

## **Lesson and Instructional Ideas for Multicultural Scientists and Related Resources**

**Link to current learning in science** - What topic are you studying now? Which disciplinary core idea? Locate scientists that connect to your topic and review the listed resources. Is there an article, video, or lesson plan that might be useful?

**Scientist biographies** – Read about one of the scientists connected to your current unit topic. One of the key purposes of this resource is to help students see that not all scientists are white, male, Americans. Reading and writing about scientists could also be part of a biographies unit within reading and writing instruction.

**Practices in scientist biographies** - Each of the scientists use science and engineering practices in their work. As students read or watch information about a scientist, and learn about their research, they can be looking for their use of the practices. What questions are they asking? What evidence did they find? How do they communicate with the public about their work?

**Crosscutting concepts in scientist biographies** - Alternatively, as students read or watch information about a scientist, they can consider which crosscutting concepts best frame their work. Are they looking at changes over time or cause and effect? Are they searching for patterns? Perhaps they're focusing on energy transformations and conservation, such as in work with solar power?

**Inspiration** - What inspires and engages your students? Have them write about it and share. Is it similar to what inspired these scientists and what started them on their paths?

**Connections to other countries** - Do you learn about other countries in social studies? Could you highlight a current or historical scientist from that country as part of that investigation? Which countries are your students from? Are they aware of science work happening in the birthplace of their ancestors?

**Native language resources** - Some of the resources provided are in Spanish or Chinese. Not all science happens in English! Making students explicitly aware of that helps to build their identity and show value for their cultures.

**Connecting to current events** - As students learn about current events across the globe, these resources could provide depth to that understanding. For example, the work of some African scientists relates to sustainable crop production in drought conditions. How could that connect to current drought conditions in the western United States?

**Science is linked to daily problems** - Looking at the contemporary work of scientists and engineers, it's easy to find linkages to current problems we're facing. Land and sustainability issues in Africa and Southeast Asia are good examples. But, there are also problems such as

making electronics small enough to fit into your cell phone. There's a big scale difference between the wires and bulbs students use in class and the microprocessors in cell phones doing millions of calculations per second.

**Role models and contacts** - It's difficult for students to imagine themselves having a particular career if they never see someone who looks like them in that career. These scientists and many more can become role models to the students. Reach out to them and others and see if they'll answer emails or engage in online video chats!