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ABSTRACT

Rural Trust schools and communities embrace an education that values what is unique to a particular place in an effort to promote mutual school and community well-being. This local focus engages students academically, pairing real world relevance with intellectual rigor. It also develops skills that promote citizenship, such as decision making, planning, public presenting, and valuing of local culture. These skills are best displayed through long-term projects in community-based work with a public purpose and audience. Assessment practices compatible with such project-oriented learning are those in which students actually do something: construct answers, perform critical tasks, and create a product of value. In the face of increased calls for accountability, assessments are needed that capture the place-based learning of Rural Trust students more adequately than standardized tests. This guide describes alternative assessment strategies, practical steps to take in constructing them, and specific examples from various school communities. Part 1 presents background, definitions, and rationale for alternative assessments, which include performance, authentic, and exhibition assessment. Part 2 discusses steps and samples for constructing alternative assessments. Part 3 covers portfolio assessments. Part 4 discusses tracking student progress with alternative assessments. Three appendices present resources for developing instructional and educational goals, Alaska Rural Systemic Initiative Tools, and assessing nonacademic performance skills. (Contains 18 references.) (TD)

ASSESSING STUDENT WORK

Prepared by the Harvard Documentation & Assessment Program for the Rural School and Community Trust

January 2001

THE RURAL SCHOOL AND COMMUNITY TRUST

The Rural School and Community Trust (Rural Trust) is a nonprofit educational organization dedicated to enlarging student learning and improving community life by strengthening relationships between rural schools and communities and engaging students in community-based public work.

Through advocacy, research and outreach, the Rural Trust strives to create a more favorable environment for rural schooling, for student work with public audience and use and for more active community participation in schooling.

Founded as the Annenberg Rural Challenge in 1995, the Rural Trust today works with more than 700 rural elementary and secondary schools in 35 states.

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Dedication

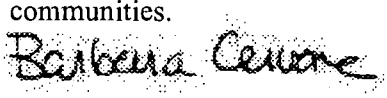
Dedicated to Vito Perrone, whose preface to an earlier version of this guide notes: "Those in Rural Trust schools must argue for, and make use of, assessment practices that are potent, that support their students and the teaching-learning exchange productively, that inform their local communities fully."

Acknowledgements

The following guide is an adaptation of a previous *Assessment Monograph*, published in October 1999 under the leadership of Vito Perrone, principal investigator of the Rural Trust's documentation and assessment team at the Harvard University Graduate School of Education.

A host of individuals contributed to the preparation of the original document. Polly Ulichny completed much of the research and writing, and Carla Fontaine contributed to the text through her work with several teachers in Rural Trust sites. While many Rural Trust Project Directors provided constructive counsel and critique, the interest and suggestions of David Ruff and Edd Diden stand out. Several Rural Trust teachers contributed by sharing their materials and assessment practices: Tom McLaughlin, Pat Higgins and Bob Cobb of the Molly Ockett Middle School in Fryeburg, Maine; Liza Finkel of Noble High School in Berwick, Maine; Mitch Mendosa from Anderson Valley, California; Judy Cross and Regina Headden of the Wartburg Central High School in Tennessee; and Margaret MacLean and Kathy Renfrew of the Peacham School in Vermont.

Lisa Rowley of the Harvard "team" provided the lion's share of the editing for this revised notebook. We hope it will be useful to Rural Trust participants, who continually inspire one and all with the quality of their work and their vital commitments to children, young people and communities.



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January 2001

Introduction

> *"[W]e sacrifice our aims as educators and our children's intellectual needs when we test what is easy to test rather than the complex and rich tasks that we value in our classrooms and that are at the heart of our curriculum."*
>
> — Grant Wiggins, in Educative Assessment: Designing Assessments to Inform and Improve Student Performance

Rural Trust schools and communities embrace an education that values what is local—the unique history, environment, culture, economy, literature and art of a particular place—in an effort to promote *mutual* school and community well-being. This local focus, the Rural Trust argues, has a special power to engage students academically, pairing real world relevance with intellectual rigor. It also develops in students critical habits of mind that promote genuine citizenship—decision-making, planning, public presenting and valuing of local culture. The Rural Trust believes these skills and habits are best displayed through long-term projects, in community-based work with a public purpose and audience.

This notebook originated in a request from Rural Trust project directors for assessment practices compatible with such project-oriented learning—the types of assessment in which students actually do something, construct answers, perform critical tasks and create a product of value. In the face of increased calls for accountability, there is an urgent need for thoughtful assessments that capture the place-based learning of Rural Trust students more adequately than standardized tests. What follows, therefore, are descriptions of various assessment strategies, practical steps to take in constructing them, and specific examples from a number of school communities.

In the end, of course, teachers in particular schools, working with students, parents and community people, must develop assessment tools that meet their own well-defined purposes. Responsiveness and local ownership are hallmarks of alternative assessments. The discussion and examples presented here, we trust, will be useful in that endeavor—not only for Rural Trust participants, but for other educators as well.

Part I. Alternative Assessments: Background, Definitions, Rationale

A long tradition of progressive educators—dating back at least 100 years—has advocated for assessment techniques that demonstrate students' ability to *use* knowledge, to go beyond what has been presented in their textbooks or by their teachers. These include strategies for assessing student understanding that is made visible in projects, laboratory experiments, portfolios of work and public exhibitions of expertise. In recent years, a variety of organizations have worked hard to bring such assessments into the mainstream, including among others, the Coalition of Essential Schools, various small schools networks (e.g, Annenberg's New York Networks for School Renewal), Project Zero, the North Dakota Study Group and Jobs for the Future. Indeed, this notebook barely skims the surface of the work these groups—and many individuals—have done in the area of alternative assessment. The bibliography at the end offers a good starting place for those who want to learn more.

Commonly referred to as "alternative assessment," these practices take their names from what they emphasize. In the case of "performance" assessment, for example, students actually do something. In "authentic" assessments, students' learning tasks mirror real-life problem solving. In a portfolio or exhibition, a student presents an array of understandings and work. In some schools, such assessments often replace the weekly or unit tests of the past.

What do these alternative assessments look like? Below are several illustrations. A newcomer to this kind of assessment might well note that these examples more closely resemble units of curriculum than methods of assessing, grading or evaluating. In fact, the terms "assessment task" or "performance task" are closely tied to, and often used synonymously with, alternative assessment—an intentional blurring of an artificial line between *what* a student studies and *how* his or her understanding of that subject is evaluated.

The following performance task was developed by the Center on Learning, Assessment, and School Structure (CLASS) and appears in Wiggins' *Educative Assessment.*

Troubled Waters – Headline News

"CONFLICT ON THE COAST—FRIENDLY RIVER BECOMES DEADLY
Major fish kills... 100,000 fish wash ashore; child returns from swim with hives; seafood harvest plummets; and scientist discovers fish-killing invader!" What is the problem? In this task, students take on the role of the "Riverkeeper," whose job is to maintain healthy rivers. Students will analyze data gathered along the Anywhere River, pinpoint pollution hotspots, and outline research to determine potential sources. Two letters will be drafted: (1) an informative letter to fishermen, and (2) a letter to a governmental agency, convincing them to address the situation.

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Below is an example of an exhibition developed for the humanities curriculum at Fulton Valley Prep at Piner High School in Santa Rosa, California.

Heroes Exhibition

What kind of heroes would you prescribe for our society? After whom should we pattern our lives?

For this exhibition, you will create and justify a collection of heroes for our time and culture. In your project you will define your idea of a hero for today's America, based on your own interpretation and synthesis of class activities. You will select a group of persons—mythic or real, living or dead, famous or known only to a few—who exemplify that definition. You will have the opportunity to choose the format of your project from a list which follows. Finally, you will make an oral presentation of your collection, first to a small group of your peers and then to the whole class, during which you will explain and defend your ideas more completely, focusing on our central question: Who should our heroes be?

[In relation to the task] Decide on a format for your project. You may choose from the following list:

a.	Anthology of stories and poems, original and found	[includes author's introduction]
b.	Series of monologues	[includes performer's introduction]
c.	Expository speech	[includes intro, body, conclusion]
d.	Illustrated calendar	[plus promotional copy]
e.	Set of trading cards	[plus promotional copy]
f.	Illustrated magazine or comic book	[includes author's introduction]
g.	Hypercard stack	[includes author's introduction]
h.	mural	[with legend and artist's notes]

Write an exhibition proposal that includes:

- a bibliography of sources you have consulted and plan to consult
- a working list of heroes you plan to include
- the format of your project
- a list of materials needed
- a timeline, including estimated dates of presentation to your work group and to the class.

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Finally, the following abbreviated version of a Senior Portfolio/Exhibition Handbook was developed by staff at Heathwood Hall Episcopal School in Columbia, South Carolina.

Autobiographic Portfolio Semester I

So that our seniors understand their skills, strengths and talents better, and in order to enhance the college admissions process, they will create and compile an autobiographic portfolio, to include written and visual components.

Essential questions, like the ones below, will inspire students to begin thinking about the scope and nature of their portfolios. Students may write their own questions which address issues of identity, place, society, family, etc. These questions should be used as a "starting place" for their autobiographical writings:

- How does the geographical region(s) in which you are/were raised help define who you are?
- How do I want to be remembered?
- How do I fit into a pluralistic society?
- How has my relationship to my neighborhood, church, family, school, or peers shaped who I am?

Assessment of the portfolio and the Senior Thesis will be by a committee consisting of the following people: one outside adult, one faculty advisor (assigned), one junior from your advisor group, a second faculty member, and an outside "expert." The portfolio will include:

- college essay(s)
- a post-graduate plan which accounts for the whole person (body, mind, spirit)
- a written autobiography
- a non-written component (an artistic or technological medium expression of some aspect of self)
- the proposal for senior thesis
- written reflection on the question, "How does what I do reflect who I am?"
- rubric for assessment of autobiographic portfolio.

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These examples reflect a central tenet of alternative assessment: that no single task or test can tap the range of students' abilities and know-how. Instead, alternative assessments typically evaluate *multiple* examples of student work *over time* and, in the process, focus on students' growth and development. Unquestionably, they require of teachers and students considerable time, effort, and thought. But, the payoff can be large. The composite results of these assessment procedures yield a detailed picture of students' attitudes and motivation, their knowledge and abilities—including, importantly, what teachers and students need to doto improve performance.

How are judgements rendered? Against what yardstick are student progress and the quality of student work measured? As part of each project, teachers who use performance tasks, exhibitions or portfolios develop detailed criteria, often called *rubrics,* by which they judge various levels of student performance. (See page 14 for more information about constructing rubrics). Rubrics give well-articulated descriptions of excellent, adequate and insufficient student performance for the specific traits and skills being evaluated. Examining complex tasks and performances by students against these rubrics informs educators of next steps or adaptations to make in improving their teaching. And since rubrics are made public, students can use them to guide their own performance, as well—to solicit feedback on works in progress as well as on final products.

Part II. Constructing Alternative Assessments: Steps and Samples

Just as there are better and worse tests, there are more and less effective alternative assessments. Not all stand up as educative tools, capable of generating useful information. Many practices that go by the name of alternative assessments are not carefully planned and executed; others can be laborious exercises that offer little new information to teachers or students. In the case of portfolios, some are merely collections of all of a student's work, unanalyzed for what they say about the student's growth.

As we create alternative ways for measuring what we want students to learn and value, we must design assessments that match our purposes. Stated simply, good assessment practices require that teachers:

1. Articulate the goals of instruction clearly.
2. Determine valid and appropriate evidence for meeting instructional goals.
3. Insure that tasks are complex, realistic and generate multiple sources of data.
4. Construct clear, well-understood rubrics for assessing student products.
5. Involve students in developing rubrics and evaluating their own work.

