In response to the greatly increased use of statewide high stakes testing, the National Research Center on the Gifted and Talented at the University of Virginia developed differentiated authentic assessments for middle school classroom use that embodied key concepts, principles, generalizations, and processes in the disciplines of English/language arts, mathematics, science, and social studies. A small scale study of the psychometric attributes of the authentic assessments was also conducted. Results provide evidence that authentic assessments can be developed to provide reliable and valid information about student learning and an accurate assessment of students' success in achieving academic learning standards, with positive responses of both teachers and students to the authentic assessment experience. Individual chapters address: (1) effects of high stakes testing; (2) content and principles for the development of authentic assessment tasks; (3) psychometric attributes of the authentic assessments; and (4) teachers' and students' responses to authentic assessments. Appendices provide five examples of authentic assessment tasks with scoring rubrics. (Contains 31 references.) (DB)
Development of Differentiated Performance Assessment Tasks for Middle School Classrooms

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August 2002
RM02160

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ABSTRACT

Educational reform efforts since the 1980s have all emphasized accountability in terms of student achievement and learning outcomes rather than process. As of this year, 49 out of 50 states (excluding Iowa) have mandated the implementation of statewide testing. As a result, high-stakes testing has become the focal point for evaluating student learning, with nearly all of the evaluative efforts dominated by the use of traditional objective assessments.

Much debate surrounds the effectiveness of using high-stakes tests as a tool for accountability purposes in terms of improved student achievement and performance. Some literature affirms that using tests for accountability purposes is one avenue for enhancing student performance. However, other literature indicates that the widespread use of statewide mandated tests negatively affects students, teachers, schools, and the quality of curriculum and instruction in the classroom.

While the use of high-stakes testing has focused teacher planning on specified, agreed upon state-level objectives, exclusive use of traditional assessment, often in the form of multiple-choice tests, has been judged to be a negative in middle school classrooms. In response to these criticisms, some measurement experts advocate the use of authentic assessments for their potential for increased validity.

The National Research Center on the Gifted and Talented (NRC/GT) at the University of Virginia undertook the development of differentiated authentic assessments for classroom use that embodied key concepts, principles, generalizations, and processes critical to understanding in the disciplines of English/language arts, mathematics, science, and social studies. In addition to the development of the assessments, a small-scale study was designed to investigate the psychometric attributes of the authentic assessments.

The results of the study provide evidence that authentic assessments for classroom purposes can be developed to provide reliable and valid information about student learning. In addition, results suggest that the authentic assessment can provide an accurate assessment of students' success in achieving academic learning standards, with positive responses of both teachers and students to the authentic assessment experience.
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EXECUTIVE SUMMARY

Introduction

There have been three waves of educational reform in America since the early 1980s. The first, prompted by the release of *A Nation at Risk* (National Commission on Excellence in Education, 1983), began during the Reagan administration. The second initiative, "Education 2000," was introduced during the administration of George H. W. Bush (1989-1993). The current venture, "No Child Left Behind," is a product of the George W. Bush administration (2001-2005). One common theme of each of these reforms has been attention to accountability in terms of student achievement and learning outcomes rather than process. Concurrently, in addressing issues of accountability, 49 out of 50 states have mandated the implementation of statewide testing over the course of the last 10 years (Council of Chief State School Officers, 2000). As a result, high-stakes testing has taken center stage in the evaluation of student learning. Nearly all of these evaluative efforts have been dominated by the use of traditional objective assessments.

Review of Related Literature

The effectiveness of using high-stakes tests, particularly in their current format, as a tool for increased accountability and improved student achievement and performance is debated in the literature. Cunningham (1991) affirms that educational testing is an obvious way to increase accountability that, in turn, is believed to be a condition likely to enhance both teacher and student performance. Using the data of the National Assessment of Educational Progress (NAEP) tests from 1978 and 1986, Frederiksen (1994) concluded that the use of minimum competency tests had desirable influences on the performance of young students. In Colorado, preliminary results from school districts suggest that uniform standards not only raise student achievement, but also close gaps between various ethnic and socioeconomic groups (Romer, 1997). However, other literature indicates that the widespread use of statewide mandated standardized tests negatively affects students, teachers, superintendents, schools, and the quality of curriculum and instruction in the classroom.

Teachers and administrators indicate that the pressure associated with standardized testing forces them to compromise their ideals about good teaching and affects their performance, behavior, and/or attitudes towards school. Meaghan and Casas (1995) confirmed that where standardized tests were common, there was a tendency for teachers to teach to the tests rather than to plan in a manner most conducive to what they felt promoted student learning and understanding.

In 1992, Brown examined the meanings that teachers assigned to state-mandated tests and the actions they initiated following their interpretation of the tests. Brown found
that teachers altered the scope and sequence of curriculum and eliminated concepts not included in the state tests, a practice known as "narrowing the curriculum." Teachers also reported reluctance to use innovative instructional strategies and mentioned the use of more traditional instructional methods based on the belief that these types of strategies would better prepare students for state tests.

Support for Authentic Assessment

While use of high-stakes testing has focused teacher planning on specified, agreed upon state-level objectives, exclusive use of traditional assessments, often in the form of pencil-and-paper, multiple-choice tests, have been judged to be a negative in middle school classrooms (Archbald, 1991; Dana & Tippins, 1993; Kennedy, 1996). Resnick describes the imbalance between how intellective work is conducted in school and in real life: "In real life one actually engages in performances that contribute to the solution of real problems, rather than producing, on demand and in artificial situations, symbolic samples of one's repertoire of developed abilities" (Resnick, 1987, cited in Gordon & Bonilla-Bowman, 1996, p. 33).

Furthermore, traditional assessments in the middle school ignore the needs of the learners in that setting. Traditional testing requires passive involvement with the subject material and, thus, is inconsistent with the developmental needs of young adolescents (Dana & Tippins, 1993).

In response to these criticisms of the traditional assessment paradigm, some measurement experts advocate for the use of authentic assessment. "Performance measures have the potential for increased validity because the performance tasks are themselves demonstrations of important learning goals rather than indirect indicators of achievement" (Resnick & Resnick, 1992, cited in Shepard et al., 1995, p. 1).

Differentiated Authentic Assessment

Differentiated authentic assessments engage students in real-world tasks and scenario-based problem-solving more than traditional measures such as multiple-choice, pencil-and-paper tests (Darling-Hammond, 1997). Differentiated authentic assessment can take the form of performances, projects, writings, demonstrations, debates, simulations, presentations, or other sorts of open-ended tasks (Cheek, 1993; Dana & Tippins, 1993; Reed, 1993). While differentiated authentic assessment is highly contextual, exemplary differentiated authentic assessments always allow students to demonstrate knowledge and skills that are worth knowing (Dana & Tippins, 1993).

While differentiation of instruction and authentic assessment are advocated by many educators for all students, the middle school environment and the particular needs of middle school students suggest particular reasons why the performance assessment approach is well-suited to middle school classrooms. Using the notion of authentic assessment, middle school students can work on tasks of value to a particular community, yielding a truer audience for authentic feedback. This approach to assessment, hence, may use community resources to enrich the learning experience, as recommended by the Carnegie Council (Carnegie Council on Adolescent Development, 1989; Kennedy, 1996).
Development of Middle School Authentic Assessments

Framework for Development

Several basic principles guided the development phase of each authentic task. First and foremost, NRC/GT focused on creating assessments that embodied key concepts, principles, generalizations, and processes critical to an understanding of the discipline(s). Another criterion applied in the development process was that each assessment reflected current understandings or best practices in the areas of motivation, cognition, learning theory, and instruction. In addition, tasks allowed multiple pathways to solutions and/or allowed for a diversity of perspectives in solutions.

Promotion of effective problem solving was another criterion of task development. Therefore, tasks were designed that, in general, required sustained work on the part of the students and at the same time allowed students to have some degree of control or choice over the actions needed to solve the problem or conduct the investigation. In some instances, students were given the responsibility for designing and carrying out their own investigations. Tasks were also developed to provide sufficient challenge for the range of academic diversity in the heterogeneous middle school classroom.

Psychometric Attributes of the Authentic Assessments

Content Validity

Once the development of the assessments and associated rubrics were completed, expert reviewers were solicited to participate in a content validation of the tasks. Content validation was carried out to ascertain the degree to which each assessment measured the objectives that it was intended to measure, as well as the extent to which the assessment was relevant and applicable to the world of work done by practicing professionals. Panelists were also asked to review each assessment for potential biases against students from economically disadvantaged environments, differing cultural/ethnic groups, and gender groups.

Inter-rater Reliability

In evaluating scores involving raters, it is important to know the extent to which different scorers agree (or disagree) on the values assigned to student responses. Inter-rater reliability is the degree to which two raters agree on the level of student performance. One way to compute an index of agreement between raters is with the Kappa coefficient. Kappa is the proportion of agreements after chance agreement between raters has been excluded (see Kraemer, 1982).

In general, the Kappa coefficients ranged from 0.55 to 0.95, indicating that ratings between two independent raters were fairly consistent with one another, despite the lack of training. This range of coefficients also suggests that the assessments elicit student responses that are reflective of the performance criteria in the scoring rubrics and that the domain criteria are clearly delineated.

Conclusions

On a national level we have a history for demanding that assessments provide quantifiable information about student learning that is both reliable and valid. However, as a nation we have failed in working with classroom teachers in developing classroom assessments that provide the same high quality information about student learning so that
the instructional process is better informed. To date, guidelines do not exist for psychometric standards for classroom assessments where teachers make judgments about student learning.

The results of this small-scale study provide evidence that authentic assessments for classroom purposes can be developed to provide reliable and valid information about student learning. In addition, the results suggest that authentic assessments can be used in middle school classrooms for accurate assessment of students' success in achieving academic learning standards.
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There have been three waves of educational reform in America since the early 1980s. The first, prompted by the release of *A Nation at Risk* (National Commission on Excellence in Education, 1983), began during the Reagan administration. The second initiative, "Education 2000," was introduced during the administration of George H. W. Bush (1989-1993). The current venture, "No Child Left Behind," is a product of the George W. Bush administration (2001-2005). One common theme of each of these reforms has been attention to accountability in terms of student achievement and learning outcomes rather than process. Concurrently, in addressing issues of accountability, 49 (excluding Iowa) out of 50 states have mandated the implementation of statewide testing over the course of the last 10 years (Council of Chief State School Officers, 2000). As a result, high-stakes testing has taken center stage in the evaluation of student learning. Nearly all of these evaluative efforts have been dominated by the use of traditional objective assessments.

**Effects of High-stakes Testing**

The effectiveness of using high-stakes tests, particularly in their current format, as a tool for increased accountability and improved student achievement and performance is debated in the literature. Cunningham (1991) affirms that educational testing is an obvious way to increase accountability that, in turn, is believed to be a condition likely to enhance both teacher and student performance. Several sources (e.g., Mathews, 2000; Olson, 2001) provide evidence of increased student performance brought about by state testing. Using the data of the National Assessment of Educational Progress (NAEP) tests from 1978 and 1986, Frederiksen (1994) concluded that the use of minimum competency tests (MCTs) had desirable influences on the performance of young students. In Colorado, preliminary results from school districts suggest that uniform standards not only raise student achievement, but also close gaps between various ethnic and socioeconomic groups (Romer, 1997).

However, other literature indicates that the widespread use of statewide mandated standardized tests negatively affects students, teachers, superintendents, schools, and the quality of curriculum and instruction in the classroom. The analysis of data from NAEP suggest that an overemphasis on minimum competencies might prevent students from learning the skills associated with higher order thinking (Frederiksen, 1994).

Teachers and administrators indicate that the pressure associated with standardized testing forces them to compromise their ideals about good teaching and affects their performance, behavior, and/or attitudes towards school. Frederiksen (1994) expressed concern that "the state mandated use of minimum competency tests (MCTs) has influenced many schools to 'teach for the test'—even to put aside the curriculum and lesson plans in order to prepare students for the MCTs" (p. 1). Meaghan and Casas (1995) confirmed that where standardized tests were common, there was a tendency for teachers to teach to the
tests, rather than to plan in a manner most conducive to what they felt promoted student learning and understanding. A study sponsored by the National Science Foundation (NSF) found that standardized testing influences instruction, primarily negatively (Rothman, 1992, cited in Meaghan & Casas, 1995). Half of the teachers surveyed taught test taking skills, diverting energy from teaching and studying to identifying and preparing for items likely to be on the tests to cover only state test content and raise test scores (Meaghan & Casas, 1995).

Herman and Golan1 (1990) also sought to determine if accountability pressures drive schools to narrow their curriculum at the cost of broader student learning. In addition, the researchers were interested in determining differences, if they existed, between districts serving predominantly economically disadvantaged students and districts serving predominantly advantaged students. Teachers reported that testing substantially influenced their instructional planning. Specifically, teachers reported devising instructional plans that included all or most of the test content and test objectives. In addition, teachers reported adjusting the curriculum sequence based on what was included on the tests. The authors also reported that low socioeconomic status (SES) schools were more influenced by testing than high SES schools. That is, the arithmetic means were higher for teachers who were located in low SES schools than those teachers located in high SES schools.

Shepard and Dougherty (1991) furthered the study conducted by Herman and Golan (1990) by surveying third through sixth grade teachers in two high-stakes testing districts on their perceptions of the influences of testing on their teaching. Seventy-five percent of the teachers reported giving greater emphasis to basic skills instruction, vocabulary lists, word recognition skills, and paper-and-pencil computation than they would if there were no state mandated tests. Further, content that was not a focus of the tests clearly suffered. Fifty percent of the teachers reported giving less emphasis to subjects not tested.

In 1992, Brown examined the meanings that teachers assigned to state-mandated tests and the actions that they initiated following their interpretation of the tests. Brown found that teachers altered the scope and sequence of curriculum and eliminated concepts that were not included in the state tests, a practice known as "narrowing the curriculum." Teachers also reported reluctance to use innovative instructional strategies and mentioned the use of more traditional instructional methods based on the belief that these types of strategies would better prepare students for state tests.

Other data indicate that when test scores are overemphasized, the teacher-student relationship becomes adversarial, with the teacher viewed by the students as an opponent or judge rather than as an advocate (Graves, 1983; Meaghan & Casas, 1995). Finally, negative impacts on teachers were noted by Lutz and Maddirala (1990) in a study of the effect of certain Texas reform policies on teacher burnout. They found that about approximately 9% of teacher burnout was attributable to state mandated tests. The researchers also found that teachers appeared to be coping with these tests by teaching to the test, resulting in a perceived loss of control over their own professional lives.

