

Bio/Diversity Project Who Can Be A Scientist?

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Grade Level: 3rd grade

Common Core Standard:	<i>Strand 2, Concept 1: Identify individual and cultural contributions to scientific knowledge.</i> <ul style="list-style-type: none"> • <i>PO1: Identify how diverse people and/or cultures, past and present, have made important contributions to scientific innovations.</i> • <i>PO 2. Describe science-related career opportunities.</i>
Content Objective: Science	<ul style="list-style-type: none"> • <i>Students will be able to identify scientists from underrepresented groups in the STEM fields.</i> • <i>Students will be able to explain broadly what science is, and will be able to give examples of different fields of science.</i>
Language Objective: (Optional)	N/A

Vocabulary	Materials
<ul style="list-style-type: none"> • Science • Scientist • Scientific Method 	<ul style="list-style-type: none"> • Blank paper • Colored pencils, crayons, or markers • PowerPoint presentation on science/scientists • Relevant videos • Projector and smartboard • Supplies for scientist project <ul style="list-style-type: none"> ○ Plastic water bottle (ask students to bring in a used one, or collect/bring in already used bottles) ○ Styrofoam ball
Guiding Questions:	
<ul style="list-style-type: none"> • What is science? • What does a scientist do? • What kind of work is considered science? • What are examples of science jobs/professions? • Who can be a scientist? Can you be a scientist? 	

Engagement/Introductory Activity:

The beginning activity will be the Draw a Scientist activity. Each student will be asked to draw a picture of themselves using colored pencils, crayons, or markers. Once they have completed the drawing, ask them to flip over their papers and to draw a scientist. On the bottom of the paper have them write a brief explanation as to why they drew the scientist in the way that they did.

**Exploratory Activity:**

Each student will be assigned to research a scientist that represents diversity in the scientific workforce. Students will write a report and make a small figurine that represents their scientist using the supplies provided (plastic water bottle and Styrofoam ball) and those they find at home. This activity will be done both at school and at home over the course of several weeks.

Potential scientists for student reports:

- Benjamin Banneker
- Caroline Herschel
- Chien Shiung Wu
- Clyde Tombaugh
- Ellen Ochoa
- Ernest Everett Just
- Franklin Chang-Díaz
- Fred Begay
- Gebisa Ejeta
- Geerat Vermeij
- George Washington Carver
- Jacques Cousteau
- Jane Goodall
- Jane Lubchenco
- Joseph M. Acaba
- Katherine Johnson
- Kathleen Howell
- Luis Walter Alvarez
- Mae Jemison
- Marie Curie
- Mario Molina
- Mary Anning
- Neri Oxman
- Rachel Carson
- Richard Leakey
- Sarah Boysen
- Stephen Hawking
- Sylvia Earle
- Temple Grandin
- Wallace Hampton Tucker



Student figurine of a scientist, dressed in scuba diving gear

Explain:

Student Presentations:

- Ask students who they usually think of when they hear the word scientist – encourage them to think about these responses while they listen to their classmates present their scientists.
- Ask each student to present their scientist figurine and their report about the scientist to the class. Have them explain what makes their scientist different from the traditional scientist that most people think of (Einstein).
- Encourage the class to ask questions about the different scientists that were researched.

**Extension Activity/Questions:**

Once the students have presented their scientists to one another, use the following questions to help them understand that not all scientists study the same material, look like Albert Einstein, or necessarily have advanced degrees. Make sure to tell them that you are a scientist and that they too were just scientists in the research that they performed.

- Do all scientists look like Albert Einstein?
- Are all scientists from the United States?
- Are all scientists the same height, gender, skin color, age, etc.?
- Did all scientists go to school?
- Did all scientists have the same physical abilities?
- What were some of the topics that the scientists studied?
- Where did your scientist work?
- Do you have to work in a laboratory with chemicals to be a scientist?

Evaluation Activity:

Students will complete the Draw a Scientist activity again. These drawings can be compared to their initial drawings to evaluate whether students broadened their thinking about who can be, and who they think of, as scientists.