

Student Guide
6th–8th Grade
 Constructing Explanations

Science Practice: Constructing Explanations

Grade Level: 6–8

Who Leads? Students in small groups or pairs

How long does it take? 30 minutes

What do you need? A smartphone for reading the guide and taking videos and/or pictures, or a printout of this document, a pencil, and a blank sheet of paper.

What happens? You will come up with ideas about what’s going on in the exhibit by making observations and using those observations to support your ideas.

What counts as evidence?

We gather evidence by asking questions, trying things out, and making observations. To verify whether you can use your observations as evidence, try repeating your experiment and see if the same thing happens again, have more than one person make the observation and discuss whether you noticed the same thing, or try out another question that relates to your original question.

Pick one exhibit from the following suggestions. If the exhibit you want to use is busy, come back to it later or pick a new one from the list.

Having troubles finding the exhibit? Ask orange-vested Explainers. They can help!

Icy Bodies Convection Currents Watch Water Freeze <i>Explores Matter and Its Interactions</i> Located in the East Mezzanine Gallery	Chaotic Pendulum Floating Objects Bicycle Gyro <i>Explores Motion and Forces</i> Located in the Concourse Gallery
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Start by playing with the exhibit.

With your partner, pick an exhibit. Try things out and see what happens.

There is no wrong way to use the exhibits. Do what's most interesting to you!

Do some careful noticing.

As you are trying things out, talk about what you observe. Are you noticing the same thing? Maybe not. If so, try it again, and see what happens.

Next, decide on two things that you observed that are important in understanding this exhibit.

Discuss your ideas.

What do you think is going on?

This is not about getting the "right answer." It's about talking through your ideas based on your observations.

Try to come up with two different explanations.

Use your observations as evidence.

Which of your observations could be used as evidence?

To verify whether you can use your observations as evidence, try repeating the experiment and see if the same thing happens again, have more than one person make the observation and discuss whether you noticed the same thing, or try out another question that relates to your original question.

OR

Record your observations with a smartphone.

Decide who will video and who will talk. In your video, include these four things:

- 1) Introduce the exhibit. Share what you tried and what you noticed.
- 2) Share your explanation for what's happening.
- 3) Show one observation you made that can be used as evidence.
- 4) Share one question that you still have about this exhibit.

Record your observations by writing.

On a blank piece of paper, record the following:

- 1) Answer these questions: What did you try? What did you notice?
- 2) Write your explanation for what's happening.
- 3) Write down one observation you made that can be used as evidence.
- 4) Write down one question that you still have about this exhibit.