An additional practice of strong assessment applies to Rural Trust participants in particular—involving an "outside" as audience reviewers, including those with a real stake in the student work being assessed. A core tenet of the Rural Trust is that teachers and students not only engage in place-based learning, but that they also invite public scrutiny (as well as celebration) of the fruits of their labor. Student exhibitions and performances are properly a mainstay of Rural Trust assessment strategies, since their audience typically includes those with a keen interest in the results: the community.

We now look more closely at these recommended practices for designing good alternative assessments. In addition to a description of each practice and its importance to the overall process, below are examples developed by a number of schools, including those participating in the Rural Trust.

1) Articulate the goals of instruction clearly:

- ***What should students know, understand and be able to do?***

Good assessment begins with clearly stated goals of instruction. What we assess must line up with what we hope students will achieve. If we aim to prepare students to be thoughtful, democratic participants in their community and wider society, for example, we must engage and assess them in tasks that support such values.

Many examples of "articulated" goals of instruction are available to schools and communities. National discipline-based standards, state frameworks, district guidelines, even textbooks provide numerous lists of instructional goals—often voluminous. Given the tendency to outline long lists of what students should know and be able to do, thinking about smaller numbers of generative goals may offer a more manageable departure point.

The following example of guiding questions and possible answers comes from the Association for Supervision and Curriculum Development's (ASCD) *Practical Guide to Alternative Assessment:*

a. **What Important Cognitive Skills Do I Want My Students To Develop?**
I want students to be able to:
- Communicate effectively in writing, or more specifically, to write persuasively, to write good descriptions, and to write stories.
- Communicate effectively orally.
- Analyze literature using plot, character, setting, and theme.
- Analyze issues using primary source and reference materials.
- Analyze current events from historical, political, geographic, and multicultural perspectives.
- Design and conduct studies to aid decision-making about current or everyday problems.
- Use the scientific method.
- Use different media to express what they know.

b. **What Social And Affective Skills Do I Want My Students To Develop?**
I want them to be able to:
- Work independently.
- Develop a spirit of teamwork and skill in group work.
- Appreciate their individual strengths.
- Be persistent in the face of challenges.
- Have pride in their work.
- Enjoy and value learning.
- Have confidence in their abilities.
- Have a healthy skepticism about current arguments and claims.
- Understand that we all have strengths and that each person is able to excel in some way.

c. **What Metacognitive Skills Do I Want My Students To Develop?**
I want them to be able to:
- Reflect on the writing process they use, evaluate its effectiveness, and derive their own plans for how it can be improved.
- Discuss and evaluate their problem-solving strategies.
- Formulate efficient plans for completing their independent projects and for monitoring their progress.
- Evaluate the effectiveness of their research strategies.

d. **What Types of Problems Do I Want Them To Be Able To Solve?**
I want them to:
- Know how to do research.
- Solve problems that require geometric proofs.
- Understand the types of problems that trigonometry will help them solve.
- Apply the scientific method.
- Predict consequences.
- Solve problems that have no right answer.
- Make healthy choices.
- Create their own unique expressions.

e. **What Concepts and Principles Do I Want My Students To Be Able To Apply?**
I want them to be able to:
- Understand what a democracy is.
- Understand cause-and-effect relationships in history and in everyday life.
- Understand the meaning of various logical propositions.
- Criticize literary works based on plot, setting, motive, and so on.
- Understand and recognize the consequences of substance abuse.
- Apply basic principles of ecology and conservation in their everyday lives.

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Far briefer is the following statement of purpose from the Central Park East Secondary School (CPESS) in New York City; it reminds us that "less" can often be "more."

Statement of Purpose: Central Park East Secondary School, New York, NY

At CPESS we make an important promise to every student—one we know we can keep. We promise our students that when they graduate from CPESS, they will have learned to use their minds—and to use their minds well. In every class, in every subject, students will learn to ask and to answer these questions:

1. From whose viewpoint are we seeing or reading or hearing? From what angle or perspective?
2. How do we know what we know? What's the evidence and how reliable is it?
3. How are things, events or people connected to each other? What is the cause and what is the effect? How do they "fit" together?
4. So what? Why does it matter? What does it all mean? Who cares?

***

2) Determine valid and appropriate evidence for meeting instructional goals:

- ***How will we know when students understand what we most want them to understand?***

In this step, teachers specify how they will know if students have learned what has been defined in the goals. Alternative assessment practices must build in appropriate, agreed-upon standards for evidence of students' mastering instructional goals if they are to yield valid information about student learning and understanding.

The following is an elaboration of an example of "Standards for Student Work in Mathematics" presented by Fred Newmann, Gudelia Lopez, and Anthony Bryk in *The Quality of Intellectual Work in Chicago Schools: A Baseline Report (1998).*

Standards for Student Work in Mathematics

- Mathematical analysis: students would demonstrate their thinking about mathematics and their mathematical analysis abilities by going beyond simple recording or reproducing of facts, rules, and definitions or merely applying algorithms.

- Mathematical concepts: students would demonstrate understanding of important (specified) mathematical concepts by representing the concepts in different contexts, or making connections of these concepts to other mathematical concepts, other disciplines, or real world situations.[1]

- Written mathematical communication: students would demonstrate elaboration of their understanding, explanations, or conclusions in the form of diagrams or symbolic representations and prose that present convincing arguments.

- Habits of study and work: students would demonstrate effective study and work habits by utilizing their time well, completing assignments on time, paying attention during class and group activities, showing initiative in taking care of themselves and others, taking an active part in class and group activities.

- Habits of social interaction: students would demonstrate social maturity by being considerate of others' opinions and belongings, cooperating with others to achieve

[1] The concepts would, of course, be specified. In terms of articulating overall goals of instruction, this could be a compilation of the topics and concepts of the course, such as rational numbers, probability, geometric reasoning, variable equations, etc.

common goals, listening and speaking with consideration for others, showing self control, being dependable and responsible.

***

While we have presented the first two practices of good alternative assessment as separate steps, they necessarily inform each other—pushing educators to define specifically what is worth assessing, and how they will identify what they want to assess. The process must start with articulating instructional goals, but the clarity of the articulation will depend upon how well these two steps complement one another.

3) Insure that assessment tasks are complex, realistic and generate multiple sources of data:

- ***Does the task require students to display their knowledge on multiple dimensions?***
- ***Are the genres, contexts, and content typical of real-world work in this area?***
- ***Does the task produce evidence that can be evaluated upon completion?***

Although all subject matter is not equally generative, assessment tasks ideally should resemble the complexity of problem solving in the real world. They should yield a student product that demonstrates and tests a variety of skills and performance.

Below are several assessment tasks—prepared for classes in math, social studies/writing and science—that meet these criteria and have been designed with specific instructional goals and appropriate evidence in mind. The first is an extended algebra assignment requiring multiple abilities and knowledge bases.

A Project in Cost-Effective Design

Groups of three to four students become members of a design firm competing with other student firms for the right to design a large museum complex. The task requires that students solve a variety of problems which require algebraic concepts and skills related to rate, work and rows/columns of seating. In addition, students must make some philosophical and aesthetic judgments about the content and form of the museum.

The complex will sit on a hill overlooking and due west of the city of Harrisville. The existing straight road leads back to the city, is 30 miles long, and has a continuous slope of 11 degrees on the three-mile stretch down the hill to the valley. Parallel to the existing road, all the way to the city, is a canal with locks and a railroad track. A new road will have to be built from the main road to the site. The vertical distance from the main road to the proposed site is 167 feet, according to survey maps.

The bidding calls for a museum/auditorium of 500,000 cubic feet. The building must be made of brick. (Assume that the roof and costs other than that of the walls remain constant in all possible designs; such factors as the size and cost of the windows and doors need not be considered for this exercise.)

The design must solve the following problems [this is a partial list]:

a. You have three types of brick to choose from, labeled A, B, and C. Each A brick is 2x2x1 and costs $1. Each B brick is 4x4x2 and costs $5. Each C brick is 4x2x1 and costs $3. The A brick factory is five miles away; the B brick factory is three miles away; and the C brick factory is four miles away. All three factories are accessible by rail, barge or road.

b. A truck can carry one-third the number of bricks carried by a barge up the canal. Both modes, used together, can move 3,000 bricks a day in two round trips each. A train can carry all the bricks at once.

c. Rental costs for each mode of transportation (not counting labor): The truck rents for $50 a day; the barge, $200 per day; the train, $3,000 for the one trip it needs.

d. The average worker (AW) can lay 200 bricks per day at $10 per hour for an eight-hour day. The skilled worker (SW) can lay 300 bricks per day at $15 per hour.

e. To finance the job, you will need to borrow money. You have your choice between rates of 8% compounded daily or a 12% flat rate. Figure the cost of borrowing the money based on the fraction of a year the project will roughly last (figure to the week only).

f. The rate of the current in the canal is 4 mph. A strong tailwind of 15 mph is usually blowing when traveling to the site from the city. The total round-trip time by truck is 50 minutes. It takes 18 minutes by car, travelling at 40 mph to get from the site to the city.

g. Each design team must "hire" the teacher as a consultant (three brief, all-class presentations are "free"). Cost: $1,000 per 10-minute segment. Teams can join together to "hire" the teacher as a means of reducing costs. Teams must plan ahead, however, submitting a schedule of times they wish to lock in with the teacher.

Design Competition Rules:

a. Your team will submit a written plan (with each person's contribution clearly noted) and make an oral presentation to the class (all members presenting). Voting on "design points" (see below) will be done by the entire class, with teams unable to vote for their own design. As a listener you will be expected to accurately check the facts and figures presented.

b. The museum will house portraits and two artifacts each of the 10 greatest mathematicians of all time. Explain your choices and justify their inclusion.

c. Include with all figures accurate graphs of the top and side views of the building and the hill-site with road.

d. Be prepared to justify figures in your presentation to the class. An inability by any one of your team members to explain a figure or cite the correct formula will cost one design point.

e. The three (or four) of you must finish a proposal by the last class of the week. Each day late costs you five design points.

f. Each mathematical error (either in presenting or checking others) costs you two design points. Omission of a necessary formula or problem solution costs you three design points.

g. Five design points can be earned by winning each of the various segments of the competition: aesthetics, completeness, effectiveness of presentation, most balanced use of team members, cost-efficiency in transporting costs, lowest wages, shortest construction time and lowest overall accurate bid.

***

Not all alternative assessment tasks, of course, need be as complex or lengthy as the previous one. Following is another example of a math assessment that meets the same design criteria yet requires a simpler product, borrowed again from Newmann et al.'s *The Quality of Intellectual Work in Chicago Schools (1998).*

8th Grade Mathematics Performance Tasks

Assignment: Your group is going to design tiles which can be used to decorate part of the classroom. You can use shapes on the attached Shape Sheet to cut out as many copies of each of the shapes you need. You may use any other tools you wish (calculator, rulers, glue, string, protractors, compasses, pens etc.)

[Accompanying this task was a list of vocabulary words that included *regular polygon* (a shape whose sides are all the same length and whose corners all have the same "sharpness"), *complex polygon* (a shape which is not regular), *tile* (a regular or complex polygon which is used like a puzzle piece to attempt to cover a surface), *tessellate* (to cover a surface with tiles, all the same shape, so that no tiles overlap and so that there are no gaps between tiles), *good tile* (a tile that tessellates), *bad tile* (a tile that doesn't tessellate).]

The task included two parts. For Part I, students were told to:

- Find out which regular polygons make good tiles (remember: good tiles tessellate). For each good tile you find, cut out enough shapes to cover half a page of paper to show that the tiles tessellate (you can also do this by tracing). For two shapes that are bad tiles, cover half a page showing how they overlap or leave gaps.

- Find a pattern that shows which regular polygons are good tiles. Write an explanation as to why these are good tiles. Based on the pattern that you have found, are there any other regular polygons which make good tiles? Why or why not? Write an explanation which uses information on the paper that you covered with the tiles and the patterns that you looked for.

[Part II of the assignment asked the students to create complex polygons and explain how they could be used to cover a surface. Students were asked to write up their findings and conjectures about this.]

