Standard Indicators
7.1.5, 7.1.6

Without Limits

Purpose

Students will identify some important contributions to the advancement of science, mathematics, and technology that have been made by different kinds of people, in different cultures, at different times, and will provide examples of people who overcame bias and/or limited opportunities in education and employment to excel in the fields of science.

Materials

For the teacher: chalk, chalkboard
For each group of students: copies of Black Line Master (BLM) *Without Limits*, research materials, paper, pencils
For the class: television, VCR, video camera, video equipment, props for commercials and news segments

Activity

A. Pre-Activity Preparation

1. Arrange for students to have access to the school library and the Internet for their research.
2. Arrange for the use of video equipment for several days.

B. Pre-Activity Discussion

1. Ask students to think of different scientists and their accomplishments and list them on the chalkboard.
2. Ask students: "What do you know about the lives of these scientists? What were their contributions to science? Did they have to overcome any obstacles in order to pursue their goals?"
3. Discuss how many scientists of different backgrounds have had to overcome bias and/or limited opportunities in order to reach their goals and excel in their fields.

C. Introduction to the Activity

1. Divide students into three groups. Label one group A, one group B, and one group C. Distribute a copy of the BLM *Without Limits* to each student.
2. Instruct students to read through the directions on the BLM and discuss the assignment with students.
3. Direct each group to choose at least two scientists to research. Tell students that each group is responsible for the assigned tasks listed next to its group name on the BLM.

(continued)

connecting across the curriculum

English/ Language Arts
Direct students to read *Brainstorm!: The Stories of Twenty American Kid Inventors*, by Tom Tucker, et al.

EXTENDING THE ACTIVITY

Challenge students to think of an invention or discovery that interests them and to find out who was responsible for that event. Have students compare the backgrounds of the scientists they researched.

Standards Link
7.1.7

Activity (continued)

4. Allow students time to brainstorm ideas and encourage them to be creative in their news segments (e.g., role play, conduct interviews, etc.).
5. Make reference materials available and direct students to begin researching their scientists.

D. Preparation and Production

1. Help the class select two co-anchors and a technical crew.
2. Monitor and guide students as they outline and produce their news segments.
3. Advise students in the technical crew on their responsibilities as they work to produce each segment. Be sure that each group establishes deadlines to meet for production of each segment.
4. Monitor and advise students in Group B as they work on their commercials and students in Group C as they work on the introduction and credits.
5. Assist students in Group A in making their final edits and in putting together the entire show.

E. The Big Show

1. Show the completed video to the class.
2. Discuss each group's experiences in the production process.
3. As a class, discuss each scientist highlighted in the newscast.
4. Discuss and compare the scientists' accomplishments, backgrounds, and the challenges they faced in their careers.

Classroom Assessment

Basic Concepts and Processes

At the end of the activity, ask questions, such as:


What important contributions to the advancement of science did your scientist make?


What obstacles did your scientist have to overcome in order to succeed in his/her fields?


Which characteristics of your scientist did you choose to highlight in your news segments, and how did you decide what to highlight?

Name: _____

Without Limits

Getting Started:

1. Choose two of the following scientists to research:

Elizabeth Blackwell	Rita Levi-Montalcini
George Washington Carver	Galileo Galilei
Jewel Plummer Cobb	Percy Lavon Julian
Lise Meitner	Charles Babbage
Roger Arliner Young	Lydia Villa Komaroff

2. Your research should include, but is not limited to, the following:
   - Important contributions to science each person has made
   - The time period in which each scientist lives/lived
   - The cultural/ethnic background of each scientist
   - How each had to overcome bias and/or limited opportunities in education and/or employment to excel in his/her field
   - Any other noteworthy information

3. Prepare a news segment (for each scientist) that includes the above information. Your news segment will be part of a class-produced news program.

Putting It All Together:

- Responsibilities for each group are as follows:
  - Group A: Report your news segments; perform final editing of all segments; put the news program together for taping
  - Group B: Report your news segments; write and produce three 1½ minute commercial skits relating to what the class researched
  - Group C: Report your news segments; create and produce the introduction and credits segments (beginning and end of program)

- The class will elect two co-anchors (one male and one female) to introduce each news segment in the broadcast.

- A technical crew taken from the three groups will be in charge of the video equipment and sets for the program.

- Each news segment is limited to 5 minutes of broadcast time.