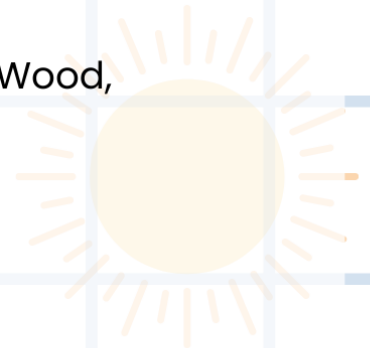


# Educator Guide

# Scientists Like Me: Stories, Advice, and Inspiration from 25 Trailblazers with Experiments to Try at Home

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## **About the Book**

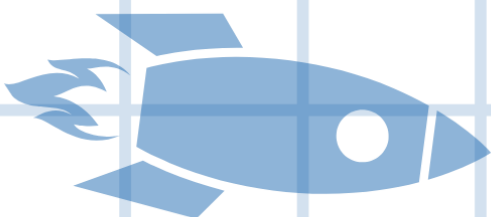
From doctors and physicists, mathematicians and marine biologists, to AI experts and more, *Scientists Like Me* profiles twenty-five diverse historic and contemporary scientists and encourages readers ages 8–12 to discover their own scientific passions. Students can:

- Learn about scientists' paths to their chosen professions through short biographies and hear their words of advice for the next generation.
- Delve into the many disciplines that exist in the scientific world and see what it takes to reach the top of these fields.
- Discover how scientists do science through asking good questions and using the scientific method.
- Try out more than a dozen hands-on activities!

Written in partnership with the Kamin Science Center, *Scientists Like Me* helps readers understand that science is shaped not just by ideas but by the real people who pursue them.

## **Approaches to Using Scientists Like Me in the Classroom**

Biography can be a valuable vehicle for introducing scientific concepts. Scientific knowledge is developed by people. By humanizing science with the stories of specific individuals, you are providing context that can enhance science content learning, helping students to connect new science concepts with what they already know and building background knowledge. Use *Scientists Like Me* to:



- Connect students to science on a human level.
- Develop empathy in students by engaging with the professional, personal, and societal struggles faced by scientists, as well as their reasons for persevering.
- Encourage students to ask deeper questions about a person, time period, event, or discovery. Whet students' appetites for more information!
- Inspire students to write their own autobiographies that reflect how they already see themselves as scientists through their curiosity, problem-solving, observations, or everyday explorations of the world around them.
- Provide students with hands-on experiments, thought exercises, and a step-by-step guide on how to integrate science and continuous learning into everyday life.

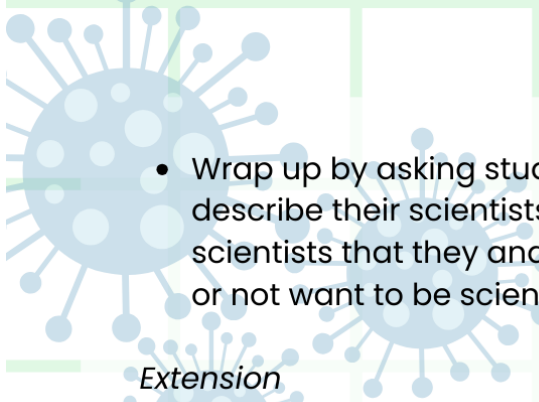
### **Before Reading**

#### **Draw a Scientist**

Having students draw a scientist in action is a well-established activity used in research to explore how people think about science and scientists. Before reading and sharing *Scientists Like Me*, have them draw a scientist and see what ideas students have about what science is and who scientists are.

- Ask students to imagine a scientist at work. What does this scientist look like? What is the scientist wearing? Where is the scientist working? What kinds of tools or equipment are there for the scientist to use? Next, have students create a detailed drawing of what they imagined.
- After they finish, encourage students to write a description of their drawing, including what kind of scientist they imagined and how their scientist is practicing science, such as doing research, conducting an experiment, or making observations.
- Ask students to reflect on what they have drawn and written, think about what traits make their scientist an expert, and write down three characteristics which best describe their scientist.
- Give students the opportunity to explain their drawings with one another. Have students share and compare, looking for common themes and things that are missing from depictions. Discuss with students why they have represented science or scientists in a particular way. Why are there similarities in their drawings? What books, movies, or experiences have influenced their ideas about science and scientists?