***

The following social studies/writing assessment task—from the Urban Academy in New York City—has many aspects of a traditional, albeit complex, assignment. The task requires analyzing original documents, which are then synthesized to construct a product. It requires of students both oral and written communication.

Part of a Civil Rights Unit

Attached are five newspaper articles that appeared regarding the Montgomery, Alabama Bus Boycott that followed the arrest of Rosa Parks.

The point of this paper is to write an informed opinion - an analysis - that evaluates press coverage of the protest.

As someone who has studied the Montgomery Bus boycott and read many first-person accounts of people who were participants, you have your own outlook about what occurred. Your individual view can, and should be, included; however, it shouldn't overwhelm the analysis you submit.

To prepare the paper you need to:

(a) Read each article carefully and highlight or underline important points.
(b) Summarize the situation that the articles address in one paragraph.
(c) Consider what each reporter did to write the story that appears. Who was interviewed, listened to, read about, observed by the reporters?
    1. Where would you guess each reporter was during the protest?
    2. What would you guess each reporter feels about:
       ...the protest itself?
       ...what caused the protest to be called?
(d) Select quotes which can be effectively used and which are not repetitive.
(e) Interview at least two individuals who were alive at the time of the Montgomery Bus Boycott about their remembrances of the protest as well as press coverage (you might show them the newspaper articles you are working with).
(f) Write a transcript of an interview you have had with one of the reporters. (Think of yourself as a participant in the protest engaged with one of the reporters of a newspaper account you have read.)
(g) Pay attention to the headlines used in each story. Consider the impact they have on the reader.
(h) Study photographs. How might the photographs which were used influence the views a newspaper reader gets of the event?

Keep in mind as you work on this paper that you are using multiple sources to develop an overall view of the press coverage. You might want to compare different papers or discuss sources that reporters used to write stories. Whatever you decide, you should constantly keep in mind that you need to support your statements effectively.

Your concluding analysis should not be an afterthought; it should be a key part of your paper. Begin the concluding section (not the concluding paragraph) of your paper with the words, "I think the press coverage of this event was..."
In this section, state your point of view in a way that selects out and emphasizes the key points from all the points you've been describing. This section should make your conclusions clear. You should cite key pieces of evidence to show why your conclusions are valid. (This will also be presented orally.)

When you think you have finished, proofread your paper carefully. Then, have someone else read your paper and have that person sign it, saying that it reads well.
In preparing your essay you need to:

- Highlight or underline the attached articles
- Jot down questions and comments, ideas and points to include as you think and read
- Organize your jottings into a structure that you plan to follow in your essay
- Write down your interview questions (this can happen during or after your interview)
- Consider your interview transcript.

Please attach all these items to your final essay when it is submitted. If you'd like help with this assignment, see me. This assignment needs to be completed no later than the due date, as there will be a follow-up assignment.

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This final example, from a Rural Trust site, focuses attention on a local issue with a local audience. It calls for group, as well as individual, work and written and oral presentations.

9th Grade Science Energy Unit
Community Action Initiative Assignment
Noble High School, Berwick, Maine[2]

In this assignment you will identify an energy-related problem in Maine and develop a plan to help address this problem. There are two parts to the assignment.

PART ONE: CREATING AN ACTION PLAN
You will be expected to turn in a formal write-up of this part of the assignment. Each member of your group will need a copy for their portfolio.

Create a plan of action which includes:

- A clear statement of the problem you will address
- A description of what you see as a solution to the problem
- A plan that will help to achieve the desired change. This is the "action" piece. You should include what you want people to do to solve the problem and how you will encourage people to take the action you want them to. Remember that we would like to be able to implement some of these plans, so keep them as realistic as possible
- A list of potential problems your group may encounter and need to overcome to achieve your goal. (Examples: attitudes, habits, values, costs, etc.)
- A list of key people or resources that could be helpful to you in getting your initiative off the ground

Responses to these requirements need to be written neatly or typed, and in complete sentences.

PART TWO: CREATING YOUR COMMUNITY ACTION INITIATIVE
This portion of the assignment is your chance to begin to put your plan into action by creating an advertisement that will convince others to adopt your plan.

Your advertisement can take the form of a poster, brochure, full-page newspaper ad, or radio advertisement. Your ad should achieve the following:

- Promote understanding of the nature of the problem
- Convince the community of the severity of the problem; and
- Promote understanding of potential solutions to the problem and of what you want people to do to solve the problem.

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[2] This assignment was furnished by Liza Finkel of Noble High School in Berwick, Maine.

4) Construct clear, well-understood rubrics for assessing student products:

- ***What differentiates levels of student performance—from excellent to insufficient—on the various components required by the task?***

Rubrics, as noted previously, are sets of criteria used to distinguish levels of student performance. Well-constructed rubrics allow any evaluator—including students—to assign an appropriate rating or score to a given piece of work. Rubrics define what a quality performance looks like, no matter who performed or assesses it.

Rubrics describe several levels of performance along a continuum, with ratings generally corresponding in some fashion to "expert/advanced," "proficient," "satisfactory," "needs improvement," or "novice." The number of performance levels may vary; while fewer performance levels (from three to six) are more manageable, some rubrics define up to ten. The number of levels is not nearly as important as the clarity of criteria used to distinguish among them.

An effective rubric takes into consideration the developmental level of the student. Quality writing in the first grade obviously differs from that of the tenth grade, even though both rubrics may include phrases such as, "clearly presents ideas in an organized fashion." Including exemplars—illustrations of each level of performance—anchors the criteria in an appropriate developmental level. Exemplars also help students understand what is expected of them.

Determining how many criteria to assess and how each will be evaluated are part and parcel of rubric design. Three basic types of rubrics—*particular trait analytic* and *holistic*—offer a range of possibilities for assessing criteria, from most to least particular. Following these definitions are examples of each type:

- *Particular trait* rubrics single out one or two criteria to evaluate in a complex performance and ignore other elements for purposes of assessment. They provide especially targeted information.
- *Analytic* rubrics track all of the criteria or standards demonstrated by students in a performance and allow for individual ratings of each one. They require more than one score for each piece of student work, providing more detailed information about a student's performance.
- *Holistic* rubrics merge all the criteria into comprehensive description of performance. The value of holistic rubrics is in assessing a student's overall performance on a particular task. They also allow for comparing students' work over time.

Particular Trait Rubric

The rubric below was designed to evaluate a senior essay in which students agreed or disagreed with an article about substance abuse. This example demonstrates the main features of a *particular trait* rubric: the criteria are specific to the task, narrowed to organization and style; the nine-point scale carefully distinguishes performance levels; and the evaluator assigns a single score based on the specified elements.

Rubric for Senior Essay
Heritage High School, Littleton, Colorado

9-8 The upper-range responses satisfy the following criteria:

a. *Summary.* The summary should identify the main idea [of the reading].
b. *Focus of agreement.* Agreement and/or disagreement may be complete or partial but writer must make clear what he/she is agreeing/disagreeing with. Specifically, 9-8 papers must address author's thesis, not substance abuse in general.
c. *Support for agreement/disagreement.* Support should provide an analysis of argument and/or relevant and concrete examples.
d. *Style and coherence.* These papers demonstrate clear style, overall organization, and consecutiveness of thought. They contain few repeated errors in usage, grammar, or mechanics.

[The four phrases in italics represent the dimensions being scored. Two of the criteria are underlined.]

7 This grade is used for papers that fulfill basic requirements for the 9-8 grade but have less development, support, or analysis.

6-5 Middle range papers omit or are deficient in one of these four criteria:

a. *Summary.* Summary is absent or incomplete, listing only author's thesis.
b. *Focus of agreement/disagreement.* What the writer is agreeing/disagreeing with is not clear or is unrelated to author's proposals. Example: writer doesn't use enough phrasing like "on the one hand ... on the other hand..." [an indicator].
c. *Support.* Writer only counterasserts; examples are highly generalized or not distinguishable from examples in the article. Analysis may be specious, irrelevant, or thin.
d. *Style and coherence.* These papers are loosely organized or contain noticeable errors in usage, grammar, or mechanics.

4 This grade is used for papers that are slightly weaker than the 6-5 papers. Also, a student who writes his/her own parallel essay in a competent style should receive a 4.

3-2 These papers are deficient in two or more of the criteria. Typically, they weakly paraphrase the article or they have serious organization/coherence problems. Papers with serious, repeated errors in usage, grammar, or mechanics must be placed in this range. [This whole paragraph, like all the previous ones, is a descriptor for this point on the scale.] [3]

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[3] Reproduced from the example provided in Wiggins, *Educative Assessment*, 155.

Analytic Rubrics

Below are two examples of *analytic* rubrics for writing. The first example is introduced by the following list, developed by teachers, of six traits that go into effective writing:

Six Traits for Teaching/Assessing Writing[4]

IDEAS
- Clear - makes sense
- Writer has narrowed idea or story line to manageable proportions
- Writer has plenty of information
- A fresh, original perspective
- Details that capture a reader's interest or make ideas understandable

ORGANIZATION
- An inviting lead that pulls me in
- Starts somewhere and goes somewhere
- Even when the writer seems to drift from the topic, everything's connected
- I have the feeling it's building to something
- Doesn't just stop
- Doesn't end "Then I woke up and it was all a dream"
- Doesn't end with a redundant, banal, or preachy summary: "Now you know the three reasons why we must all join in the war on drugs"
- A strong sense of resolution or completion

VOICE
- Sounds like a person wrote it, not a committee
- Sounds like this particular writer
- Brings topic to life
- Makes me feel part of it
- Makes me feel connected with the writer, maybe even want to *meet* the writer
- Makes me respond, care what happens
- Writer seems involved, not bored
- Brims with energy

WORD CHOICE
- Memorable moments
- Words and phrases I wish I'd thought of myself
- Word pictures
- Every thought is crystal clear
- Strong verbs
- Simple language used well
- Words used precisely
- Minimal redundancy
- The writer is *speaking* to me, not trying to impress me

SENTENCE FLUENCY
- Easy to read aloud
- Inviting, playful rhythms
- Well-built sentences
- Varied sentence length and structure
- Cadence

CONVENTIONS
- Looks clean, edited, polished
- Most things done correctly
- Easy to decipher and follow
- Free of distracting errors
- Designed to make reading easy and pleasant
- Attention given to spelling, punctuation, grammar and usage, capitalization, and indentation

[4] This list as well as the resulting rubric that follows is explained in Vicki Spandel and Richard J. Stiggins, Creating Writers: Linking Writing Assessment and Instruction, Second Edition, (White Plains, NY: Longman, 1997) 49-57.