Advocacy for Authentic Assessment/Performance Assessment

While use of high-stakes testing has focused teacher planning on specified, agreed upon state-level objectives, exclusive use of traditional assessments, often in the form of

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1 Percentages of teachers reporting particular practices were not reported in the manuscript. However, means and standard deviations were reported.
pencil-and-paper, multiple-choice tests, have been judged to be a negative in the middle school classrooms (Archbald, 1991; Dana & Tippins, 1993; Kennedy, 1996). Critics of these traditional forms of assessment argue that "standardized, multiple-choice tests have definite limitations, are overused and over-interpreted, and are unlikely to help schools achieve the reform goals" (Archbald, 1991, p.1). While best practices in the middle school advocate teaching conceptually and assessing student understanding of concepts, traditional standardized tests fail to do so. Cheek (1993) argues that traditional test items that test core understanding of disciplines are often discarded because they fail to discriminate among test-takers. Rather, questions that deal with peripheral details or sub-skills do a better job of discriminating among students, and are therefore the questions selected for inclusion on traditional standardized tests. Others maintain that traditional assessments are incompatible with the genuine knowledge, skills, and dispositions of disciplines (Cheek, 1993; Dana & Tippins, 1993; Gordon & Bonilla-Bowman, 1996). Further, Dana and Tippins (1993) argue that these tests cannot assess the extent to which a student has mastered the entire body of knowledge surrounding a concept, only the information tested in the selected items, nor do they provide rich information about the multifaceted thinking necessary for complex problem solving. Resnick describes the imbalance between how intellectual work is conducted in school and in real life: "In real life one actually engages in performances that contribute to the solution of real problems, rather than producing, on demand and in artificial situations, symbolic samples of one's repertoire of developed abilities" (Resnick, 1987, cited in Gordon & Bonilla-Bowman, 1996, p. 33).

Furthermore, traditional assessments in the middle school ignore the needs of the learners in that setting. Traditional testing requires passive involvement with the subject material and thus, is inconsistent with the developmental needs of young adolescents (Dana & Tippins, 1993). In short, traditional assessment is increasingly being viewed as insensitive to differences among learners and nonsynchronous with optimal learning conditions (Gordon & Bonilla-Bowman, 1996; Kennedy, 1996).

In response to these criticisms of the traditional assessment paradigm, some measurement experts advocate for the use of authentic assessment. "Performance measures have the potential for increased validity because the performance tasks are themselves demonstrations of important learning goals rather than indirect indicators of achievement" (Resnick & Resnick, 1992, cited in Shepard et al., 1995, p. 1).

**Characteristics of Differentiated Authentic Assessment**

Differentiated authentic assessments, often called performance-based assessments, engage students in real-world tasks and scenario-based problem-solving more than traditional measures, such as multiple-choice, pencil-and-paper tests (Darling-Hammond, 1997). Performance-based tasks are largely open-ended and often can be answered using multiple approaches (Reed, 1993). For maximum benefit, these tasks should be relevant and meaningful to students (Henderson & Karr-Kidwell, 1998). Differentiated authentic assessment can take the form of performances, projects, writings, demonstrations, debates, simulations, presentations, or other sorts of open-ended tasks (Cheek, 1993; Dana & Tippins, 1993; Reed, 1993). While differentiated authentic assessment is highly contextual, exemplary differentiated authentic assessments always allow students to demonstrate knowledge and skills that are worth knowing (Dana & Tippins, 1993), and they:

1. are [focused on content that is] essential, focusing on the big ideas or concepts rather than trivial micro-facts or specialized skills,
2. are in-depth in that they lead to other problems and questions,
3. are feasible and can be done easily and safely within a school and classroom,
4. focus on the ability to produce a quality product or performance, rather than a single right answer,
5. promote the development and display of student strengths and expertise—the focus is on what the student knows,
6. have criteria that are known, understood and negotiated between the teacher and student before the assessment begins,
7. provide multiple ways in which students can demonstrate they have met the criteria, allowing multiple points of view and multiple interpretations,
8. require scoring that focuses on the essence of the task and not what is easiest to score. (p. 4)

Rationale for Differentiated Authentic Assessment in the Middle School

While differentiation of instruction and authentic assessment are advocated by many educators for all students, the middle school environment and the particular needs of middle school students suggest particular reasons why the performance assessment approach is well-suited to middle school classrooms. For example, the Carnegie Council on Adolescent Development (1989) calls for schools to:

1. create small communities for learning where stable, close, mutually respectful relations with adults and peers are considered fundamental for intellectual development and personal growth,
2. teach a core academic program that results in students who are literate, including in the sciences, and who know how to think critically, lead a healthy life, behave ethically, and assume the responsibilities of citizenship in a pluralistic society,
3. ensure success for all students through the elimination of tracking by achievement level and promotion of cooperative learning, flexibility,
4. connect schools with communities which together share responsibility for each middle grade students' success, through identifying service opportunities in the community, establishing partnerships and collaborations to ensure students' access to health and social services, and opportunities for constructive after-school activities. (p. 9)

This call for action from the Carnegie Council is consistent with the implementation of differentiated authentic assessment in the middle school. Using the notion of performance assessment, middle school students can work on tasks of value to a particular community, yielding a truer audience for authentic feedback. This approach to assessment, hence, may use community resources to enrich the learning experience, as recommended by the Carnegie Council (Carnegie Council on Adolescent Development, 1989; Kennedy, 1996).

Differentiated authentic assessment can also improve teaching and learning in the middle school by preserving the integrated, complex nature of learning. In this approach, students recall learned information and utilize needed skills, but do so in the context of a real-world scenario, requiring the production of new ideas in particular contexts and forms and for particular purposes. This process of problem solving and solution finding requires and fosters a deep understanding of the discipline as well as integration of knowledge and skills across disciplines, a basic tenet of curriculum construction in the middle school (Archbald, 1991).

In differentiated authentic assessment classrooms, teachers serve as facilitators, rather than directors of learning, and the learning process is seen by students as important and linked to skills used in the real world (Lines, 1994). The premise underlying authentic
assessment is that teachers create curricular experiences targeting specific performance
skills and, as a result, they gain richer instructional information about students useful for
modifying instruction for the varied needs of learners (Darling-Hammond, 1997).

Differentiated authentic assessment may also have the potential to narrow the
performance gap between various cultures and therefore be more equitable in the
assessment of various cultural groups, another goal of the middle school movement (Egan
& Gardner, 1992; Gordon & Bonilla-Bowman, 1996). For example, the cultural
performance gap seems to narrow when students are engaged in activities that provide
various linguistic interpretation options, use materials familiar to the students, and build in
engaging problem-solving tasks (Egan & Gardner, 1992; Gardner, 1993; Gordon &
Bonilla-Bowman, 1996), characteristics associated with well-designed authentic
assessments.

The Context and Principles for the Development of Authentic
Assessment Tasks

The development of a resource bank of technically reliable and valid performance
assessment tasks discussed in this report was part of a more comprehensive study of the
implementation of differentiated instruction and authentic assessment in middle schools.
The information and materials that follow are the result of a 5-year effort to develop
authentic assessments for middle school classrooms in the content areas of
English/language arts, social studies/history, mathematics, and science. Each task was
developed in response to the specific state standards in place in one or more of the three
states involved in the larger study and reflected specific goals that were the focus of
instruction during the time of the project intervention. Hence, development of these
authentic assessments for measuring deep understanding in the four disciplines was based
on the importance of documenting student classroom learning and informing instruction,
not on large-scale, high-stakes educational accountability.

The assessment tasks were developed for consistency with several of the learner-
centered psychological principles that are aligned with more than a century of research on
teaching and learning (Alexander & Murphy, 1994). The specific principles that served as a
framework for the assessments included:

- Principle 1—The nature of learning process: Learning is a process of
discovering and constructing meaning from information and experience.
- Principle 2—Goals of the learning process: The learner seeks to create
meaningful, coherent representations of knowledge.
- Principle 3—The construction of knowledge: The learner links new
information with existing and future-oriented knowledge.
- Principle 4—Higher-order thinking: Higher-order strategies facilitate
creative and critical thinking and the development of expertise.
- Principle 5—Characteristics of motivation-enhancing learning tasks:
Curiosity, creativity, and higher-order thinking are stimulated by relevant,
authentic learning tasks of optimal difficulty and novelty for each student.
- Principle 6—Individual differences in learning: Although basic principles of
learning, motivation, and effective instruction apply to all learners, learners
have different capabilities and preferences for learning mode and strategies.
Framework for Development

Authentic Tasks

Several basic principles guided the development phase of each authentic task. First and foremost, The National Research Center on the Gifted and Talented (NRC/GT) staff focused on creating assessments that embodied key concepts, principles, generalizations, and processes critical to an understanding in the discipline(s). Because of this focus, content standards from state and national frameworks that were reflective of the understandings and applications of big ideas and core themes of the disciplines were the primary assessment target, although processes and attitudes, at times, were included.

Another criterion applied in the development process was that each assessment reflected current understandings or best practices in the areas of motivation, cognition, learning theory, and instruction. To actively engage students in their own learning, tasks were designed around "real-life" situations and required students to make connections and forge relationships between prior knowledge and skills. In addition, tasks allowed multiple pathways to solutions and/or allowed for a diversity of perspectives in solutions.

Promotion of effective problem solving was another criterion of task development. Therefore, tasks were designed that, in general, required sustained work on the part of the students and at the same time allowed students to have some degree of control or choice over the actions needed to solve the problem or conduct the investigation. In some instances, students were given the responsibility for designing and carrying out their own investigations.

Tasks were also developed to provide sufficient challenge for the range of academic diversity in the heterogeneous middle school classroom. Using the work of NRC/GT staff member Carol A. Tomlinson (2001), authentic assessments were differentiated using "The Equalizer." Beginning with the presumption that all students' tasks must relate to the same essential skills and objectives, a core, on-grade level task was designed around the specific standards to be assessed and then modifications were made to reflect advanced understanding of the major concepts, principles, generalizations, and skills for more advanced learners or to provide the scaffolding necessary to guide struggling learners to successful completion of the task. Examples of the type of task differentiation for struggling learners included a more structured context (solutions, decisions, etc.), tasks based on only single facets (applications, approaches, etc.), or less independence in planning, designing, or monitoring. In contrast, tasks for advanced-level students required depth and complexity of content understanding, were less structured, required integration of multiple facets of a discipline or across disciplines, and/or allowed for greater independence.

Clear communication of student responsibilities and requirements was also a critical component of task development. To assess what students knew, understood, and were able to do, clear delineation of student roles and responsibilities as well as clearly defined performance criteria in the scoring rubric were part of each assessment task with only subtle variations across the varied levels of the scoring rubric.

Scoring Rubrics

Rubrics were designed to yield information about students' strengths and weaknesses relative to the content and processes being assessed. To provide teachers with rich, detailed instructional information, rubrics were designed for analytic scoring, where student performance on specific task elements (domains) were assessed, with the overall performance on the assessment being the summation of the domains.
The development of each scoring rubric began with revisiting the purpose of the assessment and the objectives or standards that the authentic assessment was designed to assess. Once the purpose of the assessment was reviewed, elements of the performance to be evaluated were identified (domains). Characteristics or criteria were identified that determined each score point for each domain. These score points translated into levels of performance, with the highest level developed to reflect the work of practicing professionals. This process was repeated for each domain identified for the assessment.

Sample performance assessments created following these guidelines are found in Appendices A-E. A total of 37 are currently in the bank of performance assessments.

Psychometric Attributes of the Authentic Assessments

The numbers of performance assessments implemented by teachers, and consequently provided student samples and data on outcomes of the scoring process were limited. However, the process did provide a rich source of information of how samples of students in heterogeneous classrooms performed on practical authentic assessments and the psychometric qualities of those. The following section describes those characteristics that could be assessed with the tasks.

Content Validity

Once the development of the assessments and associated rubrics were completed, expert reviewers were solicited to participate in a content validation of the tasks developed. Content validation was carried out to ascertain the degree to which each assessment measured the objectives that it was intended to measure, as well as the extent to which the assessment was relevant and applicable to the world of work done by practicing professionals. Panelists were also asked to review each assessment for potential biases against students from economically disadvantaged environments, differing cultural/ethnic groups, and gender groups.

A total of 46 individuals reviewed the assessment tasks. Nineteen panelists were gifted education specialists or curriculum coordinators in school districts, 18 were state departments of education officials, 5 were middle school teachers, and 4 were university professors. Individuals reviewed only those tasks that were in content areas with which they were familiar. Modifications to the tasks and/or rubrics were made based on the assimilation of reviewers' comments. In general, modifications suggested by the reviewers were clarifications of terms and directions for students and teachers.

Inter-rater Reliability

In evaluating scores involving raters, it is important to know the extent to which different scorers agree (or disagree) on the values assigned to student responses. Inter-rater reliability is the degree to which two raters agree on the level of student performance. One way to compute an index of agreement between raters is with the Kappa coefficient. Kappa is the proportion of agreements after chance agreement between raters has been excluded (see Kraemer, 1982). Using SPSS for Windows™ 10.1.4, Kappa coefficient was computed through the CROSSTABS sub-routine.

Fables and Folktales (Appendix A), Wall Street Decisions (Appendix B), You Can't Convince Me (Appendix C), Creature Classification (Appendix D), and Where in the World (Appendix E) were five assessment tasks completed by students on which Kappa was
computed. Each assessment was differentiated by student readiness level or interest but data were not collected on each prompt. Participating teachers made the decision as to which prompt or prompts would be given to students based on their particular classroom. Fables and Folktales was completed by one seventh-grade classroom, Wall Street Decisions was completed by two seventh-grade classrooms, You Can't Convince Me was completed by a seventh-grade classroom, and Creature Classifications was completed by a third-grade classroom and a seventh-grade classroom. All classrooms were located in states that had a state-testing program based predominantly on traditional type assessments.

The student examples provided the data for assessing inter-rater reliability. For Fables and Folktales and one set of students completing Wall Street Decisions, the classroom teacher and an NRC/GT staff member served as the two raters; two NRC/GT staff members were the raters for You Can't Convince Me, Creature Classification, and Where in the World, as well as one classroom's products from Wall Street Decisions. Tables 1-7 display the reliability results for each assessment.

Fables and Folktales

The Fables and Folktales (Appendix A) assessment task invites students to develop an original fable or folktale within the context of a storytelling festival in the year 2060. Students are assessed across six domains: purpose, sequencing, symbolism, word usage, expressiveness, and timeliness.

