

# PROJECTS

## NATURE OF PROJECTS

A **project** is an assignment aimed at having students produce something themselves on a topic related to the curriculum rather than just “reproduce” knowledge on tests. Projects are a traditional part of the curriculum. Projects are assigned at all grade levels in subjects such as music, media, art, science, language arts, and social studies. Projects may involve models, maps, pictures, tables, graphs, collages, photographs, plays, films, or videotapes. The assignments are aimed at enhancing communication, reasoning, technical, interpersonal, organizational, decision-making, and problem-solving skills. Projects may be completed by individual students, cooperative learning groups, whole classes, schools, and communities. Projects may involve both in-class and out-of-class research and development. Projects allow students to be creative, use multiple modes of learning, and explore their own multiple intelligences. The disadvantages of projects are that they are difficult to assess and to store.

## WHY USE PROJECTS?

Despite the assessment challenges posed by projects, they are useful assignments that achieve objectives that may not be achieved in any other way. Projects

1. Allow students to be creative and inventive in integrating diverse knowledge and skills
2. Allow students to demonstrate and clarify their multiple intelligences through the use of diverse medias (see Box 6.1)
3. Require students to use, integrate, apply, and transfer a wide variety of diverse information and skills into a final product
4. Require students to engage in procedures (such as scientific investigation and inquiry) that promote higher-level outcomes
5. Give students the opportunity to formulate their own questions and then try to answer them
6. Accommodate different achievement levels by allowing students to complete projects at varying levels of difficulty
7. Give students with reading and writing problems an alternative method of demonstrating learning and competencies, which may result in increased academic self-esteem
8. Provide opportunities for positive interaction and cooperation among classmates
9. Provide a forum for students to share their learning and accomplishments with other students, classes, parents, and the community

## HOW TO ASSIGN PROJECTS

The wide variety of meaningful outcomes achieved by projects make them a valuable and flexible teacher tool. Their richness and complexity make them ideally suited for

### BOX 6.1 MULTIPLE INTELLIGENCES

INTELLIGENCE	DEFINITION
<b>Linguistic</b>	Ease in producing language (writers, poets, storytellers); related to written and spoken words and language
<b>Logical-mathematical</b>	Ability to reason and to recognize abstract patterns (as in science, mathematics); often called "scientific thinking" because it deals with logical reasoning, numbers, and the recognition of abstract patterns
<b>Musical/rhythmic</b>	Sensitivity to pitch and rhythm (inherent in composers, instrumentalists); recognition of tonal patterns, including various environmental sounds
<b>Visual/spatial</b>	Ability to create visual/spatial representations of the world and to transfer these representations either mentally or concretely (architects, sculptors, engineers); relies on the sense of sight and being able to visualize an object and create internal mental images
<b>Bodily/kinesthetic</b>	Using the body to accomplish physical activity, to solve problems, to create products, and to convey ideas and emotions (athletes, surgeons, dancers); related to physical movement and knowing how the body, including the brain's motor cortex, controls body motion
<b>Interpersonal</b>	Ability to understand other people and to work effectively with them (salespeople, teachers, politicians); operates primarily through person-to-person relationships and communication; relies on all other intelligences
<b>Intrapersonal</b>	Personal knowledge about one's own emotions or self; relates to inner states of being, self-reflection, metacognition, and awareness of spiritual realities

Source: Adapted from White, Blythe, and Gardner, 1992.

cooperative learning groups. The steps for assigning a project for general use and specifically for cooperative learning groups follow.

#### Steps for General Projects

1. Assign a variety of projects throughout the year. Structure the projects so that students
  - a. Have some choice in the focus or topic of their projects
  - b. Can use a variety of intelligences in completing them
  - c. Have to use higher-level reasoning skills such as induction and problem solving
  - d. Can be creative and divergent in their approach to the assignment
2. For each project list the dates for when the project starts, when each part of the project should be completed, when the initial draft is submitted for peer editing and initial teacher reaction, and when the final product is due.
3. Show students samples or models of completed projects. A variety of projects ranging from excellent to poor will help students develop a frame of reference on what is and is not an acceptable finished product.
4. Have students develop specific criteria to assess the quality of the completed projects. Criteria may include timeliness, appearance, originality, quality, evi-

dence, reflection, richness of ideas, and presentation. Students develop indicators of excellent, fair, and inadequate products. If students want to make a video, for example, they can view several videos and then develop a rating scale that differentiates high-quality from medium- and low-quality videos. The best video they view can be the benchmark to which they aspire. Students need to understand the components of a good project and then use indicators to guide them in their work.

