

The scientific process and career connections



Length
35-40 minutes

About this lesson

Students will participate in a classroom discussion about the steps of the scientific process and how it can be used to solve real world problems. They will then investigate various careers related to science, and will describe connections between core tasks and aspects of those careers and the scientific process.

Objectives

By the end of this lesson, students will:

- Define and describe the steps of the scientific process, and explain the importance of following this structure when conducting investigations.
- Draw connections between the scientific process and the core tasks and responsibilities of various careers.

Inquiry prompts

- What approach should I take when solving a problem?
- How does the scientific process factor into different careers?

Before you begin

1. Ensure that you can play the [Science and your future success](#) video. This video is also available in [Spanish](#).
2. Ensure that you can log into your student demo account in Xello and can access **Explore Options**.
3. Ensure that students are able to log into their accounts and access **Explore Options**.
4. Review the following resource and have it available for your discussion with students: [The Scientific Process](#). The website also includes a printable PDF if you'd like students to each have their own copy.
5. Decide whether to take discussion/brainstorming notes with your class via a slide deck and project for students to view, or on a whiteboard in the physical classroom.

Teaching strategies

- 1 Show students the [Science and your future success](#) video. This video is also available in [Spanish](#). When the video is over, ask students to give examples of two real-world connections to science.
- 2 Explain that you will be looking at how to solve problems using the scientific process, and how that could be useful to a future career. Pose the following question to students: How do you solve a problem? As students discuss, take notes where students can see them.
- 3 Next, project [The Scientific Process](#) (or hand out copies of the PDF). Go over the five steps with students. Choose a real-life example of a problem and work through the steps of the scientific process with students. Some

Xello entry point

Students can dive right in!

Materials required

- [Science and your future success](#) video. This video is also available in [Spanish](#).
- Computers or tablets with Internet access
- Whiteboard and whiteboard markers (optional)

Artifacts

Students:

- Save 2 careers and fill out their related career Investigate cards in **Explore Options**

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examples below:

- Your computer isn't turning on.
- Your toast isn't getting brown in the toaster.
- There is a puddle of water outside your door but it isn't raining.

- 4 Now have students log in to their accounts. In your student demo account, click on **Careers** under **Explore Options** and direct students to do the same. Then direct students click on **More filters**, scroll down to **School Subjects** and click on **Science**. Then apply the filter to narrow the list of careers. Once students do this, they will be able to see the science-related careers in Xello.
- 5 Direct students to follow your lead as you select one career, click on it, and scroll down to read through the job description and core tasks with students. Then discuss the following questions as a class:
 - What are the most important tasks of this job?
 - Does this job utilize the scientific process? If so, what's an example of how one might use it on an average day at work?
 - How does knowing the steps of the scientific process prepare you for this career?
- 6 Save this career. Then, click an option for how you feel about this career then the choices appear. You will now be directed to the career Investigate card. Select the emoji that best describes how you feel about the career, and then click on the Helpful Articles section and add The Scientific Process article to this section. In the "Why is this important to you?" section that appears, write your answers to the questions above.
- 7 Now give students 15-20 minutes to repeat this process on their own as they investigate careers. Tell them they must save and fill out career Investigate cards for at least 2 careers. Remind students that they must make sure that their answers draw a clear connection between the job and the scientific process as described in the article.
- 8 Once students have finished saving careers and filling out the related Investigate cards, answer the following discussion questions as a class:
 - Why might the scientific process be useful to a future career?
 - Can a person use the scientific process in a career that's not related to science? What are some examples?
 - Why is it helpful to have a structure when solving problems?