Eight student responses to this assessment were evaluated. Table 1 indicates that the inter-rater reliability of the domains ranged from 0.37 to 0.60, with exact agreement on the ratings between the teacher and NRC/GT staff ranging from 38% to 75%. The word usage domain had the greatest exact agreement (75%) with also the highest reliability coefficient (0.60). Kappa could not be computed for two domains, Sequencing and Symbolism, because ratings within each set of raters (i.e., teachers or NRC/GT staff) did not vary, that is, all raters were in perfect agreement in their ratings. Using guidelines suggested by Landis and Koch (1977), the rater reliability estimates ranged from fair (.37) to moderate (.60).

Table 1

Independent Ratings (Teacher and NRC/GT) for Fables and Folktales

<table>
<thead>
<tr>
<th>DOMAIN*</th>
<th>Kappa</th>
<th>% Exact of Agreement</th>
<th>% Adjacent of Agreement</th>
<th>Teacher Rating</th>
<th>NRC/GT Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purpose</td>
<td>.37</td>
<td>50</td>
<td>25</td>
<td>2.6</td>
<td>1.9</td>
</tr>
<tr>
<td>Sequencing</td>
<td>**</td>
<td>38</td>
<td>38</td>
<td>3.0</td>
<td>2.1</td>
</tr>
<tr>
<td>Symbolism</td>
<td>**</td>
<td>38</td>
<td>13</td>
<td>3.0</td>
<td>1.9</td>
</tr>
<tr>
<td>Word Usage</td>
<td>.60</td>
<td>75</td>
<td>25</td>
<td>2.6</td>
<td>2.4</td>
</tr>
<tr>
<td>Expressiveness</td>
<td>.49</td>
<td>63</td>
<td>25</td>
<td>2.0</td>
<td>2.5</td>
</tr>
</tbody>
</table>

* domain scale range = 1 to 3
** could not be computed because domain ratings were constant
Wall Street Decisions

Wall Street Decisions (Appendix B) assesses the degree to which students understand and can apply mathematical concepts and calculations, such as estimation; rate of change; and percent, decimal, fraction conversions, to make decisions about stock purchases, as well as to explain changes in the stock market. There are three levels of the prompt: one designed for struggling learners, one designed for on-grade level learners, and one designed for students above grade level in mathematical understanding. All students are assessed in the domains of support for conclusions, strategy and calculations, supporting materials, justification, and presentation.

Four student responses to prompt 1 of the assessment were evaluated. Table 2 indicates that the inter-rater reliability of the domains for prompt 1 (struggling learners) ranged from 0.41 to 1.0, with exact agreement on the ratings between the teacher and NRC/GT staff ranging from 25% to 100%. The support for conclusions domain had the highest exact agreement rate (100%) with also the highest reliability coefficient (1.0). Based on guidelines provided by Landis and Koch (1977), estimates of rater reliability were in the substantial range (.60-.80) in all domains, except for the domains of supporting materials and presentation that were considered to be moderate (.40-.59).

Seven student responses were evaluated for prompt 2 of the assessment that was designed for on-grade level learners. For prompt 2, the inter-rater reliability of the domains ranged from .53 to .86 (Table 3), with the supporting materials and justification domains having the highest exact agreement rate (71%). As estimates of rater reliability, using previously indicated guidelines, the Kappa coefficients were considered moderate to substantial for all of the domains.

Table 2
Independent Ratings (Teacher and NRC/GT) for Wall Street Decisions—Prompt 1**

<table>
<thead>
<tr>
<th>DOMAIN*</th>
<th>Kappa</th>
<th>% Exact of Agreement</th>
<th>% Adjacent of Agreement</th>
<th>Teacher Rating</th>
<th>NRC/GT Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Support for Conclusions</td>
<td>1.0</td>
<td>100</td>
<td>-</td>
<td>3.3</td>
<td>3.3</td>
</tr>
<tr>
<td>Strategy and Calculations</td>
<td>.78</td>
<td>75</td>
<td>25</td>
<td>2.8</td>
<td>2.5</td>
</tr>
<tr>
<td>Supporting Materials</td>
<td>.47</td>
<td>25</td>
<td>25</td>
<td>3.5</td>
<td>3.0</td>
</tr>
<tr>
<td>Justification</td>
<td>.87</td>
<td>25</td>
<td>50</td>
<td>3.3</td>
<td>2.3</td>
</tr>
<tr>
<td>Presentation</td>
<td>.41</td>
<td>50</td>
<td>25</td>
<td>3.0</td>
<td>3.5</td>
</tr>
</tbody>
</table>

* domain scale range = 1 to 4
** designed for struggling learners
Table 3

Independent Ratings (Teacher and NRC/GT) for Wall Street Decisions—Prompt 2**

<table>
<thead>
<tr>
<th>DOMAIN*</th>
<th>Kappa</th>
<th>% Exact of Agreement</th>
<th>% Adjacent of Agreement</th>
<th>Teacher Rating</th>
<th>NRC/GT Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Support for Conclusions</td>
<td>.69</td>
<td>57</td>
<td>29</td>
<td>3.1</td>
<td>2.6</td>
</tr>
<tr>
<td>Strategy and Calculations</td>
<td>.71</td>
<td>57</td>
<td>29</td>
<td>2.6</td>
<td>2.0</td>
</tr>
<tr>
<td>Supporting Materials</td>
<td>.86</td>
<td>71</td>
<td>14</td>
<td>2.7</td>
<td>2.7</td>
</tr>
<tr>
<td>Justification</td>
<td>.71</td>
<td>71</td>
<td>29</td>
<td>2.6</td>
<td>2.0</td>
</tr>
<tr>
<td>Presentation</td>
<td>.53</td>
<td>29</td>
<td>71</td>
<td>2.3</td>
<td>2.6</td>
</tr>
</tbody>
</table>

* domain scale range = 1 to 4
** designed for on-grade level learners

The Kappa coefficients for the domains in prompt 3 (Table 4) could not be computed because of the lack of variability within the teacher ratings and within the NRC/GT staff ratings (i.e., domain ratings were constant within the set of teacher ratings and domain ratings were constant within the set of NRC/GT staff ratings). Three students responded to this particular level of the assessment task.

Table 4

Independent Ratings (Teacher and NRC/GT) for Wall Street Decisions—Prompt 3

<table>
<thead>
<tr>
<th>DOMAIN*</th>
<th>% Exact of Agreement</th>
<th>% Adjacent of Agreement</th>
<th>Teacher Rating</th>
<th>NRC/GT Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Support for Conclusions</td>
<td>33</td>
<td>33</td>
<td>4.0</td>
<td>3.0</td>
</tr>
<tr>
<td>Strategy and Calculations</td>
<td>0</td>
<td>50</td>
<td>4.0</td>
<td>3.0</td>
</tr>
<tr>
<td>Supporting Materials</td>
<td>50</td>
<td>50</td>
<td>4.0</td>
<td>2.3</td>
</tr>
<tr>
<td>Justification</td>
<td>0</td>
<td>50</td>
<td>4.0</td>
<td>2.7</td>
</tr>
<tr>
<td>Presentation**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* domain scale range = 1 to 4
** did not have presentation ratings from NRC/GT staff because staff were not present for student oral presentation
You Can't Convince Me

The purpose of You Can't Convince Me (Appendix C) is to engage students in thinking about, discussing, and identifying the essential elements of persuasive rhetoric. In addition, students are given the opportunity to practice communicating in a clear, concise manner to a specific audience and in a specific format. Students also engage in the process of preliminary instrument design. Students are assessed in the domains of essential elements, clarity of descriptors, presentation, and peer evaluation.

Nine student responses to prompt 1 of this assessment were evaluated. Table 5 indicates that the inter-rater reliability of the domains ranged from .42 (presentation domain) to .81 (essential elements domain), with exact agreement on the ratings between the teacher and NRC/GT staff, ranging from a low of 22% (checklist and clarity of descriptions domains) to a high of 89% (essential elements domain). As estimates of rater reliability, using previously indicated guidelines, the Kappa coefficients were considered moderate to substantial for all of the domains.

Creature Classifications

Creature Classifications (Appendix D) was designed to assess the proficiency of students in developing classification systems for biological organisms. Students are assessed in the areas of introduction, "bug selection," thoroughness, and ease of use/quality of classification.

Fifteen student responses were evaluated for this assessment. Table 6 indicates that the inter-rater reliability of the assessment domains ranged from .55 (appearance domain) to .95 (bug selection and ease of use domains), with the exact agreement rate ranging from 40% (appearance) to 93% (bug selection and ease of use domains). Landis and Koch's (1977) guidelines for rater reliability indicated that two of the domains, Bug Selection and Ease of Use, were almost perfect (.80-1.0) with the other two domains, Thoroughness and Appearance, substantial (.61) to moderate (.55), respectively.

Table 5
Independent Ratings (Teacher and NRC/GT) for You Can't Convince Me—Prompt 1

<table>
<thead>
<tr>
<th>DOMAIN*</th>
<th>Kappa</th>
<th>% Exact of Agreement</th>
<th>% Adjacent of Agreement</th>
<th>Teacher Rating</th>
<th>NRC/GT Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Essential Elements</td>
<td>.81</td>
<td>89</td>
<td>11</td>
<td>2.6</td>
<td>2.7</td>
</tr>
<tr>
<td>Checklist</td>
<td>.59</td>
<td>22</td>
<td>56</td>
<td>2.4</td>
<td>1.7</td>
</tr>
<tr>
<td>Clarity of Descriptions</td>
<td>.78</td>
<td>22</td>
<td>56</td>
<td>2.4</td>
<td>1.4</td>
</tr>
<tr>
<td>Presentation</td>
<td>.42</td>
<td>33</td>
<td>44</td>
<td>2.1</td>
<td>1.8</td>
</tr>
</tbody>
</table>

* domain scale range = 1 to 3
Table 6

Independent Ratings (Teacher and NRC/GT) for Creature Classifications

<table>
<thead>
<tr>
<th>DOMAIN*</th>
<th>Kappa</th>
<th>% Exact of Agreement</th>
<th>% Adjacent of Agreement</th>
<th>Teacher Rating</th>
<th>NRC/GT Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bug Selection</td>
<td>.95</td>
<td>93</td>
<td>7</td>
<td>2.9</td>
<td>3.0</td>
</tr>
<tr>
<td>Thoroughness</td>
<td>.61</td>
<td>73</td>
<td>20</td>
<td>2.0</td>
<td>2.2</td>
</tr>
<tr>
<td>Ease of Use</td>
<td>.95</td>
<td>93</td>
<td>7</td>
<td>1.9</td>
<td>1.9</td>
</tr>
<tr>
<td>Appearance</td>
<td>.55</td>
<td>40</td>
<td>47</td>
<td>2.5</td>
<td>2.2</td>
</tr>
</tbody>
</table>

* domain scale range = 1 to 3

Where in the World?

The Where in the World? (Appendix E) assessment task is designed to measure students' understanding of key cultural elements of countries and regions around the world. Students are assessed in the areas of accuracy of information, thoroughness of coverage, validity of choices, appeal of display, and supporting materials.

Forty-one student responses to the assessment were evaluated. Inter-rater reliability of the domains (Table 7) ranged from .10 (supporting materials) to .72 (thoroughness), with the exact agreement rate ranging from a low of 57% (validity of choices and appeal of display domains) to a high of 83% (supporting materials domain). Using previously established guidelines for judging the Kappa coefficient as an indicator of rater reliability, the supporting materials domain reliability was only slight (0-.2), the validity of choices domain was moderate (.40-.59), and the thoroughness and appeal of display was substantial (.60-.80).

Table 7

Independent Ratings (Teacher and NRC/GT) for Where in the World—Prompt 2

<table>
<thead>
<tr>
<th>DOMAIN*</th>
<th>Kappa</th>
<th>% Exact of Agreement</th>
<th>% Adjacent of Agreement</th>
<th>Teacher Rating</th>
<th>NRC/GT Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thoroughness</td>
<td>.72</td>
<td>74</td>
<td>26</td>
<td>1.9</td>
<td>1.9</td>
</tr>
<tr>
<td>Validity of Choices</td>
<td>.43</td>
<td>57</td>
<td>40</td>
<td>2.8</td>
<td>2.5</td>
</tr>
<tr>
<td>Appeal of Display</td>
<td>.67</td>
<td>57</td>
<td>36</td>
<td>1.8</td>
<td>2.1</td>
</tr>
<tr>
<td>Supporting Materials</td>
<td>.10</td>
<td>83</td>
<td>17</td>
<td>2.0</td>
<td>2.0</td>
</tr>
</tbody>
</table>

* domain scale range = 1 to 3
Teachers' and Students' Responses to Authentic Assessments

Collecting reliability and validity evidence on the authentic assessments, while critical to ensure that measurement is relatively free of both systematic and random error, is only useful if teachers will actually use the assessments in their classrooms. Thus, a second step in data collection was to collect qualitative data from teachers and students involved in classrooms where these authentic assessments were implemented. During interviews that were part of the larger project, teachers and students who had actually used the tasks and rubrics were asked to reflect on their experiences with using or completing the assessments.

Middle school teachers and students generally expressed positive responses about the differentiated authentic assessments. "Most of [the students] I'd say for the most part seemed to enjoy it and seemed to get something out of it. Two or three of them did above and beyond, did beautiful, beautiful work. I was very, very thrilled." (Arnold interview, Y3, #1, p. 1)

Assigning Assessment Work Outside of Class Time

For many teachers, using differentiated authentic assessments was a new approach and required teachers to re-conceptualize the classroom. For many, the first step was to assign the work to be completed outside class, rather than to change instructional and classroom routines. Teachers frequently introduced the assessments during class but required the bulk of the work to be done outside of class time. Joan Borden, a seventh-grade science teacher at Langley Middle School described the introduction of the assessment task, Creature Classification:

I took the rubric and we spent one class period—in fact, actually, it was two—step-by-step telling them what was expected. I explained to them that everybody was working for a 3. That's the one I emphasized. We mentioned the 2, and I told them since 1 would be failing, we wouldn't even discuss that. They could read that on their own, but as I went through it with each class, I emphasized the 3. (Borden interview, Y3, #5, p. 1)

Following this initial introduction, teachers largely left students to independent completion of the tasks: "For science, we have no time in class . . . we had to do it all by ourselves, and I had to go to the library and get about 500 books" (Langley student interview, Y3, #3, p. 5).

