERS

people



bears



cows



chickens



DECOMPOSERS

bacteria



worms



mushrooms



Science Experiment

Red food coloring:

Hypothesis:

if will change the water to red,
the water is clear now.

Observation:

it turned the water red

Name: _____

Date: 3-3-08

Force Investigation

Items needed:

Four smaller marbles and one bigger marble

Steps to follow:

1. Line up three smaller marbles.
2. Shot the smaller marble at the three smaller marbles going the same way they are lined up.
3. Observe which way they went and how far they went.
4. Write down your observation.
5. Line up three smaller marbles.
6. Shot the bigger marble at the three smaller marbles going the same way they are lined up.
7. Observe which way they went and how far they went, and write down observation.
8. Do the same as above, but shot the marbles going the opposite way as the marbles are lined up.
9. Write down your observation for both.

1 Smaller Marble hitting 3 smaller ones going the same way.

Did ^{the} farthest away marble move the most? Yes

Did all the marbles move? yes

2 Bigger marble hitting 3 smaller ones going the same way.

Did the marbles move more than with the smaller one? yes

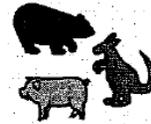
Does the bigger marble have more force? yes

Lesson 6

We're All in This Together!



bacteria



animals



eat



plants



worms

Parent Input.

For 2006-2007, parent input about alternate assessment was obtained 2 ways. First, the State of Iowa Alternate Assessment Team met with the state Parent-Educator Connection (PEC). The PEC are parents of students with disabilities, who are employed by Iowa's Area Education Agencies to provide information on resources and "navigating the system," to parents of students newly identified as having disabilities. The meetings with the PEC suggested (a) parents of students with severe disabilities are not supportive of academic instruction for students with severe disabilities, and (b) even parents part of the state-wide network did not have access to reliable information on alternate assessment.

Second, the State of Iowa Alternate Assessment Team commissioned focus groups with parents of students with severe disabilities. Approximately eighty parents participated in 10 focus groups. Observations from the focus groups are summarized.

1. IEP and Alternate Assessment

There appears to be some confusion about how Alternate Assessment and a student's Individual Education Plan interface. Parents repeatedly stated that they saw great value in the IEP process for their children. It would strengthen the meaningfulness of Alternate Assessment for parents if the strong connection between the two can be established and practiced.

2. Parents with "No Expectations"

Serious consideration should be given to parents who shared that they have no academic expectations for their children. The question of whether these parents are realistic in their expectations or simply do not realize their children's potential for learning, must be answered. This brings up the point about whether certain children should be waived from Alternate Assessment because their condition precludes "academic" learning.

3. Assessment Stress

It is apparent that great care must be taken in how Alternate Assessment is administered. These special children are particularly susceptible to situations where they feel under pressure or their daily routine is upset. It should be seriously considered whether children, who react in a violent manner to stress and change, should be included in Alternate Assessment. The safety of teachers and parents can be at risk.

4. Communication with Parents

It was evident from most of the focus groups that there are a significant number of parents who do not understand Alternate Assessment and some who had not even heard of it, despite their children being enrolled in the assessment process. There is a lot of work that should be done to better educate parents about what Alternate Assessment is all about, its purpose, its benefits, how it is administered, and how results are recorded and shared. The Department already has some useful tools developed that parents have found helpful, such as the General Information document, shown in Appendix H as Attachment III. The following is

a list of suggestions for helping parents to be better informed about Alternate Assessment. These ideas will help to improve the connection between Department personnel, who are required to put Alternate Assessment in place, and the parents of students who participate in Alternate Assessment.

5. Encourage and Support Teachers

Obviously, teachers must not be left out of the parent education and support effort. So much of the parents' understanding and ease with Alternate Assessment is dependent upon the teachers who work directly with their children. If the teachers are uncomfortable with conducting the assessments, or if they are unconvinced that Alternate Assessment is an appropriate way to proceed, parents will be able to detect their hesitance or lack of commitment and this will influence whether or not they embrace Alternate Assessment. Strategies for encouraging teacher commitment to the instrument and process could include additional workshops to build knowledge and confidence, and to enlarge a toolbox of strategies and techniques for improving their role as administrators of Alternate Assessment.

Parents expressed concern about the amount of time teachers have to spend on paperwork. Every effort should be made to streamline the Alternate Assessment process to make it as efficient as possible for teachers.

6. Alternate Assessment Reports

Several parents mentioned that they had not seen an Alternate Assessment instrument or the results of their child's assessment. If parents are to understand Alternate Assessment and embrace its intent, then they must have access to the instrument the teacher is using and a copy of the results. It is important for not only teachers to track academic progress of the children in their care, but parents too. This sharing of the assessment instrument and results will help strengthen the teacher-parent partnership and enhance learning opportunities for each child.

In 2007-2008, additional parent input was sought. In addition, a telephone interview was conducted with building administrators to understand the extent to which administrators knew about the alternate assessment process.

In analyzing the responses parents gave to the nine questions posed, several major topics emerged as being of prime importance to parents regarding alternate assessment. These topics were:

- Knowledge of Alternate Assessment
- Defining Proficiency
- Alternate Assessment—Fair and Meaningful?
- Reporting Student Progress
- The Crucial Role of Teachers

Knowledge of Alternate Assessment

Knowledge about alternate assessment ranged from, “I don’t have a clue” to “I see the need for having alternate assessment as a way to test or find out if your child has gone from point A to point B.” About a third of the parents stated that they were unfamiliar with Iowa’s Alternate Assessment system. They did not know that their child was being assessed in this manner. A few of the parents, not in a focus group last year, identified the No Child Left Behind (NCLB) legislation as the reason for alternate assessment. Measuring academic ability was mentioned on a couple of occasions but only one parent stated that the alternate assessment is tied to the standards and benchmarks for their child’s grade level. “It has to be grade level appropriate for them, however modifications adapt to individual children.”

Some misconceptions about alternate assessment were: “It’s done during the Iowa Basic Skills time”; “Known about alternate assessment forever since preschool”; “Maybe to make the whole school’s scores better...due to NCLB. Just to make the schools look better.” and “One shot—to determine where you are at—I don’t agree” referring to alternate assessment as being administered on one occasion only. One parent stated that, “Families may not be giving their opinion, due to not knowing or understanding alternate assessment.”

Defining Proficiency

The term “proficiency” was difficult for some parents to understand in the context of their children’s learning. When the words “mastered” or “doing well” were used, parents could grasp what they were being asked. As expected, the response to “What does being proficient in math and reading mean to you as a parent of a child in alternate assessment?” question brought a wide range of responses. However, for most parents, being proficient in math and reading for their children meant having sufficient skills to keep them safe and able to manage daily living appropriately. Examples of being proficient in math were: being able to recognize money and know how to make change, perhaps using a calculator; being able to tell time; recognizing number settings on a microwave; counting to a specific number; knowing that items in a store cost money; being able to play games involving numbers in order to socialize. One parent with a child of higher functioning skills said adding two digit numbers on a calculator would be an example of proficiency in math for her child.

Examples of reading skills parents shared were: being able to understand letters and sounds, and to recognize signs such as “Stop”, “Danger”, restrooms, their own name, and Mom and Dad. One parent whose child had a greater reading ability said, “I don’t really see him picking up a book and reading it. I think he will read parts of the newspaper and letters that come to him. “My son reads very well, but doesn’t understand what he reads.” Another said her expectations for her child were to “Read the book and understand it.” One parent stated, “For her to be proficient in math or reading is not something I see. She will never probably be able to brush her teeth on her own. I think her needs are to live another ten years.” One parent said, we want our children to “not have to depend on you for everything.”

“Meeting her where she is and finding out what she really knows and letting her know you know what she knows—at the level the child can comprehend—that’s what being proficient means to

me; it's not going by a guideline that the state or federal government is dictating." One parent said that her daughter's level of proficiency in reading is questioned at school by the teacher. "She reads all the time at home; she won't read at school because she doesn't understand it and it interferes with her social life." "My child's skill is under-tapped in reading." "Her reading has regressed because there hasn't been programming to help her since 3rd grade," stated another parent.

In answer to the question how parents feel when their child is assessed as not proficient on an item being rated, the parents in the groups did not respond specifically to that question. Instead, they shared how they felt whenever their child receives a poor performance report. "It makes me wonder where I went wrong." "I haven't gotten real concerned... I am more interested in whether they are making progress on their IEP goals." "You always want more; you never give up." "I don't like to hear that he is not proficient, focus on what he is proficient in." "Why focus on the negative?" "I don't see it as negative, but as an area we need to work on." "If it doesn't work, find another way of presenting it. What can we do to improve what we are doing?" These comments indicate various reactions to the reports about their children's level of proficiency.

One parent spoke with emotion: "I don't think you ever get beyond the pain each time you are told something your child can't do. You wish for their own benefit they could do more. Her teacher says she is now in high school, it is about time she grows up and I said if she was blind would you say she should see now. – The grieving process never stops."

Alternate Assessment— Fair and Meaningful

One parent's question captured the thinking of every parent involved in this project, "What does alternate assessment really do for my child?" Parents gave mixed responses to the questions about whether alternate assessment is both fair and meaningful. Some parents thought that an instrument that showed their child was progressing was an asset. "I asked my daughter's teacher. The teacher likes alternate assessment. At least you can show they are progressing in different areas. If the teacher is OK with it, so am I." Several parents mentioned that their expectations for their child had increased after seeing the alternate assessment results. "Children can do more than parents thought they could because of alternate assessment." Alternate assessment is "designed for success, not failure."

Several parents mentioned their children's difficulties with test taking. "Alternate assessment is not fair if children can sense they are being tested. When they take tests, they freak out." These comments may well indicate a misunderstanding about how alternate assessment is administered. However, alternate assessment is better than "setting an ITBS in front of them." "It's a benefit that they do it over a period of time."

Multiple parents stated that alternate assessment was not meaningful to them because their children had low functioning ability. Their concerns were more to do with their children's health, safety, and very survival. "I think it is a joke—No Child Left Behind is a joke for special ed. kids," stated one parent.

Several parents, in different focus groups, voiced their concern about the huge influence the teacher has on how each child is rated. “Teachers who are doing the testing try to get them on their best day. They are manipulating the test,” said one parent. Another said, “There’s still too much input from the teacher; the teacher has too much to do with how the outcome is determined. I think the teacher can still manipulate and be subjective about my child’s abilities. So it is not meaningful.” On the other hand, another parent stated that alternate assessment is a good way to find out what her child knows and consequently, to her, is meaningful.

A major concern for some parents was that alternate assessment does not take into account the huge range in individual differences of special education students. “Everyone tests differently. Alternate assessment allows schools to follow the rules but doesn’t take in the scope of what the child does. There are other ways to demonstrate what a child can do.”

Reporting Student Progress

Parents were almost unanimous in that their preferred way of gaining information about how well their child is doing is in face-to-face meetings. These sessions with the teacher could be informal, “drop-in” occasions or formal, organized Individual Educational Program (IEP) meetings. Some parents had almost daily contact with their child’s teacher, whereas other parents had contact at annual IEPs and parent-teacher conferences only. Several parents mentioned their preference for written reports, because this gave them time to digest the information.

Parents, whose children are in the elementary grades, lauded the use of a daily log. This book records the students’ activities, moods, behaviors etc. both at school and home and is sent every school day back and forth between the home and school. This tool, which parents find very effective, appears to be utilized widely at the elementary level but by the middle and high school years its use has declined. Throughout the focus groups, parents whose children were in the upper grades believed that less attention was given to their children as they aged in the education system. “As a child gets older, the group that comes to the IEP meeting is not quite as many people as it used to be. Where did all those staff go from the earlier IEPs that have been held? As my child gets older, why are there less people involved in her IEP meetings?”

One parent’s perception was that, “Elementary level teachers really care; middle school teachers care a little less and high school teachers care even less.” However, another parent stated that her child is doing very well in high school. “Middle school was a nightmare and a waste of time. She lost reading and math skills but gained socially because she wandered around a lot. In high school, when my daughter couldn’t do something, the teacher said, “Let’s find another way.” One parent shared her concern that alternate assessment is given only once in high school and she feels that it should be done more frequently to help guide discussions in preparation for when her child graduates.

Some parents stated that teachers use email regularly to keep in touch and show their children’s progress. This process is helpful to parents but does not allow for instant communication, which a phone call or meeting would provide. However, the parents realized the time factor that makes

frequent phone and in-person meetings very difficult for teachers to do. “We keep the phone line open and if there is a problem, we call.”

When parents responded to the question about assessing their child’s progress over time, most of the focus group participants referred to the records they have from their child’s IEP meetings. “I go back over his IEPs to see how they have changed in school. It does help to show progress—to me how much more he is involved and interacting with others.” Another parent said, “If we’ve met the IEP goals, we are gaining ground.” “I take the IEPs page by page and compare,” said one parent. Some parents talked about more anecdotal ways of tracking progress over time. “We measure progress by increased independence at home; her lack of fear. We notice improvement in how she acts and reacts to people.”

Parents appreciate reporting mechanisms that they can understand. Several participants mentioned the value of graphs and charts—visual forms of capturing their child’s progress over time. Other parents stated that often times IEP meetings are confusing and overwhelming because of the amount of information that is shared, the number of people present and the short amount of time available to accomplish the task. “I wish the IEP and the document itself was more understandable for parents—it’s so confusing.” Another parent stated, “All parents in this group are having trouble understanding the IEP and its content—it needs to be more parent friendly.” It is possible that parent knowledge about alternate assessment is impeded because of the complexity of the IEP meetings. Several other parents said reassuringly, “It gets easier to understand IEPs because I’ve been looking at them for many years.”

The Crucial Role of Teachers

In every focus group, parents stressed the importance of the role teachers play in their children’s lives. They believe their children’s progress is very closely tied to the skills and abilities of their teachers. Their comments stressed the great importance of the teacher/parent/child relationship and the impact that has on the alternate assessment results. On the one hand, a parent implied that teachers believe parents would not be interested in the specifics of alternate assessment. “Teachers seem to think parents don’t want to know about alternate assessment.” On the other hand, a parent stated, “Families rely on teachers to know all about alternate assessment so they don’t really learn about it.” The general agreement overall, however, is that parents want to have access to the alternate assessment instrument, and their child’s results. Many parents stated that they do not have the information they would like.

Parents believe the reasons teachers do not share information about alternative assessment with them is because teachers are too busy or do not realize that parents would like to know more about the assessment process and results. Parents in the focus groups, now know more about alternate assessment and according to some in the groups have a responsibility to ask their child’s teacher for the information they would like. One parent voiced her concern that, “Teachers are stressed because they waited until the last minute (i.e. to do alternate assessment). I don’t know how accurate the testing is under those conditions.” Another parent stated, “The teacher needs to be working on these items all year long; it depends on the individual teacher as to whether or not they are great with alternate assessment.”

One parent, who appears to have a unique relationship with her child's teacher, said, "My son's teacher asked for information from me to help with the assessment of him. I keep a notebook and photos and she had me bring it in. She asked permission to scan or make copies of part of it so she could use it. I gave permission. She said it is part of his alternate assessment. I was very happy." Overall, parents appear to believe that teachers do the best they can in difficult circumstances but, as with any work environment, there are good and not-so-good employees.

Parent Guide to Alternate Assessment

Very few parents in the focus groups had seen "The Parent Guide to Alternate Assessment," the document that the Department of Education had developed in response to the questions parents had asked in the first round of focus groups held during the 2006-2007 academic year. They were very pleased to receive a copy and thought it was a useful tool. In addition, even less parents had seen an alternate assessment rating scale document. Again, they were grateful to have the sheet that showed samples of items and rating scales for math, reading and science.

Parent Questions:

As a result of the focus groups, parents posed a series of questions. A sample of the questions follows:

- What assessments do the teachers do in an off-year (of alternate assessment)?
- What do you think of "training" parents in alternate assessment so that they know the questions to ask?
- What is the state doing with the alternate assessment data?
- How can we contribute to making alternate assessment better?
- Who is doing the teaching, if the teacher is working with a student on alternate assessment?
- Can I ask to see the alternate assessment?
- Why is my daughter sent home during ITBS time? This doesn't seem fair.
- Is there a grant available for a touch screen computer?
- What if there is more than 1% of students in your district on alternate assessment?

Ideas and Recommendations

As a result of this project, several ideas emerged that could contribute to improving the Iowa Alternate Assessment system from a parent perspective.

1. Organize a series of parent focus groups for the 2008-09 academic year to gauge what parents know and understand about alternate assessment. Compare the results of those focus groups to the results from the two previous years.
2. Consider a series of informational meetings about alternate assessment for parents across the state. Invite a parent, who is familiar with alternate assessment and has found it beneficial to his/her child's growth and development to participate. Utilize a staff member or consultant to accompany the parent to provide the state and No Child Left Behind perspectives.
3. Share this report with teachers. It is important for them to know what parents are thinking about alternate assessment. It might also be a suitable occasion to emphasize the

value of the “Parent Guide to Alternate Assessment” as a rich resource for parents and they can help to disseminate copies.

4. Identify multiple means, beyond that suggested above, for getting the “Parent Guide to Alternate Assessment” in the hands of parents. The guide is an invaluable way for parents to receive accurate and understandable information about alternate assessment. It is a vital, but as yet, underutilized resource.
5. Respond to the questions that parents posed during the various focus groups. Some of these questions and answers might be suitable for inclusion in a revised Parent Guide. Ensure the answers to their questions reach parents.
6. Consider the advantages and disadvantages of various ways to gather information from parents. Undoubtedly, the best way to engage parents in discussion about alternate assessment is in group face-to-face meetings. This venue encourages keen interaction between each of the parents and with the facilitator. In addition, there is an opportunity to build a rapport in the group and parents make connections with other parents that can provide a source of information and support. In the meetings, the facilitator also has the opportunity to pick up cues from facial expressions and body language about parents’ thoughts and feelings that are lacking in other information-gathering mechanisms.

The second most successful tool for gathering parent input is the conference call. This medium should be considered where long distance traveling to a location, or adverse weather conditions make it very difficult for parents to participate. This approach was effectively used this year, even though facilitation was more challenging. A skilled recorder took meticulous notes of parent comments.

The third means of gathering information was individual telephone interviews. This worked well when parents were unable to attend a focus group. Of course, the missing element in this approach is the lack of parent-to-parent interaction which parents find of such value and which stimulates more in-depth discussion.

The least effective means of gathering parent input was through an online survey. Most of the responses gathered for this project were very brief with very little depth. There was no opportunity to ask any probing questions for gathering further information and greater clarity of perceptions.

