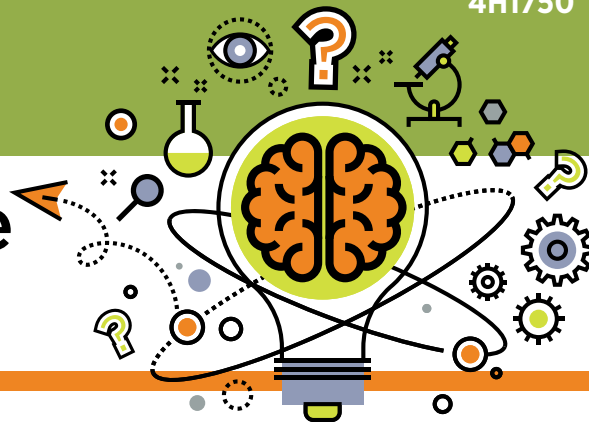# TEACHING SCIENCE
...when you don't know diddly-squat

Does technology make our lives easier?

Purpose:

The purpose is **not** to teach specific content, but to teach the process of science – asking questions and discovering answers. This activity encourages young people to try to figure things out for themselves rather than just read an answer on the internet or in a book. As a leader, try not to express your opinion, but let the youth engage in arguments based on evidence.

Time required:

20 minutes or multiple days depending on the interest and questions the youth have
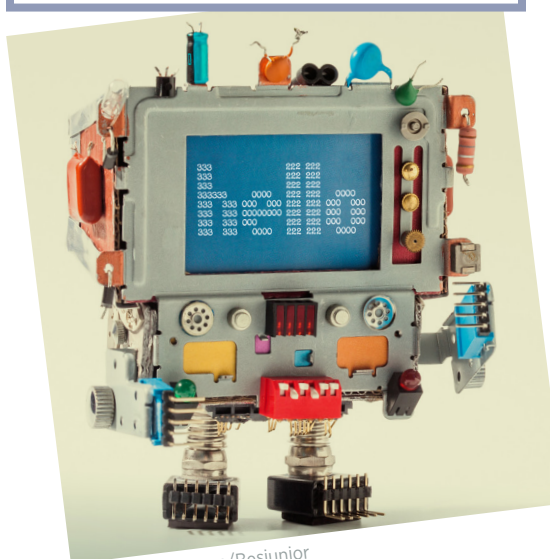
Materials:

❏ Paper
❏ Pencils

Photo © istock.com/Besjunior

SCIENCE PRACTICE:
Asking questions and defining problems

1. Ask the youth: *Does technology make our lives easier?* Have the youth share their answers. Don't share your ideas. After they have given answers, follow up with more questions.

    a. *What is technology?*

SCIENCE PRACTICE:
Planning and carrying out investigations

2. Ask the youth: *While we all use technology every day, how do we know if it is making our lives easier?*

3. Have the youth work in pairs. Hand out paper and pencils. Have them write on the far left side of the paper the heading "Technology." Under it, have them list all the technology they think they use in an average day.

SCIENCE PRACTICE:
Asking questions and defining problems

4. At this point, the youth may realize that everyone has a slightly different definition of technology. You may need to help them determine the parameters for what will be considered technology for this investigation.

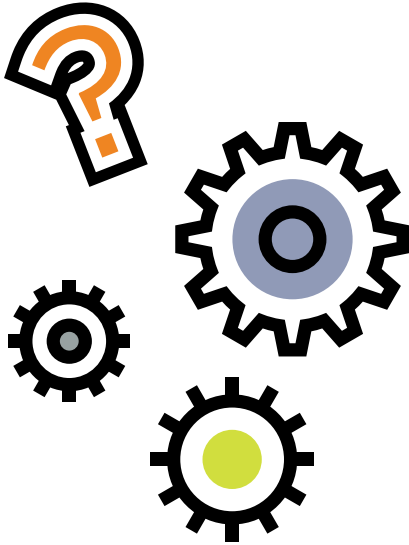*SCIENCE PRACTICE:*
Planning and carrying out investigations

5. Next, have them make two columns beside the list title, one headed "Positive Impacts" and the other headed "Negative Impacts." Ask each pair to fill in as many positive and negative impacts as they can.

Impacts of Technology

Technology	Positive impacts	Negative impacts

You do not need all the answers to teach science. You simply need an inquisitive mind and to be willing to carry out an investigation.

Reference:

National Research Council. (2012). *A framework for K-12 science education: Practices, crosscutting concepts, and core ideas.* Washington, DC: National Academies Press.

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SCIENCE PRACTICE:
Analyzing and interpreting data

6. Discuss as a group the negative and positive impacts the youth list. *Are there more positives or negatives? Is each item on the list equal in benefit or disadvantage? Does one item on a list "balance out" another? How can you compare things that aren't the same? Do you look at the time it saves (or wastes)?*

SCIENCE PRACTICE:
Constructing explanations and designing solutions

7. After discussing, ask the youth again: *Do you think technology makes our lives easier?*

SCIENCE PRACTICE:
Engaging in argument from evidence

8. Have a discussion about why and how technology makes our lives easier or harder.

SCIENCE PRACTICE:
Obtaining, evaluating, and communicating information

9. Have youth make a claim about technology by having then answer the question: *Do you think technology makes your lives easier?* Allow time for youth to justify their answers using the data they collected and to explain their thinking.

Other thoughts:

▸ *Does technology make our lives better?*

▸ *What factors did you use to define technology?*

▸ *Do you think someone living in the Civil War time might have a different answer to this question? How about ancient Roman times? Cave dweller times?*

▸ *Has technology made us weaker by our reliance on it?*

Science & Engineering Practices:

These eight Science and Engineering Practices come from *A Framework for K–12 Science Education* (National Research Council, 2012, p. 42). These research-based best practices for engaging youth in science are connected to in-school science standards that all children must meet.

▸ Asking questions and defining problems
▸ Developing and using models
▸ Planning and carrying out investigation
▸ Analyzing and interpreting data
▸ Using mathematics and computational thinking
▸ Constructing explanations and designing solutions
▸ Engaging in argument from evidence
▸ Obtaining, evaluating, and communicating information