

Latina Scientists:

From Obscurity to Prominence

Abstract

Although women have always been involved in scientific pursuits, historically, they were not welcomed or encouraged in these activities. Documented contributions and scientific biographies are virtually all androcentric. For Latinas, the barriers to higher education have been even greater as racism, converging with sexism, enabled systematic discrimination and exclusion from scientific fields. In this lesson, students will be able to explore the obstacles women have faced in science and conduct research on notable Latina scientists.

Learning Objectives

The student will be able to:

- explore perceptions of science;
- discuss the obstacles of women have faced in the sciences;
- research Latina scientists using appropriate technology;
- share and learn about Latina scientists via cooperative learning.

Curriculum Standards

Social Studies (National Council for the Social Studies):

Time, Continuity, and Change

People, Places, and Environments

Science (National Science Teachers Association)

History and Nature of Science

Technology (International Society for Technology in Education)

Technology Productivity Tools

Technology Research Tools

Materials

PowerPoint Presentation: *Latina Scientists*

Appropriate technology and audio-visual equipment for PowerPoint

Web Quest Assignment Sheets

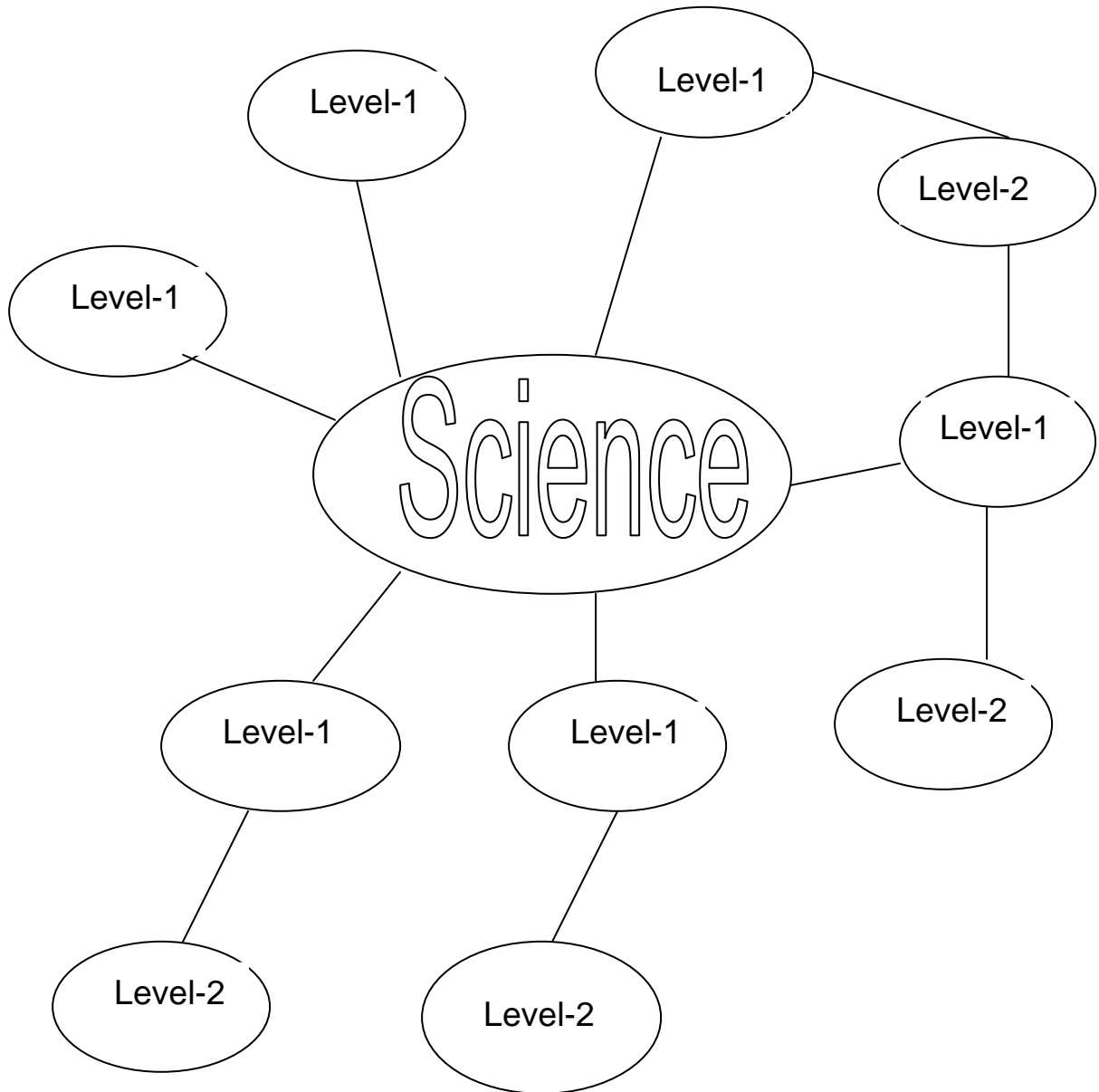
Computer lab for students to conduct Web Quest