7. Consider methods for “recruiting” parents to the focus groups, in addition to the valuable assistance of the Parent Educator Connection Coordinators. Would it be feasible to contact the larger school districts, through the building administrators, to see if their teachers would “recruit” parents? This would also emphasize to teachers the important role that parents play in Iowa’s Alternate Assessment I system.

Concluding Parent Comment

One parent stated that Iowa’s Alternate Assessment system, “Sends out a message. No matter what the motive is, they are paying attention to that population, so it speaks a good message to me.”

Building Administrator Knowledge of Alternate Assessment

The intended outcomes for this project were to: a) determine what school administrators know about alternate assessment; b) identify how school administrators believe alternate assessment has impacted instruction in the classroom and; c) identify school administrators' knowledge of alternate assessment support documents. In addition, the project provided an opportunity to record any questions the school administrators had about alternate assessment. Ideas that school administrators might have about how the Department of Education could offer additional support to them regarding alternate assessment were invited.

Project Design

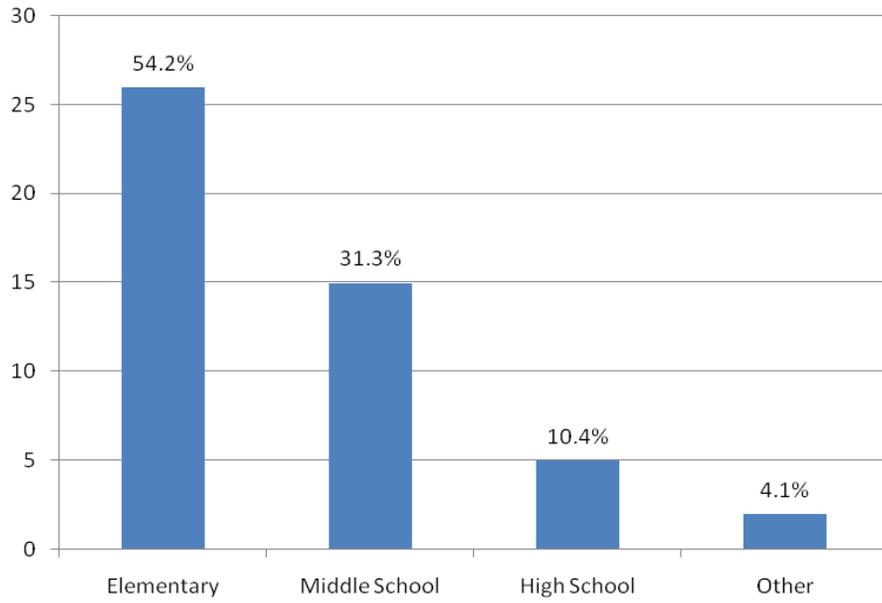
It was decided that the best method for obtaining information from building administrators across the state was to conduct telephone interviews using a series of narrowly focused questions. Recognizing how busy the lives of school administrators are with their myriad of responsibilities, it was anticipated that responding to the questions about alternate assessment should only take about ten to fifteen minutes of their precious time. The questions were as follows:

1. What do you know about Alternate Assessment?
2. Have you seen the "Iowa Alternate Assessment Administrator's Guide"?
3. Has/Have your special education teacher(s) talked to you about the building administrator's "Alternate Assessment Assurance Form"?
4. How has Alternate Assessment impacted instruction in the classroom?
5. What is the process used to ensure parents have access to the "Parent Guide to Alternate Assessment"?
6. What questions do you still have?
7. What additional support do you need from the Department of Education?

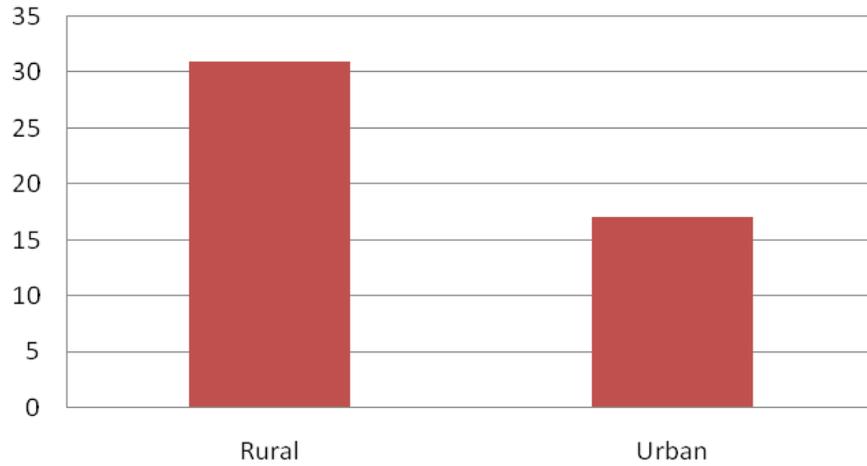
A list of Iowa elementary, middle and high school administrators in random order was printed. The name of the school administrator, his/her school, school district, telephone number and Area Education Agency were included on the list. The consultant began calls from the top of the list and made at least two attempts to contact each school administrator. In some cases, multiple attempts were made to reach the school administrator when the individual returned the consultant's calls.

Results

Of the forty eight school administrators who were interviewed, twenty six were administrators of elementary schools, fifteen of middle schools and five of high schools. Two school administrators fell into the "Other" category. One principal was an administrator of both a middle and a high school building. The second school administrator was the administrator of a kindergarten through twelfth grade building.



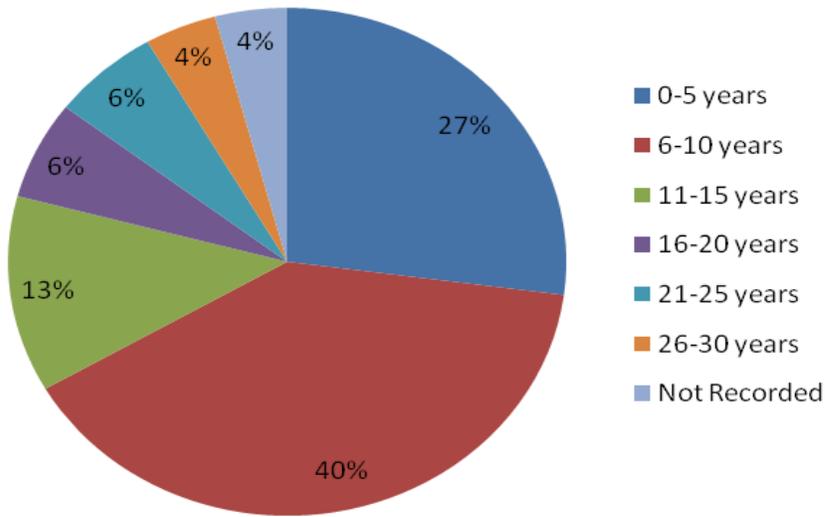
The schools of a majority of school administrators surveyed were identified as located in a rural area.



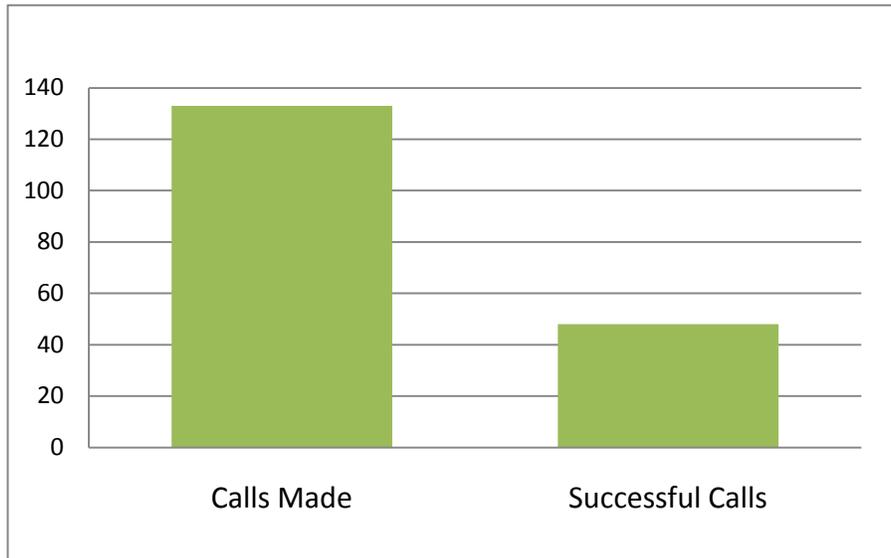
The number of years the respondents had been a building administrator ranged from one year to twenty seven years. Sixty seven percent of the administrators had been in their role for ten or less years.

Number of Years	Number of Administrators
0-5 years	13
6-10 years	19
11-15 years	6
16-20 years	3
21-25 years	3
26-30 years	2
Not Recorded	2

Seventy eight percent had been in their current building less than ten years.



Of the 133 calls made to Iowa school administrators following down the random list of names, forty eight school administrators agreed to be interviewed. The few administrators who did not agree to an interview, stated that they were unable to commit sufficient time to respond to the questions because of a pressing engagement. Approximately two thirds of calls made resulted in the consultant leaving a message requesting that the administrator please return the call. As the data shows, the success rate of calls placed was about 36%.



What Building Administrators Know About Iowa Alternate Assessment I

Eight principals admitted that they knew nothing about alternate assessment. Three of these individuals appeared to be “out of the loop” on alternate assessment because they stated that someone else had that responsibility. This response occurred in larger school districts that had a special education director. The remaining principals identified that the number of students, who are in alternate assessment, is very small. The majority of them stated that alternate assessment was for special education students. As one principal said, “It is for a very small number of students who don’t take the district-wide assessments.” In addition, the respondents did recognize that alternate assessment was for special education students “who do not have the cognitive ability to take standardized tests to measure academics.” Many responses appear to be based on the concept of making accommodations and not the Iowa Alternate Assessment I system.

Several principals queried the consultant’s use of the term “alternate assessment.” Clarification was requested in some cases about whether the discussion was on alternate assessment in its broadest sense or the specifics of Alternate Assessment, the new Iowa initiative.

Several administrators talked about students using other ways to take tests besides the pencil and paper approach of ITBS and ITEDS, such as using audio delivery. Also, administrators mentioned the use of portfolios to gather data on a regular basis to assess how well the student is doing. Another administrator stated that “Alternate assessment is looking at IEP goals and

finding an assessment that measures these goals that were set for the student in the IEP.” After some clarification, several administrators could share more specific knowledge of the Iowa Alternate Assessment I system.

Four respondents did state that alternate assessment is tied to the standards and benchmarks in their district for the student’s grade level. It was apparent from administrator respondents that they rely heavily on their special education teachers to deliver what is required for alternate assessment. Several administrators mentioned that their teachers had attended extensive training to prepare them for their alternative assessment work with students. Alternate assessment is “made up by the teacher” and “special education teachers design the assessment” appear to indicate a misunderstanding on the part of administrators about the specific role that teachers play. Alternate assessment does give teachers a great deal of flexibility to deliver the assessment to students through a medium that aligns with a student’s best method for learning. However, the rating scales of the assessment are standardized.

Alternate assessment is “quite a challenge for teachers,” said one administrator whose special education teacher had administered alternate assessment to a sixth grade, nonverbal student. “It was a real stretch,” he stated. “Alternate assessment is very time consuming for the teacher,” remarked one administrator. “We have to make sure the instructor knows what she is doing.” On the other hand, an administrator stated that alternate assessment provides “safeguards for students to make sure teachers are doing what they are supposed to.”

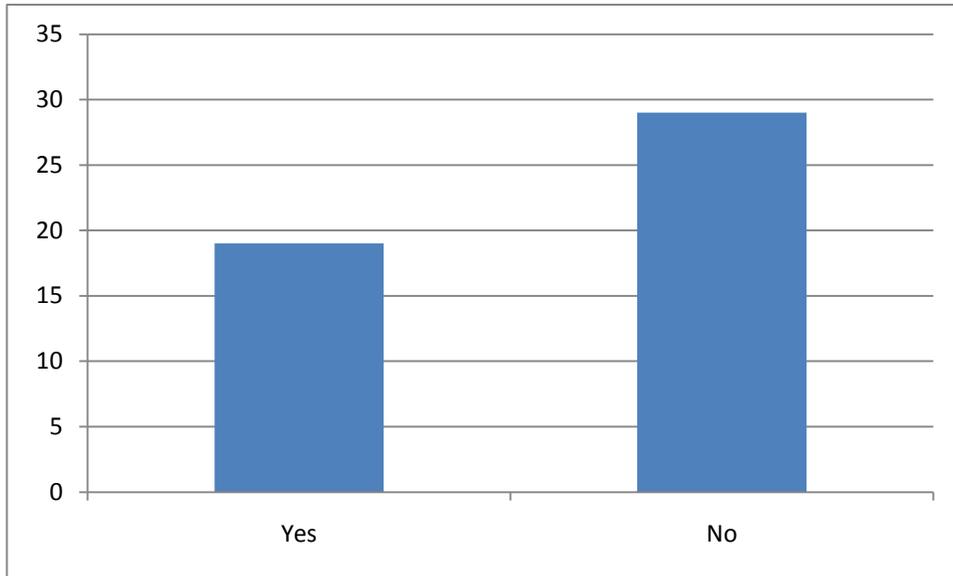
Mention was made multiple times of the key role the Area Education Agency consultants play in supporting teachers and schools in the administration of alternate assessment. “We are counting a lot on our AEA regional contact,” “The AEA does a great job,” and “The AEA is helpful in giving guidance” on alternate assessment are a sample of comments made about the positive contributions the AEA consultants provide to the alternate assessment process

Several administrators were very supportive of alternate assessment. As mentioned in the previous paragraph, alternate assessment from one administrator’s perspective makes teachers accountable. One administrator stated, “Alternate assessment is very beneficial for the student. It is a chance for that student to be successful on their level. ITBS would be ludicrous.” Another remarked, “Alternate assessment is more attuned to the development needs of students.”

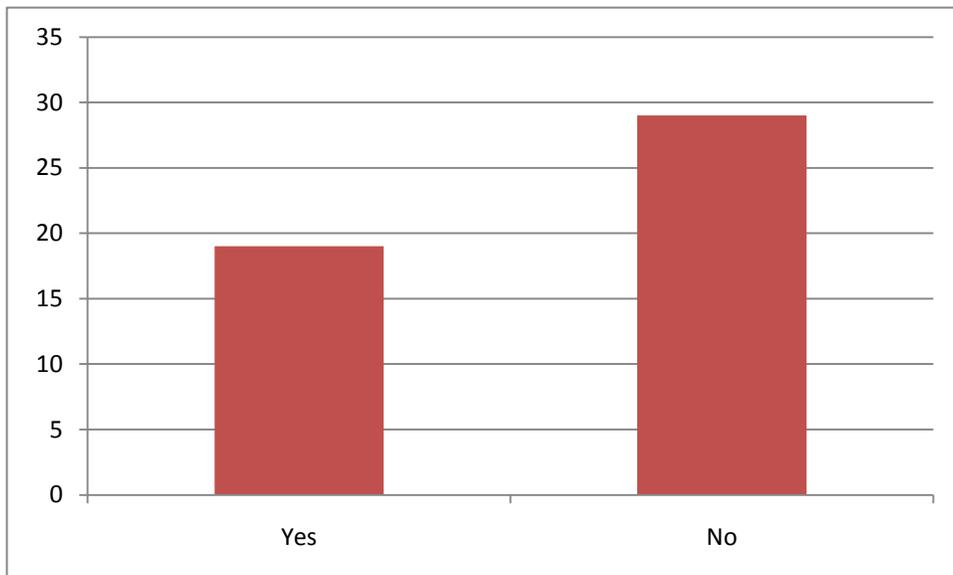
Iowa Alternate Assessment Documents for Administrators

From the data below, of the building administrators who were interviewed, it is evident that “The Iowa Alternate Assessment Administrator’s Guide” and the “Alternate Assessment Assurance Form” have had moderate success in reaching their audience. Several administrators responded, “Maybe” as to whether they had seen either document. These responses were counted as “No,” because a “Maybe” response implies that even though the administrators might have seen the document, they had not read it. Some administrators would not want to give the appearance of failing to read these important documents.

Iowa Alternate Assessment Administrator's Guide



The Alternate Assessment Assurance Form



An interesting, but not surprising observation about the Alternate Assessment Assurance Form occurred as the project progressed. In the early interviews during the first four months of the year, most building administrators responded “No” on this question. However, as the timeline for teachers to complete the alternate assessments approached, most of the administrators were familiar with the Alternate Assessment Assurance Form.

Impact of Alternate Assessment on Instruction

The responses from building administrators about how Alternate Assessment has impacted instruction in the classroom fell into four main areas: 1) positive comments; 2) negative comments; 3) not much changed; and 4) don't know.

Positive Comments about the Impact on Instruction in the Classroom

- Made teachers think about how a severely handicapped child connects to the curriculum.
- Creates a closer parallel between what we are doing in special education with general education.
- Keeps academics to the forefront and not just testing on vocational areas.
- Anytime we can get kids feeling good about what they are doing, it is good.
- We can use alternate assessment as a diagnostic tool to get students to where they need to be.
- Our special needs classroom has changed dramatically with assessments tied to standards and benchmarks. Tying regular curriculum and special needs curriculum allows special education teachers to be on the same page as regular education and this is very advantageous to students.
- Allows the teacher not to feel such pressure. If special education students are very low functioning, the ITBS produces stress for teachers and students. It reduces the level of frustration and addresses the needs of students. It gives us the important information we need to know.
- I understand the need for alternate assessment. It's a realistic compromise. It seems reasonable. I taught special education for twenty five years. Alternate assessment is a formalized way of seeing if student needs are being met.
- Alternate assessment is a good deal for heavily weighted kids who are Level 3. I wish it was easier to use and get away from ITBS for higher functioning kids. We can link student's assessment to standards and benchmarks.
- It provides an overview of what has been mastered and also maybe what the student can't do. We can see how the curriculum aligns with the assessment tool. We can measure progress.
- Alternate assessment has been streamlined somewhat. It provides a direction for instruction and focuses on what the teacher should be doing.
- It makes us have higher expectations.
- It has helped the teacher think about how to meet the district's standards and benchmarks.
- Teachers are now accountable. A positive of alternate assessment is that every kid has to be assessed. We should know what all kids can do.
- For many years, most of the student emphasis was a watered down academic curriculum, then we went to an emphasis on functional skills. Now we are looking at benchmarks that we can set within academic areas. The jury is out about whether students will benefit. Some students will benefit more than others.
- Gives more focus and direction for teachers.
- Alternate assessment is a pretty true measure of what is being taught because there is more of a self design to it. It is a real measurement of what happened because it is designed around instruction of the student.