Teachers in other subject areas followed suit. "[In math] I did it all outside of class" (Langley student interview, Y3, #3, p. 9). While the bulk of work was completed outside of school, eighth-grade math teacher Wendy Arnold described how she incorporated skills and concepts from the assessment, Wall Street Decisions, into other math instruction:

I kind of took it a little piece at a time every day, and we just built on that. The rubric was given to them when I gave them the pack of what they're supposed to do. We went through that where they knew what was going to be expected, where they could organize their little checklist and all this kind of thing from the rubric. So we worked on it and did some pieces just about every day but they put it all together themselves. (Arnold interview, Y3, #1, pp. 2-3)

Students Using Rubrics in Varying Ways to Guide Project Completion

Students used the rubrics to guide the completion of their work in varying ways: to guide their initial planning, to monitor progress, and to check accuracy and completeness at
the end of the project. Many students explained how they used the rubric accompanying
the tasks at the beginning of the project, finding the detailed criteria helpful in their initial
planning: "I was looking at all of this stuff and me and my dog were sitting there and we
put this in to try to get to expert . . . we try to put a little bit of everything in it" (Langley
student interview, Y3, #1, p. 4).

Another student verified the helpful nature of the rubrics to guide the work processes:

[I looked at it while I was doing the project]. To look and see what we were
supposed to do on it. Yes, m'am, it was real helpful. I was looking on there to see
what we were supposed to do and it helped me a lot, telling me what I was supposed
to do. (Langley student interview, Y3, #2, p. 8)

Others took a different approach, using the rubrics through the work process. One
student explained how the rubrics guided his thinking through the process as his
understanding of the task developed over time, as in the case of the Wall Street Decisions
task:

The more I read [about the stock market] I realized it had nothing to do with [the
specific task requirements] and so, I picked out what I thought was the best for each
company and then I put it down here. (Langley student interview, Y3, #3, p. 9)

The specificity of the rubric and the key objectives of the task assisted the student in
identifying the essential elements and discarding other, less relevant information.

Other students used rubrics most significantly at the conclusion of the project. The
rubric allowed students the opportunity to complete the assessment and then use the rubric
to determine whether all required elements were present, sufficient, and in the correct format:

The first time I went through [I realized] that I needed to add a little bit more of
supporting materials. At first, I didn't put in the [mathematical computations] on that
[the appropriate sheets] and I had to do calculations and estimations and stuff.
(Langley student interview, Y3, #1, p. 4)

Although students used the rubrics in varied ways to guide their project completion,
all students seemed to agree that the rubrics were helpful. Students liked the teachers' clear
explanations of product expectations characteristic of the rubric: "It was more detailed, like
on this, it said 20 or more. . . . I meant, this one said exactly what I needed to hear . . . and I
just needed to read it once to know what I was doing. . . ." (Langley student interview, Y3,
#3, p. 11).

Teachers acknowledged the students' positive reaction to the rubrics:

Most of them [students] liked the [rubric] because it gave them definite guidelines.
They're used to rubrics; this wasn't the first time they've seen a rubric. They like to
know exactly what they needed to have and where. Some of the kids wanted more
clarification, exactly what this, that, and the other. Most of the kids really liked it.
They like to see things cut and dried, and black and white, where they know exactly
what they need to do. (Arnold interview, Y3, #1, p. 2)

Although students clearly appreciated clarity and specificity in teachers' explanation
of project expectations, students also appreciated the opportunity to creatively interpret some
elements of the task:
Yeah, I like [rubrics to be] specific because if I have it specific I know exactly what I'm going to do, but if it's a little open, I can have a little creativity in there, and do a little more things, and still get what she's asking for. (Langley student interview, Y3, #3, p. 12)

Potential for Future Use

Although the students and teachers agreed upon the positive response to differentiated authentic assessments, teachers were mixed about the likelihood of future use of the new assessment approach. As a result of involvement in the project, Joan Borden seemed to begin to shift her instructional and assessment behaviors:

Next year... and I'm thinking maybe this summer about trying to make it a unit, that's a maybe, and see if I can go back and incorporate the text and all of this stuff that we're held to the fire with and let everything I do revolve around entomology, but that's a kind of pie in the sky idea right now, and it would just depend on... if I really had... I just have to sit down and look at what I could incorporate using the insects. I think it's a possibility, but I just have to go through. (Borden interview, Y3, #5, p. 4)

Other teachers resisted the idea of a significant change in their instructional and assessment behaviors to better attend to student academic diversity through differentiated assessments, citing irreconcilable differences with state testing formats:

[Would I use it again?] If time were available. I'll tell you, I really had to push to get it in. They have us so crammed with all this [state testing] stuff and they keep changing years on us with what we're supposed to do and how and everything, that it's tough. I enjoyed doing it with the kids, and I can see a lot of areas where it's worthwhile, but my problem right now is they have us so hog tied. (Arnold interview, Y3, #1, p. 2)

Conclusions and Implications

On a national level we have a history for demanding that assessments provide quantifiable information about student learning that is both reliable and valid. However, as a nation we have failed in working with classroom teachers in developing classroom assessments that provide the same high quality information about student learning so that the instructional process is better informed. To date, guidelines do not exist for psychometric standards for classroom assessments where teachers make judgments about student learning.

While a review of the literature revealed no studies on the reliability of classroom assessments, in general, the inter-rater reliability coefficients were similar to that found in studies on classroom observations of student performance. In general, the Kappa coefficients ranged from .55 to .95, indicating that ratings between two independent raters were fairly consistent with one another, despite the lack of training. This range of coefficients also suggests that the assessments elicit student responses that are reflective of the performance criteria in the scoring rubrics and that the domain criteria are clearly delineated.

The results of this small-scale study provide evidence that authentic assessments for classroom purposes can be developed to provide reliable and valid information about
student learning. In addition, the results suggest that authentic assessments can be used in middle school classrooms for accurate assessment of students’ success in achieving academic learning standards, with positive responses of both teachers and students to the authentic assessment experience.

Oftentimes, particularly in states with high-stakes accountability mandates, the focus of classroom instruction is on test preparation rather than a more constructivist-type classroom where students gain understanding through the construction of their own knowledge and making the interconnections among facts and concepts within and across disciplines. This view of learning is reflected in many contemporary instructional methods used in today's classrooms: writing across the curriculum, hands-on approaches, and problem-solving and reasoning emphases. Evidence is provided by this study to suggest that with proper development and implementation, teachers can successfully use authentic assessments in their classrooms to measure academic standards, while not foregoing the requirements of preparing students for success on mandated standardized assessments. However, it also demonstrates a fear of sacrificing success on state tests if classroom assessment formats and tasks vary from the formats used in the state assessment program.
References


Appendix A

Fables and Folktales
Subject Area: Language Arts
Grade Level: Middle School

Fables and Folktales

Purpose/Rationale

This assessment task invites each student to develop an original fable or folktale within the context of a storytelling festival in the year 2060. A planning worksheet and scoring rubric enable students to consider purpose, sequencing, character development, symbolism, word usage, expressiveness, and time management when preparing their project.

Knowledge, Skill, and Disposition Objectives

Students will demonstrate their ability to:

- create a story with a message/purpose.
- sequence an orally presented story in a way that is easy for the listener to follow.
- use symbolism effectively in their storytelling.
- select and use colorful nouns, verbs, adjectives, and adverbs appropriately.
- vary the tone and volume of their voice to add drama to their storytelling.
- complete a project in a timely manner.

Related Standards of Learning

English

Students will:

- use verbal communication skills such as word choice, pitch, feeling, tone, and voice.
- organize and synthesize information for use in written and oral presentations.
- elaborate on a central idea in an organized manner.

Prerequisite Knowledge/Skills

Students must have:

- experience reading and listening to a variety of fables and folktales from different times and regions.
- working understanding of the elements of folktales and fables, including how these stories reflect cultural messages.
- working understanding of symbolism.
- experience in public speaking.

Context

This task can serve as a culminating assessment for a unit of study on fables and folktales. Planning should be conducted during class time. Final story development can

Prepared by Rachel Cochran
Revised by Cindy Strickland

Funding for the development of these tasks was supported under the Educational Research and Development Centers, PR/Award Number R206R50001, as administered by the Office of Educational Research and Improvement, U.S. Department of Education.
take place in school or at home. The storytelling festival should take place during school hours and be promoted as a celebration of the spoken word.

**Rater**

It is important to clearly explain both the task and the scoring rubric to students before they begin work on the project. As each component of the rubric is explained, solicit and/or provide illustrations of quality performance, drawing examples from the stories students have read or listened to in class.

This task is to be rated by the teacher; rubric could also be used or adapted for peer review.

**Prompt**

This task is designed for students functioning at grade level in language arts skills such as story writing and oral presentation. Students functioning below grade level may need additional help and/or coaching.
Fables and Folktales

A good storyteller grabs the imagination of his or her audience and holds the listeners captive with the tales he or she is telling. You have learned about fables and different types of folktales—Trickster Tales, How-and-Why Stories, and Tales of Enchantment, etc. Now it is your turn to weave your own magic.

The Situation: The year is 2060. You have lived a long life and learned much along the way. A teacher at a local middle school has invited you to participate in the annual storytelling festival hosted by the school. You must create your own fable or folktale to share with the students.

In the process of developing your story, you will need to ask yourself a number of questions, including the following:

- What type of story do I want to tell?
- What message/moral/explanation/advice do I want my story to give to the listeners?
- How will I use symbolism to connect my story to universal themes that transcend time and/or place?
- Do I want to modernize or revise an old story, or create a brand-new one?
- Who will my characters be and what will they be like?
- What will my story be about?
- How will my story unfold? What will happen first? What will happen next, etc.?
- What story telling techniques will I use in sharing my story with others?

As you decide on answers to these questions, record your ideas on the planning page provided (front and back). Once this form is complete, have the teacher look it over and initial it when he or she is satisfied that you are ready to put the pieces together into a well-crafted story.

As you develop the story itself, think about how you can make the words, details, and expressiveness of your voice more interesting and/or exciting.

The storytelling festival is scheduled for ____________________.

Come prepared. Your work will be evaluated using a score sheet like the one attached.
Name__________________________

Planning Page

Type of Story

Part 1 (check all that apply)  Part 2 (check one)

___ Fable  ___ Modernization or Revision of Old Story

___ Trickster Tale  ___ Brand New Story

___ How-and-Why Story

___ Tale of Enchantment

___ Other (specify) ____________________

Main Point/Message

Characters

<table>
<thead>
<tr>
<th>Name</th>
<th>Physical Description</th>
<th>Personality Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
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<tr>
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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Plot Summary (Briefly, what will your story be about?)

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Sequence of Events (Step-by-step, what will happen in your story?)

1.

2.

3.

4.

5.

6.

Presentation Format (check one)

____ Live!

____ Audio Tape Recording

____ Video Tape Recording

__________________________ Planning Page Complete

(Teacher's Initials)
Name: __________________

**Folktales and Fables Rubric**

<table>
<thead>
<tr>
<th></th>
<th>Wondrous Wordsmith (3 Points)</th>
<th>Skillful Storyteller (2 points)</th>
<th>Tale-Teller in Training (1 point)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Purpose</strong></td>
<td>The story you tell clearly and powerfully leads your listener to understand and appreciate the main idea/message.</td>
<td>The listener is able to understand the purpose of your story.</td>
<td>The main point of your story is unclear. The listeners are left unsure of the message you are trying to get across.</td>
</tr>
<tr>
<td><strong>Score:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Sequencing</strong></td>
<td>You effortlessly lead your listener along your story's path from the introduction of the characters to the final resolution of conflict.</td>
<td>There are minor inconsistencies or gaps in the sequencing of your story. Still, listeners are able to understand and follow the basic series of events.</td>
<td>The listener is unable to follow your story. The sequence of events that you use is illogical or overly cumbersome.</td>
</tr>
<tr>
<td><strong>Score:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Symbolism</strong></td>
<td>Characters and events in your story are clearly symbolic of people and happenings across time and/or generations.</td>
<td>You use symbolism to represent people or happenings, but the symbolism does not easily transfer or connect to other times and/or generations.</td>
<td>There was little or no symbolism apparent in your story, OR the symbolism does not transfer to other times and/or generations.</td>
</tr>
<tr>
<td><strong>Score:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Word Usage</strong></td>
<td>You use vivid and powerful nouns, verbs, adjectives, and adverbs when telling your story. Your listener can visualize in detail what happens.</td>
<td>You use nouns, verbs, adjectives, and adverbs appropriately to express your ideas. Your listener is able to picture events or people in your story.</td>
<td>You do not make appropriate use of nouns, verbs, adjectives and adverbs. Your listener is unable to visualize people or events in your story.</td>
</tr>
<tr>
<td><strong>Score:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Expressiveness</strong></td>
<td>Your story comes to vibrant life as you vary the tone and volume of your voice to match what is happening in your story.</td>
<td>Your voice is clear as you tell your story, but you do not vary your tone of voice and/or volume in a way that captivates and holds the listener's attention.</td>
<td>It is difficult to hear you as you tell the story. You do not vary your volume or tone of voice.</td>
</tr>
<tr>
<td><strong>Score:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Timeliness</strong></td>
<td>You are prepared and present your story at the festival as scheduled.</td>
<td>You are not prepared to present your story at the scheduled time, but you present it within 1-2 days.</td>
<td>You are not prepared to present your story at the scheduled time or within 2 days of the festival, OR you do not tell a story.</td>
</tr>
<tr>
<td><strong>Score:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total Score:** __________________

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Appendix B

Wall Street Decisions
Wall Street Decisions

Purpose/Rationale

This task and rubric are designed to assess the degree to which students can understand and apply mathematical concepts and calculations such as estimation, rate of change, and percent/decimal/fraction conversions to make decisions about stock purchases and to explain changes in the stock market.

Knowledge, Skill, and Disposition Objectives

Students will demonstrate their ability to:

- use mathematical logic to make an appropriate decision given many equally appealing choices.
- choose appropriate strategies to solve problems.
- apply strategies correctly.
- perform accurate mathematical calculations, transformations, and conversions.
- use graphs, tables, and/or charts to organize and display relevant information.
- describe their problem-solving and decision-making process so that others can easily understand them.
- present information in a legible and appealing format.

