



Nature-Watch Activity Kit

Dino Tooth

(Nature Watch Kit #135)

Kit Contents

Kit Size

25 100

Item:

Tyrannosaurus Rex Teeth	25	100
Magnet Squares	25	100
Baggies	25	100
Instructor Manual	1	1

This page includes the Next Generation Science Standards (NGSS) mapping for this kit and Science, Technology, Engineering, and Math (STEM) extensions (on back) to use in adapting and extending this activity to other subject areas.

**See Back for
STEM Extensions**

Next Generation Science Standards Alignment

K-LS1-1. Use observations to describe patterns of what plants and animals (including humans) need to survive.

2-LS4-1. Make observations of plants and animals to compare the diversity of life in different habitats.

3-LS4-1. Analyze and interpret data from fossils to provide evidence of the organisms and the environments in which they lived long ago.

4-LS1-1. Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.

MS-LS2-2. Construct an argument that predicts patterns of interactions among organisms across multiple ecosystems.

MS-LS4-1. Analyze and interpret data for patterns in the fossil record that document the existence, diversity, extinction, and change of life forms throughout the history of life on Earth under the assumption that natural laws operate today as in the past.

MS-LS4-2. Apply scientific ideas to construct an explanation for the anatomical similarities and differences among modern organisms and between modern and fossil organisms to infer evolutionary relationships.

This Nature Watch Activity Kit contains an Instructor Manual and materials to implement the curriculum. The kit was designed to be used with adult supervision only. Unsupervised use is not recommended.

Dino Tooth

(Nature Watch Kit #135)

STEM Extensions

Science

Teeth have an important job as the first step of digestion. They are specialized in shape to help animals bite and chew the specific foods they like to eat. Try a quick activity to realize how this works in your mouth. Print a diagram of your teeth to use as a reference. Next, take a bite of an apple the way you normally would, but pay very close attention. Which teeth are you using during that bite? And what teeth are you using to chew the piece of apple you bit off? Take another bite of the apple and try to chew using your incisors. How does that work out? Finally, try to take a bite of your apple using your molars. What does it feel like? What do you think the *T. Rex*'s cone-shaped teeth were specialized for?

Since no one is able to see a live dinosaur and fossils only provide partial clues, scientists are not totally sure what *T. rex* and other dinosaurs looked like, but they can make guesses based on what they know. Find five pictures of *T. rex* from various sources online or in print. Post them in a row on the board or the wall. On a poster next to the pictures, make two columns: one for SAME and one for DIFFERENT. Look at the pictures and, on the poster, record anything that all the pictures have in common (under SAME) and things that differ among the pictures (under DIFFERENT). For instance, if the dinosaur is brown in some pictures but green in others, you could write in the DIFFERENT column: color of dinosaur (green, brown). Once you have completed the list, draw your own version of *T. rex*, including all of the things listed in the SAME column.

Studying dinosaurs is an interesting field of work because there are so many subject areas involved, including multiple kinds of science, history, and more. Research what it takes to become a paleontologist. What kinds of classes do you need to take to be prepared for that job? After you have an understanding of the training required, look for videos or written accounts of paleontologists talking about their jobs. With all of this information, discuss why you would or would not want to become a paleontologist.

Technology

Plan a road trip to see the locations in North America where *T. rex* fossils have been found. First, determine where these locations are. Then, use online mapping software to figure out the best driving route from your location to visit all of these locations. Plan your route and how long it will take to do the trip there and back. While you're planning, take some time to research the locations. Do they have anything in common with one another? What do you see that is interesting about them? Why do you think the fossils were found in these places?

Use word processing or publishing software to create a menu for a dinosaur café. Include a diverse array of food that the dinosaurs liked to eat (consider a page for carnivores and one for herbivores) and add artwork and creative names for the meals that reflect the dinosaurs' natural habitats and characteristics. You will need to do some research to find out what specific plants and animals were part of the dinos' diets.

Engineering

Imagine if *T. rex* and the other dinosaurs mentioned in the manual came back. Things are quite different now than what they were used to! What would you do to make them comfortable and to keep both them and us safe? Where would they live; would you build some kind of habitat for them? What could they eat? How would you feed them? Make a plan with sketches that show the key steps you would take.

Look into the process of how dentures are made. Create a process flow diagram that shows the steps and points out the input (the materials and resources used) along the way. How might you need to change the process if you were making dentures for a *T. rex*?

Math

If a *T. rex* could eat up to 500 pounds of meat in one bite, how many quarter-pound hamburgers is that? How much would it cost to buy that many hamburgers for a *T. rex* at a fast food restaurant?

Make a pictograph that shows the relative weights of the dinosaurs in the manual as well as two or three large modern animals (you pick!). Look up the weight in pounds for each one and convert it to tons (1 ton = 2,000 pounds). For the pictograph, use a picture of a car to represent 2 tons (4,000 pounds) and a picture of a school bus to represent each 10 tons (20,000 pounds). Combine the pictures (you may need to use partial pictures in some cases, too) to add up to the weight of each dinosaur/animal.