Negative Comments about the Impact on Instruction in the Classroom

- It is cumbersome. So many hours have been spent on this process. It is very time consuming. Teachers could be doing other things with students. We have to bring in substitutes so the teacher has time to work on the assessment. It takes many hours for one student. NCLB is good in theory, but in practice it doesn't work.
- It is worthless. A student who was nonverbal was rated as non proficient on a science experiment item as preparation for pre-algebra. The student can't toilet himself. It is a little unfair. We should be focusing more on how to develop his skills for feeding himself and staying on task, not useless activities.
- Alternate assessment takes a lot of time.
- Takes a lot of time for the teacher in documenting why the student is not taking ITDS.
- It's complicated, burdensome, and takes too long to prepare. It takes away from classroom instruction time.
- It's a waste of time and there are lots of hoops to jump through. It is cumbersome and there is lots of paperwork. If a child can have an assessment that guides instruction that is helpful but at some levels of disability where capability is limited, alternate assessment is not useful.
- It has no impact because the students are all homebound.

Not Much Changed Comments

- Instruction hasn't changed much. I don't believe the way of teaching has changed. We are still making accommodations.
- I don't think alternate assessment has impacted instruction.
- I don't think it has impacted curriculum.

Don't Know Comments

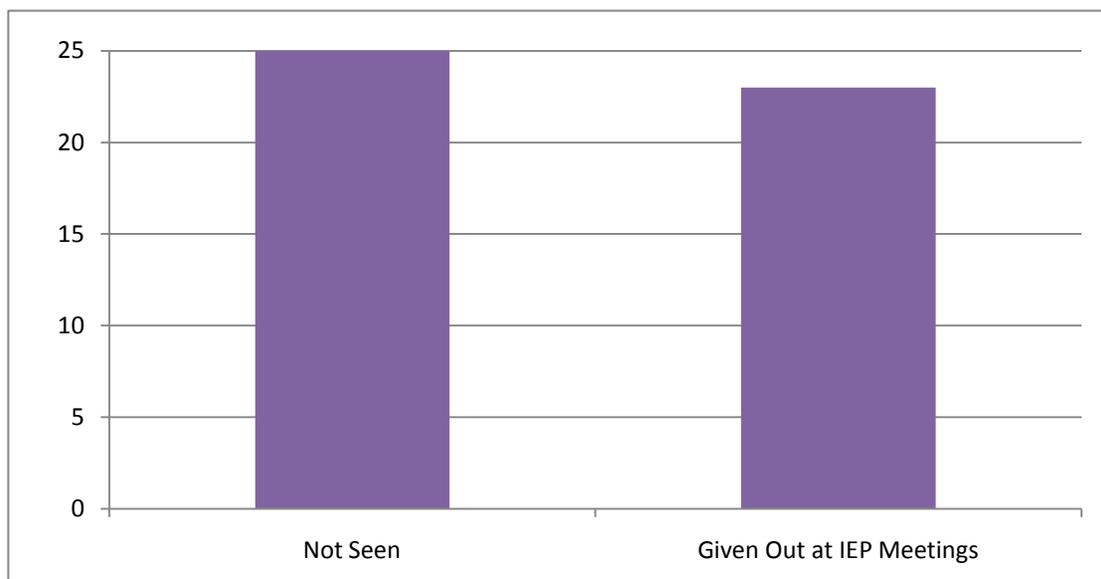
- I have no clear answer.
- I can't answer that.

Other Comments about the Impact of Alternate Assessment on Instruction

- We have used in-service time to develop alternate assessment for each student. It is very helpful. Teachers work together with the AEA consultant.
- I wish it was easier to get away from ITBS for higher level special education kids.
- I hope alternate assessment has been helpful, but I can't be sure it has been.
- Alternate Assessment has had no impact on instruction, but on the way of measuring instruction.

Parent Guide to Alternate Assessment

Building administrators were asked what process is in place to ensure parents have access to “The Parent Guide to Alternate Assessment.” Principals stated that they had either not seen the document or that it is given to parents by teachers at student IEP meetings. The responses “given out at IEP meetings” in some cases may be true. However, the statement in many instances appeared to be based on what the building administrators hope is happening at the IEP meetings, rather than based on any concrete evidence. “Shared at IEP meetings with parents,” “Given out with ‘Rights and Responsibilities’ document,” and “Parents’ have access to this at the IEP meeting.” were typical comments

*Final Administrator Comments and Questions*

- Expand the percentage of students who can be tested on alternate assessment. For students who are not the lowest of low on the ITBS, it doesn't give a clear picture of progress made.
- Special education teachers find the process so time consuming. They cringe at the amount of time. It takes them away from other things.
- The regional facilitator does a good job of support. Offer different training for staff during the summer, so we don't have to pull teachers out of the classroom during the school year.
- The Department of Education does a good job of listening. The AEA has a good structure for funneling information. I understand it is difficult for the Department because of Federal requirements.
- _____ has been very responsive to our questions.
- I want to make sure I know the Assurance Form process.

- Do all states have this? It would make more sense to focus on higher functioning kids. One percent will never be proficient. It would have more impact on kids at the next level up. We want all kids to succeed. Why can't we just turn in IEP goals? We have plenty of support from the AEA contact who keeps us updated with information.
- Any support you can provide for brand new teachers would be very helpful.
- Put information into the School Administrators of Iowa newsletter and the "School Leader" section in the Department of Education website.
- I want to be knowledgeable. Point out what key things we should know. Come up with a summary or blitz to get us to look at the right material.
- Can this be implemented with fidelity and do we have the skills to do it?
- It would be good to include in SAI fall conference workshops.
- Streamline the information that we receive. The amount of information is overwhelming.
- Do you have models for IEP development? Put good models together because this saves us making mistakes.
- I would like to have more kids take alternate assessment that don't qualify now and tie the assessment back to the standards and benchmarks.
- The AEA trainings have been very helpful for our teachers.
- Would like to stick with something for awhile to see if it works. Teacher collected data to give to parents and then had to recreate it. This year, there's a different process. Information should be out in late spring/summer for special education teachers so they are ready in the fall.
- Going to the website for information is great.
- It depends on the special education teacher how much information an administrator gets. Some share and some don't. Administrators sometimes need a meeting so that they have the information they need. The Department of Education could perhaps visit a classroom to see what teachers are doing. Our building would be severely hindered in compliance if our special education teacher was not so good. I'm concerned about what happens when this teacher retires.
- There is sometimes some frustration with online connections relating to documentation. The teachers couldn't get the forms they needed because the system was down.
- Ensuring teachers are trained. Often one date is offered for training, and if the teacher can't go, it's difficult for them to get the training they need.
- My student, who is in alternate assessment, is so disabled that none of the ratings work for this child. Can only do blinking, eye gaze, head turn, and so for the range of skills being measured, it doesn't mirror reality.
- Continue the conversation.
- Some kids shouldn't be tested with ITEDS, but they don't qualify for alternate assessment. For example, non-readers or behind in reading. ITEDS doesn't show growth - what the child can do.

Recommendations for Impacting Administrators

1. Disseminate a copy of this report to the building administrators who participated in the survey accompanied by a letter of thanks.
2. Post the report on the Iowa Department of Education website, so that it is available to all building administrators. Identify a communication mechanism for directing administrators to the document on the web. In addition, encourage building administrators to view the “Iowa Alternate Assessment Administrator Guide”, “Alternate Assessment Assurance Form” and “Parent Guide to Alternate Assessment” on-line.
3. Alternate Assessment is discussed as an optional assessment tool at a student’s IEP. It would be helpful information to know in a future survey, about the level of involvement by the building administrator in IEP meetings.

Conclusion

Building administrators are an integral part of the Alternate Assessment I system in their oversight function. In partnership with teachers, Area Education Agency personnel and Department of Education consultants, building administrators help to ensure that every child, even those with the most significant cognitive disabilities are being assessed on academics, as is required by NCLB. However, of greater importance is the impact that alternate assessment has had on the growth and development of some children whose level of cognitive ability has far exceeded expectations.

As one administrator told the consultant, “A student last year thought she couldn’t complete a certain item but she could. It opened up a lot of opportunities for her. She got to be with the other kids more. We should never assume these kids can’t do something because they can surprise you.”

Quality of Evidence

Additional evidence supporting validity of the IAA has been generate by having Iowa teachers provide samples of evidence generated by students. While qualitative in nature, evidence for 322 samples was rated in 2007-2008 for whether or not the evidence was representative of the item assessed, whether or not the adapted materials maintained the grade level benchmark being assessed, and whether or not sufficient observations were used to generate student ratings. Samples of the kinds of evidence reviewed by the Department of Education, have been included because the evidence depicts the academic nature (not functional) of the instruction evident through alternate assessment, and the kinds of student performances observed. Additional supports have been provided to Iowa’s teachers using DVDs and Quick Time video links.

Classroom Observations

The Iowa Alternate Assessment team members visit classrooms annually to examine practices. In addition, we have contracted an external evaluator who visited classrooms in 2008-2009 and will continue in 2009-2010. Our internal team observations are that teachers are teaching

academic content. Teachers are taking grade level curriculum and adapting down so that students with severe cognitive disabilities can access. We have some DVD examples that we have not put on the web because of copyright issues, but can provide if requested, to show what some teachers in Iowa are doing. In addition, during our classroom visits, while we still see some community-targeted instruction, and heavy emphasis on “functional” skills, we rarely see age inappropriate leisure activities, and we have seen academic instruction. In fact, we believe qualitatively, that we have more evidence that students with severe cognitive disabilities are accessing grade level content even though heavily adapted and reduced, more than students with learning disabilities. Our external evaluator verbally confirms our observations based on her 5 visits, she confirms that principals were more knowledgeable about alternate assessment process this year compared to last (2008-2009 compared to 2007-2008), with only 1 of 50 principals expressing negativity about the process. In addition, she reports more favorable impressions of alternate assessment from parents. Contacts for Alternate Assessment in Iowa’s Area Education Agencies report much more favorable responses by teachers to the rating scale method compared to the portfolio method, and several administrators and teachers have communicated with us that the assessment system, while not clear why academics should be emphasized over functional skills, is much better and much more fair than the strict portfolio method.

CHAPTER 9:**Internal Consistency**

Data for reliability of the scale are available for 2 school years, FFY 2006 (2006-2007), and FFY 2007 (2007-2008).

Two indices of reliability are summarized. First, internal consistency reliability coefficients, average ratings, range of ratings, standard deviations, standard errors of measure, and conditional standard errors, are summarized by grade and content. Second, inter-scoring reliability and accuracy are summarized.

Internal Consistency Reliability

Internal consistency reliability coefficients are summarized for each of two years, FFY 2006 (2006-2007) and FFY 2007 (2007-2008), for Reading, Mathematics, and Science Rating Scales.

Table 25 summarizes internal consistency reliability data for science FFY 2006 (2006-2007). Table 26 summarizes internal consistency reliability data for science FFY 2007 (2007-2008).

Table 25.
Internal Consistency Reliability Coefficient for Science by Grade [FFY 2006 (2006-2007)]

Grade	N	Internal consistency Reliability coefficient	Mean	Range	Standard Deviation	Standard Error
5	92	.95	40	0-66	18.60	1.94
8	223	.98	13.60	0-60	18.04	2.55
11	188	.97	13.14	0-48	13.96	2.42

Table 26.
Internal Consistency Reliability Coefficient for Science by Grade [FFY 2007 (2007-2008)]

Grade	N	Internal consistency Reliability coefficient	Mean	Range	Standard Deviation	Standard Error	Conditional Standard Error*
5	178	.96	51.77	0-90	24.88	1.86	1.55
8	175	.96	58.63	0-104	31.55	2.39	2.36
11	169	.96	50.88	0-120	36.43	2.80	2.14

*Standard Error based on ± 1 SD from the proficient cut score

For all grades and for both school years, in science, internal consistency reliability coefficients exceeded .95.

CHAPTER 10:

Classification Consistency

Inter-scoring reliability[FFY 2006 (2006-2007)]

Inter-scoring reliability was assessed 3 ways: (a) judgment on sufficiency of evidence and rating, (b) judgment on proficiency and teacher ratings, and (c) inter-item rating agreement.

Judgment on sufficiency of evidence and rating. A panel of 8 expert judges was consulted to assess agreement between evidence provided and teacher rating, and to assess congruence between performance level achieved by the student based on score, and performance level as judged by the experts based on what was depicted in the student evidence under review. The judges were (a) teachers participating in the Teacher Cadre, had participated in the Webb alignment, and had knowledge and experience in alternate assessment, and (b) the State of Iowa Alternate Assessment Team.

The panel reviewed 105 rating scales and all supporting evidence used to rate students, and judged (a) number of items rated, (b) number of items linked to the student's IEP, (c) pieces of evidence used to rate students, (d) the number of evidences aligned with multiple items on the rating scale, (e) whether or not each item rated had evidence depicting a unique score for that item, (f) whether or not IEP aligned items had more evidence, (g) whether or not IEP aligned items had better evidence, (h) if the evidence appeared age appropriate, (i) if the evidence appeared academic, and (j) if the evidence appeared representative of the rated performance. Raters first rated cases together until all raters agreed on all ratings for 1 case. Raters then rated individually with no check for observer drift.

Letters (a) – (i) will be used in the discussion of validity.

Subpart (j), addressing whether evidence appeared representative of rated performance, will be used as beginning evidence of inter-rater reliability. Eighty-four percent of cases reviewed were judged “evidence appeared representative of the performance rated.” Sixteen percent of the cases reviewed were judged “evidence was not representative of performance rated.” The data suggest that (a) teachers in Iowa used evidence that was demonstrable of student performance, and that (b) performance was accurately rated by teachers. The agreement of 84% exceeds published standards of inter-rater reliability of 80% (Salvia & Ysseldyke, 2000).

Judgment on proficiency and teacher ratings. The same panel of 8 experts reviewed reading, math, and (as appropriate) science rating scales and all supporting evidence used in ratings, for 70 students and judged, (a) does each item rated appear to have supporting evidence? and (b) in examining the evidence, does the expert's global rating of proficiency match the teacher's rating of proficiency?

Results of these judgments are summarized in Table 27.

Table 27.
Percentage agreement on sufficiency of evidence and student proficiency given evidence

Grade	Content	Number of cases reviewed	Percent of cases judged as having sufficient supporting evidence	Percent of cases judged as having a match between expert judgment and teacher judgment
5	Science	19	95%	89%
8	Science	24	92%	88%
11	Science	27	85%	89%
	Science Totals	70	90%	89%

The data in Table 27 suggest high levels of cases judged as having sufficient supporting evidence for each item reviewed, and high percentage of agreement between results of proficiency levels as a result of summed rating scores, and expert judges of proficiency given the data reflected in evidence submitted for review. One hundred percent of the agreement indices reported in table 27 meet or exceed agreements of 88%.

Inter-item rating agreement. A panel of 30 experts reviewed 195 rating scales and supporting evidence for approximately 70 students. The expert panelists examined each piece of evidence submitted, rated the student's performance on the rating scale given the evidence, and then matched their rating on each item with the teacher's rating on each item. Three case studies were used to train panelists to rate, and each panelist reached 100% agreement with the case studies prior to training individually. There was no check for rater drift.

Table 28 summarizes the percent agreement between ratings by the expert rater on an item given the evidence provided by the teacher, and the teacher's rating of performance on the actual rating scale.

Table 28.
Inter-rater agreement of item rating given evidence

Grade Span	Content	N	R_{xx}
3-5	Reading	44	.91
6-8	Reading	21	.84
11	Reading	10	.90
All	Reading	75	.89
3-5	Math	41	.93
6-8	Math	22	.91
11	Math	10	.91
All	Math	73	.92
5	Science	15	.92
8	Science	21	.87
11	Science	10	.92
All	Science	46	.90
Grand Total	Reading, Math, Science	194	.90

Results depicted in Table 28 suggest moderate-to-high levels (.84 or higher) of agreement between expert ratings of items given all evidence submitted for review, and teacher ratings of student performance.

The data as a whole suggest that (a) teachers supported ratings with evidence, and (b) a second person reviewing the evidence would agree with the teacher's ratings of items and of the overall score obtained by summing the items, at accepted levels of agreement (most indices at 80% agreement or higher).

Classification Consistency [FFY 2007 (2007-2008)]

Seven raters were asked to review evidence submitted for 323 cases selected at random (20% of cases). Teachers of students selected for review were asked to submit all evidence for 2 items in reading, 4 items in Math (1 for each Standard), and 2 items in Science (1 for Standard 1, 1 for a standard of the teachers' choice).

The seven raters were part of Iowa's Teacher Cadre, all experienced with Alternate Assessment, participants in the Alignment Institute, and Standard Setting efforts. The raters were asked to rate whether the evidence provided supported the rating of the student on that specific item. In addition, the raters were asked to judge, over all the items reviewed, if the construct was maintained, if sufficient data were present to accurately judge student performance, and if the performance in the evidence samples, on average, matched the ratings of the student on the items reviewed.

Data are summarized in Table 29. At least 80% agreement was desired, and on the items reviewed by the expert raters, agreement was reached to the criterion level. There were lower levels of agreement in Math on Standards 3 and 4, and the IDE hypothesized that teachers had more difficulty aligning instruction to more abstract items (like applying concepts to solve problems, and interpreting graphs and tables) as depicted in those Grade level Standards.

Table 29.
Inter-rater agreement of item rating given evidence

Item	Agreement with Rating of Teacher
Reading 1	96%
Reading 2	93%
Math 1	95%
Math 2	90%
Math 3	85%
Math 4	81%
Science 1	87%
Science 2	91%

Classification Consistency (2008-2009)

Building principals reviewed all evidence and assured that ratings represented performance depicted. We had 15 exclusions in which principals attested the evidence did not support that the ratings were valid. In addition, we contacted 50 building principals at random throughout the year, and as the year progressed, the number of principals familiar with alternate assessment increased. We also needed to contact 30 building principals to verify the assurance process, and 100% of the 30 had the assessments and evidence either in their office, or had seen the assessment and evidence in April of 2009. Hence, there is evidence that second raters are reviewing the evidence and are judging the appropriateness of the evidence and of the ratings supported by evidence.

Safeguards in Scoring

We have a process in place to review evidence and ratings for students who:

- (a) Had score increases from 2007-2008 through 2008-2009 that would change proficiency level from basic to higher
- (b) Scored much higher than would be predicted from the student profile
- (c) Had scores at the ceiling of all rating scales

These reviews will be done annually, and administration and scoring rules modified as needed, to ensure valid results. At present, the data do not support over-rating of students by teachers: teachers are not “gaming” the system to impact AYP decisions. Instead, the data suggest teachers may not be providing sufficient opportunity to be rated for students one might predict to be advanced, but who end up being rated basic because only a few items were taught and rated. Teachers either need to increase the use of the “mastered” option, or we may institute a rule around minimum numbers of items for rating.