The list of traits was then developed into the following rubric for expository or narrative writing:

Six-Trait Analytical Rubric for Writing

Ideas	Organization	Voice
5 Essay is clear, focused, purposeful and enhanced by significant detail that captures a reader's interest. • The paper creates a vivid impression, makes a clear point, or tells a whole story, without ever bogging the reader down in trivia. • Thoughts are clearly expressed and directly relevant to a key theme or story line. • The writer selectively and purposefully uses knowledge, experience, examples and/or anecdotes to make the topic both understandable and interesting. • Quality details consistently inform, surprise, or delight the reader--or just expand his or her thinking	5 The order, presentation, or internal structure of the piece is compelling and moves the reader purposefully through the text. • The organization serves to showcase or enhance the central theme or story line. • Details seem to fit right where they are placed, though the order is often enlivened by a surprise or two. • An inviting lead draws the reader in; a satisfying conclusion ties up loose ends and leaves the reader with something to think about. • Pacing feels natural and effective; the writer knows just when to linger over details and when to get moving. • Organization flows so smoothly the reader does not need to think about it. • The entire piece seems to have a strong sense of direction and balance. Main ideas or high points stand out clearly.	5 The writer's energy and passion for the subject drive the writing, making the text lively, expressive, and engaging. • The tone and flavor of the piece fit the topic, purpose, and audience well. • Clearly, the writing belongs to this writer and no other. • The writer's sense of connection to the reader is evident. • Narrative text is open, honest, and revealing. • Expository or persuasive text is provocative, lively, and designed to prompt thinking and to hold the reader's attention.
3 The writer has made a solid beginning in defining a key issue, making a point, creating an impression or sketching out a story line. More focus and detail will breathe life into this writing. • It is easy to see where the writer is headed, even if some telling details are needed to complete the picture. • The reader can grasp the big picture but yearns for more specific elaboration. • General observations still outweigh specifics. • There may be too much information; it would help if the writer would be more selective. • As a whole, the piece hangs together and makes a clear general statement or tells a recountable story.	3 The organizational structure guides the reader through the text without undue confusion. • Sequencing seems reasonably appropriate, given the main theme or story line. • Placement of details seems workable though not always deft. • Predictable moments or developments outweigh surprises or discoveries. • The introduction and conclusion are recognizable and functional. • Transitions are usually present but sometimes reinforce obvious connections. • Structure is sometimes so dominant it is hard for the reader to focus on the ideas or voice. • The piece has a developing sense of balance; the writer is zeroing in on what is most important but does not yet build to that point effectively.	3 The writer seems sincere and willing to communicate with the reader on a functional, if somewhat distant, level. • The writer has not quite found his or her voice but is experimenting—and the result is pleasant or intriguing, if not unique. • Moments here and there amuse, surprise, or move the reader. • The writer often seems reluctant to "let go" and thus holds individuality, passion, and spontaneity in check. The writer is "there"—then gone. • Though clearly aware of an audience, the writer only occasionally speaks right to that audience or invites the audience "in." • The writer often seems right on the verge of sharing something truly interesting— but then backs away as if thinking better of it.
1 The writing is sketchy or loosely focused. The reader must make inferences in order to grasp the point or piece together the story. The writing reflects more than one of these problems: • The writer still needs to clarify the topic. • The reader often feels information is limited, unclear, or simply a loose collection of facts or details that, as yet, do not add up to a coherent whole. • It may be hard to identify the main theme or story line. • Everything seems as important as everything else.	1 Ideas, details, or events seem loosely strung together. The reader struggles to discover a clear direction or purpose. The writing reflects more than one of these problems: • There is as yet no identifiable structure to move the reader from point to point. • No real lead sets up what follows. • No real conclusion wraps things up. • Missing or unclear transitions force the reader to make giant leaps. • Sequencing feels more random than purposeful, often leaving the reader with a disquieting sense of being adrift. • The writing does not build to a high point or turning point.	1 The writer seems somehow distanced from topic, audience, or both; as a result, the text may lack life, spirit, or energy. The writing reflects more than one of these problems: • The writer does not seem to reach out to the audience or to anticipate its interests and needs. • Though it may communicate on a functional level, the writing takes no risks and does not involve or move the reader. • The writer does not seem sufficiently at home with the topic enough to personalize it for the reader.

Word Choice	Sentence Fluency	Conventions
5 Precise, vivid natural language paints a strong, clear, and complete picture in the reader's mind. • The writer's message is remarkably clear and easy to interpret. • Phrasing is original—even memorable—yet never overdone. • Lively verbs lend the writing power. • Striking words or phrases linger in the reader's memory, often prompting connections, memories, thoughts or insights.	5 An easy flow and rhythm combined with sentence sense and clarity make this text a delight to read aloud. • Sentences are well crafted, with a strong and varied structure that invites expressive oral reading. • Purposeful sentence beginnings often show how a sentence relates to and builds on the one before. • The writing has cadence, as if the writer hears the beat in his or her head. • Sentences vary in both structure and length, making the reading pleasant and natural, never monotonous. • Fragments if used, add to the style.	5 The writer has excellent control over a wide range of standard writing conventions and uses them with accuracy and style to enhance meaning. • Errors are so minor that if there are any, a reader can easily miss them unless searching for errors. • The text appears clean, edited, polished. • The text is sufficiently long and complex to demonstrate control of a range of conventions.
3 The language communicates in a routine, workable manner; it gets the job done. • Most words are correct and adequate, even if not striking. • Energetic verbs or memorable phrases occasionally strike a spark, leaving the reader hungry for more. • Familiar words and phrases give the text an "old comfortable couch" kind of feel. • Attempts at colorful language are full of promise, even when they lack restraint or control.	3 The text hums along with a steady beat. • Sentences are grammatical and fairly easy to read aloud, given a little rehearsal. • Some variation in length and structure enhances fluency. • Some purposeful sentence beginnings aid the reader's interpretation of the text. • Graceful, natural phrasing intermingles with more mechanical structure.	3 The writer shows reasonable control over the most widely used writing conventions and uses them with fair consistency to create text that is adequately readable. • There are enough errors to distract an attentive reader somewhat but they don't obscure the meaning. • It is easy to get through the writing without stumbling but it clearly needs polishing. • Moderate editing is necessary to get the piece ready to "publish."
1 The writer struggles with a limited vocabulary, searching for words or phrases to convey the intended meaning. The writing reflects more than one of these problems: • Vague words and phrases convey only the most general sorts of messages. • Redundancy inhibits clarity and creativity. • Cliches and tired phrases impair precision. • Words are used incorrectly. • The reader has trouble zeroing in on the writer's intended message.	1 A fair oral reading of the text takes practice. The writing reflects more than one of these problems: • Irregular or unusual word patterns make it hard to tell where one sentence ends and the next begins. • Ideas are hooked together by numerous connectives (and, but, so, then) to create one gangly, endless "sentence." • Short choppy sentences bump the reader through the text. • Repetitive sentence patterns grow distracting or put the reader to sleep. • The reader must often pause and reread to get the meaning. • Transitional phrases are either missing or so overdone that they become distracting.	1 The writer demonstrates limited control even over widely used writing conventions. Oral reading of the text takes practice. The writing reflects more than one of these problems: • Unclear writing, punctuation, or irregular word patterns make it hard to tell where one sentence ends and the next begins. • No visual evidence of paragraphs or erratic indentation. • Spelling is erratic; a number of common words are misspelled. • Extensive editing would be required to prepare the text for publication.

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The following *analytic* rubric for writing—developed by the Robert G. Shaw Middle School in Boston, Mass.—is a simpler version, combining criteria into only three large categories. One's preference for a more or less detailed rubric will depend on several factors: the purpose of the assessment; how many pieces of work need to be assessed; and how easily evaluators are able to apply the given rubric.

Three Trait Writing Rubric

Content and Organization	Style and Voice	Mechanics
4 - Answers the questions or responds to the task completely and with details - Includes substantial information that is accurate and true - Elaborates using ample details, examples, reasons, illustrations, and other sources - States clearly what the purpose is - Stays focused on the topic - Has a clear beginning, middle and end, and is well organized, logical and sequential	4 - Uses a clear and consistent point of view - Tries something original, unexpected, uncommon or imaginative - Uses words in a way that creates pictures in the reader's mind (colorful words, and lots of action words) - Includes a variety of complete sentences - Is passionate, honest, personal - Keeps the reader interested - Uses rich and varied vocabulary - Uses tone that is appropriate for the purpose and audience	4 - Incorporates significant revisions - Is polished and presented in a legible and appropriate format - Follows rules of grammar, punctuation, spelling with very few errors - Uses correct subject-verb agreement - Uses correct verb tenses - Uses a format that suits the assignment
3 - Answers the questions or responds to the task - Includes information that is accurate and true - Elaborates using some details, examples, and reasons - States the purpose - Stays focused on the topic - Has a clear beginning, middle and end, and is organized and logical	3 - Uses a fairly consistent point of view - Tries something original - Uses words in a way that creates pictures in the reader's mind (colorful words, lots of action words) - Is interesting - Uses some advanced vocabulary	3 - Incorporates revisions - Is polished and presented in an appropriate legible format - Follows rules of grammar, punctuation, and spelling with some errors - Includes some different and complete sentences - Uses a format that suits the assignment
2 - Partially answers the question or responds to the task - Includes minimal information - Uses minimal details, examples, and reasons with some errors - The purpose is unclear - Strays from the topic - Beginning, middle and end may be unclear - Is not always organized, logical or clear	2 - Point of view is unclear and/or inconsistent - Uses little descriptive language or colorful words - Does not interest the reader - Uses limited vocabulary	2 - Makes few revisions - End product is sloppy - Many errors in grammar, punctuation, and spelling - Product is illegible - Does not use the same format throughout the assignment - Uses few complete sentences
1 - Does not answer the questions or respond to the task - Includes minimal information that is sketchy or false - Uses few details or examples to support topic - Purpose is not stated - Strays from the topic - Shows no organization	1 - Shows no clear point of view - Uses little descriptive language - Is not interesting, incomplete - Uses very limited vocabulary	1 - Does not incorporate revisions - Has numerous errors in grammar, punctuation, and spelling - Is illegible - Uses many run-ons - Uses no format

***

The *analytic* rubrics for writing presented above suggest the numerous options available to teachers and schools. Indeed, rubrics are being generated in all subject areas and at all grade levels. Following are examples of analytic rubrics used in math and sciences classes.

Mathematics Scoring Rubric: A Guide to Scoring Open-Ended Items[5]

SCORE LEVEL	MATHEMATICAL KNOWLEDGE Knowledge of mathematical principles and concepts which result in a correct solution to a problem	STRATEGIC KNOWLEDGE Identification of important elements of the problem and the use of models. diagrams and symbols to systematically represent and integrate concepts	COMMUNICATION Written explanation and rationale for the solution process.
4	• shows complete understanding of the problem's mathematical concepts & principles • uses appropriate mathematical terminology and notation (e.g., labels answer as appropriate) • executes algorithms completely and correctly	• identifies all the important elements of the problem and shows complete understanding of the relationship between elements • reflects an appropriate and systematic strategy for solving the problem • gives clear evidence of a complete and systematic solution process	• gives a complete written explanation of the solution process employed; explanation addresses what was done and why it was done • if a diagram is appropriate there is a complete explanation of all the elements in the diagram
3	• shows nearly complete understanding of the problem's mathematical concepts & principles • uses mostly correct mathematical terminology & notations • executes algorithms completely; computations are generally correct but may contain minor errors	• identifies most of the important elements of the problem and shows general understanding of the relationships among them • reflects an appropriate strategy for solving the problem • solution process is nearly complete	• gives a nearly complete written explanation of the solution process • explanation of the solution process employed; may contain some minor gaps • may include a diagram with most of the elements explained
2	• shows some understanding of the problem's mathematical concepts and principles • may contain major computational errors	• identifies some important elements of the problems, but shows only limited understanding of the relationships between them • appears to reflect an appropriate strategy, but application of strategy is unclear • gives some evidence of a solution process	• gives some explanation of the solution process employed, but communication is vague or difficult to interpret • may include a diagram with some of the elements explained
1	• shows limited to no understanding of the problem's mathematical concepts and principles • may misuse or fail to use mathematical terms • may contain major computational errors	• fails to identify important elements or places too much emphasis on unimportant elements • may reflect an inappropriate strategy for solving the problem • gives minimal evidence of a solution process; process may be difficult to identify • may attempt to use irrelevant outside information	• provides minimal explanation of solution process; may fail to explain or may omit significant parts of the problem • explanation does not match presented solution process • may include minimal discussion of elements in diagram; explanation of significant elements is unclear
0	• no answer attempted	• no apparent strategy	• no written explanation of the solution process is provided

***

[5] From a workshop by Jay McTighe, Director of the Maryland Assessment Consortium.

The *analytic* rubric for science experiments below includes elements of oral and written communication as well as critical elements of the experiment.

