Draw a Scientist

Grade: 1st
Length: 45 minutes
Big Ideas: Perception
Topic: Scientist

Summary: Students will draw what they think a scientist looks like and what they do. After a discussion about scientists with their teacher and peers, students will reevaluate their drawing and make modifications or create a new drawing.

Standards:
K-2 Standard 1 – Intended Learning Outcomes
The Processes of Science, Communication of Science, and the Nature of Science – *Students will be able to apply scientific processes, communicate scientific ideas effectively, and understand the nature of science.*
Objective 2: Communicating Science: Communicate effectively using science language and reasoning.
1. Developing social interaction skills with peers
2. Sharing ideas with peers
3. Connecting ideas with reason (evidence).
4. Using multiple methods of communicating reasons/evidence (verbal, charts, graphs)
Objective 3: Knowing the Science: Understanding the nature of science.
1. Ideas are supported by reasons
2. There are limits to ideas in science (i.e. what can be observed, measured, and verified).
3. Differences in conclusions are best settled through additional observations and investigations.
4. Communication of ideas in science is important for helping to check the reasons for ideas.

Essential Questions:
- Who is a scientist?

Enduring Understandings:
- Science is a process that anyone can do.

Objectives:
Students will…
- Draw a picture of what they think a scientist looks like and what they do based on their own ideas and perceptions of a scientist.
- Draw a picture of what a scientist looks like and what they do after exploring and discussing with their teacher and peers about scientists.

Materials:

- Paper (1-2 per student)
- Writing utensils (e.g. crayons, markers, colored pencils)

Background Information:

Over 50 years ago, researchers asked elementary-school children from the United States and Canada to draw a scientist. Their drawings commonly showed males in white lab coats with glasses, lab equipment, and books. In this original study, of the 5,000 drawings created, only 28 showed a female scientist, and all of those were drawn by girls. In subsequent studies, from the 1980's forward, an average of 28% of children drew female scientists (Yong, 2018). This is an encouraging trend, but today's students are still drawing at least twice as many male scientists as female scientists. It is important to dispel misconceptions about scientists and who can be a scientist, including, but not limited to gender, socioeconomic status, and race. "Draw a Scientist" can help students learn about their perceptions, dispel misconceptions, and understand that science is a process that anyone can do.

Key Vocabulary:

- Scientist: A person who studies, specializes in, or investigates a field of science.

Procedure:

1. Ask the students to take out a piece of paper and draw a scientist. Do not give them further prompts or ideas of who that scientist could be, what they could look like, or what they could be doing. This should be a quiet activity.
2. If you have time, do a gallery walk, if you are short on time have a few students share about their drawing.
    a. Gallery Walk: Have students put their picture on top of their desk. Let them walk around and observe everyone else's pictures.
3. Ask students what they noticed about the scientists in the drawings. What did they have in common? What was different? Was anything surprising?
4. Discuss what makes a scientist a scientist. A scientist is person who studies, specializes in, or investigates a field of science (e.g. natural or physical). Depending on the students' level, discuss the scientific process. Anyone that uses the scientific process is a scientist. Make sure to dispel common misconceptions (e.g. not all scientists are men working in labs). If time permits, provide examples of influential diverse scientists.
5. Ask students to
    a. Think: Individually think about who can be a scientist.
    b. Pair: Talk to a partner about their answer.
    c. Share: Let students share out to the whole group their answers, or their partner's ideas.
6. Have students make modifications on their first drawing or create a new drawing of a scientist based on what they learned.

Citations:

Yong, E. (2018, May 20). What We Learn From 50 Years of Kids Drawing Scientists. *The Atlantic*. Retrieved from https://www.theatlantic.com/science/archive/2018/03/what-we-learn-from-50-years-of-asking-children-to-draw-scientists/556025/

Additional Activity/Extension:

For extensions please visit:
https://www.calacademy.org/educators/lesson-plans/draw-a-scientist