

Bluedorn Science Imaginarium

Teacher Information

Before Your Visit

- Let the students know what to expect during their visit to the Imaginarium and discuss with them what standards of behavior you expect from them.
- If you are participating in a science demonstration, briefly discuss some of the science concepts that will be presented.
- If you are participating in a science class, try the pre-visit activities located on the other side of this sheet.

Upon Arrival

- **Orientation:** The staff will give a brief orientation to welcome students to the Imaginarium, discuss suitable behavior, and outline the tour activities.
- **Exhibit Exploration:** During this portion of the visit, students will explore the hands-on exhibits. Help students read signage and use the exhibits as they were intended. Chaperones and teachers must be on the exhibit floor to help supervise students.
- **Demonstrations and Classes:** Please encourage students to volunteer when we ask for help! Remind students that they need to raise their hands before speaking.

Before You Leave

- Please fill out an evaluation form. Your comments and suggestions are important to help us determine how to better serve your needs.

Bubbles: Pre and Post Activities

Objectives

- Discover that water has a skin (surface tension) on it, and that soap makes the skin stretch.
- Experiment with bubbles and discover that bubbles don't care how sharp an object is, only whether it is wet or dry.
- Learn that all bubbles are circles because that is the simplest form in nature—the pressure is equal at all points in a circle.
- Observe how bubbles act like prisms turning light into rainbows.

Pre-Visit Activities

- Advise students that they will be having fun with water, so be prepared to get wet!

Post-Visit Activities

- Discuss ideas for homemade bubble wands. Do a craft activity where students make their own bubble wands, and send a recipe home for making bubble solution with their parents.
 - Wand: Thread a length of string (about 18") through 2 drinking straws. Tie the loose ends together. Hold one straw in each hand, pull tight, and now you have a bubble frame!
 - Bubble solution: 1 part Dawn dish soap
3 parts water

Chemical Clock Reaction: Pre and Post Activities

Objectives

- Students will learn what a chemical reaction is and why it occurs.
- Students will learn what the Scientific Method is and why we use it.
- Students will conduct a chemical clock reaction and use the scientific method to study it.
- Students will be able to accurately measure the reaction time.

Pre-Visit Activities

- Conduct a class discussion on what chemistry is. Get them thinking about what chemical reactions are, and why they might occur.

Post-Visit Activities

- Discuss the different steps of the Scientific Method and why we use it.
- Make homemade carbonated soft drink with the students and discuss the carbonization process.
- Have the students experiment with other chemical reactions such as acid/base reactions (e.g. vinegar and baking soda) or redox reactions (e.g. yeast and hydrogen peroxide).

Marvelous Minerals: Pre and Post Activities

Objectives

- Establish the difference between rocks and minerals.
- Become familiar with various minerals and the ways in which different minerals can be identified using Moh's Scale of Hardness.
- Discuss and show the three basic types of rocks: igneous, sedimentary, and metamorphic.
- Give students the opportunity to see and touch various rocks and minerals.

Pre-Visit Activities

- Discuss minerals that students have heard of. Have they ever actually seen these minerals? Why are these minerals important?
- Discuss where rocks come from. Do they last forever or do they change?
- Find various rocks and minerals in the classroom, around the house, or outside. Give students materials that will allow them to try to identify those rocks and minerals. Get them familiar with terminology and the wide variety of rocks and minerals.
- Compare and contrast. Looking at different examples of rocks and minerals, get students thinking about how and why they are different from each other.
-

Post-Visit Activities

- Discuss the idea of the rock cycle, and discuss how they are created, destroyed, and broken down over time.
- Demonstrate metamorphic rocks. Stack clay or play-dough layers of different colors on top of each other, and then smash them together to see what the result is. Food can be used also; baking and burning are forms of metamorphism. Many rocks undergo changes due to heat. Layered foods can also be used to demonstrate sedimentary rock formation.

Dinosaurs and Fossils: Pre and Post Activities

Objectives

- Discuss and show that a fossil is a plant or animal part that has turned into rock. Allow students to examine various fossils.
- Learn the different kinds of fossils: trace, mold, cast, petrified, preserved.
- Discuss and show what can and cannot be learned about dinosaurs by looking at fossils.

Pre-Visit Activities

- Discuss extinction and the variety of dinosaurs that existed. Do students think that all dinosaurs were large? Were there swimming dinosaurs? Were there flying dinosaurs? Did dinosaurs lay eggs? Did all dinosaurs have sharp teeth? What have children learned from movies about dinosaurs?

Post-Visit Activities

- Look at various fossils and see what you can learn about the plant or animal they came from.
- Find pictures or drawing of bones, have students recreate the animal from a set of selected bones. Have several different students use the same bones and see what similarities and differences they come up with.
- Have children do an age appropriate research project on a dinosaur. Design the activity so a wide variety of dinosaurs are explored.
- Have students create their own dinosaur. The dinosaur should have physical traits that allow it to survive in its environment. For example, large claws for predators, fins for swimmers, long necks for grazers, big eyes for nocturnal dinosaurs, and camouflage for hiding. Encourage creativity.