Related Standards of Learning

The student will:

- identify representations of a given percent and describe orally and in writing the equivalence relationship between fractions, decimals, and percents.
- solve problems that involve addition, subtraction, and multiplication with fractions and mixed numbers, with and without regrouping, that include like and unlike denominators of 12 or less and express their answers in simplest form.
- use estimation strategies to solve multi-step practical problems involving whole numbers, decimals, and fractions.
- compare, order, and determine equivalent relationships between fractions, decimals, and percents.
- solve consumer application problems (tips, discounts, sales tax, etc.).
- solve practical problems involving whole numbers, integers, and rational numbers, including percents. Problems will be of varying complexity involving real life data.
Prerequisite Knowledge/Skills

- Understanding of and practice working with fractions, decimals, ratios, and conversions among them
- Calculating rate of change
- Understanding of consumer decision-making
- Basic understanding of the stock market (how it works, how stocks are reported, etc.)
- Organizing and displaying information using graphs, tables, and charts
- Problem-solving and decision-making skills
- Using a calculator
- Using the internet and newspapers to find stock information (prompts 2, 3)

Context

This assessment may be given as homework or completed in class. It should take students 1-2 hours to complete, but some "incubation" time might be helpful. It may be best to break up the time over a couple of days. The task and rubric are targeted to a sixth or seventh grade audience, but may be modified further for use with any middle grade level or any readiness level. Teachers should insure that students have access to calculators, newspapers with stock performance summaries, and Internet resources.

Form

The assessment is designed to be completed by students individually with minimal teacher intervention. Students should read the scoring rubric before beginning the task. Prompt and rubric should be read aloud by teacher after students receive handouts (see following pages for student handouts).

Rater

This task should be rated by the teacher and discussed in class. Scoring may be done on the rubric itself by highlighting the level of performance (Incomplete-Expert) as well as any specific descriptors under performance levels which may apply to particular student responses.

Prompts

There are three prompts. The first is designed for learners who have trouble with fractions and decimals as well as those students who struggle with graphs. Students functioning far below grade average may need further modifications. For those students, the teacher may use whole number stock prices, use simpler change rates (like 50%, 100%, and 200%), and/or provide graphs and graphic organizers to help guide students through the problem.

The second prompt is designed for students who are functioning at grade level in the way they solve mathematical problems, handle fractions and decimals, and integrate graphs and estimation into their problem-solving processes. It is more open-ended and slightly more complex than the first prompt. It requires students to find their own stock information in the paper or on the web and use performance history to make a case for their decisions.
The third prompt is designed for those students functioning above grade level in the way they solve mathematical problems, handle fractions and decimals, and integrate graphs and estimation into their problem-solving process. These students need little to no reinforcement in simple fractional conversions. The task requires them to make decisions about stocks that they find in the paper or on the web, make predictions about how the stocks will perform in the future, and explain the multi-faceted nature of stock performance. More complexity may be added to the task by including additional facets such as the pros and cons of investing in stocks versus mutual funds, mortgages, etc.
Wall Street Decisions
Prompt 1

For your 10th birthday, your grandfather gave you $1,000 to invest in stocks. You and he went through some newspapers and used the Internet to narrow down some choices for your investment. You worked with your grandfather's five favorite companies (listed on the next page). Based on past performance of the stocks, you made decisions along the way to buy and sell stocks in certain companies. You had the liberty to buy and sell as many stocks as you wanted. The performance of the stocks over time, since you started investing, is outlined below. The initial prices are given in Table 1. You have charted the progress of the five stocks over the last two years, whether you actually invested in them or not because you know that a smart investor is always informed of what's going on around him/her.

A recent examination of your stocks' performances has shown that your investments have paid off! You made decisions that brought in big money. What a master investor you are! So... how did you do it?

Show your thanks to your grandfather in a letter in which you explain to him how your decisions led you to big bucks! You know your grandfather would be interested to know how you did it. In the letter, you should summarize your decision-making over the past two years. How was it you were able to make so much money? Which shares did you buy and sell along the way?

Let your grandfather know exactly how you spent the money. Include the record of your transactions. Include the graphs, tables, or charts that helped you make your decisions and/or will help your grandfather understand your decisions. In the letter, describe your problem-solving process so that your grandfather gets a clear idea of what you did with the money he gave you and why.

You will be assessed on the mathematical "logic" behind your decision, the accuracy of your supporting materials (calculations, estimations, charts, graphs, etc.), your letter to grandpa thoroughly discussing how you solved the problem, and the presentation of your information (neatness, spelling, grammar, etc.).
## Stock Prices: February 1996 through August 1997

### Table 1: February 1996

<table>
<thead>
<tr>
<th>Stock</th>
<th>Price per share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mason Corp.</td>
<td>82.50</td>
</tr>
<tr>
<td>Pullano, Inc.</td>
<td>110.00</td>
</tr>
<tr>
<td>Shockey Co.</td>
<td>60.27</td>
</tr>
<tr>
<td>Ruston's</td>
<td>121.00</td>
</tr>
<tr>
<td>Garofolo, Inc.</td>
<td>109.74</td>
</tr>
</tbody>
</table>

### Table 2: August 1996

<table>
<thead>
<tr>
<th>Stock</th>
<th>Price Per Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mason Corp.</td>
<td>36.21</td>
</tr>
<tr>
<td>Pullano, Inc.</td>
<td>90.89</td>
</tr>
<tr>
<td>Shockey Co.</td>
<td>50.00</td>
</tr>
<tr>
<td>Ruston's</td>
<td>242.64</td>
</tr>
<tr>
<td>Garofolo, Inc.</td>
<td>121.12</td>
</tr>
</tbody>
</table>

### Table 3: February 1997

<table>
<thead>
<tr>
<th>Stock</th>
<th>Price per share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mason Corp.</td>
<td>36.00</td>
</tr>
<tr>
<td>Pullano, Inc.</td>
<td>120.98</td>
</tr>
<tr>
<td>Shockey Co.</td>
<td>40.71</td>
</tr>
<tr>
<td>Ruston's</td>
<td>200.95</td>
</tr>
<tr>
<td>Garofolo, Inc.</td>
<td>100.50</td>
</tr>
</tbody>
</table>

### Table 4: August 1997

<table>
<thead>
<tr>
<th>Stock</th>
<th>Price Per Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mason Corp.</td>
<td>82.33</td>
</tr>
<tr>
<td>Pullano, Inc.</td>
<td>120.50</td>
</tr>
<tr>
<td>Shockey Co.</td>
<td>30.82</td>
</tr>
<tr>
<td>Ruston's</td>
<td>150.99</td>
</tr>
<tr>
<td>Garofolo, Inc.</td>
<td>90.00</td>
</tr>
</tbody>
</table>
### Wall Street Decisions
**Scoring Rubric**

<table>
<thead>
<tr>
<th>Rubric for Prompt 1</th>
<th>Expert</th>
<th>Proficient</th>
<th>Emerging</th>
<th>Incomplete</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Support for Conclusions</strong></td>
<td>Consumer offers both mathematical and logical support for the conclusions drawn.</td>
<td>Consumer offers mathematical OR logical support for the conclusions drawn.</td>
<td>Consumer offers inappropriate support for the conclusions drawn.</td>
<td>Consumer offers no support for the choices made.</td>
</tr>
<tr>
<td><strong>Strategy and Calculations</strong></td>
<td>Consumer analyzes the problem using multiplicative logic to demonstrate rate of change, percent increase/decrease, etc. for the stock prices. Consumer chooses an appropriate strategy for calculating or estimating.</td>
<td>Consumer analyzes the problem using additive logic to demonstrate the rate of change for stock prices. Consumer chooses an appropriate strategy for calculating or estimating.</td>
<td>Consumer uses neither additive nor multiplicative logic to analyze the problem. Consumer chooses an inappropriate strategy or misapplies an appropriate strategy.</td>
<td>Consumer begins the process of logical and mathematical applications to solve the problem, but does not complete calculations or make appropriate estimations.</td>
</tr>
<tr>
<td><strong>Supporting Materials</strong></td>
<td>Calculations and/or graphs are mathematically accurate. Calculations, estimations, and graphs clearly support the decision made and work in concert with the logic of the strategy chosen.</td>
<td>Calculations and/or graphs are mathematically accurate. There are minor errors in calculations, estimations, or graphs that do not interfere with or effect the decision.</td>
<td>Calculations and/or graphs are inaccurate. Errors interfere with the decision OR no clear connection exists between the decision made and the calculations, estimations, and graphs.</td>
<td>Consumer makes no calculations or graphs OR many and/or major errors prevent the consumer from solving the problem.</td>
</tr>
<tr>
<td><strong>Justification</strong></td>
<td>Problem solving process is clearly described so that anyone reading the discussion could reproduce the process.</td>
<td>Problem solving process is clear enough so that someone reading the discussion could glean a basic understanding of what the consumer did to solve the problem, but may have a few clarifying questions.</td>
<td>There is little evidence of how the student solved the problem. The problem-solving process is not reproducible by the reader.</td>
<td>Consumer leaves no evidence of how a decision was reached OR indicates that s/he made the decision based on a guess indicating no logical or mathematical underpinnings to support the guess.</td>
</tr>
<tr>
<td><strong>Presentation</strong></td>
<td>Writing is legible and neat and graphs are easy to understand. Response has a &quot;professional&quot; quality. Consumer uses correct grammar and spelling.</td>
<td>Writing and graphs are legible. Consumer makes minor errors in grammar and/or spelling that do not distract the reader.</td>
<td>Writing and graphs are very difficult to follow. Errors in grammar and/or spelling distract the reader.</td>
<td>Response is presented in &quot;note&quot; form and there is little to no flow from one idea to the other. Reader can not decipher graphs and/or sentences.</td>
</tr>
</tbody>
</table>
Wall Street Decisions
Prompt 2

Your grandfather has just given you and your 20-year-old brother $1,000 each to invest in stocks. Your brother doesn't know much about stocks, so he called one of those hotlines that are supposed to advise you of safe bets and pitfalls. The woman on the hotline suggested that he invest his money in one of the following companies:

- Lucent Technologies
- Apple
- Coca Cola
- International Paper
- Chrysler
- Xerox
- R. J. Reynolds

Your brother is about to invest the money without even checking the stock performance himself. You want to help him, but you know he won't listen to you unless you plan your argument well. So you've decided to do some research on the companies suggested by the woman on the hotline. Your research will help your brother make his decision, and will help you to choose a company or companies in which to invest your money. Which company/Companies, if any of them, is/are best for your brother (and you!) to invest in? If you find a better stock to invest in, you may recommend it instead, but spend the majority of your time working with the stocks suggested on the hotline.

Use newspapers and the Internet to chart the past progress of the above stocks. Include enough data in your charts and graphs to provide your brother with sufficient information to back up the recommendations you make to him. Create an investment plan that includes any buying, selling, or trading you might advise over the next year. How can you make the most money? Which shares do you buy and sell when?

Record all of your evidence for your decisions. Use graphs, tables, or charts to help you make your decisions. Estimate when appropriate. Use all of your evidence, research, and calculations to support the investment plan you propose. Remember that your brother is a hard sell. He'll need some strong evidence to convince him to believe you over the woman on the hotline. You'll have to prepare a plan that includes explanations of your reasoning and problem-solving so that he can understand why you make the suggestions you make.

You will be assessed on the mathematical "logic" behind your decisions, the accuracy of your supporting materials (calculations, estimations, charts, graphs, etc.), your plan of investment including a thorough discussion of how you solved the problem and why you made the decisions you made, and the presentation of your information (neatness, spelling, grammar, etc.).
## Wall Street Decisions
### Scoring Rubric

#### Rubric for Prompt 2

<table>
<thead>
<tr>
<th>Support for Conclusions</th>
<th>Expert</th>
<th>Proficient</th>
<th>Emerging</th>
<th>Incomplete</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumer chooses most financially sound stocks. Consumer offers both mathematical and logical support for the conclusions drawn. This evidence would convince the consumer's brother to follow his/her advice.</td>
<td>Consumer chooses financially sound stocks. Consumer offers mathematical support for the conclusions drawn, but fails to make logical connections that may have led to a more appropriate choice.</td>
<td>Consumer chooses one of the three most appropriate stocks but offers no support for the choice OR consumer chooses one of the least appropriate stocks with inappropriate support for the choice.</td>
<td>Consumer bases decision on a guess OR is unable to reach a decision.</td>
<td></td>
</tr>
</tbody>
</table>

| Strategy and Calculations | Consumer analyzes the problem using multiplicative logic to demonstrate rate of change, percent increase/decrease, etc. for the past stock performances. Consumer chooses an appropriate strategy for calculating, estimating, and predicting. | Consumer analyzes the problem using additive logic to demonstrate the rate of change for past stock performances. Consumer chooses an appropriate strategy for calculating, estimating, and predicting. | Consumer uses neither additive nor multiplicative logic to analyze the past stock performances. Consumer chooses an inappropriate strategy or misapplies an appropriate strategy. | Consumer begins the process of logical and mathematical applications to solve the problem, but does not complete calculations or make appropriate estimations. |

| Supporting Materials | Calculations and/or graphs are mathematically accurate. Calculations, estimations, and graphs clearly support the decisions made and work in concert with the logic of the strategy chosen. | Calculations and/or graphs are mathematically accurate with the exception of minor errors in calculations, estimations, predictions, or graphs that do not interfere with or affect the decision. | Calculations and/or graphs are inaccurate. Errors interfere with the decision OR no clear connection exists between the decision made and the calculations, estimations, predictions, and graphs. | Consumer makes no calculations or graphs OR many and/or major errors prevent the consumer from solving the problem. |

<p>| Justification | Problem solving process is clearly described so that anyone reading the discussion could reproduce the process and understand the decisions made. | Problem solving process is clear enough so that someone reading the discussion could glean a basic understanding of what the consumer did to make decisions, but may have a few questions. | There is little evidence of how the consumer made decisions. The problem-solving process is not reproducible by a reader. | Consumer leaves no evidence of how decisions were reached OR indicates that s/he made the decision based on a guess indicating no logical or mathematical underpinnings to support the guess. |</p>
<table>
<thead>
<tr>
<th>Rubric for Prompt 2</th>
<th>Expert</th>
<th>Proficient</th>
<th>Emerging</th>
<th>Incomplete</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presentation</td>
<td>Writing is legible and neat and graphs are easy to understand. Response has a &quot;professional&quot; quality. Consumer uses correct grammar and spelling.</td>
<td>Writing and graphs are legible. Consumer makes minor errors in grammar and/or spelling that do not distract the reader.</td>
<td>Writing and graphs are difficult to follow. Errors in grammar and/or spelling interfere with the reader's message.</td>
<td>Response is presented in &quot;note&quot; form and there is little to no flow from one idea to the other. Reader cannot decipher graphs and/or sentences.</td>
</tr>
</tbody>
</table>
Wall Street Decisions
Prompt 3

You have just been hired as a stockbroker for a local financial consulting and investment company. Your first client has come in asking for your help in investing the $12,000 that he and his wife received in wedding gifts. You must design an investment plan for him that includes any and all companies he will invest in, how much he will invest and when, as well as any buying and selling you think will be beneficial. He agrees to let you help him invest his money, but he seems a little skeptical and concerned. After all, you are young and new to the company, and he is recently married and trying to start a nest egg to secure his family’s future.

