

COLO-ROAD
TRIPS
-K TO 5TH GRADE-
EDUCATIONAL ITINERARIES

EXPLORE OUTSIDE THE CLASSROOM. LEARN INSIDE OUR STATE.

Scientifically Speaking
Powerhouse Science Center

As you enter the Powerhouse Science Center, be sure to stop by the front desk to grab an activity guide for the current exhibits. Located in the historic 1892 Durango Power and Light building, this 6,000-square-foot space partners with museum giants, including the American Museum of Natural History, the Smithsonian, and the Betty Brinn Children's Museum to create interactive, hands-on exhibits.

Activity: Choose one exhibit that you want to explore and learn more about. Complete the K-W-L chart graphic organizer below to help you identify what you know about the topic before viewing the exhibit and what you learned after visiting the exhibit. Fill in the columns below with what you **Know** about the topic, what you **Want** to know, and what you've **Learned**.

Exhibit Title: _____

What do you know about the topic of the exhibit?	What do you want to know?	What did you learn ?

Additional Activity: Exploring the Scientific Method

While exploring the museum you will be learning many science concepts and using the scientific method. The scientific method is important because it sets a standardized approach to conduct an experiment/solve a problem and ensures the results are valid and based on facts.

Watch the [following video](#) which explains the scientific method. As a note, answers used in the examples below come from the video.

Word Alert:

Scientific method—a system of consisting of observation, hypothesis, experimentation, and conclusion

Observation—the act of watching something carefully to gain information, using your five senses in science.

Hypothesis—an educated guess or prediction.

Experimentation—the process of doing a scientific process.

Conclusion—the end of the scientific experiment and the findings

Variable (for 3rd-5th grades)—in an experiment something that can be changed in the experiment.

After watching [the video](#) ask the following questions about the experiment to help you understand the scientific method.

1. What did you observe before work began? (*salt makes ice melt*)
2. What is the hypothesis? (*Adding salt to ice will help it melt*)
3. How was the experiment set up? (*freeze water, and then try different amounts of salt to see how much to make it melt faster*)
4. What was the variable? (*how much salt added and then time it took to melt*)
5. What was the conclusion? (*when more salt was added, the ice melts faster; once too much salt is added, the rate of melting no longer increases but stays the same*)

Activity: If you are still at the museum, choose an area or exhibit on the museum you want to explore and complete an experiment at one of the hands-on stations. If you are at home, you can conduct your own experiment, such as “How Many Licks Does it Take to Get to the Center of my Lollipop”? (Watch this Oregon Museum of Science and Industry **video**). You can find additional [ideas for experiments here](#).

Share the question you want to answer with your experiment. Share your hypothesis (what you think will happen). Determine your procedure, make observations, record your data and results.

Make sure to record how you changed the experiment (did you add something, take away something, change the position of something) each time and what the result was. After conducting your experiment, write your conclusion (what you found out).

Question: _____

Hypothesis: _____

Attempt at the experiment.	Variable	Result
1st Attempt		
2nd Attempt		
3rd Attempt		
4th Attempt		

Conclusion: _____

Example: Using the ice and salt experiment from the video. While variables and results were not demonstrated in the video, results have been made up to show how an experiment should be set up.

Question: Does ice melt faster when salt is added?

Hypothesis: If I take ½ cup of water and freeze it, the more salt I add, the faster the ice will melt.

Attempt at experiment	Variable	Result
1 st	1 teaspoon of salt	3 minutes to melt
2 nd	2 teaspoons of salt	2 minutes to melt
3 rd	3 teaspoons of salt	1.5 minutes to melt

Conclusion: The more salt added, the faster the ice melts.