Analytic-Trait Rubrics for Fifth Grade Science Experiments[6]

Experiment Design	*Scientific Results*
4 Design shows student has analyzed the problem and has independently designed and conducted a thoughtful experiment.	4 Pamphlet explained with convincing clarity the solution to the problem. Information from other sources or other experiments was used in explaining.
3 Design shows student grasps the basic idea of the scientific process by conducting an experiment that controlled obvious variables.	3 Pamphlet showed that student understands the results and knows how to explain them
2 Design shows student grasps basic idea of scientific process but needs some help in controlling obvious variables.	2 Pamphlet showed results of experiment. Conclusions reached were incomplete or were explained only after questioning.
1 Design shows student can conduct an experiment when given considerable help by the teacher.	1 Pamphlet showed results of the experiment. Conclusions drawn were lacking, incomplete, or confused.
Data Collection	***Verbal Expression***
4 Data were collected and recorded in an orderly manner that accurately reflects the results of the experiment.	4 Speech presented a clearly defined point of view that can be supported by research. Audience interest was considered as were gestures, voice, and eye contact.
3 Data were recorded in a manner that probably represents the results of the experiment.	3 Speech was prepared with some adult help but uses experiment's result. Speech was logical and used gestures, voice, and eye contact to clarify meaning.
2 Data were recorded in a disorganized manner or only with teacher assistance.	2 Speech was given after active instruction from an adult. Some consideration was given to gestures, voice, and eye contact.
1 Data were recorded in an incomplete, haphazard manner or only after considerable teacher assistance.	1 Speech was given only after active instruction from an adult.

***

[6] From Wiggins, Educative Assessment, 167.

The final *analytic* rubrics presented evaluate aspects of student work that do not result in written products. Developed to assess a five-minute persuasive speech, the following example suggests that rubrics can be used to assess many aspects of student performance.

Rubric for Assessing a Speech[7]

Performance Task: Students will present a five-minute persuasive speech.
Goal/Standard: Speak effectively using language appropriate to the situation and audience

Scale: **Criteria:**	**0** Not Yet	**1** Student Council Elections	**2** The Senate Floor	**3** Presidential Debates
Organization Hook	None	Introduces topic	Grabs attention	Electrifies audience
Transitions	None	Uses words to link ideas	Makes key connections between ideas	Smooth flow of ideas
Closure	None	Lacks interest	Referred to introduction	Powerful and dramatic
Content Accuracy	3 or more factual errors	2 factual errors	1 factual error	All information correct
Documentation	No sources cited	1 source cited	2 sources cited	3 or more sources cited
Quotations	No quotes	1 quote to support case	2 quotes to support case	3 key quotes to prove case
Delivery Eye Contact	Reads speech	Looks at some people some of the time	Looks at some people all of the time	Looks at all of the people all of the time
Volume	Could not be heard	Could be heard by people in the front	Could be heard by most people	Could be heard clearly by all people
Gestures	None	Used a few gestures	Used some gestures appropriately	Used many appropriate gestures effectively
Visual Aid Graphics	None	Minimal	Colorful	Creative graphics that enhance speech
Appeal	None	Little visual appeal	Captures our attention	Visually stimulates audience
Relevance	None	Minimal relation-ship to topic	Relates specifically to topic	Relates and reinforces topic

***

[7] This rubric appears in Kay Burke, Robin Fogarty, Susan Belgrad, The Mindful school: How to Assess Authentic Learning (Arlington Heights, IL: IRI/SkyLight Training and Publishing, Inc., 1994), 63.

The rubric below is used to evaluate students' collaboration and cooperation skills during group activities.

Collaboration and Cooperation Rubric

Trait	4	3	2	1
Contribution to goals of group	-Participates actively -Helps set groups' goal -Meets and exceeds groups' expectations	-Participates in group discussions -Completes jobs assigned by group -Shows care for group's goals	-Participates in group discussions -Shows care for groups' goals -Does not complete job/s assigned	-Does not participate in group discussion -Works against the completion of group's goals
Communication	-Encourages all to participate and share their ideas -Demonstrates care of group members' feelings -Mediates difficulties that arise among group members	-Participates voluntarily in group discussions -Demonstrates care of group members' feelings	-Participates in group discussions when asked to -Does not always show sensitivity to the feelings of other group members	-No participation in group discussions, even when asked -Rarely shows sensitivity to the needs and feelings of others in the group
Group facilitation	-Encourages group to evaluate their group processes -Encourages new group processes when difficulties arise -Helps group change their processes	-Participates in evaluating group functioning -Contributes to suggestions for improving group work -Works on making the changes agreed to	-Participates in evaluating group functioning only when asked -Puts little effort into changing group processes	-Never participates in group evaluation discussions -Refuses to implement agreed upon changes
Group work tasks	-Performs a variety of tasks for the group well	-Performs two tasks for the group well	-Performs two tasks for the group but not well	-Refuses to perform any tasks for the group

***

Holistic Rubrics

The following *holistic* rubric—one that merges all criteria into comprehensive descriptions of different levels of performance—was developed for general writing at Bronxville (New York) High School.[8]

Writing Assessment Criteria

[4] Exemplary/Excellent
- Good use of accurate details (intelligently selective)
- Interesting - appeals to a wide audience
- Clearly makes its points, doesn't run-on or ramble
- Appropriate vocabulary / Good diction
- Correct mechanics, clear knowledge of mechanics
- Well-organized
- Smooth transitions

[3] Good
- Appropriate use of details (some lacking)
- Attempts to appeal to a wide audience; style is basically "smooth"
- Clear thesis, makes its points with an occasional run-on
- Vocabulary is adequate; little or no misuse of words
- Occasional mechanical errors
- Generally well-organized; some problem with transitions

[2] Acceptable
- Misuse or lack of detail in significant places
- Transitions are weak, or missing in places
- Narrow point of view, appeals to a limited audience
- Point may be distinct/clear, BUT needs more support or details
- Organized, but lacks focus, details (Doesn't clearly follow thesis at times)
- Limited vocabulary
- Mechanical errors

[1] Unacceptable
- Failure to use details or facts effectively
- Rambles, runs-on
- Poorly organized
- Simplistic vocabulary, misused or inappropriate diction
- Numerous mechanical errors
- No clear thesis or point of view

***

[8] Johnson, The Performance Assessment Handbook, 100.

The final *holistic* rubric is for general problem-solving tasks in math.

Mathematics Problem Solution Generalized Holistic Rubric[9]

Demonstrated Competence

Exemplary Response ... Rating = 6
Gives a complete response with a clear, coherent, unambiguous, and elegant explanation; includes a clear and simplified diagram; communicates effectively to the identified audience; shows understanding of the open-ended problem's mathematical ideas and processes; identifies all the important elements of the problem; may include examples and counterexamples; presents strong supporting arguments.

Competent Response ... Rating = 5
Gives a fairly complete response with reasonably clear explanations; may include an appropriate diagram; communicates effectively to the identified audience; shows understanding of the problem's mathematical ideas and processes; identifies the most important elements of the problems; presents solid supporting arguments.

Satisfactory Response

Minor Flaws But Satisfactory ... Rating = 4
Completes the problem satisfactorily, but the explanation may be muddled; argumentation may be incomplete; diagram may be inappropriate or unclear; understands the underlying mathematical ideas; uses mathematical ideas effectively.

Serious Flaws But Nearly Satisfactory ... Rating = 3
Begins the problem appropriately but may fail to complete or may omit significant parts of the problem; may fail to show full understanding of mathematical ideas and processes; may make major computational errors; may misuse or fail to use mathematical terms; response may reflect an inappropriate strategy for solving the problem.

Inadequate Response

Begins, But Fails to Complete Problem ... Rating = 2
Explanation is not understandable; diagram may be unclear; shows no understanding of the problem situation; may make major computational errors.

Unable to Begin Effectively ... Rating = 1
Words do not reflect the problem; drawings misrepresent the problem situation; copies parts of the problem but without attempting a solution; fails to indicate which information is appropriate to the problem.

No Attempt ... Rating = 0

***

[9] This rubric was developed by the California State Department of Education, 1989, and is reproduced in Herman, et al. A Practical Guide to Alternative Assessment, 56.

Most of the examples presented here—particularly the *holistic* rubrics—can be used for a variety of assessment tasks. They are not, in other words, developed with a specific task in mind. Using the same—or very similar—rubrics over time and applying them to a number of assessment tasks has multiple benefits. They help communicate a consistent message to students about essential ingredients of quality performance across a number of disciplines; they enable schools to reliably chart student performance over time in order to assess how well students are meeting desired educational goals.

This is not to suggest, however, that rubrics should remain static. Adding new criteria or modifying a basic rubric to fit the special needs of a particular assessment will not seriously interfere with the ability of the rubric to show student progress over time. Indeed, tailoring rubrics to specific assessment tasks can provide better information to both teachers and students than force-fitting a single rubric onto multiple assessment tasks. A defining characteristic of good rubrics, argues Grant Wiggins, is that they aim for the middle ground. They are "sufficiently generic to relate to general goals beyond an individual performance task," says Wiggins, "but specific enough to enable useful and sound inferences about the task."[10] The following task-specific rubric, designed for the Heroes Exhibition Project presented on page 4, is a good example.

Heroes Exhibition Rubric
Fulton Valley Prep/Piner High School[11]

	Mastery	Distinguished
Project Content	1. The project contains a clear, thoughtful definition of a hero for our society. 2. The project includes a collection of heroes who fit the author's definition. 3. Each hero in the collection is described accurately and connections between the heroes and the definition are evident. 4. The author has researched the heroes in the collection and has included a bibliography of sources.	1. The project contains a clear, thoughtful, multi-faceted definition of a hero for our society. 2. The project includes a varied collection of heroes who fit the author's definition. 3. Each hero in the collection is described accurately and in detail and connections between the heroes and the definition are clearly drawn. 4. The author has thoroughly researched the heroes in the collection and has included a bibliography of sources.
Project Format	1. Written material is the original creation of the author or is clearly labeled as a quotation with the source identified. 2. Written materials are organized and readable, with an introduction, body and conclusion. Hypercard stacks allow easy travel among cards. 3. Written materials are neatly hand- written in ink or typed and contain spelling, punctuation or usage errors. 4. The layout and graphics in an anthology, calendar, cards, magazine or mural are neat and easy to follow. 5. The performer (series of monologues or speech) speaks clearly and loudly and, although using a script, shows evidence of ample rehearsal.	1. Written material is the original creation of the author or is clearly labeled as a quotation with the source identified. 2. Written materials are well-organized and interesting, with an introduction, body and conclusion. Hypercard stacks allow easy travel among cards and use graphics and backgrounds creatively. 3. Written materials are typed and contain minimal spelling, punctuation or usage errors. 4. The layout and graphics in an anthology, calendar, cards, magazine or mural are creative, eye-catching and professional looking. 5. The performer (series of monologues or speech) speaks clearly and loudly and has memorized the material, referring minimally to note cards. The presentation is energetic, believable and convincing.

[10] Wiggins, Educative assessment, 184.
[11] Presented in Johnson, The performance assessment handbook, Vol 2, 132-133.

Defense	1. The presenter can explain reasons for his/her definition and can field questions about the heroes in the collection.	1. The presenter can explain connections between his/her definition and our society and can thoroughly defend her/his choice of heroes for the collection.

***

A closing word about rubrics. Constructing rubrics for the first time can seem daunting. With so much to consider in a well-constructed assessment task, one might easily conclude that the rubric need be similarly complex. This is not necessarily so. Constructing rubrics begins with making choices, which depend on the steps that preceded the creation of the assessment task: namely, determining the instructional goals and the criteria or standards to be assessed. These choices will determine the most salient elements of the task and will necessarily limit the scope of the rubric.

No rubric is perfect. If you find you have designed one that does not capture the desired outcomes of the task well or the distinctions among levels of student performance, adjust it. (Keep in mind, however, that the same rubric should be used to score all the products of a particular task in order to maintain the reliability of the scoring process). As with most new endeavors, the process of constructing and using rubrics grows easier over time. With practice, teachers invariably become more and more adept at formulating important criteria and distinguishing relevant levels of student performance.

5) Involve students in developing rubrics and evaluating their own work.

