WONDERY KIDS

DINO DIG & DIORAMA

NEXT LEVEL CHALLENGES!

THAMES & KOSMOS

WOW IN THE WORLD

NAME:

❶ ADD TO YOUR DIORAMA

You will need:
Colored pencils or makers and paper
Cardboard and glue stick
Modeling clay (optional)
Tape
Diorama

Here's how:

1. Do some research in library books or on the Internet to find other living things that lived in each geological period:

    - Triassic
    - Jurassic
    - Cretaceous

2. When you find something interesting, create a model of it using modeling clay or by drawing a picture on paper and then gluing it to a cardboard stand.

3. Place the new living creatures into your diorama, or make your own, even larger diorama!

❷ MAKE YOUR OWN FOSSILS

You will need:
Air dry clay
Rolling pin
Leaves or shells
Cookie cutter (optional)
Paint or mod podge and brush (optional)

Here's how:

1. Roll out clay to about one centimeter thick with a rolling pin.
2. Press a leaf or shell into the clay, leaving space around the imprint.
3. Carefully remove the leaf or shell.
4. Optional: use a cookie cutter to cut out the shape. You can also use an upside-down glass or mug.
5. Let the fossils dry overnight.
6. Paint your fossils or use mod podge for some glossy decoration.

❸ DIY EXCAVATION

You will need:
Dust masks for anyone working with plaster in dust form
Plaster of Paris
Sand
Water
Disposable mixing bowl
Disposable stick for stirring
Cinnamon or food coloring for color (optional)
Container for mold
Objects that you want to excavate
Rock hammer and chisel

Here's how:

1. Everyone should put on a dust mask. Do not inhale plaster powder. Do not rinse the powder or plaster in the sink.
2. Mix approximately equal parts plaster of Paris, sand, and water in your disposable mixing bowl. (A plastic take-out container works well.) For a harder rock, add more plaster; for a softer rock, add more sand.
3. Optional: add cinnamon or food coloring for color.
4. Pour some of the mixture into your mold. (An empty, rinsed yogurt cup works well.)
5. Add a treasure (or multiple treasures) that you would like to excavate later.
6. Pour more of the mixture to cover your treasure.
7. Allow the rock to harden for 3 hours or more.
8. Remove the hardened mixture from the mold. You may need to use tools to remove it.
9. Get diggin! Follow the instructions on page 3 of the Wow-To Guide to excavate your treasure.

❹ DIG LIKE A REAL PALEONTOLOGIST

You will need:
Rock hammer and chisel
Brush
Shoebox
Potting soil
Old spoon
Plastic bag
Old newspaper
Various specimens (small rocks, shells, fossils, etc.)
String
Adhesive tape
Ruler
Paper and pencil

What is paleontology anyway?

Paleontology is the scientific study of life of the geologic past, including plants, animals, and fungi preserved in rocks. Often, paleontologists dig up fossils from the ground, where layers of dirt and sand have slowly buried them over the years.

A paleontological dig to unearth a fossil site typically involves these steps: surveying, excavation, analysis, and preservation.

Here's how:

Instructions for parents, teachers, or other supervising adults:

1. Cover the work area with newspaper. The area may get messy.

2. Fill the shoebox with one-half inch of potting soil.

3. Place some of the artifacts around the shoebox, in the soil.

4. Add another half inch of soil on top of the artifacts, and press the soil down a little.

5. Put a few more artifacts in the box, and add another layer of soil.
6. Continue adding artifacts and soil until the box is at least half full.

7. Press down on the soil to compact it.

8. Give the box to your child so they can proceed with the instructions.

Instructions for the junior paleontologist:

1. You have just discovered a new site that is suspected to have great paleontological significance — the shoebox full of soil. You must perform a careful paleontological investigation of this site, and document your findings.

2. Start by making a grid over the site. Divide the box into three equal sections on the short side and four or five equal sections on the long side. Cut pieces of string to fit the box, and tape them in place as shown in the illustration on the next page. Since shoeboxes come in many sizes, your grid may look a little different than the one shown.

3. On a piece of paper, draw a scale plan of your shoebox, looking down from the top, as shown in the illustration.

❹ DIG LIKE A REAL PALEONTOLOGIST, CONTINUED

Here's how it continues:

4. Starting in one of the squares, use the spoon to carefully remove soil from the square until you have dug a square hole about half an inch deep. Neatly place the soil you remove in a plastic bag or on the newspaper, so you don't make a mess. Did you run into any specimens while digging?

5. The instant your spoon touches something you think might be an object of interest, stop digging with the spoon. With the pick end of the hammer tool, carefully scrape soil away from the object, touching the object as little and as lightly as possible. With the brush, clean the object off with a light sweeping motion. Above all, be careful that you do not move or damage the object!

6. When you have cleaned off the object enough to see what it is, draw a picture of it in the corresponding location on your site plan. Make sure you draw it oriented in exactly the same way as you found it. Label the drawing of the object on the site plan.

7. Continue to excavate the rest of the squares in the same way, to a depth of half an inch, excavating and recording your discoveries as you go.

8. Once you have excavated a half inch from the entire box, move down to the next layer. Before you begin, carefully remove each object you already uncovered from the shoebox, and store all objects in an organized way off to the side, on a piece of paper, for example.

9. Repeat steps 4 through 8, excavating layer by layer, until you have found and documented all of the objects and reached the bottom of the box. Start a new site plan drawing for each layer you excavate.

10. Analyze your findings: How many objects did you find? Which object is the "oldest"? (That is, which object was placed in the box first?) Which object is the "youngest"? (That is, which object was placed in the box last?) What can you conclude about the living things that left these remains behind?