As you talk try to reassure him, you uncover that he has recently seen a clip on the national news about a "study" being done that compares the stock performance of company stocks selected by top brokers to the stock performance of company stocks selected by inexperienced lay persons. In the study, the experienced brokers make their decisions based on complicated mathematical calculations, inside knowledge about corporate performance, and experience playing the stock market. The inexperienced "brokers" make their investment decisions by throwing darts at a Washington Post investment section. Whichever companies the darts land on, those are the companies in which they invest. So far, as your client points out, the experienced brokers are ahead by only a hair.

Because your credibility with your client is on the line here (as well as your job!), you feel it is necessary to look into the matter and defend your knowledge and experience as a stockbroker. You know you didn’t go to school for nothing and you pride yourself on the investment advice you are able to offer your clients.

Upon your client’s next visit, you will present him with an investment plan to cover the next five years of investments, including projected returns, buying and selling, etc. You should also include graphs and charts to back up your projected plan and a detailed mathematical and written justification for why following your advice will pay off for your client in the long run. In addition, in your introduction, you must address and refute the issue raised by your client concerning the study he cited. You must make a case for the need for informed stockbrokers and explain the anomalies of the dart-throwers’ success.

You may use the Internet, newspapers, e-mail, community members, or any resources necessary to address the issue (you’ll probably want to do some research about the study to find out what’s going on) and prepare your investment plan (you might even want to find some real investment plans as a model for your response). You will be assessed on the mathematical "logic" behind your decisions, the accuracy of your supporting materials (calculations, estimations, charts, graphs, etc.), your plan of investment that includes a thorough justification for your decisions, the effectiveness of the way you analyze and refute the argument of the dart-throwers, and the presentation of your information (neatness, spelling, grammar, etc.).
### Wall Street Decisions
#### Scoring Rubric

<table>
<thead>
<tr>
<th>Rubric for Prompt 3</th>
<th>Expert</th>
<th>Proficient</th>
<th>Emerging</th>
<th>Incomplete</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Support for Conclusions</strong></td>
<td>Broker chooses most financially sound stocks and proposes an investment plan that will make sense to the client. Broker offers both mathematical and logical support for the conclusions drawn. This evidence would convince the broker's client to follow his/her advice.</td>
<td>Broker chooses financially sound stocks. Broker offers mathematical support for the conclusions drawn, but fails to make logical connections that may have led to an alternative, more appropriate choice. Choices still make sense, but the client may remain somewhat skeptical.</td>
<td>Broker chooses a financially sound stock, but offers no support for the choice OR broker chooses one of the least sound stocks with inappropriate support for the choice.</td>
<td>Broker bases decision on a guess OR is unable to reach a decision to propose an investment plan.</td>
</tr>
<tr>
<td><strong>Strategy and Calculations</strong></td>
<td>Broker analyzes the past performance of the stocks using multiplicative logic to demonstrate rate of change, percent increase/decrease, etc. for the past stock performances. Broker chooses an appropriate strategy for calculating, estimating, and predicting.</td>
<td>Broker uses neither additive nor multiplicative logic to analyze the past stock performances. Broker chooses an inappropriate strategy or misapplies an appropriate strategy.</td>
<td>Broker makes no calculations or graphs OR many and/or major errors prevent the broker from solving the problem.</td>
<td>Broker begins the process of logical and mathematical applications to solve the problem, but does not complete calculations or make appropriate estimations.</td>
</tr>
<tr>
<td><strong>Supporting Materials</strong></td>
<td>Calculations and/or graphs are mathematically accurate. Calculations, estimations, and graphs clearly support the decisions made in the investment plan and work in concert with the logic of the strategy chosen.</td>
<td>Calculations and/or graphs are mathematically accurate with the exception of minor errors in calculations, estimations, predictions, or graphs that do not interfere with or affect the decisions made in the investment plan.</td>
<td>Calculations and/or graphs are inaccurate. Errors interfere with the decision made in the investment plan OR no clear connection exists between the decision made and the calculations, estimations, predictions, and graphs.</td>
<td>Broker makes no calculations or graphs OR many and/or major errors prevent the broker from solving the problem.</td>
</tr>
<tr>
<td>Rubric for Prompt 3</td>
<td>Expert</td>
<td>Proficient</td>
<td>Emerging</td>
<td>Incomplete</td>
</tr>
<tr>
<td>---------------------</td>
<td>--------</td>
<td>------------</td>
<td>----------</td>
<td>------------</td>
</tr>
<tr>
<td><strong>Justification</strong></td>
<td>Problem solving process is clearly described so that anyone reading the discussion could reproduce the process and understand the decisions. The client will be able to understand exactly what is going on and why, and will feel comfortable leaving his money with the broker.</td>
<td>Problem solving process is clear enough so that someone reading the discussion could glean a basic understanding of what the broker did to make decisions. But the client may have several questions before he feels comfortable accepting the broker’s plan.</td>
<td>There is little evidence of how the broker made decisions. The problem-solving process is not reproducible by a reader. The client will most likely take his business elsewhere.</td>
<td>Broker leaves no evidence of how decisions were reached OR indicates that s/he made the decisions based on a guess indicating no logical or mathematical underpinnings to support the guess.</td>
</tr>
<tr>
<td><strong>Refutation</strong></td>
<td>Broker refutes the argument that throwing darts is a better way to choose stocks than consulting a broker by uncovering flaws in the study and/or the conclusions being drawn from it, using a logical argument to defend the expertise of brokers, and citing past successful performance of brokers. Broker deals with the issues of chance as well addresses several of the multiple facets that can affect the ups and downs of the market. The client is likely to accept the argument as a valid one.</td>
<td>Broker refutes the argument that throwing darts is a better way to choose stocks than consulting a broker by uncovering flaws in the study and/or the conclusions being drawn from it, using a logical argument to defend the expertise of brokers, or citing past successful performance of brokers. Broker does not address the issue of chance OR does not address many of the multiple facets that can affect the ups and downs of the market. The client may accept the argument, but will require further convincing during the meeting.</td>
<td>Broker uses only one of the following methods to refute the client’s claims: uncovering flaws in the study and/or the conclusions being drawn from it, using a logical argument to defend the expertise of brokers, or citing past successful performance of brokers. Broker does not address the issue of chance AND fails to address many of the multiple facets that can affect the ups and downs of the market. The client will likely buy a set of darts to make his own stock decisions.</td>
<td>The broker fails to address the issue raised by the client or addresses the issue without a logical argument or reference to research.</td>
</tr>
<tr>
<td><strong>Presentation</strong></td>
<td>Writing is legible and neat and graphs are easy to understand. Response has a &quot;professional&quot; quality. Broker uses correct grammar and spelling.</td>
<td>Writing and graphs are legible. Broker makes minor errors in grammar and/or spelling that do not interfere with the overall message.</td>
<td>Writing and graphs are very difficult to follow. Errors in grammar and/or spelling interfere with the message.</td>
<td>Response is presented in &quot;note&quot; form and there is little to no flow from one idea to the other. Reader can not decipher graphs and/or sentences.</td>
</tr>
</tbody>
</table>
Appendix C

You Can't Convince Me
Purpose/Rationale

The purpose of this assessment is to engage students in thinking about, discussing, and identifying the essential elements of persuasive rhetoric. In addition, students will have the opportunity to practice communicating in a clear, concise manner to a specific audience and in a specific format. Students will engage in the process of preliminary instrument design.

Knowledge, Skill, and Disposition Objectives

Students will demonstrate their ability to:

- identify the elements of persuasive rhetoric.
- analyze the elements of persuasive rhetoric to choose the most "critical" elements.
- communicate appropriately to a chosen audience.
- organize ideas in a clear and concise manner.
- work collaboratively in pairs.

Related Standards of Learning

The student will:

- use a variety of planning strategies to generate and organize ideas.
- select vocabulary and information to enhance the central idea.
- give and seek information in conversations and group discussions.
- identify persuasive messages in non-print media.
- apply knowledge of the characteristics of various literary forms.
- identify persuasive techniques.

Prerequisite Knowledge/Skills

- Understanding of the elements of persuasive rhetoric
- Ability to compare, contrast, and analyze elements of persuasive rhetoric
- Experience working in pairs or groups
- Experience with the peer-review process and revision process
- Familiarity with rubrics for Prompt 2

Context

This assessment is designed to be completed in pairs as an in-class assignment. Teachers will collect responses and provide feedback (rubric). Pairs will then engage in a peer review and revision process. Instruments may eventually be combined to form a class rubric for persuasive writing and speaking. The task and rubric are designed for eighth grade, but may be modified for any middle grade level and any readiness level.
Rater

Teachers will review instruments and provide feedback to student pairs. Peers may also provide feedback. Student pairs will engage in a revision process and eventually combine items to form a class rubric for persuasive rhetoric.

Prompts

There are two prompts. The first prompt is designed for students functioning at grade level in their reading and writing ability as well as their understanding of the elements of persuasive rhetoric. Prompt two is designed for students functioning well above grade level in their reading, writing, and analytical abilities. The second prompt is more complex and requires students to dig deeper into the characteristics of persuasive rhetoric.

Rubric

Rubrics for prompts are slightly different, but focus on the same objectives.
You Can’t Convince Me!

You have been hired to work on a committee to organize and direct a national speech competition for middle school students. One component of the competition is a persuasive speech component in which competitors must prepare a persuasive speech about a current issue that is important to them. The rules of the competition dictate that the speech be no longer than seven minutes.

You have been assigned to the speech committee. As a member of the speech committee, one of your duties is to develop a checklist to help the judges make decisions about the merit of the competitors’ persuasive speeches. With a partner, brainstorm a list of items that focus on the elements of persuasive rhetoric. Be sure your list covers at least six of the significant elements of persuasive rhetoric. Remember, it may be necessary to have more than one item to appropriately cover each element, as some elements are more important and complex than others. It is up to you and your partner to decide which are the most important elements and which ones may be complex enough to require more than one item on the checklist.

The judges on the committee will be using this checklist to rate the competitors’ speeches. Therefore, you may not simply list the elements of persuasive rhetoric found in your texts. You must describe how those elements of persuasive speech are carried out in reality. What are the characteristics of a good persuasive speech? What would it sound like? What components would it have?

Your checklist should be easy for judges to use (remember, they won’t have a lot of time to rate the speeches), be written in clear and concise language that they can understand, and should be presented in an appealing form with no errors. Be sure to cooperate with your partner and read the rubric for this assignment before you begin!

The committee (our class) will reconvene at the end of the week to share checklists.
# You Can’t Convince Me
## Scoring Rubric

<table>
<thead>
<tr>
<th>Prompt 1</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Essential Elements</strong></td>
<td>Committee members address at least 6 of the essential elements of persuasive rhetoric such as purpose, audience, tone, supporting materials, etc. Members communicate to the judges that they have a clear understanding of the characteristics of a good persuasive speech and can evaluate it validly.</td>
<td>Committee members address 4 - 5 of the essential elements of persuasive rhetoric such as purpose, audience, tone, supporting materials, etc. Members communicate in a manner that lets the judges know that they understand what a persuasive speech should sound like and how to evaluate it.</td>
<td>Committee members address 3 or fewer of the essential elements of persuasive rhetoric such as purpose, audience, tone, supporting materials, etc. Judges question the members' understanding of a persuasive speech.</td>
</tr>
<tr>
<td><strong>Rating</strong></td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td><strong>Checklist</strong></td>
<td>The checklist is simple to use and consistent in form. The judges will need no instruction to be able to use the checklist.</td>
<td>The checklist is fairly easy to follow, although the format is unclear OR inconsistent. The judges will need some training to be able to use the checklist and may have some questions about its use.</td>
<td>The checklist is difficult to follow and lacking in structure. The judges will need a lot of instruction to be able to use the checklist, and even then, it will still be difficult for them to move quickly through it.</td>
</tr>
<tr>
<td><strong>Rating</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Clarity of Descriptors</strong></td>
<td>By reading the checklist, the judges will get a clear sense of what to look for in a persuasive speech. The language is precise and the committee members describe distinctive, recognizable behaviors related to persuasive rhetoric.</td>
<td>By reading the checklist, the judges will get a general idea of what to look for in a persuasive speech. Language is inappropriate or unclear in places, but in general, the checklist describes distinct, recognizable behaviors related to persuasive rhetoric.</td>
<td>By reading the checklist, the judges are unable to understand what to look for in a persuasive speech. Behaviors are described in vague terms OR not at all.</td>
</tr>
<tr>
<td><strong>Rating</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Presentation</strong></td>
<td>There are no grammatical or spelling errors. Checklist looks like a published instrument. Checklist is legible or word-processed in a readable font.</td>
<td>Checklist contains minor grammatical or spelling errors, which, though distracting, do not interfere with understanding. Checklist is neat and legible or word-processed in a readable font.</td>
<td>Checklist contains grammatical and spelling errors, which interfere with the message. Checklist is messy or word-processed in a font that is difficult to read.</td>
</tr>
<tr>
<td><strong>Rating</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Optional Peer Evaluation</strong></td>
<td>Committee members participate equally and work together to get the job done. Each member is involved in the design of the checklist. Members listen to each other and incorporate each other's ideas.</td>
<td>Committee members share ideas, but work is not divided equally. Students listen to each other, but have trouble coming to a consensus. In the end, they manage to work together to get the job done.</td>
<td>Committee members divide work unequally. One person makes the majority of contributions to the discussion. Committee members require prompting to stay on task and to respect each other's ideas.</td>
</tr>
<tr>
<td><strong>Rating</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
You Can’t Convince Me!

You have been hired to work on a committee that organizes and directs a national competition for middle school students. The competition has several components. You have been assigned to the speech committee. For this part of the competition, competitors must prepare a persuasive speech about a current issue that is important to them. The rules of the competition dictate that the speech be no longer than seven minutes.

You have been assigned to the speech committee. As a member of the speech committee, one of your duties is to develop a checklist to help the judges make decisions about the merit of the competitors’ persuasive speeches. With a partner, develop a rubric that contains at least six dimensions and at least four performance levels that focus on and describe the elements of persuasive rhetoric.

Be sure to cover what you believe to be the most significant elements of persuasive rhetoric. Remember it may be necessary to have more than one item to appropriately cover each element as some elements are more important and complex than others. It is up to you and your partner to decide which are the most important elements and which ones may be complex enough to require more than one dimension on your rubric. Your top level of performance for each dimension should describe the characteristics of a polished, professional persuasive speech, even though only a few competitors may be able to deliver such a speech.