It is typical with alternative assessments that the specific criteria used to evaluate student performance—including rubrics—are given to students up front, along with the assignment. Why? Students are much more likely to produce quality work if they know exactly what is expected of them in advance. In addition, seeing concrete examples of those high expectations helps students learn to evaluate their own work. Indeed, enlisting students in the creation of a rubric—asking them to help generate the criteria for distinguishing levels of proficiency—becomes part of the learning experience. If the rubric is unfamiliar to students, a good teacher will explicitly "teach" the rubric in its component parts.

Self-evaluation guides also help students evaluate their own work before handing it in for a teacher's response. Following are two examples.

Self Evaluation Check List for Expository Essay [12]

Initial each statement which you feel describes your work. Explain any things you cannot initial, giving reasons. Attach this sheet to your paper.

— My paper has a definite purpose; it 'works.'

— My title indicates my point or slant, and creates interest.

— I had a specific audience in mind as I wrote and revised.

— The details and word choices paint the right picture, give the right feel, and make my point - without my having to state it.

— I can explain why I placed every punctuation mark as I did.

— Each paragraph contains a clear idea (and topic sentence).

— My opening sentences catch the readers' attention.

— I checked each sentence to insure it was complete.

— I reorganized sentences and paragraphs to make the paper more logical and fluid.

— The transitions are smooth; the paragraphing is appropriate.

— The ending is effective in wrapping things up.

— I read the paper aloud or had others read it to catch awkward, confusing language or mechanical errors.

***

[12] From Vito Perrone, "Assessment Additions," Harvard Graduate School of Education, 1992. The example comes from the Urban Academy in New York City.

The teacher who designed the following reflection sheet notes that her students gave themselves overly high grades the first week she used it. As they became more engaged with the project and familiar with the reflection tool, however, their self-assessments universally matched the scores she would have assigned.

Project Work Reflections[13]

1. Describe the projects on which you have worked this week.
2. What have you learned while working on the projects? (Give specific examples.)
3. What is the status of the projects on which you have worked this week? What did you finish and what is "in progress"?
4. Classes which involve project work change the way the class is run. More responsibility is placed on the students to manage their time wisely, decide the jobs which need to be completed, set priorities, and meet deadlines. How have you adapted to these responsibilities?
5. Evaluate HONESTLY the quality of your work this week. Think about whether you stayed on task or just "piddled" except when the teacher walked by. How MUCH did you accomplish this week? Are you proud of the work you completed? Would you be proud to have your friends, your family, and your teachers see the work you completed this week?
6. How do you plan to improve the quality of your work, your work habits, your productivity on similar projects in the coming weeks?
7. List specific goals and objectives that you plan to accomplish next week in this class.

Based on what I have described above, my participation grade for this week is:_____.

***

A final note: The people evaluating a given student performance can—and should—include not only teachers and students but also parents, community members, or specialists in a given project. And just as teachers and students need practice in designing and applying rubrics, so too will outside adults need training in scoring procedures. The best way to insure consistent interpretation of criteria is for reviewers to regularly discuss their scoring on actual pieces of work, resolving in consensus any discrepancies that occur.

[13] This weekly guide is used by Judy Cross at the Wartburg (Tennessee) Central High School, part of the Waldens Ridge Rural Challenge cluster. The guide for work reflections changes from week to week, becoming more comparative -- "compare what you actually accomplished this week with what your intended goals were at the beginning of the week."

Part III. Portfolios: A Special Kind of Alternative Assessment

Across the country, portfolios are now commonly found in classrooms and increasingly required by education agencies for purposes of school accountability. As tools for both instruction and assessment, they offer a means of tracking student progress over time and encouraging student self-evaluation.

Portfolios can be compiled in many ways. Some are a collection of all of a student's graded work that is passed along to the next year's teacher. Some contain selected samples—of a student's best, most useful or most complex work—to show parents or community members what students are doing in school. Still others illustrate all the work that goes into a final product. A science lab portfolio, for example, might contain all the paperwork from a science experiment, culminating with a complete written lab report; a writing portfolio might include pre-writing notes, early drafts, revisions, and final copy.

Portfolio assessments also serve a variety of purposes. The following are common:

- to document a student's best performances in a number of areas;
- to show the process of learning or the change over time in a student's performance;
- to display a student's self-assessment of growth, including strengths and areas that need improvement.

Whatever the intended purpose, clear and logical organization of a portfolio is crucial to its usefulness as an assessment tool. Careful organization, display, and explanation of a portfolio's contents allow evaluators of varying experience and familiarity with classroom activities (and language) to grasp the full context in which the student work was generated—and thereby help provide reliable and valid scoring. The following example suggests several elements for creating a well-organized math portfolio.

Organizing Elements of a Mathematics Portfolio[14]

- a table of contents
- an introduction or title page that identifies the student and explains what can be found in the collection, and the purpose of the portfolio
- brief descriptions of selected assignments for readers less familiar with the operation of the classroom
- labels that distinguish attempted solutions from the final report
- dates on all entries
- a review section that includes student reflections and self-assessments, together with teacher comments and peer comments that can help provide important information about the expectations, standards and critical atmosphere in which the various projects were produced.

***

[14] Seidel, et al. Portfolio Practices, 33.

As with other alternative assessment tasks, the criteria by which a portfolio is to be judged and the levels of student competence—from novice to expert—need to be articulated in a scoring guide or rubric. These often take the form of descriptions of a portfolio's contents and criteria for evaluation. The following is an example of the requirements for Vermont's language arts portfolio.[15] It illustrates an additional benefit of portfolio assessment: the ability to analyze the quality of a teacher's assignments and project design.

Vermont's Language Arts Portfolio Assessment

Items included:

- table of contents
- a dated "best piece"
- dated letter from the student to the reviewers explaining the choice of the "best piece," as well the process of writing it
- a dated personal response to a cultural, media, or sports event; or to a book, current event, math problem, or science concept
- a dated poem, short story, play, or personal narration
- three dated prose pieces from any subject area *other than* English or Language Arts

Assessment Criteria:

Five dimensions of writing are to be rated on the following levels of performance: extensively, frequently, sometimes and rarely

- *Purpose* - Does the writer: establish & maintain a clear purpose; demonstrate awareness of audience & task; exhibit clarity of ideas?
- *Organization* - Does the writer's response illustrate unity and coherence?
- *Details* -To what degree are the details appropriate for the writer's purpose and do they support the writer's main point?
- *Voice/Tone* - Does the response reflect personal investment and expression?
- *Usage, mechanics, grammar* - Does the writer use correct usage (word choice, tense formation, agreement), mechanics (spelling, capitalization, punctuation), grammar; sentences?

Reviewers were asked to respond to three questions about the school's program (based on reviews of a sample of portfolios):

- Is there progress from earlier dated works to more recent works?
- Is there evidence of variety which will challenge all students and allow for an opportunity for success?
- Is there evidence of teacher/peer response to student drafts, and opportunity for students to revise?

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[15] Reproduced from Bill Johnson, The Performance Assessment Handbook: Designs from the field and guidelines for the territory ahead. Vol. 1, (Princeton, NJ: Eye on Education, 1996), 79.

Who decides what goes into a portfolio is also of critical importance. If we are to assess a portfolio of a student's best work, for example, does the student or the teacher determine what is "best"? "Best" from a student's point of view might mean most interesting, easiest to complete, or a host of other possibilities. For teachers, "best" work might be found in comparison to other students, to a student's own prior work, or by applying specific criteria. The most advantageous route is usually for a student and teacher to decide together the contents of a portfolio.

The thinking and preparation that go into this kind of choice requires students to reflect on their own learning and to articulate their growth, strengths, and weaknesses. This reflective awareness of one's own learning is an extremely desirable outcome of the assessment process.

The following example is a portfolio guide and rubric for a project-based, ninth-grade science class. Each project concludes with a portfolio comprising of the assessment pieces, a table of contents, an introduction, and a conclusion. The latter two require students to reflect on their learning over the course of the project.

Stream Project Portfolio Guide
Fall 1998[16]

What is a Project Portfolio? A project portfolio is a collection of the work you have done on this project. You MUST include certain pieces of work (see list below) and you can CHOOSE to include others (see suggestions below). This portfolio should demonstrate what you have learned through doing the project, and should also allow you to show off your best work.

What MUST be included in your portfolio:

- A Table of Contents page
- An Introduction, in which you introduce the project as a whole, summarizing or listing the essential questions, and briefly describing the purpose of the project
- Water Cycle Diagram
- Stream Guide Contribution
- Design and Write-up of Stream Investigation
- "What do you know about water quality?" assignment
- At least one homework assignment (of your choice)
- A Conclusion in which you:
  (1) Summarize our findings about the water quality of Worster Brook, including information from the Visual Survey and Habitat Inventory, Macroinvertebrate Study, and Chemical Tests.
  (2) Explain how the work in your portfolio demonstrates what you have learned through this project (refer to the Maine Learning Results on the initial handout for this).
  (3) Answer the following questions:
    (a) What is the piece of work that makes you the proudest in this portfolio? What about it makes you feel that way?
    (b) What is the piece of work you wish you had done a better job completing? What would you do to improve it if you had a chance, to revise it further?

What else MIGHT you CHOOSE to include?

- Copies of other assignments you have completed for this project
- Copies of related journal entries
- Work that you have done on your own, or for another class, related to this topic.

[16] Provided by Liza Finkel, Noble High School, Berwick, Maine

RUBRIC FOR STREAM PROJECT PORTFOLIO

A Proficient Portfolio:

- Contains all required assignments
- All assignments are complete and revised to at least the Proficient level
- Includes a legible Table of Contents
- Includes a clear and complete Introduction
- Includes a clear and complete Conclusion
- All pieces (including Table of Contents, Introduction and Conclusion) are either typed or legible
- Is neatly organized (at a minimum, assignments are placed in the portfolio in the order listed on the Table of Contents)

An Advanced Portfolio:

- Meets all of the requirements for a Proficient Portfolio
- All assignments have been revised or corrected to the Advanced level
- Includes at least one optional assignment
- The Introduction and Conclusion are detailed and show evidence of thought and effort beyond the minimum requirements
- Is presented neatly in a folder or binder

A Distinguished Portfolio:

- Meets all of the requirements for an Advanced Portfolio
- Includes at least two optional assignments
- Most assignments have been revised to the Distinguished level, and any that are not Distinguished are revised to the Advanced level
- Demonstrates connections between the work of the project and related ideas or issues from other classes, or from outside of school (these connections may be included in the Introduction and Conclusion of the Portfolio, or may be included as extra assignments)
- Demonstrates the use of outside resources
- Is unique and distinctly the work of you as an individual.

***

Although the foregoing examples feature elements of portfolios for math, English or language arts, and science classes, portfolios are common in every subject area. The Central Park East Secondary School in New York City has developed over the years a single rubric for assessing student portfolios and other performance tasks in all academic disciplines. This generic rubric provides a consistent language and set of expectations that have been fully incorporated by teachers and students alike.

