



# Who Walked Here?

## Introduction

Paleontologists study trackways—fossilized footprints—for clues about how ancient dinosaurs behaved. For example, did they travel in herds, like elephants? Did some hunt alone? Did they migrate long distances in search of food, like modern caribou? Trackways often hold the key. In this activity, students will analyze a dinosaur trackway for clues about non-avian dinosaur behavior.

## Objective

Students will examine dinosaur trackways to form explanations about how dinosaurs behaved and to gain an understanding about how paleontologists study trackways.

## Time Frame

One class period (40 minutes)

## Materials Included

- Museum Display: Fossil cast footprint, stand, and label
- Three sets of Vinyl dinosaur footprints
- Twelve fossil trackway casts

## Online Materials to Print

- Student Worksheets (K-2 and 3-5)
- Dinosaur Trackway Schematic

## Online Materials

Fossil trackway slideshow (TK)

## Classroom to Provide

Blue, red, yellow, and green crayons or colored pencils

## Classroom Setup

- Arrange tables into up to six stations, each with two fossil trackways.
- Arrange the footprints on the floor according to the schematic on page 3. (You can also choose to have students arrange the footprints.)

## Procedure

1. Have students examine the dinosaur fossil footprints at their tables. Prompt them to notice things like how big or how deep the imprints are, and how that relates to how big the dinosaur might have been. Invite students to share their observations with the class. (5 minutes)
2. Draw students' attention to the Museum display. Ask: What more can you learn about a dinosaur from multiple footprints rather than just a single footprint? Then have them observe the large footprint on the backdrop and the illustrations of different kinds of dinosaur footprints. Ask students what they notice about the tracks made by different kinds of dinosaurs. Make sure they understand that some dinosaurs (meat-eaters like theropods) walked on two feet while others (plant-eaters like sauropods) walked on four feet. (Ornithopods did both.) (5 minutes)
3. Show the fossil trackway slideshow. Tell students that these are famous dinosaur trackways, or sets of footprints. Ask students what scientists can learn from studying trackways (*Answers may include: how big dinosaurs were, what dinosaurs lived at the same time...*) Tell students that in this activity they will examine dinosaur trackways to make inferences about dinosaur behavior. (5 minutes)
4. If you haven't arranged the footprints on the floor, ask the students to arrange them using the schematic. (You can have some students do this while other

students are investigating the fossil.) Be sure to pay attention to which footprints go on top of others—the layering is important! (5 minutes)

5. Gather your students around the footprints. Tell them that they represent a trackway that was left by dinosaurs and discovered by paleontologists. (10 minutes)

Ask students:

- What does the trackway show?  
*(Answer: footprints)*
- How many different kinds of trackways can you see? *(Answer: Three)*
- Can you tell which animal passed by first? How?  
*(Answer: The other prints cover the first print.)*
- Can you tell which dinosaur is the meat eater and which the plant eater? *(Answer: Generally, three-toed dinosaurs were meat eaters. The large footprints were probably from a plant-eater.)*
- Can you tell whether or not the dinosaurs were at this spot at the same time? *(Answer: No, because the meat eater might have passed by hours after the plant eater.)*

6. Distribute the student worksheets and crayons or pencils. Have a volunteer read the directions aloud. Make sure students understand what they are to do. Have students fill out their worksheets. (10 minutes)

## Wrap up

Ask: Did this activity change what you think about how paleontologists can learn about ancient animal behavior by examining a trackway? *(Accept all answers. Students should grasp that paleontologists can learn a lot about dinosaur behavior from trackways, including individual and group behavior.)* (5 minutes)

## Standards

### NYS P-12 Science Learning Standards

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

**3-LS2-1:** Construct an argument that some animals form groups that help members survive.

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

### NYS Next Generation ELA Learning Standards

**K-2: SL1/SL2. (Comprehension and Collaboration):**

Participate in collaborative conversations with diverse peers and adults in small and large groups and during play. Develop and answer questions and describe key ideas or details of diverse texts and formats.

**3-5: SL1 (Comprehension and Collaboration):** Participate and engage effectively in a range of collaborative discussions with diverse peers and adults, expressing ideas clearly and persuasively, and building on those of others.