5. Teach students how to use a rubric supplied by you (the teacher) that is standardized for the school, district, or state. Learning how to use a standardized rubric for assessing the quality of projects gives students a more sophisticated frame of reference for reflecting on their own work.
6. Have students complete the project with help and assistance from faculty.
7. Have students present their completed projects to some or all of their classmates. In viewing classmates' projects, students use the rating scale developed and the standardized rubric to assess project quality. A peer-editing cycle is very useful at this point (see Chapter 5).
8. Students turn in their projects to be assessed by the faculty.

### Steps for Group Projects

The usual rule for cooperative learning groups is that students learn in a group and are subsequently assessed as individuals (Johnson, Johnson, & Holubec, 1998). Whereas in school individual assessment is more common than group assessment, in real life it may be just the opposite. In most organizations, the success of each individual employee is less frequently focused on than is the success of the organization as a whole, or divisions in the organization, or teams in the division. Authentic assessment, therefore, most often means group assessment. Thus, a classroom assignment may be given that requires a group report, exhibit, performance, video, or presentation. An example of such a group project could be assigning groups to create a brochure for a vocational program. Each group would select and research a vocational program and prepare an instructional brochure to present to the class. (See Box 6.2 for more examples.)

Students and assessment procedures need to be clearly briefed when the purpose of assessment is to measure group productivity. Students are given the *task* of completing the assigned project. The *cooperative goal* is for group members to complete one project in which everyone has contributed a share of the work, everyone can explain its content and how it was conducted, and everyone can present it to the class. In addition to the general steps previously discussed, the *procedure* for groups projects includes

1. Students are assigned an initial project and are placed in cooperative learning groups to complete it. The required materials are provided.
2. The group completes the project, ensuring that all members contributed, agreed on, and can explain the results. The teacher systematically observes each group and provides feedback and coaching.
3. The group hands in their report to the teacher; each member presents the results to a section of the class; and a test may be given on the content of the project.
4. The assignment can be extended by the teacher presenting the relevant algorithm, procedure, concept, or theory required to complete the project. Students are then asked to apply what they have just learned to a more complex project.

Using the examples of group projects in Box 6.2 and the lists of steps for assigning general and group projects, you can practice doing so by completing Activity 6.1.

## BOX 6.2

## EXAMPLES OF PROJECTS

- Mythological rap song: write and present a rap song about the gods and goddesses in Greek mythology.
- Select a famous writer, artist, politician, or philosopher from the Renaissance period and become that person on a panel of experts.
- Teach cycles through gardening (different students are in charge of seeds, fertilizing, and so forth).
- Videotape a community project.
- Write plays, skits, role plays.
- Run a school post office.
- Have an international festival with multi-cultural activities.
- Groups write alternative endings with dramatizations.
- Turn a short story or event in history into a movie.
- Present a newscast.
- Pamphlet: select and research a disease and prepare an instructional pamphlet to present to the class.
- Research an international conflict in the world today (a student can research a different aspect of each country involved in the conflict—history, resolutions, maps, and so forth).
- Paint a mural of the history of the earth and humankind (each group takes an era—Greek, Roman, Middle Ages art)
- Create a timeline (personal, historical, literary, artistic, geological).
- Produce a school or class newspaper.
- Conduct a mock court.
- Create a mural based on reading.
- Create a new invention using the computer.
- Design an ideal school and have class enact it.
- Engage students in science fair projects.

## ACTIVITY 6.1 ■ CREATE A PROJECT

1. List the projects you will assign students during the course.

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_
- d. \_\_\_\_\_

2. Select one of the projects you listed. Write out the steps you will follow in assigning the project.

### INDIVIDUAL ACCOUNTABILITY

What children can do together today, they can do alone tomorrow. —Vygotsky

Assessing projects includes both group and individual accountability (Johnson, Johnson, & Holubec, 1998a). Teachers structure *group accountability* by assessing the overall performance of the group and giving the results back to group members to compare to a standard of performance. Criteria for excellence need to be established

before the project is assigned and the quality of the group performance is assessed. A group grade or score is given, and every group member gets the same score.