CHAPTER 11:**Bias Review****Bias Review During Rating Scale Development and Alignment**

As part of the Webb alignment procedures, sources of challenge (bias) of items is rated. Reviewers identified several items likely to be biased against students without verbal language, students with motor impairment, and students with visual impairment. Panelists revised items so that the construct embedded in each item was not likely to bias a student who could not respond verbally, who could not easily manipulate items (rulers for measurement in science and math, for example), and who could use vision to discriminate well in responding.

Each item was reviewed by gender for response differences. There were insufficient students from culturally diverse backgrounds to warrant examination of race bias. At each of Grades 5, 8, and 11, there were fewer than 20 African American and 20 Hispanic students. For example in Grade 5, there were approximately 200 participants, of which 185 were Caucasian.

The distribution of gender, by grade levels is depicted in Table 30.

*Table 30.
Gender Distribution by Grade, 2007-2008*

	<i>Grade 5</i>	<i>Grade 8</i>	<i>Grade 11</i>
<i>Male</i>	<i>87 (59%)</i>	<i>95 (63%)</i>	<i>82 (56%)</i>
<i>Female</i>	<i>60 (41%)</i>	<i>57 (37%)</i>	<i>64 (44%)</i>

Bias

Bias was considered potentially present when a gender was 15% below the other gender on either access or performance. Bias was examined by grade. NOTE: it is plausible that items are found to favor boys (or girls) for reasons other than gender (physical limitations, vision, hearing, etc.). Bias analyses were originally conducted by degree of sensory impairment: we found some evidence that students with physical disabilities were getting differential access to content (lower) than other students. We have professional development on instructional adaptations and response mode adaptations, and assistive technology, contracted for 2009-2010.

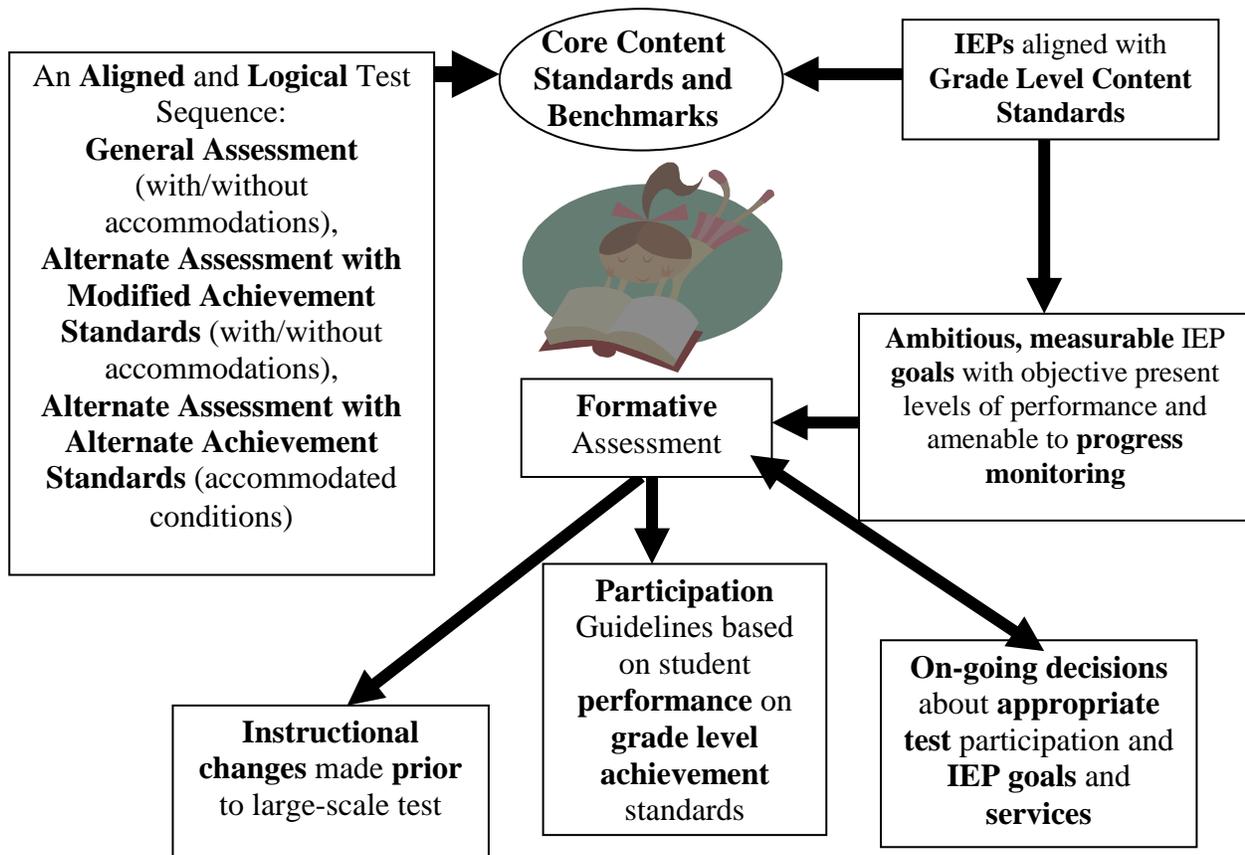
Grade 5		
	Access	Performance
Item 1: Experiment	Equitable	Equitable
Item 2: Length	Equitable	Equitable
Item 3: Weight	Favors boys	Equitable
Item 4: Volume	Equitable	Equitable
Item 5: Safety	Equitable	Equitable
Item 6: Conclusions	Equitable	Equitable
Item 7: Describes experiment	Equitable	Favors boys
Item 8: Human body	Equitable	Equitable
Item 9: Plant size	Favors boys	Equitable
Item 10: Animals	Equitable	Equitable
Item 11: Family Tree	Equitable	Equitable
Item 12: Weather	Equitable	Equitable
Item 13: Safety rules	Equitable	Equitable
Item 14: Health rules	Equitable	Equitable
Item 15: Hygiene	Equitable	Equitable
Item 16: Earth materials	Equitable	Equitable
Item 17: Wet/hard properties	Equitable	Equitable
Item 18: Soil, water	Equitable	Equitable
Item 19: Earth objects	Equitable	Equitable
Item 20: Classification	Equitable	Equitable
Item 21: Mixtures and solutions	Equitable	Equitable
Item 22: Labels stars	Equitable	Equitable
Item 23: Labels objects in sky	Equitable	Favors boys
Item 24: Force	Equitable	Equitable
Item 25: Speeds and force	Equitable	Equitable
Item 26: Energy	Equitable	Equitable
Item 27: Physics	Equitable	Equitable
Item 28: Sources of heat	Equitable	Equitable
Item 29: Viscosity	Equitable	Equitable
Item 30: Motion	Equitable	Equitable

Grade 8	Access	Performance
Item 1: Experiment	Equitable	Equitable
Item 2: Length	Equitable	Equitable
Item 3: Weight	Equitable	Equitable
Item 4: Texture	Equitable	Equitable
Item 5: Viscosity	Favors girls	Equitable
Item 6: Temperature	Equitable	Equitable
Item 7: Scientific process	Equitable	Equitable
Item 8: Ruler	Equitable	Equitable
Item 9: Scale	Equitable	Equitable
Item 10: Volume	Equitable	Equitable
Item 11: Participation in experiment	Equitable	Equitable
Item 12: Draws conclusion	Equitable	Equitable
Item 13: Producers and decomposers	Equitable	Equitable
Item 14: Fossils	Equitable	Equitable
Item 15: Life cycle	Equitable	Equitable
Item 16: Food chain	Equitable	Equitable
Item 17: Food chain	Equitable	Equitable
Item 18: Conservation	Equitable	Equitable
Item 19: Rocks/soils	Equitable	Equitable
Item 20: Classification	Equitable	Equitable
Item 21: Land forms	Equitable	Equitable
Item 22: Land forms	Equitable	Equitable
Item 23: Natural disaster	Equitable	Favors boys
Item 24: Clouds	Equitable	Equitable
Item 25: Sun and stars	Equitable	Equitable
Item 26: Sun	Equitable	Equitable
Item 27: Moon	Equitable	Equitable
Item 28: Force	Equitable	Equitable
Item 29: Gravity	Equitable	Equitable
Item 30: Speed	Equitable	Equitable
Item 31: Speed and force	Equitable	Equitable
Item 32: Water and oil	Equitable	Equitable
Item 33: Change in appearance	Equitable	Favors girls
Item 34: Ice	Equitable	Equitable
Item 35: Sun	Equitable	Equitable

Grade 11	Access	Performance
Item 1: Experiment	Equitable	Equitable
Item 2: Length	Equitable	Equitable
Item 3: Weight	Equitable	Equitable
Item 4: Texture	Equitable	Equitable
Item 5: Viscosity	Equitable	Favors girls
Item 6: Conclusions	Equitable	Equitable
Item 7: Scientific Process	Equitable	Equitable
Item 8: Participation	Equitable	Equitable
Item 9: Ruler	Equitable	Equitable
Item 10: Scale	Equitable	Equitable
Item 11: Volume	Equitable	Equitable
Item 12: Applies rules of organization	Equitable	Equitable
Item 13: Patterns	Equitable	Equitable
Item 14: Safety	Equitable	Equitable
Item 15: Discriminates critical features	Equitable	Equitable
Item 16: Classification of animals as predatory	Equitable	Equitable
Item 17: Conclusions	Equitable	Equitable
Item 18: Plant growth	Equitable	Equitable
Item 19: Food chain	Equitable	Equitable
Item 20: Food chain	Equitable	Equitable
Item 21: Food sources	Equitable	Equitable
Item 22: Land forms	Equitable	Equitable
Item 23: Rocks	Equitable	Equitable
Item 24: Weather	Equitable	Equitable
Item 25: Graphing weather	Equitable	Equitable
Item 26: Clothing	Equitable	Equitable
Item 27: States of water	Equitable	Equitable
Item 28: Precipitation	Equitable	Equitable
Item 29: Water uses	Equitable	Equitable
Item 30: Water conservation	Equitable	Equitable
Item 31: Water cycle	Equitable	Equitable
Item 32: Force prediction	Equitable	Equitable
Item 33: Magnetization	Equitable	Equitable
Item 34: Batteries	Equitable	Equitable
Item 35: Mixtures	Equitable	Equitable
Item 36: Physical properties	Equitable	Equitable
Item 37: Material	Equitable	Equitable
Item 38: Properties of materials	Equitable	Equitable
Item 39: States of matter	Equitable	Equitable
Item 40: Force and speed	Equitable	Equitable

CHAPTER 12: Appropriate Accommodations

As depicted in the figure originally introduced in Chapter 1, the alternate assessment exists as part of an aligned, logical test sequence designed to promote high expectations and performance in the general curriculum. The alternate assessment is an evidence-based rating scale, using ongoing classroom instruction to generate evidence. Student performance is rated at year's end, and a score is obtained. As depicted in the figure below, the alternate assessment uses evidence generated under accommodated conditions.



Additionally, teachers are told during training that any accommodation allowed on the child's IEP is allowed for use in instruction and generation of evidence used to rate performance, as presented previously on page 22 of this manual:

7. Considerations in Rating
 - a. Use naturally occurring, year-long instruction to generate evidence
 - i. Do not have "alternate assessment day"
 - b. Report the most recent performance for reliability purposes
 - i. Gather more evidence if needed for score accuracy
 - c. Use any accommodation allowed on the child's IEP

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Ysseldyke, J.E., Thurlow, M.L., McGrew, K.S. & Shriner, J.G. (1994).
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Appendix A

IOWA ALTERNATE ASSESSMENT SCIENCE RATING SCALES

Iowa Alternate Assessment 2008-2009 Science Rating Scale Grade 5		Check the box if the skill was already mastered (75% accurate or higher, not prompted) (no evidence needed)	Check the box if the skill was not taught (no evidence needed)	Check the box if full physical or full verbal prompts were used (the child was given the answer) (supporting evidence required)	Student Performance in Percent Accurate, minimum 4 trials. Record most recent performance (supporting evidence required)
Science Standard 1: Students can understand and apply skills used in scientific inquiry					
1.1	Identifies or states purpose of an experiment being conducted in class	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
1.2	Uses scientific tools for measurement of length (ruler)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
1.3	Uses scientific tools for measurement of mass (scale)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
1.4	Uses scientific tools for measurement of volume (teaspoons, measuring cups, beakers)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
1.5	Identifies safe behaviors at home, at play and at school	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
1.6	Draws conclusions from observations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
1.7	Identifies or describes (using words or pictures) what happened during an experiment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
Science Standard 2: Students can understand concepts and relationships in life science					
2.8	Identifies parts of the human body like head, nose, arms, legs, hands, feet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
2.9	Categorizes plants based on size (small, medium, large)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
2.10	Categories animals that live on land and those that live in water	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
2.11	Identifies family members across 2 generations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
2.12	Selects appropriate clothes for different weather conditions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
2.13	Follows safety rules at school	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %

Iowa Alternate Assessment 2008-2009 Science Rating Scale Grade 5		Check the box if the skill was already mastered (75% accurate or higher, not prompted) (no evidence needed)	Check the box if the skill was not taught (no evidence needed)	Check the box if full physical or full verbal prompts were used (the child was given the answer) (supporting evidence required)	Student Performance in Percent Accurate, minimum 4 trials. Record most recent performance (supporting evidence required)
2.14	Follows health rules at school (hand washing, use of tissues)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
2.15	Demonstrates basic hygiene skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
Science Standard 3: Students can understand concepts and relationships in Earth/space sciences					
3.16	Identifies and discriminates a variety of earth materials (e.g., rocks, pebbles, and sand)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
3.17	Uses appropriate qualitative labels to describe properties of earth materials (wet, hard, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
3.18	Classify earth materials as soil, water, sand, or rock	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
3.19	Draws or identifies pictures of earth objects like land, plants, animals, people, clouds, the sun, stars, bodies of water, mountains.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
3.20	Classifies objects based on states of matter (ice, liquid, and steam)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
3.21	Compares and makes conclusions about mixture v. solutions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
3.22	Indicates that stars are visible at night.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
3.23	Labels or identifies: “sun,” “earth,” and “moon”	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
Science Standard 4: Students can understand concepts and relationships in physical science					
4.24	Identifies the concept of “force”	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
4.25	Draws conclusions that objects move <i>at different speeds</i> based on the amount of force applied	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
4.26	Form conclusions that different forms of energy are experienced through the senses (heat, sound, light, mechanical)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
4.27	Recognizes that when a ball is pushed, it moves	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
4.28	Identifies fire as a source of heat	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
4.29	Given 2 liquids of different viscosity, the child appropriately identifies one as “more” viscous and the other as “less” viscous	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %

<p style="text-align: center;">Iowa Alternate Assessment 2008-2009 Science Rating Scale Grade 5</p>		<p>Check the box if the skill was already mastered (75% accurate or higher, not prompted) (no evidence needed)</p>	<p>Check the box if the skill was not taught (no evidence needed)</p>	<p>Check the box if full physical or full verbal prompts were used (the child was given the answer) (supporting evidence required)</p>	<p>Student Performance in Percent Accurate, minimum 4 trials. Record most recent performance (supporting evidence required)</p>
4.30	Classify the speed of moving objects as fast or slow	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____ %

Iowa Alternate Assessment 2008-2009 Science Rating Scale Grade 8		Check the box if the skill was already mastered (75% accurate or higher, not prompted) (no evidence needed)	Check the box if the skill was not taught (no evidence needed)	Check the box if full physical or full verbal prompts were used (the child was given the answer) (supporting evidence required)	Student Performance in Percent Accurate, minimum 4 trials. Record most recent performance (supporting evidence required)
Science Standard 1: Students can understand and apply skills used in scientific inquiry					
1.1	Identifies or states purpose of an experiment being conducted in class	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
1.2	Compares and makes conclusions about objects to determine differences in size (shorter/longer)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
1.3	Compares and makes conclusions about objects of different weights to determine which is heavier/lighter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
1.4	Observe items and draw conclusions as to texture (rough/smooth)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
1.5	Observe items and draw conclusions as to the viscosity of different liquids	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
1.6	Observe items and draw conclusions about temperature (warmer/colder)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
1.7	Labels the steps of the scientific process	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
1.8	Uses scientific tools for measurement of length (ruler)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
1.9	Uses scientific tools of measurement of mass (scale)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
1.10	Uses scientific tools of measurement of volume (teaspoons, measuring cups, beakers)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
1.11	Draws conclusions from observations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
1.12	Describes results and draws conclusions after an investigation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %

Iowa Alternate Assessment 2008-2009 Science Rating Scale Grade 8		Check the box if the skill was already mastered (75% accurate or higher, not prompted) (no evidence needed)	Check the box if the skill was not taught (no evidence needed)	Check the box if full physical or full verbal prompts were used (the child was given the answer) (supporting evidence required)	Student Performance in Percent Accurate, minimum 4 trials. Record most recent performance (supporting evidence required)
Science Standard 2: Students can understand concepts and relationships in life science					
2.13	Given a variety of animals, identifies appropriate food sources	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
2.14	Identify and categorize types of fossils	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
2.15	Recognize that organisms not provided with food or water will die	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
2.16	Classifies the parts of a food chain (animals (including humans), plants, decomposers)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
2.17	Identifies or produces a “complete” food chain (includes sun, producer, consumer)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
2.18	Form conclusions about what happens when an area becomes overpopulated (for example, the deer population) (natural resources become less available)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
Science Standard 3: Students can understand concepts and relationships in Earth/space sciences					
3.19	Differentiates solid rocks from soils	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
3.20	Classify earth materials as soil, water, sand, or rock	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
3.21	Identify earth materials that may appear in different land forms	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
3.22	Identify distinctive land forms (water, river, lake, beach, mountain, valley)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
3.23	Recognizes that the surface of the earth changes by different processes and/or natural events (earthquakes, volcanoes, floods, erosion)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
3.24	Labels, points to, or describes characteristics of clouds (color, shape)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
3.25	Identify the sun, moon, and stars	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
3.26	Investigate the effect of sunlight on living things	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
3.27	Labels phases of the moon	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %

Iowa Alternate Assessment 2008-2009 Science Rating Scale Grade 8		Check the box if the skill was already mastered (75% accurate or higher, not prompted) (no evidence needed)	Check the box if the skill was not taught (no evidence needed)	Check the box if full physical or full verbal prompts were used (the child was given the answer) (supporting evidence required)	Student Performance in Percent Accurate, minimum 4 trials. Record most recent performance (supporting evidence required)
Science Standard 4: Students can understand concepts and relationships in physical science.					
4. 28	Understands when balls are pushed, they roll	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
4. 29	Understands when objects are dropped, they fall to the ground	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
4. 30	Observe and draw conclusions that objects can move at different speeds	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
4. 31	Observe and draw conclusions that objects can move at different speeds based on the amount of force applied	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
4. 32	Explain what happens when mixing oil and water	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
4. 33	Answers questions about changes in color of liquids that occur when food color is added to liquids	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
4. 34	Describes what happens to water at different temperatures (liquid/ice)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
4. 35	Answers questions demonstrating knowledge that one characteristic of the sun is heat	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %

