Paleontology & Fossils

Paleontology is the study of the history of life on Earth as based on fossils.

Fossils are the remains of plants, animals, fungi, bacteria, and single-celled living things that have been replaced by rock material or impressions of organisms preserved in rock.

Paleontologists use fossil remains to understand different aspects of extinct and living organisms. Individual fossils may contain information about an organism's life and environment.

There are several different kinds of paleontology, called subdisciplines,

- Vertebrate paleontology
- Invertebrate paleontology
- Paleobotany
- Micropaleontology

Each looks at a different kind of fossil.

People around the world have been finding fossils for thousands of years. They did not always understand what they were, though. Paleontology as we know it began in the 1700s. At that point, scientists were carefully studying fossils for the first time.

Scientist Charles Darwin changed paleontology greatly. In the 1850s, he showed that new species evolve over time. Over millions of years, one species can change and become a new species. Animals living today are related to species from the distant past. This can be true even when they look very different.

Today, paleontologists use many advanced tools. They study the smallest fossils with microscopes. They use x-ray machines to look inside fossils. Computers help them figure out how extinct animals looked and moved.Paleontologists still make important discoveries with simple tools, too. They still use pickaxes and brooms. Around the world, many are still digging away. Each is hoping to learn more about the history of life on Earth.

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Create your own fossil!

Materials:

- Flour (pre-measured)
- Sand (pre-measured)
- Glue
- 3/4 cups water (not provided)
- Large mixing bowl (not provided)
- Shells, rocks, plastic toys (not provided)
- 3 mini dinosaur toys
- A small magnifying glass
- A paintbrush
- Q-tips
- A plastic knife

These measurements will make a lot of mixture! You can make multiple smaller 'fossils' or half the recipe.

Instructions:

1. We provided three dinosaur toys to hide, but we suggest you gather your own shells, rocks, or other plastic toys to make your "dig" more exciting!
2. Let's start by making some "fossils." Measure 2 cups of flour and ¾ cup of water into the bowl. Mix with a spoon or your hands to make a sticky paste.
3. Slowly add half of the sand into the mixture, kneading it in until it's completely mixed.
4. Add 2–3 large squirts of Elmer's White School Glue to the sand-flour-water dough. You don't have to use exact measurements, but your blob of glue should be about the size of a quarter! Knead the glue into the mixture. This will make your fossils harden.
5. Repeat steps two and three, adding the rest of the sand and then more glue. Your finished "fossil" dough should be wet and sticky enough to be moldable but not so dry that the dough is falling apart. You can keep adding glue and sand to the mixture until it reaches the perfect consistency.
    a. TIP: Add more sand and glue to make the "fossil" harder and more difficult to break open when dry. It is a great option for older kids!
6. Once you're ready, form the dough into balls, about the size of an orange. If using the full recipe, make multiple balls. If using half, you can make one large ball.
7. Push dinosaur or animal figurines, small toys, seashells, rocks, or stones into the balls. Fold the dough over the objects so they are covered.
8. **Let the fossils sit and dry for 24- 48 hours** depending on how much mixture you made. **You will need to flip the ball over to allow the bottom to dry!**
    a. Tip: The fossils harden faster if they're kept uncovered and stored in a dry spot.
9. Once the outside of the balls is hard and dry, let the kids chip away with their paleontology tools and dig for fossils, just like real paleontologists!

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