A common concern with the use of projects is individual accountability. Teachers worry that some members will let others do all the work. Teachers structure *individual accountability* by assessing the performance of each group member and giving the results back to each member to compare to a preset standard of performance. There are a number of ways of doing this.

1. **Keeping the size of the group small.** The smaller the size of the group, the greater the individual accountability.
2. **Observing each group and group member.** Record the frequency with which each member contributes to the group's work. Knowing that the teacher is watching and collecting systematic data increases individual accountability.
3. **Assigning one student in each group the role of checker.** The *checker* asks other group members to explain the reasoning and rationale behind group decisions and answers.
4. **Giving random individual oral examinations.** Individual students are randomly selected to explain answers or present his or her group's work in the presence of the group or to the entire class.
5. **Having students teach what they learned to someone else.** Each group member can present the group's project to another group and teach that group what his or her group learned.
6. **Having students use what they have learned to solve a problem.** Each student can be given a problem that can only be solved by applying the knowledge and skills that were necessary to complete the project.
7. **Giving an individual test to each student.** After the group project is completed, an individual test on the knowledge and skills students were supposed to learn and use can be given. Bonus points can be given if all members of the group pass the test at a certain level (such as 90 percent correct).

## SUMMARY

A project is an assignment aimed at having students produce a product on a topic related to the curriculum. Projects allow students to be creative and inventive by integrating diverse knowledge and skills, using diverse medias, using procedures such as the scientific method, formulating their own questions and answers, sharing their learning and accomplishments with others, and transferring and applying a wide variety of diverse information and skills. Projects are usually conducted by groups. When students are placed into groups to complete a project, both the group and the individual level assessments need to be conducted.

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## GROUP PROJECT RUBRIC

Students' Names: \_\_\_\_\_ Date: \_\_\_\_\_

Class: \_\_\_\_\_ Project: \_\_\_\_\_

### DIRECTIONS:

For each criterion write the indicators for each of the three levels.

	Indicators		
Criteria	Low	Middle	High
Criterion 1	1.  2.  3.		
Criterion 2	1.  2.  3.		
Criterion 3	1.  2.  3.		
Criterion 4	1.  2.  3.		

Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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## GROUP PROJECT SCORING RUBRIC

Students' Names: \_\_\_\_\_ Date: \_\_\_\_\_

Class: \_\_\_\_\_ Project: \_\_\_\_\_

Criteria	Score
1. Quality of research	1 _____ 2 _____ 3 _____ 4 _____ 5 _____ One source                      Three sources                      Five sources
2. Question and answer section	1 _____ 2 _____ 3 _____ 4 _____ 5 _____ Many factual errors                      Some factual errors                      No factual errors
3. Graphics	1 _____ 2 _____ 3 _____ 4 _____ 5 _____ No graphics                      Good graphics                      Dazzling graphics
4. Organization	1 _____ 2 _____ 3 _____ 4 _____ 5 _____ Random                      Clear                      Overwhelming
5. Oral presentation	1 _____ 2 _____ 3 _____ 4 _____ 5 _____ Incomprehensible                      Clear                      Inspiring

Comments:

**GROUP GRADE**

Score: \_\_\_\_\_

POINTS	GRADE
22-25	A
18-21	B
13-17	C
8-12	D

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## COLLEGE ADMISSIONS RATING FORM

Student's Names: \_\_\_\_\_ Date: \_\_\_\_\_

Please describe what you think is important about the applicant that will help us differentiate this student from other applicants. Describe the applicant's academic and personal qualities, especially his or her intellectual purpose, motivation, relative maturity, integrity, ability to work with others, interpersonal skills, leadership potential, independence, originality, capacity for growth, special talents, and enthusiasm.

<b>Academic Skills and Potential</b>	<b>No Basis</b>	<b>Below Average</b>	<b>Average</b>	<b>Above Average</b>	<b>Top 5%</b>
Creative, original thought					
Motivation					
Independence, initiative					
Intellectual ability					
Academic achievement					
Written expression of ideas					
Oral expression of ideas					
Disciplined work habits					
Potential for growth					
Ability to work with others					
<b>Summary Evaluation</b>					

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