Teaching Strategy

Set Induction: Web Graphic Organizer

Start by having the word “science” written on the board, in the center, with a ring

around it. Direct students to think about the word “science” and all the things that come to mind. Construct a class brainstorming web by asking students to share the words and terms that come to mind (“Level 1 Descriptors”). As you write those words on the board, connect them with a line to the word “science.” You can also have students generate additional terms (“Level 2 Descriptors”) that are elicited by the Level 1 Descriptors.



Activity 1: Discussion

Generate a class discussion by asking:

- On the whole, what sorts of images did the class envision?
- According to the words in the web, what sorts of activities “count” as science?
- According to the terms generated by the class, *who* “does” science?

Segue to PowerPoint on Latina Scientists.

Activity 2: Teacher Explanation

PowerPoint presentation, *Latina Scientists* (in preparation, read the *Latina Encyclopedia* entry on this topic), pausing to answer students’ questions and checking for comprehension frequently.

Activity 3: Web Quest

- After securing usage of a computer lab at school, go over any technology-related issues you may need to review with your students. Explain to them that they will be going on an Internet scavenger hunt of sorts, looking for information about a Latina scientist to which they will be assigned.
- Determine how many groups you will divide your class into (peruse the number of Web Quest Assignment Sheets). It is suggested that groups be comprised of no more than three students. Assign one Latina scientist per group.
- Allow one class session for the researching, monitoring the class and providing technical assistance when necessary.
- Optional: have each group create a PowerPoint presentation about the Latina scientist they researched.

Closure:

Allow each group to share their findings with the class.

After each group has presented, ask: What are some of the common characteristics and qualities that all these Latina scientists share?

Bring closure by asking: What can be done to increase the representation of Latinas in science and engineering?

Assessment Options:

Further research: Allow students to conduct further research on a Latina inventor or invention developed by a Latina. They can develop a poster, diorama, or other visual and share their projects with their classmates via a “walking gallery” set up in class.

Role Play: Have students role-play a Latina scientist, staying “in character” when asked questions by peers in the class related to her work.

Oral histories: Have students conduct oral histories of Latinas in scientific work. Ask students to first develop an interview protocol to be used during the data collection.

Biographies of Latina scientists: Ask students to research and write the biographies of Latina scientists, chronicling their life and work. These biographies can be of the scientists profiled in the Web Quest activity or of other Latina scientists discovered by the students during their research.

Further Reading and Resources: (see essay in Latina Encyclopedia for additional references)

The Center for the Advancement of Hispanics in Science and Engineering Education

<http://www.cahsee.org/home/home.asp>

Epstein, Vivian Sheldon. *History of Women in Science for Young People*. Denver, CO: VSE Publisher, 1994

Society for Advancement of Chicanos and Native Americans in Science (SACNAS)

<http://www.sacnas.org>

St. John, Jetty. *Hispanic Scientists: Ellen Ochoa, Carlos A. Ramirez, Eloy Rodriguez, Lydia Villa-Komaroff, Maria Elena Zavala*. Mankato, MN: Capstone Press, c1996

Telling Our Stories: Women in Science. Watertown, MA: Tom Snyder Productions, 1996.

Verheyden-Hilliard, Mary Ellen. Several biographies of women scientists. Bethesda, MD: Equity Institute.

Yount, Lisa. *Contemporary Women Scientists*. New York: Facts on File, 1994.