Iowa Alternate Assessment 2008-2009 Science Rating Scale Grade 11		Check the box if the skill was already mastered (75% accurate or higher, not prompted) (no evidence needed)	Check the box if the skill was not taught (no evidence needed)	Check the box if full physical or full verbal prompts were used (the child was given the answer) (supporting evidence required)	Student Performance in Percent Accurate, minimum 4 trials. Record most recent performance (supporting evidence required)
Science Standard 1: Students can understand and apply skills used in scientific inquiry					
1.1	Identifies or states purpose of an experiment being conducted in class	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
1.2	Compares and makes conclusions about objects to determine differences in size (shorter/longer)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
1.3	Compares and makes conclusions about objects to determine differences in weight (heavier/lighter)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
1.4	Observe and draw conclusions as to texture (rough/smooth)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
1.5	Observe and draw conclusions about viscosity of different liquids	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
1.6	Observe and draw conclusions about temperature (warmer/colder)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
1.7	Answers question about the scientific process	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
1.8	Draws conclusions in an experiment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
1.9	Selects and uses scientific tools for measurement (length)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
1.10	Selects and uses scientific tools for measurement of mass (scale)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
1.11	Selects and uses scientific tools for measurement of volume (teaspoons, measuring cups, beakers)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
1.12	Classify items, organize the data, and represent in a chart, table, or graph	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
1.13	Identify, investigate, and form conclusions about patterns and trends (order sequence)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
1.14	Demonstrates safe techniques for investigation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %

Iowa Alternate Assessment 2008-2009 Science Rating Scale Grade 11		Check the box if the skill was already mastered (75% accurate or higher, not prompted) (no evidence needed)	Check the box if the skill was not taught (no evidence needed)	Check the box if full physical or full verbal prompts were used (the child was given the answer) (supporting evidence required)	Student Performance in Percent Accurate, minimum 4 trials. Record most recent performance (supporting evidence required)
Science Standard 2: Students can understand concepts and relationships in life science					
2.15	Identifies and discriminates a variety of species: wild animals, plants, and humans	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
2.16	Identifies or characterizes some animals as predators to other animals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
2.17	Conduct an investigation, analyze data, and form a conclusion to demonstrate that variations in data exist (differences in height, eye color, variations between leaves, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
2.18	Conduct and analyze an investigation with a plant to determine how the environment effects its growth	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
2.19	Classify the parts of a food chain (animals (including humans), plants, humans, decomposers)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
2.20	Specify and explain the relationships between the steps of a food chain (sun, producers, consumers)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
2.21	Identify that food sources come from the environment (bread comes from wheat)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
Science Standard 3: Students can understand concepts and relationships in Earth/space sciences					
3.22	Form conclusions about how land forms were created	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
3.23	Identify differences in rocks (color, texture, composition)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
3.24	Identify weather through observation (clouds, temperature, wind, rain, and snow)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
3.25	Organize and graph qualitative observations about weather (clouds, temperature, wind, rain, snow)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
3.26	Identify materials/clothing/recreation/transportation appropriate to the weather	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %

Iowa Alternate Assessment 2008-2009 Science Rating Scale Grade 11		Check the box if the skill was already mastered (75% accurate or higher, not prompted) (no evidence needed)	Check the box if the skill was not taught (no evidence needed)	Check the box if full physical or full verbal prompts were used (the child was given the answer) (supporting evidence required)	Student Performance in Percent Accurate, minimum 4 trials. Record most recent performance (supporting evidence required)
3. 27	Recognize and identify states of water (solid, liquid, gas)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
3. 28	Form a conclusion based on precipitation (snow, hail, rain)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
3. 29	Identify uses of water (bathing, drinking, cooking, recreation, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
3. 30	Recognize and identify ways to conserve water	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
3. 31	Analyze effects of the water cycle on living organisms (precipitation, evaporation, condensation)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
Science Standard 4: Students can understand concepts and relationships in physical science					
4. 32	Accurately predicts how far a ball will roll if pushed (acceleration and velocity)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
4. 33	Draws conclusions whether magnets will repel (separate) or attract (come together)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
4. 34	Make comparisons between different types and quantities of batteries	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
4. 35	Classify mixtures as homogeneous and heterogeneous (salt water is homogeneous and chocolate chip cookie batter is heterogeneous)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
4. 36	Graph objects based on physical properties (textures, living vs. nonliving, type of object)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
4. 37	Investigate how different things can be made from the same materials (wood=furniture, paper, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
4. 38	Investigate how combining two or more materials may result in a product that has different properties than original materials (home-made ice cream, pottery, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
4. 39	Analyze and evaluate given data to determine states of matter of an object (solid, liquid, gas)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %
4. 40	Observe and draw conclusions that objects can move at different speeds based on the amount of force applied	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ %

Appendix B
Alignment Institute Training Slides and Printout

Iowa Alternate Assessment: Alignment Institute

Des Moines, Iowa
March 2007

Slides Developed by Brad Niebling, PhD

Introductions

- Marty and Steve
- Brad Niebling, Alignment Specialist, AEA 11
- Group members

Slides Developed by Brad Niebling, PhD

Objectives for Today

- Define alignment
- Learn about why an alignment institute is necessary for the IAA
- Obtain knowledge and skills necessary to participate in alignment institute
- Complete content analyses and coding of **Core Content Standards and Benchmarks, and IAA items**

Slides Developed by Brad Niebling, PhD

Acknowledgements

- Giving credit where credit is due...
 - Andrew Roach, Georgia State University
http://education.gsu.edu/cps/faculty/Andrew_T_Roach/index.htm
 - Norman Webb, Wisconsin Center for Education Research
<http://facstaff.wcer.wisc.edu/normww/>

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What is alignment?

- The extent to which to how well all policy elements work together to guide instruction and, ultimately, student learning (Resnick, Rothman, Slattery, & Vranek, 2003).
- "Breadth" vs. "depth"

Slides Developed by Brad Niebling, PhD

Alignment Between Standards, Assessments, and Classroom Practices

Slides Developed by Brad Niebling, PhD

Why Alignment is Important?

- Aligned standards, instructional programs, and assessments provide clear messages about the important goals and outcomes of the educational system.
- When policy elements contradict each other, increased stress and pressure may be placed on educators and students.
- NCLB says it is important...over 100 times
- **KEY POINT:** *Poorly aligned curriculum and assessments can "result in our underestimating the effect of instruction on learning" (Anderson, 2002).*

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Reasons to Conduct Alignment Studies

- To identify areas for improvement in classroom instruction, standards, and assessments.
- To guide vertical scaling.
- To compare standards, instruction, or assessments.
- To demonstrate compliance with a mandate.

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Conducting Alignment Studies

- The Council of Chief School Officers (CCSSO, 2005) has identified three preferred models for conducting alignment studies:
 - The "Webb" model
 - Surveys of Enacted Curriculum (SEC)
 - The "Achieve" model
- *What about "crosswalking" standards and assessments?*

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IAA Alignment Method

- We will be using the "Webb" model
- Areas explored in Webb's model include...
 - Categorical Concurrence
 - Range of Knowledge
 - Depth of Knowledge (DOK)
 - Balance of Representation
 - Source of Challenge*
- Your job will be to focus on DOK, source of challenge, and doing some "content matching" between IAA items and CCSEBs

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Webb's Alignment Process

- ✓ Identify Standards and Assessments
- ✓ Select Reviewers
- Train Reviewers on DOK Levels, Source of Challenge, and use of coding materials
- **Part I:** Code DOK Levels of the Standards/Objectives
- **Part II:** Code DOK Levels and Corresponding Objectives of Assessment Items

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Webb's DOK Level	Alternate Assessment DOK Stages	Key Verbs
Level 1- Recall	Stage 1- Respond Stage 2- Reproduce Stage 3- Recall	respond to, indicate, or acknowledge copy, replicate, repeat, re-enact, mirror, or match recite or recall facts or information, observe, provide definitions or terms, simple one-step procedures
Level 2 \$ Basic Reasoning	Stage 4- Procedures & Applications	ordering, classifying, identifying patterns and relationships, estimating, identifying main idea, two-step procedures
Level 3 \$ Complex Reasoning	Stage 5- Problem Solving	draw conclusion, explain, generalize, connect ideas, inferences, prediction, elaboration and summary
Level 4 \$ Extended Reasoning	Stage 6 \$ Extended Reasoning	make several connections, relate ideas within content(s) area, select one approach among many alternatives to answer a question or solve a problem, develop hypotheses and conduct investigations; perform complex analysis

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Training Activity #1

- The purpose of this activity is to become familiar with the "Depth of Knowledge," or "DOK" levels used in Webb's framework
- Individually read the documented titled *Expanded Depth of Knowledge by Subject Descriptors for Special Education Standards/Assessments*
- Discuss what you read at your table, writing down any question you have at your table

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Training Activity #2

- The following two slides have sets of sample tasks. Individually, indicate the DOK level or "stage" you would assign to the task. Be ready to share with the whole group or at your table
 1. Student attends while teacher reads.
 2. Student repeats or paraphrases messages upon request.
 3. Student recognizes functional symbols and signage.

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Training Activity #2 (cont.)

4. Student retells information from what he/she reads or hears.
5. Student creates a "personal" story using words, pictures, and symbols.

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Webb's Criteria for Alignment

Criterion	Definition
Categorical Concurrence	Indicates if the same or consistent categories of content appear in both standards and assessment.
Range-of-Knowledge Correspondence	Indicates whether a comparable span of knowledge expected of students by a standard is the same as, or corresponds to, the span of knowledge that students need in order to correctly answer the assessment item or activity.
Balance-of-Representation	Indicates the degree to which one curriculum objective is given more emphasis on the assessment than another.
Depth-of-Knowledge Consistency*	Indicates if what is elicited from students on an assessment is as demanding cognitively as what students are expected to know and do as stated in the standards.

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Source of Challenge

- Focus is on assessment items, not standards
- Characteristics of item could lead to a correct or incorrect response for the wrong reason
- Examples could be cultural factors, requirement of specialized knowledge, or poorly worded items
- In other words, students may have knowledge, but would be likely to incorrectly answer the item, or...
- Students may not have knowledge, but would be likely to correctly answer the item

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Training Activity #3

- At your tables, review the coding materials individually
- Note in particular where DOK and source of challenge are located
- I will talk you through the materials briefly before you begin your independent review
- Discuss them at your tables, writing down any questions you might have about them
- Share questions with whole group if necessary

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Coding CCSBs

- Use the content-specific coding sheet
- Start with independent ratings
- Write the number in the column-labeled "Depth of Knowledge" for each benchmark that corresponds with the DOK stage you feel is appropriate
- When everyone is done rating for a standard, the table leader will facilitate a consensus-building discussion for each benchmark until the entire group agrees
- The table leader will record the agreed upon DOK ratings
- Continue with each standard until entire document is done

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Coding IAA Items

- Use the content-specific coding sheet
- These will be done independently only
- Move across the columns, one item at a time, indicating your codings as appropriate
- Once you are done, indicate overall source of challenge issues about the IAA on the back of your coding sheets

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Coding Process Tips

- One primary objective and up to two secondary objectives (if necessary)
- Notes (any insights to share).
- Consider the full range of standards.
- Use generic objectives sparingly.
- Focus on written words...use low inference judgments

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Structure of Our Work Together (...and Apart)

- Step 1. Training on Coding Process. ✓
- Step 2. Consensus Process for Assigning DOK Levels to Objectives ✓
- Step 3. Coding of Assessment Tasks ✓
- Step 4. Analysis of Coding *(To be completed using WAT)*
- Step 5. Reporting *(To be completed using WAT and others)*

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Questions/Comments

- Any?
- Marty, Steve, and I will be around to facilitate and support your work all day
- We will reconvene in the future to finish the work as necessary

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Standards			Level by Objective			Hits		Cat. Concurr.
Title	Goals #	Objs #	Level	# of objs by Level	% w/in std by Level	Mean	S.D.	
A - Students can understand and apply skills used in s ...	2	2	4 5	1 1	50 50	15	2.12	YES
B - Students can understand concepts and relationships ...	3	3	4	3	100	14.75	2.17	YES
C - Students can understand concepts and relationships ...	3	3.25	4	3	100	7	0.71	YES
D - Students can understand concepts and relationships ...	3	3	4 5	1 2	33 66	7.25	1.92	YES
Total	11	11.25	4 5	8 3	72 27	44	3.61	

Standards			Hits		Level of Item w.r.t. Standard						DOK Consistency
					% Under		% At		% Above		
Title	Goals #	Objs #	M	S.D.	M	S.D.	M	S.D.	M	S.D.	
A - Students can understand and apply skills used in s ...	2	2	15	2.12	86	17	14	17	0	0	NO
B - Students can understand concepts and relationships ...	3	3	14.75	2.17	65	27	32	28	3	7	NO
C - Students can understand concepts and relationships ...	3	3.25	7	0.71	67	39	21	36	13	28	NO
D - Students can understand concepts and relationships ...	3	3	7.25	1.92	88	28	12	28	0	0	NO
Total	11	11.25	44	3.61	75	32	20	30	5	16	

Table 5.2a

Alternate Depth-of-Knowledge Consistency Between Standards and Assessment as Rated by Four Reviewers (Does Not Assume Each Objective Should Have Equal Representation)

Grade 5 Science Alignment

Number of Assessment Items - 34

Standards			Hits		Level of Item w.r.t. Standard						DOK Consistency
					% Under		% At		% Above		
Title	Goals #	Objs #	M	S.D.	M	S.D.	M	S.D.	M	S.D.	
A - Students can understand and apply skills used in s ...	2	2	15	2.12	80	605	20	17	0	0	NO
B - Students can understand concepts and relationships ...	3	3	14.75	2.17	62	271	35	28	3	7	NO
C - Students can understand concepts and relationships ...	3	3.25	7	0.71	75	138	14	36	10	28	NO
D - Students can understand concepts and relationships ...	3	3	7.25	1.92	88	186	12	28	0	0	NO
Total	11	11.25	44	3.61	75	32	20	30	5	16	

This Table Is In Development And The Results May Be Invalid

Standards			Hits		Range of Objectives				Rng. of Know.	Balance Index				Bal. of Represent.
					# Objs Hit		% of Total			% Hits in Std/Ttl Hits		Index		
Title	Goals #	Objs #	Mean	S.D.	Mean	S.D.	Mean	S.D.		Mean	S.D.	Mean	S.D.	
A - Students can understand and apply skills used in s ...	2	2	15	2.12	2	0	100	0	YES	34	3	0.75	0.08	YES
B - Students can understand concepts and relationships ...	3	3	14.75	2.17	3	0	100	0	YES	33	3	0.87	0.10	YES
C - Students can understand concepts and relationships ...	3	3.25	7	0.71	3.25	0.43	100	0	YES	16	2	0.80	0.03	YES
D - Students can understand concepts and relationships ...	3	3	7.25	1.92	3	0	100	0	YES	16	4	0.78	0.05	YES
Total	11	11.25	44	3.61	2.81	0.53	100	0		25	9	0.80	0.08	

Table 5.4

Summary of Attainment of Acceptable Alignment Level on Four Content Focus Criteria as Rated by Four Reviewers
Grade 5 Science Alignment
Number of Assessment Items - 34

Standards	Alignment Criteria			
	Categorical Concurrence	Depth-of-Knowledge Consistency	Range of Knowledge	Balance of Representation
A - Students can understand and apply skills used in s ...	YES	NO	YES	YES
B - Students can understand concepts and relationships ...	YES	NO	YES	YES
C - Students can understand concepts and relationships ...	YES	NO	YES	YES
D - Students can understand concepts and relationships ...	YES	NO	YES	YES

Item Number	Comments by Reviewer
-------------	----------------------

Table 5.6
Depth-of-Knowledge Levels by Item and Reviewers
Intraclass Correlation
Grade 5 Science Alignment

Item	Rater 1	Rater 2	Rater 3	Rater 4
1	3	3	3	4
2	4	4	3	3
3	4	4	3	3
4	4	3	3	3
5	4	3	3	3
6	4	3	3	3
7	1	1	4	4
8	2	2	2	2
9	2	2	2	2
10	2	2	2	2
11	4	4	3	3
12	3	3	3	3
13	4	4	3	4
14	4	3	3	3
15	3	3	4	3
16	3	3	4	3
17	4	4	3	3
18	4	4	4	4
19	4	4	4	4
20	4	4	4	5
21	5	5	4	4
22	3	3	2	2
23	3	4	3	3
24	3	3	2	2
25	3	3	3	3
26	3	3	3	2
27	1	1	1	4
28	3	3	3	3
29	3	3	3	2
30	2	2	2	3
31	2	2	2	3
32	2	2	2	3
33	3	3	4	3
34	3	3	4	3

Intraclass Correlation: 0.8057

Pairwise Comparison: 0.5784

Item Number	Comments by Reviewer
27	no benchmark captures this item

Table 5.8
DOK Levels and Objectives Coded by Each Reviewer
Grade 5 Science Alignment