PORTFOLIO ITEM

TITLE:

STUDENT:

ADVISOR:

READER:

SCORE:

DATE:

	VIEWPOINT	CONNECTIONS	*EVIDENCE*	VOICE	CONVENTIONS
EXPECTATIONS	Encompasses Wide Knowledge Base and Is Focused: • Clearly identifies, addresses key questions and ideas • Demonstrates an in-depth understanding of the issues; • Presents position persuasively; • Understands and discusses other views when appropriate.	The Whole is Greater Than the Sum of the Parts: • Introduced and concluded in a satisfying way; • Organized so that all parts support the whole; • Contains useful transitions; • Makes clear the relationships between ideas, notes connections and patterns; • Demonstrates Relationships between issues and a larger context.	Credible and Convincing: • Ideas supported by specific, accurate and relevant evidence; • Ideas developed in appropriate depth; • Discusses strengths and weaknesses of evidence where appropriate; • Cites appropriate sources: (primary sources, statistics, quotes from content, graphs, formulas, figures, equations, maps, illustrations) where appropriate; • Analysis of relevant evidence where necessary.	Engaging: • Lively, interesting use of language; • Awareness of reader; • Explains concepts so they are understandable to the reader; • Project has a distinct identity.	Intelligible: • Excellent appearance; • Correct format: (bibliography, footnotes, references, etc. where applicable); • Varied sentence structure; • Good mechanics and standard notation; • Appropriate, broad vocabulary and word usage.
4	**EXCEEDS**	**EXCEEDS**	**EXCEEDS**	**EXCEEDS**	**EXCEEDS**
3	**MEETS**	**MEETS**	**MEETS**	**MEETS**	**MEETS**
2	**APPROACHES**	**APPROACHES**	**APPROACHES**	**APPROACHES**	**APPROACHES**
1	**NEEDS MORE**	**NEEDS MORE**	**NEEDS MORE**	**NEEDS MORE**	**NEEDS MORE**

Comments:

***

Part IV. Tracking Student Progress with Alternative Assessments

Analyzing student learning over time helps teachers and students improve achievement. One way of tracking student progress, as we have seen in Part III, is by using portfolios for assessment. Another is to maintain a database of scores on individual traits over multiple assignments. This record keeping of student performance data can help detect variations in performances; whether those variations are positive, negative, or random; and the teaching implications of such fluctuations in scores. Tracking scores on assessment tasks for individual students also helps identify specific strengths and areas in need of improvement.

The following example shows a chart of student progress in writing based on two different assessments scored with similar rubrics. The final three columns give the change in scores on the three traits used for scoring the writing.

Student Progress on Writing Assessments

Legend: C&O = Content and Organization
S&V = Style and Voice
M = Mechanics (spelling, grammar, punctuation, formatting)
1 = 1st Writing assessment
2 = 2nd Writing assessment
1--2 + / -- = Change in score from 1st to 2nd assessment by trait

NAME OF STUDENT	1 C& O	1 S&V	1 M	1 COMMENTS	2 C& O	2 S&V	2 M	2 COMMENTS	1–2 C&O +/–	1–2 S&V +/–	1–2 M +/–
Petunia, Sally	3	2	3	Repetitive; weak vocab.	3	3	4		0	1	1
De Pina, Daniel	2	2	3	Missing para org; poor intro	2	3	3	No thesis, weak argument	0	1	0
Gainer, Tamara	3	3	3		3	4	5		0	1	2
Jones, Melinda	2	2	0	Work on spelling and punct.	2	2	1	Weak argument	0	0	1
Deal, Jason	3	3	3		3	3	4		0	0	1
Ortega, Anne Marie	2	3	2	Unclear ideas, no thesis	2	3	2		0	0	0
Dowling, Chauntee	3	3	4		4	4	3		1	1	-1
Williams, Keshia	2	2	3	Short sentences no variation	3	2	3	Simple sentences, repeats	1	0	0
Moore, Janeida	3	3	4		4	4	5		1	1	1
Story, Corine	3	3	4		4	4	4		1	1	0
Hung, Tran	3	3	3		3	3	4		0	0	1
Holmes, Jada	2	3	3	No conclusion, weak argument	3	2	2	Poor diction; spelling needs work	1	-1	-1
Jones, Paul	3	2	3		3	3	5		0	1	2
Amado, Alfie	3	2	3		3	3	2		0	1	-1
Mui, Cindy	3	3	4		4	4	4		1	1	0
Duchane, Rene-Yves	2	3	3		3	3	4		1	0	1
Lewis, Lakesha	1	1	3	No general ideas only examples	3	2	2	Work on punctuation	2	1	-1
Claiborne, Chris	2	2	2		3	3	2		1	1	0

***

Not only does this grid track progress of individual students, it also informs the teacher about the success of his or her instruction. One might infer from these data, for example, that students showed the most progress in style and voice, followed by content and organization. If these areas were the intended focus of instruction, the data generally confirm the effectiveness of the teaching strategies used. If, however, the teacher's intention had been to improve the

mechanics of student writing, these data might indicate a need to re-examine his or her instructional strategies.

Any number of ways of displaying information about particular aspects of student learning can be developed from a simple database of scores.[17] If we want to know, for instance, the number of students who scored at the highest levels on a particular assessment, the example below offers a guide. The chart shows that most students (16 of 22) scored at the highest levels of performance (6, 7 or 8). This information might spur additional questions: how do these results compare to last year's scores? How do they compare to other assignments in biology?

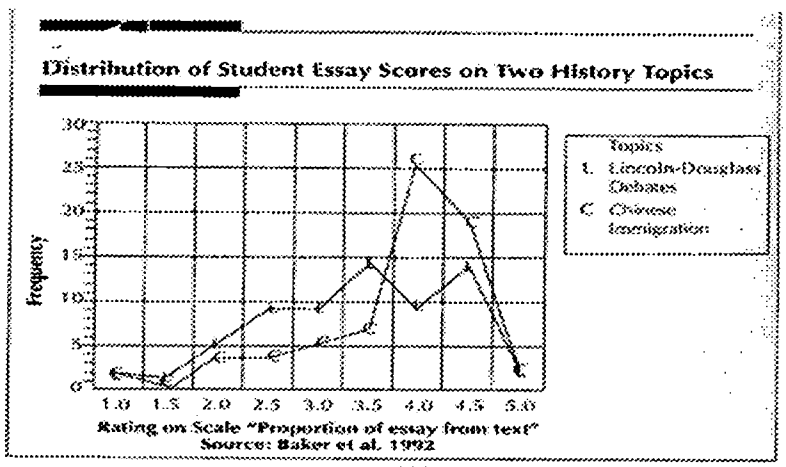
Distribution of Student Scores
Biology Laboratory Assessment

X = One student

SCORE	1	2	3	4	5	6	7	8
	X		X	X	X	X	X	X
					X	X	X	X
					X	X	X	X
						X	X	X
						X	X	X
							X	
NUMBER OF STUDENTS	**1**	**0**	**1**	**1**	**3**	**5**	**6**	**5**

***

In the same vein, the next graph compares two history essays, showing the frequency with which students used information provided in the text. The data came from a rubric that was specifically designed to evaluate this trait.



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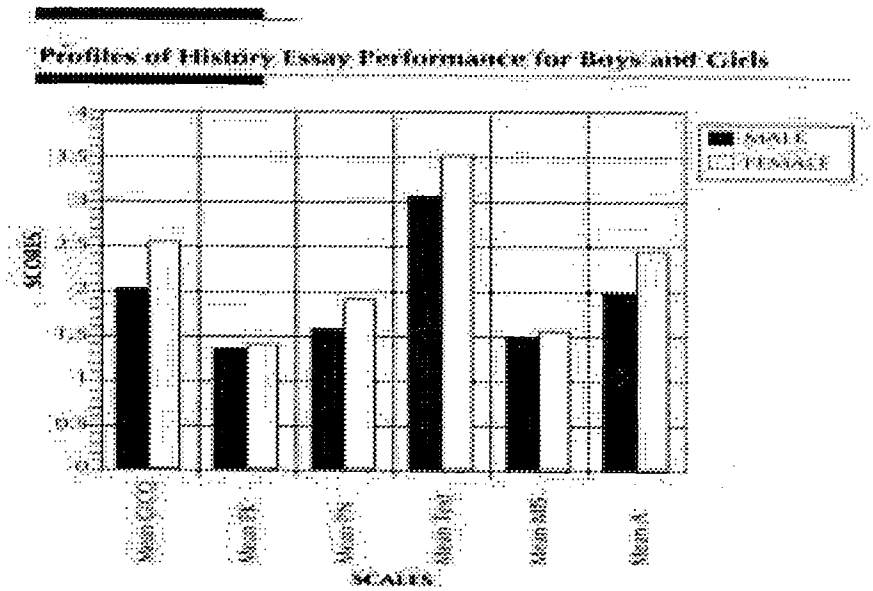
[17] The following examples are taken from Herman, A Practical Guide to Assessment.

While the previous graph concentrates on one particular aspect of performance, the following example compares the achievement of boys and girls on the same history essay using a fuller set of criteria.

ESSAY DIMENSIONS: GICQ=General Impresion of Content Quality; PN=Number of Principles or concepts; PK=Prior Knowledge; A=Argumentation; TEXT=Text (proportion of essay using text-based detail); MIS=Misconceptions



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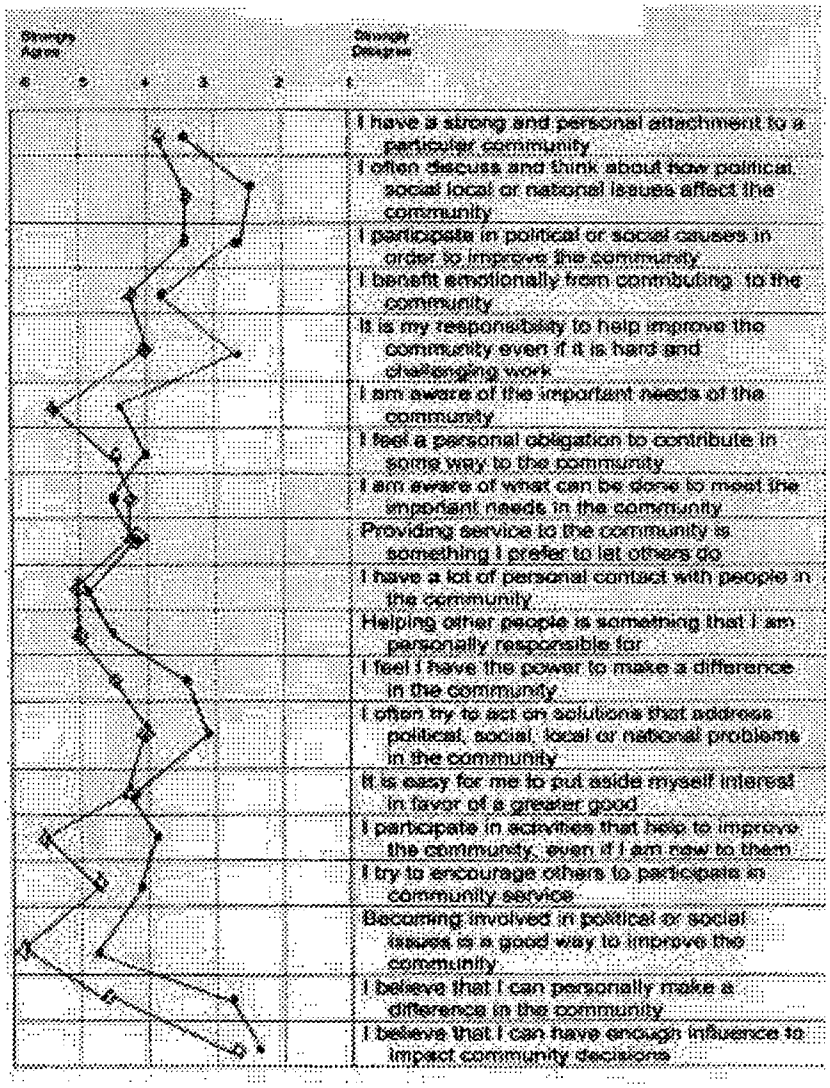
The last graph presented is not linked to performance assessment *per se,* but it does demonstrate another way schools can track other aspects of student growth over time. Provided by the North Coast Rural Challenge Network in Northern California, the graph charts changes, based on survey responses, in students' awareness of community concerns and their commitment to taking action. Students completed the survey before they began Rural Trust project-oriented work and then again at the end of the year, as a means of measuring desired changes in student attitudes and behaviors resulting from their Rural Trust work.

Pre and Post Survey of Community Awareness



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The graphs above are only samples of ways information can be displayed graphically to indicate any number of dimensions of student progress or overall trends in performance. By closely examining student work in light of the patterns made visible by creative displays of the scoring data, we can see even more deeply into students' learning, growth and understanding. These kinds of data also can be presented as part of a school's public accounting to its community, leading to further discussion of relevant issues.