### NYS Next Generation Mathematics Learning Standards

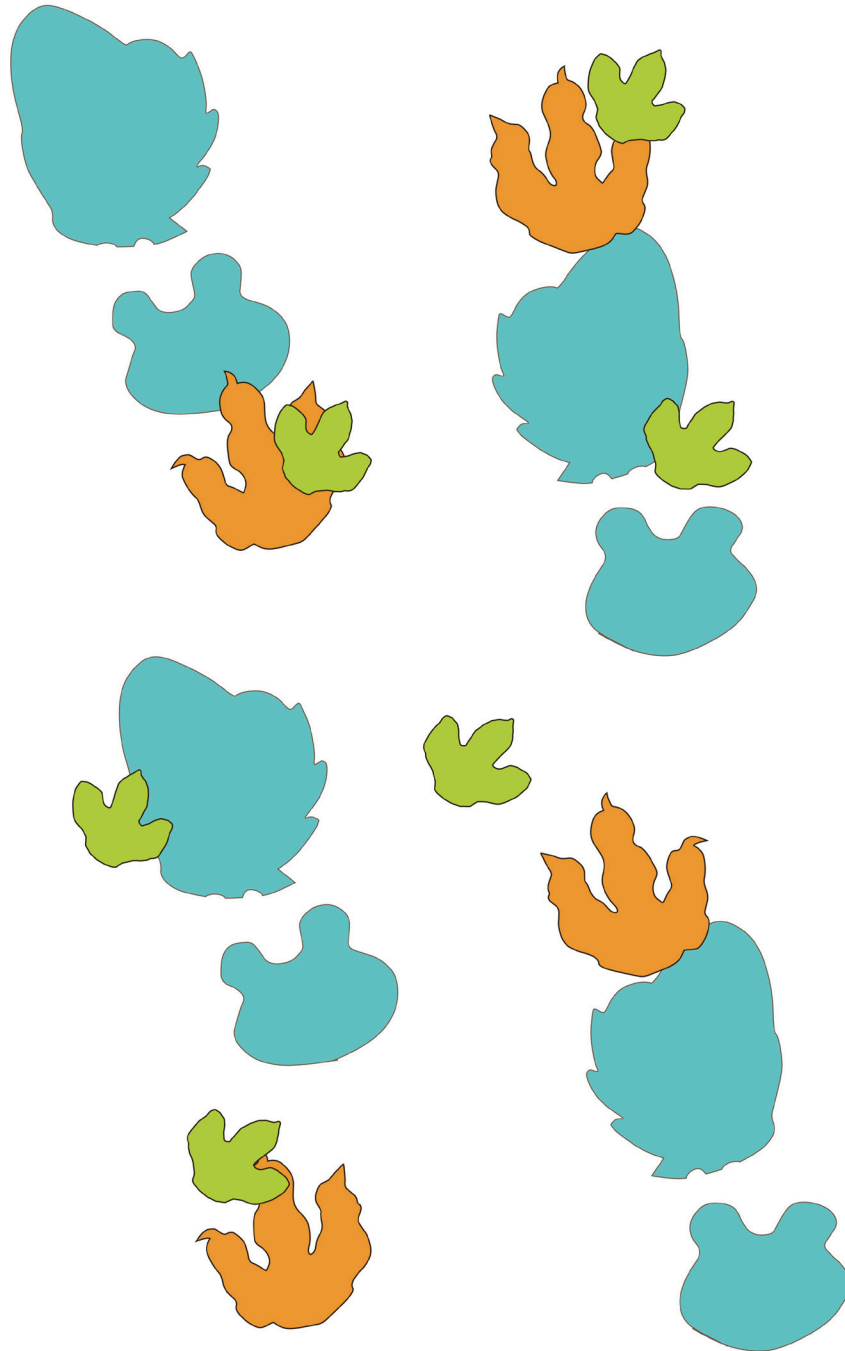
**K-2: NY-1.MD/NY-2.MD (Measurement and Data):** Measure the length of an object to the nearest whole by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.

**3-5: NY-3.MD/NY-4.MD/NY-5.MD (Measurement and Data):** Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.

**3-5: NY-3.NF/NY-4.NF/NY-5.NF (Number and Operations – Fractions):** Display data of measurements in fractions of a unit and solve problems involving information presented in line plots, solve real-world problems with operations on fractions.