Item	DOK0	PObj0	S1Obj0	DOK1	PObj1	S1Obj1	S2Obj1	DOK2	PObj2	S1Obj2	DOK3	PObj3	S1Obj3	S2Obj3
1	3	A.1		3	A.1			3	A.1		4	A.1		
2	4	A.1	A.2	4	A.1	A.2		3	A.1		3	A.1	D.3	
3	4	A.1	A.2	4	A.1	A.2		3	A.1		3	A.1	D.3	
4	4	A.1	A.2	3	D.3	A.1		3	A.1	C.1	3	D.3		
5	4	A.1	A.2	3	D.3			3	A.1	D.3	3	D.3		
6	4	A.1	A.2	3	D.3			3	A.1	D.2	3	D.2		
7	1	A.1		1	A.1			4	A.1	A.2	4	A.2		
8	2	A.1		2	A.1			2	A.1		2	A.1		
9	2	A.1		2	A.1			2	A.1		2	A.1		
10	2	A.1		2	A.1			2	A.1		2	A.1		
11	4	D.1	D.2	4	D.1	D.2		3	D.2	D.3	3	D.1		
12	3	D.2		3	D.2			3	D.3		3	D.2		
13	4	D.3		4	A.1	D.2		3	B.3	A.1	4	D.3		
14	4			3	A.1	D.3		3	B.3	A.1	3	A.1		
15	3	B.1	B.2	3	B.3	B.2	B.1	4	B.1	B.3	3	B.3		
16	3	B.1		3	B.1			4	B.1	B.3	3	B.1		
17	4	B.2	B.1	4	B.1	B.2		3	B.2		3	B.2		
18	4	B.1		4	B.1			4	B.1	B.3	4	B.1		
19	4	B.1	B.3	4	B.1			4	B.1	B.3	4	B.1		
20	4	C.1		4	C.1			4	D.3	D.2	5	C.1		
21	5	B.3	C.2	5	B.3	C.2		4	B.3		4	B.3	C.2	
22	3	C.2		3	C.2			2	D.1	D.3	2	C.2		
23	3	C.3		4	C.3			3	C.3	C.2	3	C.3		
24	3	C.3		3	C.3			2	C.3		2	C.3		
25	3	C.3	B.1	3	C.3	B.1		3	C.3	C.1	3	B.1	C.2	C.3
26	3	C.2		3	C.2			3	A.2		2	A.1		
27	1			1	C			1	A.1		4	A.1		
28	3	A.2		3	A.2			3	A.2		3	A.2		
29	3			3				3			2			
30	2	B.3	B.2	2	B.3	B.2		2	B.3	B.2	3	B.3		
31	2	B.3	B.2	2	B.3	B.2		2	B.3		3	B.3	B.2	
32	2	B.3	B.2	2	B.3	B.2		2	B.3		3	B.3		
33	3			3				4	A.1		3	A.1		
34	3			3				4	A.2		3	A.1		

Objective Pairwise Comparison: 0.5768
Standard Pairwise Comparison: 0.7671

Low		Medium		High
0		5.176471		9

1 Identifies or states purpose of an experiment being conducted in class.	A.1	A.1	A.1	A.1				
2 Characterizes measurement of 2 objects of different size as shorter/longer	A.1	A.1	A.1	A.1	A.2	A.2	D.3	
3 Characterizes measurement of 2 objects of different weights as heavier/lighter	A.1	A.1	A.1	A.1	A.2	A.2	D.3	
4 Identifies or describes 2 items of different texture as rough/smooth	A.1	A.1	A.1	A.2	C.1	D.3	D.3	
5 Identifies or describes 2 items of different viscosity as liquid/solid	A.1	A.1	A.2	D.3	D.3	D.3		
6 Identifies or describes 2 items of different temperature as warmer/colder	A.1	A.1	A.2	D.2	D.2	D.3		
7 Independently responds to request to answer question about scientific processes	A.1	A.1	A.1	A.2	A.2			
8 Uses scientific tools of length (ruler) to measure objects	A.1	A.1	A.1	A.1				
9 Uses scientific tools of weight (scale) to measure objects	A.1	A.1	A.1	A.1				
10 Uses scientific tools of volume (teaspoons, measuring cups, beakers) to measure liquids	A.1	A.1	A.1	A.1				
11 Answers questions indicating that when balls are pushed, they roll	D.1	D.1	D.1	D.2	D.2	D.2	D.3	
12 Identifies, describes, or points to fire being a source of heat	D.2	D.2	D.2	D.3				
13 Sorts objects based on material: paper, wood, or metal	A.1	A.1	B.3	D.2	D.3	D.3		
14 Identifies safety behaviors at home, at play and at school.	A.1	A.1	A.1	B.3	D.3			
15 Answers questions about healthy eating habits	B.1	B.1	B.1	B.2	B.2	B.3	B.3	B.3
16 Identifies or answers questions about external parts of the human body like head, nose, arms, legs, hands, feet	B.1	B.1	B.1	B.1	B.3			
17 Identifies family members across 2 generations	B.1	B.1	B.2	B.2	B.2	B.2		
18 Differentiates small plants from large plants	B.1	B.1	B.1	B.1	B.3			
19 Identifies and differentiates animals that live on land from those that live in the ocean or in bodies of water	B.1	B.1	B.1	B.1	B.3	B.3		

Table 5.9
 Objectives Coded to Each Item by Reviewers
 Grade 5 Science Alignment

20 Identifies and discriminates a variety of earth materials (e.g., rocks, pebbles, and sand).	C.1	C.1	C.1	D.2	D.3				
21 Selects appropriate clothes for different weather conditions	B.3	B.3	B.3	B.3	C.2	C.2	C.2		
22 Labels weather characteristics of a given day (sunny/cloudy, warm/cold, windy, not windy)	C.2	C.2	C.2	D.1	D.3				
23 Identifies that stars are visible at night.	C.2	C.3	C.3	C.3	C.3				
24 Labels or identifies, at a minimum, "sun," "earth" and "moon" when presented with a model of the solar system.	C.3	C.3	C.3	C.3					
25 Draws or identifies pictures of earth objects like land, plants, animals, people, clouds, the sun, stars, bodies of water, mountains.	B.1	B.1	B.1	C.1	C.2	C.3	C.3	C.3	C.3
26 Selects, points to, or identifies instruments used in science, like liquid expansion or digital thermometers, barometers, weather vanes, wind gauges, rain gauges	A.1	A.2	C.2	C.2					
27 Participates in an experiment without prompting for attention	A.1	A.1	C						
28 Identifies or describes (using words or pictures) what happened after an experiment	A.2	A.2	A.2	A.2					
29 Identifies pictures of people as strangers or not strangers									
30 Follows safety rules at school	B.2	B.2	B.2	B.3	B.3	B.3	B.3		
31 Follows health rules at school (hand washing, use of tissues)	B.2	B.2	B.2	B.3	B.3	B.3	B.3		
32 Demonstrates basic hygiene skill	B.2	B.2	B.3	B.3	B.3	B.3			
33 Answers questions about important scientists depicted in age appropriate books or videos	A.1	A.1							
34 Identifies or matches pictures of male and female scientists discussed in class	A.1	A.2							

Low		Medium		High
0		11		45

A																				
A.1	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	5	5	6	6	7
	7	7	8	8	8	8	9	9	9	9	10	10	10	10	13	13	14	14	14	
	26	27	27	33	33	34														
A.2	2	2	3	3	4	5	6	7	7	26	28	28	28	28	34					
B																				
B.1	15	15	15	16	16	16	16	17	17	18	18	18	18	19	19	19	19	25	25	25
B.2	15	15	17	17	17	17	30	30	30	31	31	31	32	32						
B.3	13	14	15	15	15	16	18	19	19	21	21	21	21	30	30	30	30	31	31	31
	31	32	32	32	32															
C	27																			
C.1	4	20	20	20	25															
C.2	21	21	21	22	22	22	23	25	26	26										
C.3	23	23	23	23	24	24	24	24	25	25	25	25								
D																				
D.1	11	11	11	22																
D.2	6	6	11	11	11	12	12	12	13	20										
D.3	2	3	4	4	5	5	5	6	11	12	13	13	14	20	22					

Table 5.11

Number of Reviewers Coding an Item by Objective (Item Number: Number of Reviewers)
Grade 5 Science Alignment

Low		Medium		High									
1		2		4									
A													
A.1	1:4	2:4	3:4	4:3	5:2	6:2	7:3	8:4	9:4	10:4	13:2	14:3	26:1
	27:2	33:2	34:1										
A.2	2:2	3:2	4:1	5:1	6:1	7:2	26:1	28:4	34:1				
B													
B.1	15:3	16:4	17:2	18:4	19:4	25:3							
B.2	15:2	17:4	30:3	31:3	32:2								
B.3	13:1	14:1	15:3	16:1	18:1	19:2	21:4	30:4	31:4	32:4			
C	27:1												
C.1	4:1	20:3	25:1										
C.2	21:3	22:3	23:1	25:1	26:2								
C.3	23:4	24:4	25:4										
D													
D.1	11:3	22:1											
D.2	6:2	11:3	12:3	13:1	20:1								
D.3	2:1	3:1	4:2	5:3	6:1	11:1	12:1	13:2	14:1	20:1	22:1		

Low		Medium		High	
1		2		4	
1	Identifies or states purpose of an experiment being conducted in class.				A.1:4
2	Characterizes measurement of 2 objects of different size as shorter/longer				A.1:4 A.2:2 D.3:1
3	Characterizes measurement of 2 objects of different weights as heavier/lighter				A.1:4 A.2:2 D.3:1
4	Identifies or describes 2 items of different texture as rough/smooth				A.1:3 A.2:1 C.1:1 D.3:2
5	Identifies or describes 2 items of different viscosity as liquid/solid				A.1:2 A.2:1 D.3:3
6	Identifies or describes 2 items of different temperature as warmer/colder				A.1:2 A.2:1 D.2:2 D.3:1
7	Independently responds to request to answer question about scientific processes				A.1:3 A.2:2
8	Uses scientific tools of length (ruler) to measure objects				A.1:4
9	Uses scientific tools of weight (scale) to measure objects				A.1:4
10	Uses scientific tools of volume (teaspoons, measuring cups, beakers) to measure liquids				A.1:4
11	Answers questions indicating that when balls are pushed, they roll				D.1:3 D.2:3 D.3:1
12	Identifies, describes, or points to fire being a source of heat				D.2:3 D.3:1
13	Sorts objects based on material: paper, wood, or metal				A.1:2 B.3:1 D.2:1 D.3:2
14	Identifies safety behaviors at home, at play and at school.				A.1:3 B.3:1 D.3:1
15	Answers questions about healthy eating habits				B.1:3 B.2:2 B.3:3
16	Identifies or answers questions about external parts of the human body like head, nose, arms, legs, hands, feet				B.1:4 B.3:1
17	Identifies family members across 2 generations				B.1:2 B.2:4
18	Differentiates small plants from large plants				B.1:4 B.3:1
19	Identifies and differentiates animals that live on land from those that live in the ocean or in bodies of water				B.1:4 B.3:2
20	Identifies and discriminates a variety of earth materials (e.g., rocks, pebbles, and sand).				C.1:3 D.2:1 D.3:1
21	Selects appropriate clothes for different weather conditions				B.3:4 C.2:3
22	Labels weather characteristics of a given day (sunny/cloudy, warm/cold, windy, not windy)				C.2:3 D.1:1 D.3:1
23	Identifies that stars are visible at night.				C.2:1 C.3:4
24	Labels or identifies, at a minimum, "sun," "earth" and "moon" when presented with a model of the solar system.				C.3:4
25	Draws or identifies pictures of earth objects like land, plants, animals, people, clouds, the sun, stars, bodies of water,				B.1:3 C.1:1 C.2:1 C.3:4

Table 5.12

Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)
Grade 5 Science Alignment

mountains.				
26 Selects, points to, or identifies instruments used in science, like liquid expansion or digital thermometers, barometers, weather vanes, wind gauges, rain gauges	A.1:1	A.2:1	C.2:2	
27 Participates in an experiment without prompting for attention	A.1:2	C:1		
28 Identifies or describes (using words or pictures) what happened after an experiment	A.2:4			
29 Identifies pictures of people as strangers or not strangers				
30 Follows safety rules at school	B.2:3	B.3:4		
31 Follows health rules at school (hand washing, use of tissues)	B.2:3	B.3:4		
32 Demonstrates basic hygiene skill	B.2:2	B.3:4		
33 Answers questions about important scientists depicted in age appropriate books or videos	A.1:2			
34 Identifies or matches pictures of male and female scientists discussed in class	A.1:1	A.2:1		

Low DOK		Matched DOK		High DOK
1		2		4

A [5]:													
A.1 [4]:	1:4[3.25]	2:4[3.5]	3:4[3.5]	4:3[3.33]	5:2[3.5]	6:2[3.5]	7:3[2]	8:4[2]	9:4[2]	10:4 [2]	13:2 [3.5]	14:3 [3]	26:1 [2]
	27:2 [2.5]	33:2 [3.5]	34:1 [3]										
A.2 [5]:	2:2[4]	3:2[4]	4:1[4]	5:1[4]	6:1[4]	7:2[4]	26:1 [3]	28:4 [3]	34:1 [4]				
B [4]:													
B.1 [4]:	15:3 [3.3 3]	16:4 [3.2 5]	17:2 [4]	18:4 [4]	19:4 [4]	25:3 [3]							
B.2 [4]:	15:2 [3]	17:4 [3.5]	30:3 [2]	31:3 [2.3 3]	32:2 [2]								
B.3 [4]:	13:1 [3]	14:1 [3]	15:3 [3.3 3]	16:1 [4]	18:1 [4]	19:2 [4]	21:4 [4.5]	30:4 [2.2 5]	31:4 [2.2 5]	32:4 [2.2 5]			
C [4]:	27:1 [1]												
C.1 [4]:	4:1[3]	20:3 [4.3 3]	25:1 [3]										
C.2 [4]:	21:3 [4.6 7]	22:3 [2.6 7]	23:1 [3]	25:1 [3]	26:2 [3]								
C.3 [4]:	23:4 [3.2 5]	24:4 [2.5]	25:4 [3]										
D [5]:													
D.1 [5]:	11:3 [3.6 7]	22:1 [2]											
D.2 [5]:	6:2[3]	11:3 [3.6 7]	12:3 [3]	13:1 [4]	20:1 [4]								
D.3	2:1[	3:1[	4:2[	5:3[	6:1[	11:1	12:1	13:2	14:1	20:1	22:1		

Table 5.13

Assessment Item DOK vs Consensus DOK (Item Number: Number of Reviewers [Average DOK])

Grade 5 Science Alignment

[4]:	3]	3]	3]	3]	3]	[3]	[3]	[4]	[3]	[4]	[2]
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Level	Description	DOK
A	Students can understand and apply skills used in scientific inquiry.	5
A.1	Students can understand and apply the processes and skills of scientific inquiry.	4
A.2	Students can analyze and interpret scientific information.	5
B	Students can understand concepts and relationships in life science.	4
B.1	Students can understand structures of living things.	4
B.2	Students can understand life cycles.	4
B.3	Students can understand environmental interaction and adaptation.	4
C	Students can understand concepts and relationships in Earth/space sciences.	4
C.1	Students can understand ideas about Earth's composition and structure.	4
C.2	Students can understand changes in and around Earth.	4
C.3	Students can understand concepts relating to the universe.	4
D	Students can understand concepts and relationships in physical science.	5
D.1	Students can understand and apply concepts related to mechanics, forces, and motion.	5
D.2	Students can understand and apply the concept of energy.	5
D.3	Students can understand and identify properties and changes of matter.	4

Table 8.1

Categorical Concurrence Between Standards and Assessment as Rated by Four Reviewers

Grade 8 Science Alignment

Number of Assessment Items - 34

A. For each standard, did the items cover the most important topics you expected by the standard? If not, what topics were not assessed that should have been?

B. For each standard, did the items cover the most important performance (DOK levels) you expected by the standard? If not, what performance was not assessed?

C. Were the standards written at an appropriate level of specificity and directed towards expectations appropriate for the grade level?

D. What is your general opinion of the alignment between the standards and assessment:

iii. Needs slight improvement (3) : 75%

iv. Needs major improvement (1) : 25%

E. Comments

Standards			Level by Objective			Hits		Cat. Concurr.
Title	Goals #	Objs #	Level	# of objs by Level	% w/in std by Level	Mean	S.D.	
A - Students can understand and apply skills used in s ...	2	2.25	5	2	100	14.5	1.66	YES
B - Students can understand concepts and relationships ...	3	3	4	3	100	8.75	3.49	YES
C - Students can understand concepts and relationship ...	3	3.25	4	3	100	4.5	1.12	NO
D - Students can understand concepts and relationships ...	3	3	4 5	1 2	33 66	12.75	1.92	YES
Total	11	11.5	4 5	7 4	63 36	40.5	4.72	

Table 8.2

Depth-of-Knowledge Consistency Between Standards and Assessment as Rated by Four Reviewers (Assumes Each Objective Should Have Equal Representation)
Grade 8 Science Alignment
Number of Assessment Items - 34

Standards			Hits		Level of Item w.r.t. Standard						DOK Consistency
					% Under		% At		% Above		
Title	Goals #	Objs #	M	S.D.	M	S.D.	M	S.D.	M	S.D.	
A - Students can understand and apply skills used in s ...	2	2.25	14.5	1.66	100	0	0	0	0	0	NO
B - Students can understand concepts and relationships ...	3	3	8.75	3.49	96	11	4	11	0	0	NO
C - Students can understand concepts and relationship ...	3	3.25	4.5	1.12	65	43	35	43	0	0	NO
D - Students can understand concepts and relationships ...	3	3	12.75	1.92	85	27	15	27	0	0	NO
Total	11	11.5	40.5	4.72	86	30	14	30	0	0	

Standards			Hits		Level of Item w.r.t. Standard						DOK Consistency
					% Under		% At		% Above		
Title	Goals #	Objs #	M	S.D.	M	S.D.	M	S.D.	M	S.D.	
A - Students can understand and apply skills used in s ...	2	2.25	14.5	1.66	100	698	0	0	0	0	NO
B - Students can understand concepts and relationships ...	3	3	8.75	3.49	96	241	4	11	0	0	NO
C - Students can understand concepts and relationship ...	3	3.25	4.5	1.12	66	100	34	43	0	0	NO
D - Students can understand concepts and relationships ...	3	3	12.75	1.92	78	320	22	27	0	0	NO
Total	11	11.5	40.5	4.72	86	30	14	30	0	0	

This Table Is In Development And The Results May Be Invalid

Table 8.3

Range-of-Knowledge Correspondence and Balance of Representation Between Standards and Assessment as Rated by Four Reviewers
Grade 8 Science Alignment

Number of Assessment Items - 34

Standards			Hits		Range of Objectives				Rng. of Know.	Balance Index				Bal. of Represent.
					# Objs Hit		% of Total			% Hits in Std/Ttl Hits		Index		
Title	Goals #	Objs #	Mean	S.D.	Mean	S.D.	Mean	S.D.		Mean	S.D.	Mean	S.D.	
A - Students can understand and apply skills used in s ...	2	2.25	14.5	1.66	2.25	0.43	100	0	YES	36	3	0.70	0.10	YES
B - Students can understand concepts and relationships ...	3	3	8.75	3.49	2.75	0.43	92	14	YES	21	8	0.85	0.07	YES
C - Students can understand concepts and relationship ...	3	3.25	4.5	1.12	2.75	0.43	85	15	YES	11	2	0.81	0.04	YES
D - Students can understand concepts and relationships ...	3	3	12.75	1.92	3	0	100	0	YES	32	4	0.78	0.09	YES
Total	11	11.5	40.5	4.72	2.69	0.46	94	12		25	11	0.78	0.10	

Standards	Alignment Criteria			
	Categorical Concurrence	Depth-of-Knowledge Consistency	Range of Knowledge	Balance of Representation
A - Students can understand and apply skills used in s ...	YES	NO	YES	YES
B - Students can understand concepts and relationships ...	YES	NO	YES	YES
C - Students can understand concepts and relationship ...	NO	NO	YES	YES
D - Students can understand concepts and relationships ...	YES	NO	YES	YES

