**Science Explorers, Fall 2017, Week 3**

**Topic: Fossils**

**Goal:**

Students will learn about fossil formation, different types of fossils, and what we can and can’t learn from fossils.

**Introduction:**

Watch this short video which introduces different types of fossils and how fossils are formed:

<https://www.youtube.com/watch?v=3rkGu0BItKM>

Students should learn that fossils are often formed when animals or plants die near water. Over millions of years, sediment piles on top of the bones. The pressure from above compresses the lower layers turning them into rock. Water which seeps in dissolves the bones and minerals then replace them, leaving stone forms of the bones. Movement of continental plates pushes the fossils up to the surface, where they can be discovered by paleontologists.

**Materials:**

* “Fossil” set in plaster of paris
* Popsicle sticks
* Butter knife
* Paint brush
* Paper
* Clay and extra sea creature?

**Instructions:**

1. Small group discussion: Make sure the students understand how fossils are formed.
2. Make sure your table area is covered in paper to collect all of the dust and scraps we’ll make.
3. If we have clay (will discuss in car), practice making a mold with students. Push a sea creature into the clay and discuss what features you can/can’t distinguish just from the mold.
4. Remove the “rock” from the cup (the cup should tear and pull away fairly easily)
	1. Note: the numbers on the cups correspond to the animals within. 1: stingray, 2: starfish, 3: sea lion, 4: orca whale, 5: turtle, 6: crab
5. Observe the “rock.” Is there any indication that there is something inside of it? Discuss how paleontologists discover fossils. What clues might tell them to look in a specific area?
6. Start excavating! Students should use popsicle sticks and paint brushes to scrape/brush away the excess plaster. They should uncover one side of their animal, enough to be able to remove it (the animals are coated in a thin layer of petroleum jelly, so they won’t stick to the plaster and should be easily removable once enough plaster has been removed).
7. Examine the imprint left in the fossil, compared to the animal that you have now excavated. What features of the animal can you see in the fossil? What features can you not see?
8. Switch fossils with another group and try to figure out what their animal was. What features can you see? What remaining questions would you have?
9. Once you’ve finished this discussion, get the animal from the other group and compare your observations to the actual animal.
10. Clean up! All of the mess should be contained on the paper you laid down, so you should be able to just carefully ball it up and throw the whole thing in the trash, making sure to set aside the paint brushes.
11. If you have remaining time, work on the fill in the blank/word search. There will be fossil facts on the back of the students’ worksheet which contain all of the answers to the blanks.