SN EDUCATOR GUIDE

October 12, 2019 & October 26, 2019

The SN 10: Scientists to Watch

Activity Guide for Students: Collaborate with an SN 10 Scientist

Directions:

Your SN 10 scientist

With your partner, identify one of the SN 10: Scientists to Watch to read about. You can choose a scientist from the 2019 list or search the archive for another scientist. After reading the article, think about your scientist and the sorts of things he or she is studying and answer the following questions.

1. Which scientist's work did you choose to read about? Why?

2. Why is the scientist interested in his or her work? Did the scientist have any "lightbulb moments" or other life experiences that sparked interest in this work?

3. Based on the article, give an overview of the scientist's current research.

4. Find a primary research paper authored by the scientist. What is the research question posed in this paper? What is the hypothesis?

5. In what area(s) of science does the scientist specialize? Is the scientist's work cross-disciplinary?

6. How does the scientist take advantage of collaboration or expertise from other disciplines in his or her work?

Your interests

Consider your own interests and answer the following prompts.

7. What are you most interested in?

8. Is there a field of science or scientific topic that your interest connects to?

9. Is there something about that scientific topic that you'd like to know more about?

10. Is there a problem in your life, family, community that connects to the topic?

11. Have you had any lightbulb moments related to the problem or topic?

12. How could research in your area of interest be improved by collaboration?

Birth of collaboration

Now it's time to role-play. Either you or your partner should play the role of the SN 10 scientist and the other should be a student collaborator or mentee (playing yourself). Discuss the similarities and differences in your work to try to come up with a shared research question. Be sure to ask each other questions to go deeper into each other's interests. Share knowledge, and follow up on whatever sparks your curiosity. Use the prompts below if you get stuck. Be sure to switch roles so that you each have the experience of collaborating with the SN 10 scientist you chose.

Student: Can you tell me a little bit about your research?

Scientist: What aspects of this research sound interesting and resonate with you?

Student: How did you get inspired and involved in the project?

Scientist: What other areas of science generally interest you? Is there something in school that you've studied that you'd like to learn more about?

Student: What area of science do you specialize in? Would you consider your work to be cross-disciplinary, covering multiple areas of science?

Scientist: Are there local issues or problems that you're interested in solving?

Student: What are other scientific questions that you'd like to explore?

Scientist: Can you think of a scientific question that we could collaborate to answer?

Student: What data could we collect to investigate our question? Is there specialized equipment that we would have to use and have access to in order to collect the data?

Scientist: Based on the data collected, what could be our proposed hypothesis?

Present and debrief

Based on your role-playing, you and your partner should each prepare a two-minute presentation to explain the scientific question you might ask with your SN 10 scientist and your hypothesis. Discuss any methods you will use during your research and why the research project is of interest to you and your scientist. After the presentations, be prepared to answer the following questions as a class.

13. How did collaborating with a classmate help to clarify and/or expand your research interests?

14. What did you find helpful about working toward a research question with a collaborator?

15. What was hard about working with a collaborator? How did you overcome these obstacles?