You will be evaluated on your rubric’s inclusion of the essential elements of persuasive rhetoric, its ease of use, clarity of language, presentation, and your cooperation with your partner. Read over the rubric for this assignment before you begin! Rubrics without at least five dimensions and four performance levels will not be accepted.

The committee (our class) will reconvene at the end of the week to share rubrics.
# You Can't Convince Me
## Scoring Rubric

<table>
<thead>
<tr>
<th>Prompt 2</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Essential Elements</strong></td>
<td>Committee members address at least 6 of the essential elements of persuasive rhetoric such as purpose, audience, tone, supporting materials, etc. Members communicate to the judges that they have a clear understanding of the characteristics of a good persuasive speech and can evaluate it validly.</td>
<td>Committee members address 4 - 5 of the essential elements of persuasive rhetoric such as purpose, audience, tone, supporting materials, etc. Members communicate in a manner that lets the judges know that they understand what a persuasive speech should sound like and how to evaluate it.</td>
<td>Committee members address 3 or fewer of the essential elements of persuasive rhetoric such as purpose, audience, tone, supporting materials, etc. Judges question the members' understanding of a persuasive speech.</td>
</tr>
<tr>
<td>Rating</td>
<td><strong>Ease of Use</strong></td>
<td>The rubric is simple to use and consistent in form. The judges will need no instruction to be able to use the checklist.</td>
<td>The rubric is fairly easy to follow, although the format is unclear OR inconsistent. The judges will need some training to be able to use the checklist and may have some questions about its use.</td>
</tr>
<tr>
<td>Rating</td>
<td><strong>Clarity of Descriptors</strong></td>
<td>By reading the rubric, the judges will get a clear sense of what to look for in a persuasive speech. The language is precise and the committee members describe distinctive, recognizable behaviors related to persuasive rhetoric.</td>
<td>By reading the rubric, the judges will get a general idea of what to look for in a persuasive speech. Language is inappropriate or unclear in places, but in general, the checklist describes distinct, recognizable behaviors related to persuasive rhetoric.</td>
</tr>
<tr>
<td>Rating</td>
<td><strong>Range of Performance Levels</strong></td>
<td>The range of levels allow for competitors to be rated by the judges. Descriptors at all levels of performance reflect the standards of excellence set by professionals in the discipline. The highest level describes in detail the characteristics of a polished and professional persuasive speech.</td>
<td>The range of levels is appropriate for most competitors, but the categories are not clearly delineated. The descriptors at the highest end of the rubric fail to push for the highest standards of excellence that would be displayed in a polished and professional persuasive speech.</td>
</tr>
<tr>
<td>Rating</td>
<td><strong>Presentation</strong></td>
<td>There are no grammatical or spelling errors. Rubric looks like a published instrument. Checklist is legible or word-processed in a readable font.</td>
<td>Checklist contains minor grammatical or spelling errors, which, though distracting, do not interfere with understanding. Rubric is neat and legible or word-processed in a readable font.</td>
</tr>
<tr>
<td>Rating</td>
<td><strong>Clarity of Descriptors</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Prepared by Rachel Cochran
Revised by Cindy Strickland

Funding for the development of these tasks was supported under the Educational Research and Development Centers, PR/Award Number R206R50001, as administered by the Office of Educational Research and Improvement, U.S. Department of Education.
<table>
<thead>
<tr>
<th>Prompt 2</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Optional Peer Evaluation</strong></td>
<td>Committee members participate equally and work together to get the job done. Both are involved in the design of the rubric. They listen to each other and incorporate each other's ideas.</td>
<td>Committee members share ideas, but work is not divided equally. Students listen to each other, but have trouble coming to a consensus. In the end, they manage to work together to get the job done.</td>
<td>Committee members divide work unequally. One person makes the majority of contributions to the discussion. Committee members require prompting to stay on task and to respect each other's ideas.</td>
</tr>
</tbody>
</table>

Rating ___
Appendix D

Creature Classification
Creature Classification

Purpose/Rationale

The purpose of this activity is to assess the proficiency of students in developing classification systems for biological organisms.

Knowledge, Skill, and Disposition Objectives

Students will demonstrate their ability to:

- access scientific data and/or information.
- describe biological creatures in multiple ways.
- classify organisms in useful ways.
- visually present information about scientific organisms in a manner that appeal to a specific audience.
- appropriately cite sources of information.

Related Outcomes/Standards

Life Science

- The student will investigate and understand classification of organisms
- The student will investigate and understand that interactions exist among members of a population

Prerequisite Knowledge/Skills

- general characteristics of insects and arachnids
- simple information gathering techniques
- common classification schemes
- principles of effective visual communication
- source referencing

Context

This assessment activity can take place either during class or as homework. In either case, care must be taken to insure equity in resource availability. Teachers should allot a minimum of five hours for students to work on this project, preferably spread over five days.

Form

This assessment is to be completed individually by students with minimal teacher intervention. The assessment task and scoring rubric should be presented to students both orally and in writing prior to the start of the assessment.

---

Rater

The product is to be evaluated by the teacher. The teacher may wish to incorporate a peer review and/or evaluation session into the task.

Prompt

There are two prompts. Prompt 1 is designed for students functioning at grade level in knowledge and understanding of life science. Students will produce a consumer's guide to common household pests. Prompt 2 is designed for students functioning above grade level in life science knowledge and understanding. Students will produce a professional's guide to household pests that includes and classifies information not only about the pests, but also about methods used to control them.

Evaluation Criteria

Student products will be evaluated in the following areas:

- Introduction
- Bug Selection
- Thoroughness
- Ease of Use/Quality of Classification
- Appearance/Production Quality
- Referencing of Sources

Point values may be assigned to each section of the assessment. A possible grading scheme is included for reference.

As scores address separate objectives, all should be recorded as indicators of student proficiency. If an overall project "grade" is also desired, scores can be added together using the following scales:

| Expert | 3 points |
| Proficient | 2 points |
| Inadequate | 1 point |

<table>
<thead>
<tr>
<th>Total Points</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>15-18 ( &amp; INT=0)</td>
<td>A+</td>
</tr>
<tr>
<td>13-15 ( &amp; INT=1)</td>
<td>A</td>
</tr>
<tr>
<td>12 ( &amp; INT=1) or 13-14 ( &amp; INT=2)</td>
<td>B+</td>
</tr>
<tr>
<td>12 ( &amp; INT=2)</td>
<td>B</td>
</tr>
<tr>
<td>11 ( &amp; INT=2)</td>
<td>B-</td>
</tr>
<tr>
<td>11 ( &amp; INT=3)</td>
<td>C+</td>
</tr>
<tr>
<td>10 ( &amp; INT=3)</td>
<td>C</td>
</tr>
<tr>
<td>6-9</td>
<td>Redo</td>
</tr>
</tbody>
</table>

* in-training

---

3 This scale was created using the following assumptions:
- an "A" indicates consistent performance at the Proficient level;
- work resulting in three "INT" should earn no more than a "C";
- significantly inadequate work should be redone.

Prepared by Rachel Cochran
Revised by Cindy Strickland
Funding for the development of these tasks was supported under the Educational Research and Development Centers, PR/Award Number R206R50001, as administered by the Office of Educational Research and Improvement, U.S. Department of Education.
**Teacher Notes**

Teachers may wish to give a specific number of "bugs" to be included in the guide. This requirement may be added to the "bug selection" section of the rubric.

This assessment may be adapted to measure student understanding of different content areas by modifying the scenario and rubric to revolve around anything that can be classified. (e.g., "A local natural history museum has hired you to develop a guide to the rocks and minerals found in your area.")

Teachers are encouraged to assist struggling learners with task management. (Help them set daily goals towards project completion or brainstorm sources of information, etc.)

Special accommodations may be made for students limited by their English proficiency by allowing the guide to be produced in students' dominant language.
Prompt One

A new extermination company, Peterson's Pest Control, is getting ready to start up business in your town. The firm would like to provide potential customers with a handy quick-reference guide to the different "bugs" they might find in and around their homes. They would like customers to be able to identify potential pests and their impact on humans, as well as recognize those creatures that are beneficial to humans and should be left alone.

Peterson's Pest Control has just hired you, a local entomologist, to develop this reference guide. They would like you to include as many local insects and arachnids as possible, categorized in a convenient, well organized, and attractive format. To keep printing costs down, Peterson would like you to limit your guide to three colors, in addition to black.

You should collect the information to be included in your guide from a variety of sources. You may wish to consider observations in and around your home, field guides and other reference media, interviews, etc. You will need to explain the purpose of the guide as well as justify your choices for inclusion and organization in an introduction to the guide.

Be sure to check the enclosed rubric for more specific requirements.

Evaluation Criteria

The guide you develop will be evaluated in the following areas:

- Introduction (Have you clearly explained the purpose of and rationale for the guide as well as how to best use it?)
- "Bug" Selection (Have you included most of the "bugs" people in this area are likely to find in and around their homes?)
- Thoroughness (How much meaningful information have you provided about these "bugs"?)
- Ease of Use/Quality of Classification (When one comes across an unknown "creature" in the house or yard, how easy is it to locate that creature in the guide?)
- Appearance/Production Quality (How "professional" does the guide appear?)
- Referencing (Have you given credit to your sources of information?)

A copy of the evaluation form that will be used can be found on the next page.
## Creature Classification Rubric

### Prompt One

<table>
<thead>
<tr>
<th>Prompt One</th>
<th>EXPERT (EXP) 3 points</th>
<th>PROFICIENT (PRF) 2 points</th>
<th>IN-TRAINING (INT) 1 point</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Introduction</strong></td>
<td>You clearly and concisely explain the purpose of your guide. You include a convincing rationale for what is included in the guide as well as easy-to-follow directions on how to make use of it at home.</td>
<td>You state a purpose for the guide and explain how to use it, but you do not justify your decisions about its organization and/or the &quot;bugs&quot; that are included.</td>
<td>You do not state a purpose for the guide. You do not provide a clear explanation of how to use the guide.</td>
</tr>
<tr>
<td>Score: ____</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>“Bug” Selection</strong></td>
<td>You include a wide variety of local &quot;bugs&quot; in your guide, all of which might be found in and around homes in this area.</td>
<td>You include a variety of &quot;bugs&quot; for your guide, but also include &quot;bugs&quot; that are not commonly found in this area OR you are missing &quot;bugs&quot; that are commonly found.</td>
<td>You do not include a variety of &quot;bugs&quot; in your guide. You select &quot;bugs&quot; that are not native to this area.</td>
</tr>
<tr>
<td>Score: ____</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Thoroughness</strong></td>
<td>You include at least four types of information about the &quot;bugs&quot; you are featuring, e.g., appearance (size, shape, color, markings), habitat, behavior, benefits to/problems for humans. You provide highly descriptive details so that someone using your guide gains a thorough understanding of a particular &quot;bug&quot; and of &quot;bugs&quot; in general.</td>
<td>You include at least three types of information about the &quot;bugs&quot; you are featuring, e.g., appearance (size, shape, color, markings), habitat, behavior, and benefits to/problems for humans. You provide details that allow people using your guide to readily identify insects and/or arachnids that they find in their homes or yards, and determine whether these creatures are friend or foe.</td>
<td>You include fewer than three types of information about the &quot;bugs&quot; that you are featuring. You provide few details, making it difficult for people using your guide to readily identify insects or arachnids that they find in their homes.</td>
</tr>
<tr>
<td>Score: ____</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Prepared by Rachel Cochran  
Revised by Cindy Strickland  
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<table>
<thead>
<tr>
<th>Prompt One</th>
<th>EXPERT (EXP) 3 points</th>
<th>PROFICIENT (PRF) 2 points</th>
<th>IN-TRAINING (INT) 1 point</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ease of Use/ Quality of Classification</td>
<td>Your guide uses a classification system with cross-referencing that is logical and easy to understand. After seeing an unfamiliar &quot;bug&quot; in the house, the user can rapidly locate important information about the creature in your guide.</td>
<td>Your guide uses a classification system, but it is not user-friendly. Still, after seeing an unfamiliar &quot;bug&quot; in a house, the professional is able to locate information about the creature in your guide without having to compare the specimen to every entry.</td>
<td>The guide uses a classification system that is illogical in sequence and cumbersome to use. After seeing an unfamiliar &quot;bug&quot; in the house, the user would have a difficult time locating the creature in the guide and/or difficulty finding out useful information about it.</td>
</tr>
<tr>
<td>Score: ____</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Appearance/ Production Quality</td>
<td>The guide is professional in appearance. Written information is typed or printed neatly; graphics and illustrations are eye-catching. Guide does not appear too busy or cluttered. Use of color in the guide enhances its clarity and visual appeal. No more than three colors are used in addition to black.</td>
<td>Written information in the guide is typed or printed neatly. Graphics and illustrations are also neatly presented. No more than three colors are used in addition to black.</td>
<td>Written information is difficult to read. Graphics and illustrations are messy. You use more than three colors, in addition to black.</td>
</tr>
<tr>
<td>Score: ____</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Referencing</td>
<td>Sources of information are cited according to a standardized professional format. Users are not only able to locate your sources, but are directed to sources they might use for additional study.</td>
<td>Sources of information are cited in a standardized format, allowing the user to locate them easily.</td>
<td>You do not cite your sources. OR Sources of information are not cited in a standardized way that allows the user to locate them easily.</td>
</tr>
<tr>
<td>Score: ____</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

TOTAL SCORE: ____
Creature Classification

Prompt Two

A new professional exterminator's organization, Pests Are Us, is getting ready to start recruiting members in your town. The organization would like to provide potential members with an easy to use professional quick-reference guide to some of the professional issues involved in controlling the different "bugs" found in and around this area. Your task is to come up with a classification system for these "bugs" that takes into account the following considerations:

- Priority considerations for extermination (Which "bugs" are most important to control?)
- Extermination methods available and the pros and cons of the various methods (What is the desirability of the various methods available in terms of availability, ease of use, cost, etc.? What are the possible/probable consequences of extermination method(s) used in terms of danger to homeowner, exterminator, the environment, etc.?)

Pests Are Us has just hired you, a local entomologist, to develop this reference guide. They would like you to include local insects and arachnids from most common to rare, categorized in a convenient, well organized, and professional format. To keep printing costs down, Pests Are Us would like you to limit your guide to three colors, in addition to black.

You must collect the information to be included in your guide from a variety of sources. You may wish to consider observations in and around your home, field guides and other reference media, interviews, etc. Remember, you are writing for a sophisticated audience of pest control specialists. You will also need to explain the purpose of the guide as well as justify your choices for inclusion and organization in an introduction to the guide.