Table 8.5
Source-of-Challenge Issues by Reviewer
Grade 8 Science Alignment

Item Number	Comments by Reviewer
8	physical disability

Item	Rater 1	Rater 2	Rater 3	Rater 4
1	3	3	3	4
2	4	4	3	4
3	4	4	3	4
4	4	4	3	4
5	4	4	3	4
6	4	4	3	4
7	1	1	4	3
8	4	2	2	2
9	4	2	2	2
10	4	2	2	2
11	4	3	4	3
12	4	3	4	3
13	4	3	4	3
14	4	3	4	3
15	3	3	4	4
16	4	4	4	4
17	3	4	3	3
18	3	4	4	3
19	3	3	3	3
20	3	3	3	3
21	3	3	3	3
22	3	3	3	3
23	3	2	3	3
24	4	3	4	3
25	4	3	4	4
26	1	1	1	4
27	3	3	3	3
28	3	3	3	3
29	3	4	3	3
30	4	2	2	3
31	4	2	2	3
32	3	3	3	4
33	3	1	4	3
34	3	1	3	2

Intraclass Correlation: 0.594

Pairwise Comparison: 0.5196

Table 8.7
Notes by Reviewer
Grade 8 Science Alignment

Item Number	Comments by Reviewer
23	no bmrk
27	no bmark

<i>Item</i>	<i>DOK0</i>	<i>PObj0</i>	<i>S1Obj0</i>	<i>S2Obj0</i>	<i>DOK1</i>	<i>PObj1</i>	<i>S1Obj1</i>	<i>DOK2</i>	<i>PObj2</i>	<i>S1Obj2</i>	<i>DOK3</i>	<i>PObj3</i>	<i>S1Obj3</i>
1	3	A.1			3	A.1		3	A.1		4	A.1	
2	4	A.1	A.2		4	A.1	A.2	3	A.1		4	A.1	
3	4	A.1	A.2		4	A.2		3	A.1		4	A.1	
4	4	A.1	A.2		4	A.1		3	A.1	D.3	4	A.1	
5	4	A.1	A.2		4	A.1		3	D.3		4	D.3	
6	4	A.1	A.2		4	A.1		3	D.3	D.2	4	A.1	D.2
7	1				1	A.1		4	A.1	A.2	3	A.1	
8	4	A.1			2	A.1		2	A.1		2	A.1	
9	4	A.1			2	A.1		2	A.1		2	A.1	
10	4	A.1			2	A.1		2	A.1		2	A.1	
11	4	D.1			3	D.1	D.3	4	D.1		3	D.1	
12	4	D.3			3	D.3		4	D.3		3	D.3	
13	4	D.3			3	D.3		4	D.1		3	D.3	
14	4	D.3			3	D.3		4	D.3		3	D.3	
15	3	D.3	D.2		3	D.3		4	D.2	D.3	4	D.3	
16	4	D.3			4	C.1		4	A.1		4	D.3	
17	3	B.1			4	C.1		3	B.3		3	B.1	
18	3	D.2	B.3		4	D.2		4	C.3	D.2	3	D.2	C.3
19	3	B.1	B.2	B.3	3	B.1	B.2	3	B.2	B.3	3	B.3	B.2
20	3	B.1	B.2		3	B.1		3	B.1	B.2	3	B.1	B.3
21	3	B.3	B.1		3	C.2		3	C.2		3	B.2	
22	3	B.1			3			3	C.2		3	B.1	C.2
23	3	C.2			2	C		3	C.2	D.2	3	C.2	
24	4	C.1	D.3		3	B.1		4	C.1		3	C.1	D.3
25	4	D.1	D.2		3	D.1	D.3	4	D.1	D.2	4	D.1	
26	1				1			1	A.1		4	A.1	
27	3	A.1			3	A		3	A.2		3	A.2	
28	3	B.1			3	D.3		3	A.1		3	B.2	
29	3				4	A.2		3	A.2	D.1	3	B.1	D.1
30	4	B.3			2			2	B.1		3	B.3	
31	4	B.3			2			2	B.1		3	B.3	
32	3	C.2			3	D.1	D.3	3	C.1	D.2	4	C.2	
33	3				1			4	A.1	A.2	3	A.1	
34	3				1			3	A.1		2	A.1	

Objective Pairwise Comparison: 0.5098

Standard Pairwise Comparison: 0.7228

Table 8.9
Objectives Coded to Each Item by Reviewers
Grade 8 Science Alignment

Low		Medium		High			
2		4.764706		9			
1 Identifies or states purpose of an experiment being conducted in class.	A.1	A.1	A.1	A.1			
2 Characterizes measurement of 2 objects of different size as shorter/longer	A.1	A.1	A.1	A.1	A.2	A.2	
3 Characterizes measurement of 2 objects of different weights as heavier/lighter	A.1	A.1	A.1	A.2	A.2		
4 Identifies or describes 2 items of different texture as rough/smooth	A.1	A.1	A.1	A.1	A.2	D.3	
5 Identifies or describes 2 items of different viscosity as liquid/solid	A.1	A.1	A.2	D.3	D.3		
6 Identifies or describes 2 items of different temperature as warmer/colder	A.1	A.1	A.1	A.2	D.2	D.2	D.3
7 Independently responds to request to answer question about scientific processes	A.1	A.1	A.1	A.2			
8 Uses scientific tools of length (ruler) to measure objects	A.1	A.1	A.1	A.1			
9 Uses scientific tools of weight (scale) to measure objects	A.1	A.1	A.1	A.1			
10 Uses scientific tools of volume (teaspoons, measuring cups, beakers) to measure liquids	A.1	A.1	A.1	A.1			
11 Answers questions indicating that when balls are pushed, they roll	D.1	D.1	D.1	D.1	D.3		
12 Answers questions about water and oil not mixing	D.3	D.3	D.3	D.3			
13 Answers questions about objects floating or sinking when added to water.	D.1	D.3	D.3	D.3			
14 Answers questions about changes in color of liquids that occur when food color is added to liquids	D.3	D.3	D.3	D.3			
15 Answers questions about ice representing water that has been frozen	D.2	D.2	D.3	D.3	D.3	D.3	
16 Classifies common objects as metallic or nonmetallic	A.1	C.1	D.3	D.3			
17 Identifies and discriminates a variety of species: wild animals, plants, and humans	B.1	B.1	B.3	C.1			
18 Answers questions demonstrating knowledge that one characteristic of the sun is heat	B.3	C.3	C.3	D.2	D.2	D.2	D.2

19 Identifies or answers questions that organisms not provided with food or water will die	B.1	B.1	B.2	B.2	B.2	B.2	B.3	B.3	B.3
20 Identifies or answers questions that all organisms consume food and produce waste.	B.1	B.1	B.1	B.1	B.2	B.2	B.3		
21 Labels or identifies dinosaurs as extinct	B.1	B.2	B.3	C.2	C.2				
22 Labels or identifies fossils	B.1	B.1	C.2	C.2					
23 Labels, points to, or describes characteristics of clouds (color, shape, frequency)	C	C.2	C.2	C.2	D.2				
24 Differentiates rocks from solids	B.1	C.1	C.1	C.1	D.3	D.3			
25 Answers questions indicating that when objects are dropped, they fall to the ground	D.1	D.1	D.1	D.1	D.2	D.2	D.3		
26 Participates in an experiment without prompting for attention	A.1	A.1							
27 Identifies or describes (using words or pictures) what happened after an experiment	A	A.1	A.2	A.2					
28 Identifies or labels pictures of people exercising (being active) versus not exercising (being sedentary)	A.1	B.1	B.2	D.3					
29 Identifies or labels cause-and-effect that result in accidents (tripping over a toy leads to a sprained or broken leg)	A.2	A.2	B.1	D.1	D.1				
30 Follows health rules at school (hand washing, use of tissues)	B.1	B.3	B.3						
31 Demonstrates basic hygiene skills	B.1	B.3	B.3						
32 Answers questions or identifies that natural disasters include earthquakes, tornadoes, floods, fires, and volcanic eruptions	C.1	C.2	C.2	D.1	D.2	D.3			
33 Answers questions about important scientists depicted in age appropriate books or videos	A.1	A.1	A.2						
34 Identifies or matches pictures of male and female scientists discussed in class	A.1	A.1							

Table 8.10
Items Coded by Reviewers to Each Objective
Grade 8 Science Alignment

Low		Medium		High
0		10.125		44

A	27																			
A.1	1	1	1	1	2	2	2	2	3	3	3	4	4	4	4	5	5	6	6	6
	7	7	7	8	8	8	8	9	9	9	9	10	10	10	10	16	26	26	27	
	28	33	33	34	34															
A.2	2	2	3	3	4	5	6	7	27	27	29	29	33							
B																				
B.1	17	17	19	19	20	20	20	20	21	22	22	24	28	29	30	31				
B.2	19	19	19	19	20	20	21	28												
B.3	17	18	19	19	19	20	21	30	30	31	31									
C	23																			
C.1	16	17	24	24	24	32														
C.2	21	21	22	22	23	23	23	32	32											
C.3	18	18																		
D																				
D.1	11	11	11	11	13	25	25	25	25	29	29	32								
D.2	6	6	15	15	18	18	18	18	23	25	25	32								
D.3	4	5	5	6	11	12	12	12	12	13	13	13	14	14	14	14	15	15	15	15
	16	16	24	24	25	28	32													

Low		Medium		High
1		2		4

A	27:1												
A.1	1:4	2:4	3:3	4:4	5:2	6:3	7:3	8:4	9:4	10:4	16:1	26:2	27:1
	28:1	33:2	34:2										
A.2	2:2	3:2	4:1	5:1	6:1	7:1	27:2	29:2	33:1				
B													
B.1	17:2	19:2	20:4	21:1	22:2	24:1	28:1	29:1	30:1	31:1			
B.2	19:4	20:2	21:1	28:1									
B.3	17:1	18:1	19:3	20:1	21:1	30:2	31:2						
C	23:1												
C.1	16:1	17:1	24:3	32:1									
C.2	21:2	22:2	23:3	32:2									
C.3	18:2												
D													
D.1	11:4	13:1	25:4	29:2	32:1								
D.2	6:2	15:2	18:4	23:1	25:2	32:1							
D.3	4:1	5:2	6:1	11:1	12:4	13:3	14:4	15:4	16:2	24:2	25:1	28:1	32:1

Table 8.12

*Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)
Grade 8 Science Alignment*

Low		Medium		High	
1		2		4	
1	Identifies or states purpose of an experiment being conducted in class.				A.1:4
2	Characterizes measurement of 2 objects of different size as shorter/longer				A.1:4 A.2:2
3	Characterizes measurement of 2 objects of different weights as heavier/lighter				A.1:3 A.2:2
4	Identifies or describes 2 items of different texture as rough/smooth				A.1:4 A.2:1 D.3:1
5	Identifies or describes 2 items of different viscosity as liquid/solid				A.1:2 A.2:1 D.3:2
6	Identifies or describes 2 items of different temperature as warmer/colder				A.1:3 A.2:1 D.2:2 D.3:1
7	Independently responds to request to answer question about scientific processes				A.1:3 A.2:1
8	Uses scientific tools of length (ruler) to measure objects				A.1:4
9	Uses scientific tools of weight (scale) to measure objects				A.1:4
10	Uses scientific tools of volume (teaspoons, measuring cups, beakers) to measure liquids				A.1:4
11	Answers questions indicating that when balls are pushed, they roll				D.1:4 D.3:1
12	Answers questions about water and oil not mixing				D.3:4
13	Answers questions about objects floating or sinking when added to water.				D.1:1 D.3:3
14	Answers questions about changes in color of liquids that occur when food color is added to liquids				D.3:4
15	Answers questions about ice representing water that has been frozen				D.2:2 D.3:4
16	Classifies common objects as metallic or nonmetallic				A.1:1 C.1:1 D.3:2
17	Identifies and discriminates a variety of species: wild animals, plants, and humans				B.1:2 B.3:1 C.1:1
18	Answers questions demonstrating knowledge that one characteristic of the sun is heat				B.3:1 C.3:2 D.2:4
19	Identifies or answers questions that organisms not provided with food or water will die				B.1:2 B.2:4 B.3:3
20	Identifies or answers questions that all organisms consume food and produce waste.				B.1:4 B.2:2 B.3:1
21	Labels or identifies dinosaurs as extinct				B.1:1 B.2:1 B.3:1 C.2:2

22 Labels or identifies fossils	B.1:2	C.2:2			
23 Labels, points to, or describes characteristics of clouds (color, shape, frequency)	C:1	C.2:3	D.2:1		
24 Differentiates rocks from solids	B.1:1	C.1:3	D.3:2		
25 Answers questions indicating that when objects are dropped, they fall to the ground	D.1:4	D.2:2	D.3:1		
26 Participates in an experiment without prompting for attention	A.1:2				
27 Identifies or describes (using words or pictures) what happened after an experiment	A:1	A.1:1	A.2:2		
28 Identifies or labels pictures of people exercising (being active) versus not exercising (being sedentary)	A.1:1	B.1:1	B.2:1	D.3:1	
29 Identifies or labels cause-and-effect that result in accidents (tripping over a toy leads to a sprained or broken leg)	A.2:2	B.1:1	D.1:2		
30 Follows health rules at school (hand washing, use of tissues)	B.1:1	B.3:2			
31 Demonstrates basic hygiene skills	B.1:1	B.3:2			
32 Answers questions or identifies that natural disasters include earthquakes, tornadoes, floods, fires, and volcanic eruptions	C.1:1	C.2:2	D.1:1	D.2:1	D.3:1
33 Answers questions about important scientists depicted in age appropriate books or videos	A.1:2	A.2:1			
34 Identifies or matches pictures of male and female scientists discussed in class	A.1:2				

Table 8.13

Assessment Item DOK vs Consensus DOK (Item Number: Number of Reviewers [Average DOK])

Grade 8 Science Alignment

Low DOK		Matched DOK		High DOK
1		2		4

A	27:1												
[5]:	[3]												
A.1	1:4[	2:4[	3:3[	4:4[	5:2[	6:3[	7:3[	8:4[	9:4[	10:4	16:1	26:2	27:1
[5]:	3.25	3.75	3.67	3.75	4]	4]	2.67	2.5]	2.5]	[2.5]	[4]	[2.5]	[3]
	28:1	33:2	34:2										
	[3]	[3.5]	[2.5]										
A.2	2:2[	3:2[	4:1[	5:1[	6:1[	7:1[	27:2	29:2	33:1				
[5]:	4]	4]	4]	4]	4]	4]	[3]	[3.5]	[4]				
B													
[4]:													
B.1	17:2	19:2	20:4	21:1	22:2	24:1	28:1	29:1	30:1	31:1			
[4]:	[3]	[3]	[3]	[3]	[3]	[3]	[3]	[3]	[2]	[2]			
B.2	19:4	20:2	21:1	28:1									
[4]:	[3]	[3]	[3]	[3]									
B.3	17:1	18:1	19:3	20:1	21:1	30:2	31:2						
[4]:	[3]	[3]	[3]	[3]	[3]	[3.5]	[3.5]						
C													
[4]:	23:1												
	[2]												
C.1	16:1	17:1	24:3	32:1									
[4]:	[4]	[4]	[3.6	[3]									
			7]										
C.2	21:2	22:2	23:3	32:2									
[4]:	[3]	[3]	[3]	[3.5]									
C.3	18:2												
[4]:	[3.5]												
D													
[5]:													
D.1	11:4	13:1	25:4	29:2	32:1								
[5]:	[3.5]	[4]	[3.7	[3]	[3]								
			5]										
D.2	6:2[	15:2	18:4	23:1	25:2	32:1							
[5]:	3.5]	[3.5]	[3.5]	[3]	[4]	[3]							
D.3	4:1[	5:2[	6:1[	11:1	12:4	13:3	14:4	15:4	16:2	24:2	25:1	28:1	32:1
[4]:	3]	3.5]	3]	[3]	[3.5]	[3.3	[3.5]	[3.5]	[4]	[3.5]	[3]	[3]	[3]
						3]							

Level	Description	DOK
A	Students can understand and apply skills used in scientific inquiry.	5
A.1	Students can understand and apply the processes and skills of scientific inquiry.	5
A.2	Students can analyze and interpret scientific information.	5
B	Students can understand concepts and relationships in life science.	4
B.1	Students can understand structures of living things.	4
B.2	Students can understand life cycles.	4
B.3	Students can understand environmental interaction and adaptation.	4
C	Students can understand concepts and relationships in Earth/space sciences.	4
C.1	Students can understand ideas about Earth's composition and structure.	4
C.2	Students can understand changes in and around Earth.	4
C.3	Students can understand concepts relating to the universe.	4
D	Students can understand concepts and relationships in physical science.	5
D.1	Students can understand and apply concepts related to mechanics, forces, and motion.	5
D.2	Students can understand and apply the concept of energy.	5
D.3	Students can understand and identify properties and changes of matter.	4

Table 11.1

Categorical Concurrence Between Standards and Assessment as Rated by Four Reviewers

Grade 11 Science Alignment

Number of Assessment Items - 29

A. For each standard, did the items cover the most important topics you expected by the standard? If not, what topics were not assessed that should have been?

B. For each standard, did the items cover the most important performance (DOK levels) you expected by the standard? If not, what performance was not assessed?

C. Were the standards written at an appropriate level of specificity and directed towards expectations appropriate for the grade level?

