

Grades: 4-5

SciGirls Stories, “Pedal Power”

This series showcases bright, curious real girls putting science and engineering to work as they answer questions and make unexpected discoveries in the world around them.

Best friends Angela, Olivia, Margaret and Rebecca don welding masks and rev up power tools to engineer an ice cream-maker that's powered by their bikes.

After watching this episode, choose from the following questions and/or tasks to extend your learning

Question Box 1

- What is this program “saying”? Cite evidence to support your analysis.
- What are the program’s supporting claims that support the central message?
- What is the author trying to say through the TV program?
- What evidence does the TV show director give to support his or her central idea?
- Describe the power tools the girls used and for what purpose each was used.
- What safety precautions did the girls take while using the power tools?
- What role did their bikes play?
- How did their bikes produce energy to power the ice cream maker?
- What flavor ice cream did they make after their machine was completed?

Question Box 2

- If someone else were looking at this program, what might they learn?
- What is one thing you would like to add to this topic?
- What would you change about this program?
- If a part 2 of this program was created, what you like them to focus on?
- How did the girls use their curiosity about mechanical engineering to support their love for ice cream?
- Name something that you are curious about or would like to build. What makes that specific topic interesting for you?
- What steps would you take to learn more about the topic and is it possible for you to build it?

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Box 3 (Tasks)

- How did the girls use math and science to make their ice cream maker?
- How did the girls use engineering to make their ice cream maker?
- Draw a sketch of the ice cream maker the girls built. Identify each part and explain its importance to the machine.

Box 4 (Enrichment)

- Make a model of a generator and describe the parts.
- Make a model of the girls' invention and show how energy is used along the way.
- Visit <https://www.wikihow.com/Make-Ice-Cream-in-a-Blender-with-Milk> to learn how to make ice cream in a blender. Make comparisons between a blender and the machine the girls created. Where did each get the energy needed to run?

Box 5 (Extend/Real-Life)

- Describe the way ice cream is currently made in commercial settings.