Be sure to check the enclosed rubric for more specific requirements.

Evaluation Criteria

The guide you develop will be evaluated in the following areas:

- Introduction (Have you clearly explained the purpose of and rationale for the guide as well as how to best use it?)
- "Bug" Selection (Have you included a range of "bugs" from common to rare that people in this area may find in and around their homes?)
- Thoroughness (How much meaningful information have you provided about these "bugs" and the issues surrounding control/extermination of them?)
- Ease of Use/Quality of Classification (When one comes across an unknown "creature," how easy is it to locate important information about the control/extermination of that creature in the guide?)
Appearance/Production Quality (How "professional" does the guide appear?)
Referencing (Have you given credit to your sources of information?)

A copy of the evaluation form that will be used can be found on the next page.
### Creature Classification Rubric
**Prompt Two**

<table>
<thead>
<tr>
<th>Prompt Two</th>
<th>EXPERT (EXP) 3 points</th>
<th>PROFICIENT (PRF) 2 points</th>
<th>IN-TRAINING (INT) 1 point</th>
</tr>
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<tbody>
<tr>
<td><strong>&quot;Bug&quot; Selection</strong></td>
<td>You include a wide variety of local &quot;bugs&quot; in your guide. You include a comprehensive range of &quot;bugs,&quot; from commonly found to rarely found in and around homes in this area. The professional would keep this guide handy at all times.</td>
<td>You include a variety of &quot;bugs,&quot; but make minor errors in the appropriateness of their selection for this area, or do not include a broad range of &quot;bugs,&quot; from common to rare. The listing is useful to the professional, but not comprehensive.</td>
<td>You do not include a range of &quot;bugs&quot; and/or include &quot;bugs&quot; that are not native to this area (e.g., a green Irish horned beetle) and would not be found here. The listing is not complete enough to be of help to the professional.</td>
</tr>
<tr>
<td><strong>Score: _____</strong></td>
<td></td>
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</tr>
<tr>
<td><strong>Thoroughness</strong></td>
<td>You include at least four types of information about the &quot;bugs&quot; you are featuring, (e.g., appearance, size, shape, color, markings), habitat, behavior, and benefits to/problems for humans, making it possible for the professional to correctly identify them. You provide detailed information about whether or not these &quot;bugs&quot; should be a priority for extermination, the best extermination methods available and the consequences involved in their use.</td>
<td>You include at least three types of information about the &quot;bugs&quot; you are featuring, (e.g., appearance, size, shape, color, markings), habitat, behavior, and benefits to/problems for humans, making it likely that the professional will correctly identify them. You provide general information for the exterminator in at least two of the following areas: whether or not these &quot;bugs&quot; should be a priority for extermination, the best extermination methods available and/or the consequences involved in their use.</td>
<td>You include fewer than three types of information about the &quot;bugs&quot; that you are featuring. It is difficult for the professional using your guide to readily identify the insects or arachnids that they come across. You provide overly-simplistic information or leave out important details in terms of whether or not these &quot;bugs&quot; should be a priority for extermination, the best extermination methods available and the consequences involved in their use.</td>
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<td>-----------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------</td>
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<td>------------------------------------------------------------------------------------------</td>
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<td><strong>Ease of Use/ Quality of Classification</strong></td>
<td>Your guide uses a classification system with cross-referencing that is logical and very easy to understand. After seeing an unfamiliar &quot;bug&quot; in a house, the professional can rapidly locate important information about the creature in your guide.</td>
<td>Your guide uses a classification system, but it is not user-friendly. Still, after seeing an unfamiliar &quot;bug&quot; in a house, the professional is able to locate information about the creature in your guide without having to compare the specimen to every entry.</td>
<td>The guide uses a classification system that is illogical in sequence. After seeing an unfamiliar &quot;bug&quot; in a house, the professional would have a difficult time locating the creature in the guide and/or difficulty finding out useful information about it.</td>
</tr>
<tr>
<td><strong>Score:</strong> ___________</td>
<td></td>
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<td></td>
</tr>
<tr>
<td><strong>Appearance/ Production Quality</strong></td>
<td>The guide is professional in appearance. Written information is typed or printed neatly. Graphics and illustrations are eye-catching. The guide does not appear too busy or cluttered. The use of color in the guide enhances its clarity and visual appeal. No more than three colors are used in addition to black.</td>
<td>Written information in the guide is typed or printed neatly. Graphics and illustrations are also neatly presented. No more than three colors are used in addition to black.</td>
<td>Written information is difficult to read. Graphics and illustrations are messy. You use more than three colors, in addition to black.</td>
</tr>
<tr>
<td><strong>Score:</strong> ___________</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Referencing</strong></td>
<td>All sources of information are cited according to a standardized professional format. Guide users are not only able to locate your sources, but are directed to sources they might use for additional study.</td>
<td>Sources of information are cited in a standardized format, allowing the user to locate them easily.</td>
<td>You do not cite your sources OR Sources of information are not cited in a standardized way that allows the user to locate them easily.</td>
</tr>
<tr>
<td><strong>Score:</strong> ___________</td>
<td></td>
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</table>

**TOTAL SCORE:** ___________
Appendix E

Where in the World
Where in the World?

Purpose/Rationale

This assessment task is designed to measure students' understanding of key cultural elements of countries/regions around the world.

Knowledge, Skill, and Disposition Objectives

Students will demonstrate their ability to:

- choose cultural regions or countries that emulate specific characteristics.
- engage in a logical process of research, analysis, and questioning that leads them to valid, thorough information about a concept or idea.
- choose the most relevant information about a region to communicate a big idea or theme to a specific audience.
- visually present information about cultural regions in a manner that is appealing to a specific audience.

Prerequisite Knowledge/Skills

- knowledge of various cultures around the world
- knowledge of culture—the elements of culture as well as how those elements work together to form a community
- principles of effective visual communication
- research skills

Context

This task is designed to cover a 2-week period in which students work on the project in class and in the library for one hour per day. Students may also take the project home to work on it.

Form

The task is designed to be completed individually.

Rater

This task is designed to be rated by the teacher.

Prompts

There are two prompts. The first prompt is designed for those learners who are functioning at grade level in terms of their knowledge of world cultures, research ability, and complex and abstract thinking ability. This prompt may be modified for struggling learners by providing graphic organizers and multiple teacher checks to aid students in the research process and keep them on-task. The second prompt is designed for learners functioning above grade level in terms of their knowledge of world cultures, research ability, and complex and abstract thinking ability. It requires more
transformational thinking and involves abstract ideas and a complex research and selection process.

Because of the significant amount of reading/research/written expression required, LEP students may need to work with a partner or receive additional help from a teacher to complete this task.

**Rubric**

The same rubric may be used for both prompts.

**Teacher Notes**

The teacher may wish to consider allowing ESL (English as a Second Language) students or recent immigrants the option of using their country of origin as the basis for comparison instead of the United States.
Where in the World?

You are a local travel agent. Lately, overseas travel has been a little slow. Your boss believes that by developing pamphlets, flyers, and displays about overseas countries, you will be able to encourage more people to travel overseas.

You have been put in charge of this marketing campaign. From your experience dealing with the traveling public, you have found that some people feel more comfortable traveling to countries that are culturally similar to the United States, whereas other, more adventurous types prefer to travel to places where they can feel far away from home.

Your job is to find a way to market travel to both types of people. Your specific duties are listed below:

1) The following is a list of some of the elements of culture that make up any community or population:

- Arts and Literature
- Economy and Technology
- Social Structure, Education, and Language
- Customs, Traditions, and Roles
- Religion, Philosophy, and Value Systems
- Government and Political Systems

Now, take a look at the United States. To establish a basis for comparison with other countries, describe our country using the above list. Answering the following questions may be helpful.

- What types of art or art movements have influenced life in the United States?
- Are there classic American stories or novels? If so, name several.
- What things about the American way of life do Americans seem to value most?
- What kind of technology is available and common in American society?
- What role does gender play in American society?
- What are American schools like?
- What is the national language of the United States? What other languages are gaining importance within American society?
• What types of food are eaten in the United States?
• What are common leisure activities?
• How do people in the United States dress?
• What are the predominant religious groups in America? How do they influence American life?
• What holidays are celebrated in the United States?
• What type of government exist in the United States?

You should compile this information using several different sources such as: your textbook, encyclopedias, books on art, literature, newspapers, magazines, the Internet.

2) Using your notes on American culture, choose two countries outside of North America that you think are very similar to the United States. Remember that they don't have to be exactly the same, just similar enough so that a traveler would feel "at-home" when visiting the country.

3) Use the questions from step #1 to analyze the two countries that you have chosen. Note the main similarities and differences between these countries and the United States. (Remember that the two countries should be very similar to the United States!) You may wish to use the attached chart.

4) Now, choose two countries outside of North America that you believe are very different in terms of the elements listed in #1 when compared with the United States. In other words, where might a more daring person in search of a drastically different cultural experience want to travel? Analyze these countries using the questions listed in #1.

5) Describe the two countries that you have chosen. Note the main similarities and differences between these countries and the United States. (Remember that these countries should have many items listed under the "differences" column on the chart!) You may wish to use the attached chart.

6) Use the work you did in parts 1-5 to put together two displays or pamphlets—one to market travel to the far-away countries that would feel close to home and one to market travel to the far-away countries that would feel considerably different from home.

You will turn in your final product (part 6) as well as all supporting material. You will be evaluated on all parts of the task, however, your final product (part 6) is what will be presented to the public. It should be a synthesis of parts 1-5, not a replication, yet it should contain the most important and marketable ideas from parts 1-5.

You will be evaluated on the accuracy of the information you present, how thoroughly you cover important cultural elements of your regions, the appropriateness of your selections to the assignment, the attractiveness and appeal of your display, and the completeness of your supporting materials. Supporting materials that are illegible or unclear will not be accepted.
## Cultural Similarities and Differences

<table>
<thead>
<tr>
<th>Country #1</th>
<th>Similar to the United States</th>
<th>Different from the United States</th>
</tr>
</thead>
<tbody>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Country #2</th>
<th>Similar to the United States</th>
<th>Different from the United States</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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# Where in the World?

## Scoring Rubric

<table>
<thead>
<tr>
<th>Travel Rubric</th>
<th>Expert Travel Agent</th>
<th>Experienced Travel Agent</th>
<th>Novice Travel Agent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accuracy of Information</td>
<td>The information you present about your countries is accurate and up-to-date.</td>
<td>Most of your information is accurate. Some of your facts are outdated.</td>
<td>You misquote or misinterpret some data. Some information is outdated or from an invalid source.</td>
</tr>
<tr>
<td>Thoroughness of Coverage</td>
<td>Your pamphlets or displays greatly inform your audience about the different areas of the world. You cover every element of culture to its fullest. You give your audience a thorough understanding of what they can expect when visiting in these countries.</td>
<td>You cover many of the elements of culture. Your audience gets a feel for the culture of the countries presented. However, you leave some issues unanswered, or answered in an incomplete or overly simplistic fashion.</td>
<td>You fail to research many of the elements of a culture. You leave out some crucial issues regarding your regions. The audience is unable to gain an understanding of the culture of the countries presented.</td>
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<td>You highlight some interesting countries; however, there are other countries that might better address the task at hand.</td>
<td>You highlight countries that do not meet the criteria established by the task.</td>
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<td>Your brochures or displays are attractive and inviting. Customers will be intrigued by your design and will be drawn in to the ideas that you present. You use a combination of images and creative captions to capture the essence of the countries that you chose. Your display is neat and uncluttered. Your captions and supporting information about the regions contain no errors in grammar, spelling, composition, or punctuation</td>
<td>Your brochures or displays are fun and informative. Customers learn something by examining them. However, there is a lack of originality or attention to sound aspects of design that would attract more customers. There are occasional errors in grammar, spelling, composition, or punctuation, which lessen the professional appeal of your brochure or display.</td>
<td>Your brochures or displays contain all or much of the information requested. In some places, they are too crowded with images and information OR there is so much white space that the display looks unfinished. Your display does not invite the customer to seek further information about the countries presented. Errors in grammar, spelling, composition, or punctuation distract the customer and interfere with your message.</td>
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<td>Supporting Material</td>
<td>Your supporting information reflects the most recent information about cultural elements of the countries or regions. You use multiple sources for your information. Your notes are neat, clear, and easy to follow.</td>
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Prompt Two

Where in the World?

You are a local travel agent. Your agency wants to market overseas travel to consumers by capitalizing on the new millennium. The theme of the marketing campaign focuses on "Cultural Centers of the 21st Century."

Your boss has asked you to manage the campaign. Your job is to research and present to consumers cultural elements of three far-away places that you believe will serve as cultural hubs of the next century.

You may choose any three countries, geographic regions, or cultural regions overseas. You may not choose any North American country or region.

Remember that culture is an overarching term that refers to "socially transmitted behavior patterns of communities and populations." There are many elements of culture which include:

- Arts and Literature
- Economy and Technology
- Social Structure, Education, and Language
- Customs, Traditions, and Roles
- Religion, Philosophy, and Value Systems
- Government and Political Systems

The steps of the task are outlined below.

1) In preparation for this task, you must first decide what a cultural center of the 21st Century would look like in regard to each of the elements listed above. What will make the region a popular travel destination? Why will people of the 21st century want to live or study or work there? Develop these criteria carefully, as you will use them to choose and evaluate your three regions. To help guide you in your evaluation, you may want to look at historical trends regarding the characteristics of current and past major cultural centers.

2) Use your criteria to choose three cultural regions or countries around the world that you believe best live up to the standards that you set in part 1.

3) Describe your regions in detail, discussing each of the cultural elements listed above.

Prepared by Rachel Cochran
Revised by Cindy Strickland
Funding for the development of these tasks was supported under the Educational Research and Development Centers, PR/Award Number R206R50001, as administered by the Office of Educational Research and Improvement, U.S. Department of Education.
4) Defend your reasons for believing that the three regions will be cultural hubs of the next century.

5) Develop a visual display with supporting written information to market your three regions to the public as "Cultural Centers of the 21st Century."

You will turn in your final product as well as all supporting material. You will be evaluated on all five parts, however, your final product (part 5) is what will be presented to the public. It should be a synthesis of parts 1-4.

You will be evaluated on your analysis of what comprises a cultural center, the accuracy of the information that you present, how thoroughly you cover all aspects of your regions, the quality of your defense of your choices, the completeness of your supporting materials, and the attractiveness and appeal of your display. Supporting materials that are illegible or unclear will not be accepted.
## Where in the World?

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