D. What is your general opinion of the alignment between the standards and assessment:

ii. Acceptable Alignment (2) : 50%

iii. Needs slight improvement (1) : 25%

iv. Needs major improvement (1) : 25%

E. Comments

Standards			Level by Objective			Hits		Cat. Concurr.
Title	Goals #	Objs #	Level	# of objs by Level	% w/in std by Level	Mean	S.D.	
A - Students can understand and apply skills used in s ...	2	2	4 5	1 1	50 50	17.5	5.02	YES
B - Students can understand concepts and relationships ...	3	3.25	4 5	1 2	33 66	7	1.87	YES
C - Students can understand concepts and relationship ...	3	3	4 5	1 2	33 66	2	1.15	NO
D - Students can understand concepts and relationships ...	3	3.25	4 5	1 2	33 66	7.75	1.48	YES
Total	11	11.5	4 5	4 7	36 63	34.25	3.77	

Table 11.2

Depth-of-Knowledge Consistency Between Standards and Assessment as Rated by Four Reviewers (Assumes Each Objective Should Have Equal Representation)
Grade 11 Science Alignment
Number of Assessment Items - 29

Standards			Hits		Level of Item w.r.t. Standard						DOK Consistency
					% Under		% At		% Above		
Title	Goals #	Objs #	M	S.D.	M	S.D.	M	S.D.	M	S.D.	
A - Students can understand and apply skills used in s ...	2	2	17.5	5.02	90	15	10	15	0	0	NO
B - Students can understand concepts and relationships ...	3	3.25	7	1.87	92	12	8	12	0	0	NO
C - Students can understand concepts and relationship ...	3	3	2	1.15	75	20	25	20	0	0	NO
D - Students can understand concepts and relationships ...	3	3.25	7.75	1.48	80	27	17	28	3	7	NO
Total	11	11.5	34.25	3.77	86	20	13	20	1	4	

Standards			Hits		Level of Item w.r.t. Standard						DOK Consistency
					% Under		% At		% Above		
Title	Goals #	Objs #	M	S.D.	M	S.D.	M	S.D.	M	S.D.	
A - Students can understand and apply skills used in s ...	2	2	17.5	5.02	88	746	12	15	0	0	NO
B - Students can understand concepts and relationships ...	3	3.25	7	1.87	90	234	10	12	0	0	NO
C - Students can understand concepts and relationship ...	3	3	2	1.15	75	149	25	20	0	0	NO
D - Students can understand concepts and relationships ...	3	3.25	7.75	1.48	74	397	20	28	5	7	NO
Total	11	11.5	34.25	3.77	86	20	13	20	1	4	

This Table Is In Development And The Results May Be Invalid

Table 11.3

Range-of-Knowledge Correspondence and Balance of Representation Between Standards and Assessment as Rated by Four Reviewers
Grade 11 Science Alignment
Number of Assessment Items - 29

Standards			Hits		Range of Objectives				Rng. of Know.	Balance Index				Bal. of Represent.
					# Objs Hit		% of Total			% Hits in Std/Ttl Hits		Index		
Title	Goals #	Objs #	Mean	S.D.	Mean	S.D.	Mean	S.D.		Mean	S.D.	Mean	S.D.	
A - Students can understand and apply skills used in s ...	2	2	17.5	5.02	2	0	100	0	YES	50	11	0.94	0.05	YES
B - Students can understand concepts and relationships ...	3	3.25	7	1.87	2.25	1.09	67	24	YES	21	7	0.82	0.13	YES
C - Students can understand concepts and relationship ...	3	3	2	1.15	0.75	0.25	25	8	NO	6	3	0.75	0.25	YES
D - Students can understand concepts and relationships ...	3	3.25	7.75	1.48	1.75	0.83	52	19	YES	23	3	0.89	0.12	YES
Total	11	11.5	34.25	3.77	1.69	0.83	61	29		25	17	0.85	0.11	

Standards	Alignment Criteria			
	Categorical Concurrence	Depth-of-Knowledge Consistency	Range of Knowledge	Balance of Representation
A - Students can understand and apply skills used in s ...	YES	NO	YES	YES
B - Students can understand concepts and relationships ...	YES	NO	YES	YES
C - Students can understand concepts and relationship ...	NO	NO	NO	YES
D - Students can understand concepts and relationships ...	YES	NO	YES	YES

Table 11.5
Source-of-Challenge Issues by Reviewer
Grade 11 Science Alignment

Item Number	Comments by Reviewer
8	Physical disability
9	physical disability
10	physical disability

Item	Rater 1	Rater 2	Rater 3	Rater 4
1	3	3	3	3
2	4	1	3	1
3	4	3	3	3
4	4	3	3	3
5	4	3	3	3
6	4	3	3	3
7	1	4	1	4
8	2	3	2	3
9	2	3	2	3
10	2	3	2	3
11	3	3	3	4
12	4	4	3	4
13	4	5	3	3
14	4	2	2	2
15	3	3	3	3
16	3	3	3	3
17	3	4	3	4
18	3	4	3	3
19	3	4	4	4
20	2	3	3	3
21	1	1	2	1
22	3	2	3	4
23	3	3	3	3
24	4	4	3	3
25	4	4	2	3
26	4	3	2	3
27	3	3	3	3
28	3	3	3	3
29	3	3	2	3

Intraclass Correlation: 0.5833

Pairwise Comparison: 0.5115

Table 11.7
Notes by Reviewer
Grade 11 Science Alignment

Item Number	Comments by Reviewer
9	Type of scale (digital) what does this tell us?
12	No benchmark to tie with
21	no tie
22	no benchmark
23	no bmrk
24	no bmark

<i>Item</i>	<i>DOK0</i>	<i>PObj0</i>	<i>S1Obj0</i>	<i>S2Obj0</i>	<i>DOK1</i>	<i>PObj1</i>	<i>S1Obj1</i>	<i>S2Obj1</i>	<i>DOK2</i>	<i>PObj2</i>	<i>S1Obj2</i>	<i>DOK3</i>	<i>PObj3</i>	<i>S1Obj3</i>
1	3	A.1	A.2		3	A.1			3	A.1		3	A.1	
2	4	A.1	A.2		1	A.2			3	A.1	A.2	1	A.2	
3	4	A.1	A.2		3	A.2			3	A.1	A.2	3	A.2	
4	4	A.1	A.2		3	A.2			3	A.1	A.2	3	A.2	
5	4	A.1	A.2		3	D.1	D.2		3	A.1	D.2	3	D.1	A.2
6	4	A.1	A.2		3	D.1			3	A.1	D.2	3	D.1	
7	1	A.1			4	A.1	A.2		1	A.1	A.2	4	A.1	A.2
8	2	A.1			3	A.1			2	A.1	A.2	3	A.1	
9	2	A.1			3	A.1	A.2		2	A.1	A.2	3	A.1	A.2
10	2	A.1			3	A.1			2	A.1	A.2	3	A.1	A.2
11	3	D.1			3	D.1	B.2	B.3	3	D.2	A.1	4	D.1	
12	4	D.2	D.1		4	D			3	D.2		4	D.1	
13	4	D.1	A.2	D.2	5	D.1			3	A.1	D.2	3	D.1	
14	4	D.1			2	D.1	D.2		2	A.1		2	D.1	
15	3	B.1			3	B.1			3	B.2		3	B.1	
16	3	B.1			3	B.1			3	B.2		3	B.1	B.2
17	3	B.1			4	B.1	B.2		3	B.2		4	B.1	
18	3				4				3	D.2		3	C.1	
19	3	C.1			4	C.1			4	D.2		4	C.1	D.1
20	2				3	C.1			3	D.2		3	C.1	
21	1	A.1			1	B			2	A.1		1	A.1	
22	3	A.1			2	B			3	A.2		4	A.1	
23	3	B.1			3	B			3	B.2		3	B.1	
24	4	B.1			4	B			3	D.2		3	A.2	
25	4				4				2	B.3		3	B.1	
26	4				3				2	B.3		3	B.1	
27	3	C.1			3				3	D.2		3	C.1	
28	3				3				3	A.2		3	A.1	
29	3				3				2	A.2		3	A.1	

Objective Pairwise Comparison: 0.435

Standard Pairwise Comparison: 0.7378

Table 11.9
Objectives Coded to Each Item by Reviewers
Grade 11 Science Alignment

Low		Medium		High				
2		4.724138		8				
1 Identifies or states purpose of an experiment being conducted in class.	A.1	A.1	A.1	A.1	A.2			
2 Characterizes measurement of 2 objects of different size as shorter/longer	A.1	A.1	A.2	A.2	A.2	A.2		
3 Characterizes measurement of 2 objects of different weights as heavier/lighter	A.1	A.1	A.2	A.2	A.2	A.2		
4 Identifies or describes 2 items of different texture as rough/smooth	A.1	A.1	A.2	A.2	A.2	A.2		
5 Identifies or describes 2 items of different viscosity as liquid/solid	A.1	A.1	A.2	A.2	D.1	D.1	D.2	D.2
6 Identifies or describes 2 items of different temperature as warmer/colder	A.1	A.1	A.2	D.1	D.1	D.2		
7 Independently responds to request to answer question about scientific processes	A.1	A.1	A.1	A.1	A.2	A.2	A.2	
8 Uses scientific tools of length (ruler) to measure objects	A.1	A.1	A.1	A.1	A.2			
9 Uses scientific tools of weight (scale) to measure objects	A.1	A.1	A.1	A.1	A.2	A.2	A.2	
10 Uses scientific tools of volume (teaspoons, measuring cups, beakers) to measure liquids	A.1	A.1	A.1	A.1	A.2	A.2		
11 Answers questions indicating that when balls are pushed, they roll	A.1	B.2	B.3	D.1	D.1	D.1	D.2	
12 Answers questions, gestures, or labels that magnets attract (come together) and repel (move apart)	D	D.1	D.1	D.2	D.2			
13 Identifies or labels that, in a house, when a switch is turned on, the lights go on.	A.1	A.2	D.1	D.1	D.1	D.2	D.2	
14 Puts batteries into a preferred object.	A.1	D.1	D.1	D.1	D.2			
15 Identifies and discriminates a variety of species: wild animals, plants, and humans	B.1	B.1	B.1	B.2				
16 Identifies or characterizes some animals as predators to other animals	B.1	B.1	B.1	B.2	B.2			
17 Identifies or answers questions that organisms provided with food and water will grow in size	B.1	B.1	B.1	B.2	B.2			
18 Labels, points to, or describes characteristics of clouds (color, shape, frequency)	C.1	D.2						
19 Differentiates rocks from solids	C.1	C.1	C.1	D.1	D.2			
20 Labels Sun, Earth, and Moon, at a minimum, when presented a model or picture of the solar	C.1	C.1	D.2					

system				
21 Participates in an experiment without prompting for attention	A.1	A.1	A.1	B
22 Identifies or describes (using words or pictures) what happened after an experiment	A.1	A.1	A.2	B
23 Identifies or labels pictures of people exercising (being active) versus not exercising (being sedentary)	B	B.1	B.1	B.2
24 Identifies or labels cause-and-effect that result in accidents (tripping over a toy leads to a sprained or broken leg)	A.2	B	B.1	D.2
25 Follows health rules at school (hand washing, use of tissues)	B.1	B.3		
26 Demonstrates basic hygiene skills	B.1	B.3		
27 Answers questions or identifies that natural disasters include earthquakes, tornadoes, floods, fires, and volcanic eruptions	C.1	C.1	D.2	
28 Answers questions about important scientists depicted in age appropriate books or videos	A.1	A.2		
29 Identifies or matches pictures of male and female scientists discussed in class	A.1	A.2		

Table 11.10
Items Coded by Reviewers to Each Objective
Grade 11 Science Alignment

Low		Medium		High
0		8.5625		40

A																				
A.1	1	1	1	1	2	2	3	3	4	4	5	5	6	6	7	7	7	7	8	8
	8	8	9	9	9	9	10	10	10	10	11	13	14	21	21	21	22	22	28	
	29																			
A.2	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	6	7	7	7	8
	9	9	9	10	10	13	22	24	28	29										
B	21	22	23	24																
B.1	15	15	15	16	16	16	17	17	17	23	23	24	25	26						
B.2	11	15	16	16	17	17	23													
B.3	11	25	26																	
C																				
C.1	18	19	19	19	20	20	27	27												
C.2																				
C.3																				
D	12																			
D.1	5	5	6	6	11	11	11	12	12	13	13	13	14	14	14	19				
D.2	5	5	6	11	12	12	13	13	14	18	19	20	24	27						
D.3																				

Low		Medium		High
1		2		4

A													
A.1	1:4	2:2	3:2	4:2	5:2	6:2	7:4	8:4	9:4	10:4	11:1	13:1	14:1
	21:3	22:2	28:1	29:1									
A.2	1:1	2:4	3:4	4:4	5:2	6:1	7:3	8:1	9:3	10:2	13:1	22:1	24:1
	28:1	29:1											
B	21:1	22:1	23:1	24:1									
B.1	15:3	16:3	17:3	23:2	24:1	25:1	26:1						
B.2	11:1	15:1	16:2	17:2	23:1								
B.3	11:1	25:1	26:1										
C													
C.1	18:1	19:3	20:2	27:2									
C.2													
C.3													
D	12:1												
D.1	5:2	6:2	11:3	12:2	13:3	14:3	19:1						
D.2	5:2	6:1	11:1	12:2	13:2	14:1	18:1	19:1	20:1	24:1	27:1		
D.3													

Table 11.12

*Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)
Grade 11 Science Alignment*

Low		Medium		High		
1		2		4		
1	Identifies or states purpose of an experiment being conducted in class.	A.1:4	A.2:1			
2	Characterizes measurement of 2 objects of different size as shorter/longer	A.1:2	A.2:4			
3	Characterizes measurement of 2 objects of different weights as heavier/lighter	A.1:2	A.2:4			
4	Identifies or describes 2 items of different texture as rough/smooth	A.1:2	A.2:4			
5	Identifies or describes 2 items of different viscosity as liquid/solid	A.1:2	A.2:2	D.1:2	D.2:2	
6	Identifies or describes 2 items of different temperature as warmer/colder	A.1:2	A.2:1	D.1:2	D.2:1	
7	Independently responds to request to answer question about scientific processes	A.1:4	A.2:3			
8	Uses scientific tools of length (ruler) to measure objects	A.1:4	A.2:1			
9	Uses scientific tools of weight (scale) to measure objects	A.1:4	A.2:3			
10	Uses scientific tools of volume (teaspoons, measuring cups, beakers) to measure liquids	A.1:4	A.2:2			
11	Answers questions indicating that when balls are pushed, they roll	A.1:1	B.2:1	B.3:1	D.1:3	D.2:1
12	Answers questions, gestures, or labels that magnets attract (come together) and repel (move apart)	D:1	D.1:2	D.2:2		
13	Identifies or labels that, in a house, when a switch is turned on, the lights go on.	A.1:1	A.2:1	D.1:3	D.2:2	
14	Puts batteries into a preferred object.	A.1:1	D.1:3	D.2:1		
15	Identifies and discriminates a variety of species: wild animals, plants, and humans	B.1:3	B.2:1			
16	Identifies or characterizes some animals as predators to other animals	B.1:3	B.2:2			
17	Identifies or answers questions that organisms provided with food and water will grow in size	B.1:3	B.2:2			
18	Labels, points to, or describes characteristics of clouds (color, shape, frequency)	C.1:1	D.2:1			
19	Differentiates rocks from solids	C.1:3	D.1:1	D.2:1		
20	Labels Sun, Earth, and Moon, at a minimum, when presented a model or picture of the solar system	C.1:2	D.2:1			
21	Participates in an experiment without prompting for	A.1:3	B:1			

attention				
22 Identifies or describes (using words or pictures) what happened after an experiment	A.1:2	A.2:1	B:1	
23 Identifies or labels pictures of people exercising (being active) versus not exercising (being sedentary)	B:1	B.1:2	B.2:1	
24 Identifies or labels cause-and-effect that result in accidents (tripping over a toy leads to a sprained or broken leg)	A.2:1	B:1	B.1:1	D.2:1
25 Follows health rules at school (hand washing, use of tissues)	B.1:1	B.3:1		
26 Demonstrates basic hygiene skills	B.1:1	B.3:1		
27 Answers questions or identifies that natural disasters include earthquakes, tornadoes, floods, fires, and volcanic eruptions	C.1:2	D.2:1		
28 Answers questions about important scientists depicted in age appropriate books or videos	A.1:1	A.2:1		
29 Identifies or matches pictures of male and female scientists discussed in class	A.1:1	A.2:1		

Table 11.13

Assessment Item DOK vs Consensus DOK (Item Number: Number of Reviewers [Average DOK])

Grade 11 Science Alignment

Low DOK		Matched DOK		High DOK
1		2		4

A													
[5]:													
A.1	1:4[3]	2:2[3.5]	3:2[3.5]	4:2[3.5]	5:2[3.5]	6:2[3.5]	7:4[2.5]	8:4[2.5]	9:4[2.5]	10:4[2.5]	11:1[3]	13:1[3]	14:1[2]
	21:3[1.33]	22:2[3.5]	28:1[3]	29:1[3]									
A.2	1:1[3]	2:4[2.25]	3:4[3.25]	4:4[3.25]	5:2[3.5]	6:1[4]	7:3[3]	8:1[2]	9:3[2.67]	10:2[2.5]	13:1[4]	22:1[3]	24:1[3]
	28:1[3]	29:1[2]											
B	21:1[1]	22:1[2]	23:1[3]	24:1[4]									
[5]:													
B.1	15:3[3]	16:3[3]	17:3[3.67]	23:2[3]	24:1[4]	25:1[3]	26:1[3]						
B.2	11:1[3]	15:1[3]	16:2[3]	17:2[3.5]	23:1[3]								
B.3	11:1[3]	25:1[2]	26:1[2]										
[5]:													
C													
[5]:													
C.1	18:1[3]	19:3[3.67]	20:2[3]	27:2[3]									
[4]:													
C.2													
[5]:													
C.3													
[5]:													
D	12:1[4]												
[5]:													
D.1	5:2[3]	6:2[3]	11:3[3.33]	12:2[4]	13:3[4]	14:3[2.67]	19:1[4]						
[4]:													
D.2	5:2[3]	6:1[3]	11:1[3]	12:2[3.5]	13:2[3.5]	14:1[2]	18:1[3]	19:1[4]	20:1[3]	24:1[3]	27:1[3]		
[5]:													
D.3													

[5]:

Table 11.14
Group Consensus
Science, Special Education, Grade 11

Level	Description	DOK
A	Students can understand and apply skills used in scientific inquiry.	5
A.1	Students can understand and apply the processes and skills of scientific inquiry.	4
A.2	Students can analyze and interpret scientific information.	5
B	Students can understand concepts and relationships in biological science	5
B.1	Students can make inferences and predictions from data	4
B.2	Students can analyze scientific investigations	5
B.3	Student can analyze and evaluate the adequacy and accuracy of information.	5
C	Students can understand concepts and relationships in Earth/space sciences.	5
C.1	Students can make inferences and predictions from data	4
C.2	Students can analyze scientific investigations	5
C.3	Student can analyze and evaluate the adequacy and accuracy of information.	5
D	Students can understand concepts and relationships in physical science.	5
D.1	Students can make inferences and predictions from data	4
D.2	Students can analyze scientific investigations	5
D.3	Student can analyze and evaluate the adequacy and accuracy of information.	5

A. For each standard, did the items cover the most important topics you expected by the standard? If not, what topics were not assessed that should have been?

B. For each standard, did the items cover the most important performance (DOK levels) you expected by the standard? If not, what performance was not assessed?

C. Were the standards written at an appropriate level of specificity and directed towards expectations appropriate for the grade level?

D. What is your general opinion of the alignment between the standards and assessment:

iv. Needs major improvement (4) : 100%

E. Comments