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Web Sites

www.classnj.org: The Center on Learning, Assessment and School Structure provides a co-op web page that publishes a number of rubrics, assessments and teacher-developed curriculum. Grant Wiggins and his associates develop the site.

www.aisr.brown.edu: is the website of the Annenberg Institute for School Reform at Brown University. The site offers information and practical examples of assessments and protocols for teachers looking at student work together.

www.mcrel.org: is the Mid-Continent Research for Education and Learning site listing useful information and resources for assessment practices.

Appendix I. Resources for Developing Instructional and Educational Goals

Numerous resources are available to educators that provide examples of instructional and educational goals.

National organizations have published what they consider valuable outcomes in various disciplines:

- **The National Council of Teachers of Mathematics** issued *Curriculum and Evaluation Standards for School Mathematics* in 1989. It sets out a blueprint that other discipline-based organizations have followed. www.nctm.org
  1906 Association Drive
  Reston, VA 20191-9988
  (703) 620-9840

- **The American Association for the Advancement of Science** has developed science goals in its 1989 document, *Science for All Americans: Project 2061.* www.aaas.org
  1200 New York Avenue NW
  Washington, DC 20005
  (202) 326-6400

  See also the **National Research Council, National Academy of Sciences** for its 1993 document, *National Science Education Standards;* www.nationalacademies.org/nrc/
  2101 Constitution Avenue, NW
  Washington, DC 20418

  And the **National Science Teachers Association**
  www.nsta.org
  1840 Wilson Boulevard
  Arlington VA 22201-3000
  (703) 243-7100

- The **National Council for the Social Studies** has material for discussions and proposals for discipline-based standards. www.ncss.org
  3501 Newark Street, NW
  Washington, DC 20016
  (202) 966-7840

- **The National Council of Teachers of English** has material for discussions and proposals for discipline-based standards. www.ncte.org
  1111 West Kenyon Road
  Urbana, IL 61801
  (800) 369-6283

State curriculum frameworks have been or are being developed in most states to provide accountability data in return for federal funding. They also serve as detailed resources for schools and communities attempting to define and make public their own locally-tailored educational and instructional goals.

Appendix II. Alaska Rural Systemic Initiative Assessment Tools

Since 1996, the Alaska Science Consortium has been working with the Alaska Rural Systemic Initiative (AKRSI) and the Alaska Department of Education to help develop standards-based, culturally relevant curriculum that effectively integrates indigenous and Western knowledge around science topics. Funded by the AKRSI project through a National Science Foundation grant, this work has involved teachers, Elders, Native community leaders, agency personnel, and educational consultants. Sidney Stephens' *Handbook for Culturally-Responsive Science Curriculum* represents some of the thinking and products resulting from this slowly evolving, collaborative process—and is the source of the excerpts below.

To access the handbook in its entirety or to learn more about the purpose, accomplishments and resources funded and gathered by AKRSI, see its website at http://www.ankn.uaf.edu.

Handbook for Culturally-Responsive Science Curriculum

Assessment

With the merger of cultural knowledge and science, and with the shift in science education from science as only content to science as a complex combination of attitudes, inquiry skills, and conceptual understanding, come necessary shifts in assessment. In other words, if we truly value student growth and understanding of cultural knowledge, then we must find ways to assess such knowledge and we must resist the temptation to merely treat cultural knowledge as a vehicle for science learning. If we truly value student abilities to: reason scientifically, apply science learning in real life situations and understand the contexts and constraints under which science functions, then we must assess in all those areas as well. And finally, if we recognize that learning includes the process of exploration and the student's autonomous construction of meaning, then we must allow for diverse pathways to and demonstrations of understanding.

This is a tall order. We are making progress with authentic assessment of all aspects of science, but have less experience with the issues of assessing cultural behavior, knowledge and values—things that are all critically important to Native communities. The following chart offers a look at some promising practices with regard to culturally relevant assessment, as does the sample assessment from the Alaska Science Performance Standards. This look, however, is admittedly tentative, both because our knowledge of traditional assessment practices is naive and inadequate, and because our experience with authentic, standards-based assessment in classrooms is evolving, but not secure. With these significant limitations in mind, we offer the following information and we also encourage you to consult both local experts and suggested readings for more insight.

Promising Assessment Strategies

	Traditional Assessment	Inquiry Assessment	Compatible Assessment Strategies
1. Diagnostic	• Elder sets standards using cultural knowledge continuum and "need to know" as a guide • Elder watches and interacts with children in daily life and gauges individual readiness for specific tasks	• Teacher uses standards and district curriculum as a guide to instructional priorities • Prior to instruction, teacher gauges student's background experiences, skills, attitudes and misconceptions	• Informal discussions of topic to be studied • Observational evidence from prior activities • Concept mapping
2. Formative	• Elder observes children at work on task during daily life, offering continued modeling, encouragement and positive acknowledgments of individual progress • Elder provides additional tasks as student skills and knowledge develop and they appear ready for the next challenge • Skills and knowledge are not assessed in isolation from their • purpose and application	• Teacher monitors student progress and adjusts learning activities to reach goals • Teacher provides helpful feedback to improve student's understanding • Assessments tap developing skills, attitudes and conceptual understanding	• Observations • Informal interviews • Journals and learning logs • Self-evaluations • Performance tasks
3. Summative	• Ultimate evaluation is whether or not child can apply their learning effectively in daily life (e.g. do they have adequate skills and understanding to successfully trap hares, collect and preserve berries etc.?)	• Teacher assesses student's ability to transfer skills and understandings to other tasks in other contexts	• Performance tasks • Performance events • Self-evaluations • Portfolios • Creative performances and exhibitions

Akrsi (Alaska Rural Systemic Initiative)
Unit Building Assessment Rubric

Parameter	*Level 1*	*Level 2*	*Level 3*	*Level 4*
Cultural Relevance How well does the unit examine topics of cultural significance, involve cultural experts and address cultural standards?	Cultural significance unclear or absent.	Cultural knowledge is suggested or implied.	Cultural knowledge is apparent.	Cultural knowledge is prominent and insightfully explored.
	Involvement of cultural experts not mentioned.	Role of cultural experts unclear.	Cultural experts involved.	Cultural experts are a significant and critical part of unit implementation.
	Cultural values, skills and standards not identified.	Cultural values, skills and standards suggested or implied.	Cultural values, skills and standards identified.	Cultural values, skills and standards clearly identified and tied closely to and readily accomplished by lessons.
Standards Based How well does the unit identify an appropriate number of state math or science standards; describe specifically what is to be learned about those standards; and provide an adequate number of properly sequenced opportunities that lead students to a deeper understanding of the standards?	Standards not identified.	Standards identified but inappropriate.	Appropriate standards identified.	Appropriate number of standards identified and specifically tied to unit.
	Skills and/or knowledge to be gained not identified.	Skills and/or knowledge to be gained are identified but not relevant to standards chosen.	Skills and knowledge to be gained are identified.	The specific content and skills to be learned are clearly identified, age-appropriate and clearly tied to standards.
	Lesson activities not described.	Activities don't address standards or are described inadequately to ascertain targeted skills and knowledge.	Includes an adequate number of appropriate activities.	Activities thoroughly explained and properly sequenced to allow for development of skills and knowledge (standards).

Parameter	*Level 1*	*Level 2*	*Level 3*	*Level 4*
Best Practices: How well does the unit incorporate strategies which: focus on student understanding and use of scientific knowledge, ideas and inquiry process; guide students in active and extended scientific inquiry; and support a classroom community with cooperation, shared responsibility, and respect?	Teaching strategies unclear or not described.	Teaching strategies do not attend to student understanding and use of knowledge and skills.	Strategies include some attention to student understanding and use of knowledge, ideas and inquiry processes.	Strategies directly target student understanding and use of knowledge, ideas and inquiry processes. (conceptual understanding and skill development.)
	Teaching strategies unclear or not described.	Strategies do not engage students in active investigations.	Activities include some active student investigation.	Teachers guides student in active and extended inquiry by provision of appropriately sequenced student investigations and use of questioning strategies to elicit concept.
	Teaching strategies unclear or not described.	Teacher maintains responsibility and authority for learning.	Some evidence of shared responsibility for learning.	Responsibility for learning is shared with students by teacher acting as a facilitator and creating a classroom community of cooperation and respect.
Assessment: How well does the unit engage in ongoing assessment of: student understanding of highly valued, well-structured knowledge; student skill development and reasoning ability; diverse representations of understanding?	Assessment not described.	Students tested at end of unit on factual understanding that can be easily measured. Assessment of deep scientific, mathematical, or cultural understandings or skill development is absent.	Some evidence of ongoing assessment to determine what students know and are able to do.	Students assessed throughout unit as a guide to instructional choices. Assessments tap deeper cultural, scientific and mathematical, understanding, reasoning and skill development tied to standards. Diverse representations of understanding encouraged.

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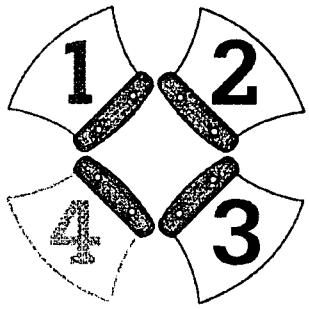

ALASKA SCIENCE PERFORMANCE STANDARDS: ASSESSMENT IDEAS

In an effort to aid teachers in their transition to standards-based, authentic assessment, the Alaska Science Performance Standards document includes both Sample Assessment Ideas and Expanded Sample Assessment Ideas. The following examples illustrate the nature of these ideas and are included to prompt further thinking about culturally-responsive curriculum assessment.

Alaska Science Key Element A14a

A student who meets the content standard should understand the interdependence between living things and their environments.

Performance Standard Level 3, Ages 11–14

Students classify living organisms based on their position and function in a complex food web.

Sample Assessment Ideas

- Students discuss the short-term and long-term consequences of removing a specific organism from a food web.
- Students describe the relationship of bacteria and plants in the nitrogen cycle.

Expanded Sample Assessment Idea

- Students report on a predatory animal in their local area: determine which other predators are in direct competition for food.

Procedure

Students will:

1. Choose an animal to study.
2. Make observations, do library and internet research, contact state park agencies for information, and discuss their assignments with knowledgeable Elders; determine what prey animals these predators eat, and how much territory is required to support each predator.
3. Identify inter-species and intra-species predators in direct competition with one another for food.
4. Illustrate and describe the food chain of the animal.
5. Produce a class poster, written, or oral class report. (The list of predators in an area could become unmanageable if insects are included. Teachers will have to set some limits on types of animals under consideration.)
6. Compare and classify the animals in the food web according to the level they occupy in the food chain.

Reflection and Revision

Describe the changes that would occur if one predator or one prey were removed from this area? How would other organisms in the food chain be affected? What happens to human consumption when one food animal is no longer available? Why are some predators no longer found in their original area or in our community?

Level of Performance

Stage 4 Student work is complete, and shows evidence of clear and logical reasoning. Student conducts a thorough investigation of an animal and produces a detailed food web that includes organisms from all trophic levels of the food chain. Student correctly identifies predators in direct competition with one another and explains how these animals avoid direct competition. Student work shows extensive evidence of transfer and extension of knowledge in a detailed discussion of how an organism's change affects the food web.

Stage 3 Student work shows evidence of logical reasoning, but may contain minor errors or omissions. Student conducts an investigation of an animal and produces a food web that includes organisms from all trophic levels of the food chain. Student correctly identifies predators in direct competition with one another and explains how two of these animals avoid direct competition. Student work shows evidence of transfer and extension of knowledge in a discussion of how an organism's change affects the food web.

Stage 2 Student work may be incomplete, or contain errors of science fact and reasoning. Student conducts an investigation of an animal and produces a simple food chain. Student may identify another animal that competes for food or other resources. Student work shows limited evidence of transfer and extension of knowledge.

Stage 1 Student work is largely incomplete, and may contain major misconceptions regarding an animal and its needs or complex food chain.

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