

## Constructing Explanations and Designing Solutions Grades 6-12 - Chaperone Guide

**Goal:** In this activity, students will explore exhibits and make observations. Then, they will use their evidence to create a scientific explanation for what is happening.



**Background Info:** The skills used in this exercise are important parts of the scientific process. Scientists' observations and inferences help them to understand the world around them and create solutions to problems. For example, a civil engineer might notice an inefficiency in our freeway system in Detroit, then collect data analyze it, and use their evidence to come up with a solution to the problem. Today, students will engage in this process with their classmates and the exhibits!

**Science Standards:** *Next Generation Science Standards, Science and Engineering Practices*

**Led By:** Chaperone and Students

**Explored By:** Students Grades 6-12

**Activity Length:** 30 Minutes

**Materials:** This worksheet and a writing utensil **OR** This document on a mobile device and pen and paper

### Getting Started:

- 1) Help students understand that making observations, evaluating evidence, and constructing scientific explanations are important tools used by scientists to discover new things about the world we live in. Good scientists work hard to learn about their surroundings so they can solve problems and explain how things work, then they share their ideas with the world!
- 2) Students will need to follow the instructions found in the student packet. Help lead them through this experience, but remember, *they* are the ones who should make all observations and explanations.
- 3) It is crucial to complete this activity in small groups and for chaperones to ask students questions along the way to guide student thinking. Here are some examples to help:
  - *What did you observe?*
  - *How do you think this exhibit works?*
  - *What do you think would happen if we...*
  - *Why do you think scientists have to make good observations?*
  - *How did you and your partner come up with your scientific explanation?*
  - *What types of problems do you think this scientific concept could solve?*
- 4) Remember, today is about exploration and discovery. Encourage *all* students to participate and remind them that not all scientists know the correct answer right away!
- 5) See a MiSci Activator in a white lab coat if you have any questions or need further assistance!