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- Wrap up by asking students to return to the three characteristics which best describe their scientists, then think about themselves. Discuss how they are like the scientists that they and their classmates imagined and drew. Why would they want or not want to be scientists?

### *Extension*


Learning about the more-than fifty years of Draw-A-Scientist studies gives students additional opportunities to explore gender norms and stereotypes and understand how perceptions of science and scientists continue to evolve. Have students research online, read, and discuss what changes the studies show, why they think changes are taking place, and what might bring about more change.

- Only 3 in 10 Kids Draw Scientists as Women; But That's More Than Ever adapted by Newsela [newsela.com/read/more-children-see-scientists-as-women/id/41599/](https://newsela.com/read/more-children-see-scientists-as-women/id/41599/)
- 50 Years of Children Drawing Scientists by Youki Terada [edutopia.org/article/50-years-children-drawing-scientists/](https://edutopia.org/article/50-years-children-drawing-scientists/)

## **Activities**

### **Portray a Scientist**

Presenting a first-person interpretation of a scientist gives students the opportunity to learn more about specific scientific disciplines and deepen their understanding of how science is shaped by individual people and stories. Use *Scientists Like Me* to help students discover a variety of contemporary and historical scientists, and to launch deeper investigations into the life and work of a scientist of their choosing.

- Kick off the activity by greeting your students one day in character as a scientist featured in *Scientists Like Me*. Dress the part, speak in first person, and share your story—what your life is like, what kind of science you do, what challenges you've faced, what inspired your work, and why your work matters. Encourage students to ask questions, and stay in character the whole time!
  - Then, explain to students that they'll be choosing a scientist to research, write about, and portray. They'll create a presentation where they will speak as if they are the scientists.
  - Have students browse *Scientists Like Me* and other books and online resources to choose at least three individuals to read more about before selecting the scientist they would like to portray. Encourage them to pick a scientist they found interesting from the book, or one they'd like to know more about.
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- You can provide questions to help guide their research so that presentations include name of the scientist, area(s) of study, life details, challenges and accomplishments, and fun or interesting facts. Students should also plan to look at research papers or other works by their scientist and do their own research into the discipline(s) their scientist studies. As appropriate, students can also offer a scientific demonstration to illustrate concepts related to their scientist's discipline as part of their presentation.
- Have students use their research to write a five-minute script in the voice of their chosen scientist. Encourage vivid stories and sensory details to tell the story of the scientist's life and work in a way that's engaging and personal. (While not part of the spoken presentation, make sure students list their sources of information in their scripts as well) Students can practice reading their scripts aloud and revise for clarity and expression. Students can also prepare a costume or props that reflect their scientist's time period or field of study.
- Host a "Science Conference," where scientists take the podium and present to fellow student-scientists or for families and guests, or set up a "Science Museum" featuring stations where guests "meet" each scientist and hear their story.

#### *Extension*

Plan "scientist meet-ups" where students in character interact. For example, what would Temple Grandin and Jane Goodall talk about? What would Alan Turing say to a computer scientist today?

#### **Citizen Science**

Are your students excited about becoming scientists themselves? In addition to the hands-on activities in *Scientists Like Me*, consider opportunities for them to participate in citizen science projects. All over the world students are helping to answer real scientific questions by collecting data, tagging species, reporting observations, and more.

Have students learn more about citizen science and research possible projects to participate in. Students can make presentations about the projects that appeal to them and see if classmates or others want to join them and that community to help answer a scientific question. To start their research, direct them to:

- SciStarter: [scistarter.org](http://scistarter.org)
- Zooniverse: [zooniverse.org/projects](http://zooniverse.org/projects)
- NatGeo: [education.nationalgeographic.org/resource/citizen-science-projects/](http://education.nationalgeographic.org/resource/citizen-science-projects/)

You can also connect students with a science museum or other science-focused organizations in your area and see if they have any CitizenScience for students to participate in locally: <https://www.citizenscience.gov/>