# Dinosaur Trackway Schematic



# Who Walked Here?

Name: \_\_\_\_\_

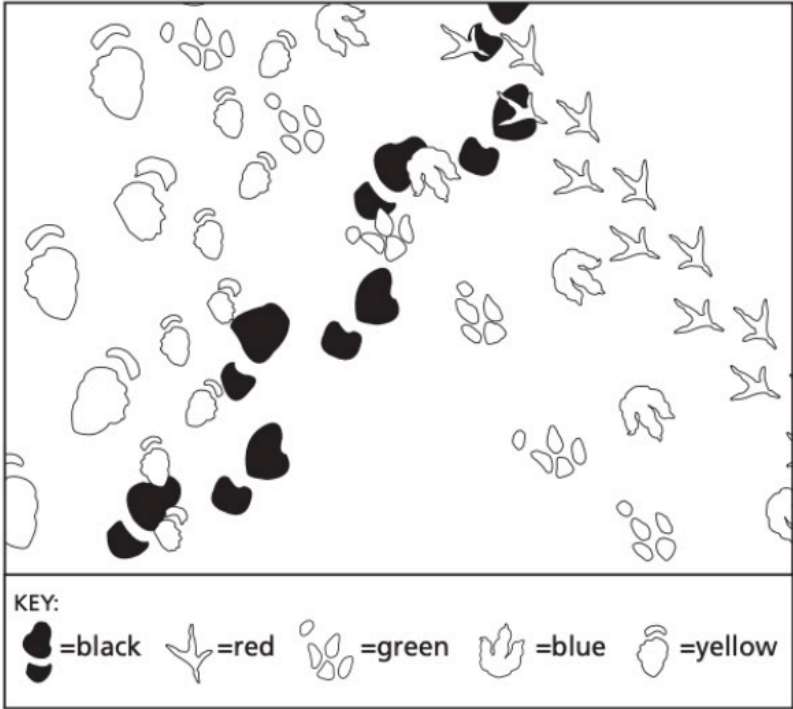
Look at the trackway. Color each animal track as indicated in the key (the first is done for you). Then answer the questions.

1. How many individual animals were here?  
\_\_\_\_\_

2. Did the animal that left the red tracks move on two or four limbs?  
\_\_\_\_\_

3. Can you determine whether any dinosaurs were running? Why or why not?  
\_\_\_\_\_  
\_\_\_\_\_

4. Which animal walked across the area first? How do you know?  
\_\_\_\_\_  
\_\_\_\_\_



5. Did the animals that left the yellow tracks travel together?  
\_\_\_\_\_

6. Why are the yellow tracks two different sizes? What made the larger tracks? What made the smaller tracks?  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

# Who Walked Here?

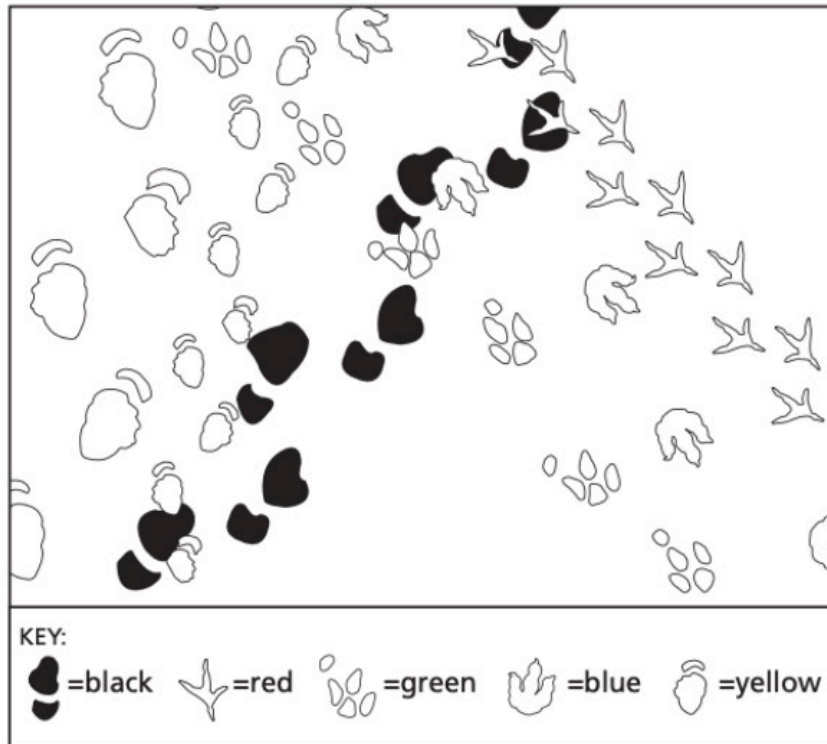
## Answer Key for Grades 3-5

1. How many individual animals were here?  
*(Answer: five adults and one juvenile.)*
2. Did the animal that left the red tracks move on two or four limbs?  
*(Answer: two.)*
3. Can you determine whether any dinosaurs were running? Why or why not?  
*(Answer: There is not enough information on the trackway to determine whether or not any dinosaur was running.)*
4. Which animal walked across the area first? How do you know? *(Answer: The animal with the black tracks. Other tracks are imprinted over it.)*
5. Did the animals that left the yellow tracks travel together?  
*(Answer: Probably, since they are very close together.)*
6. Why are the yellow tracks two different sizes? What made the larger tracks? What made the smaller tracks?  
*(Answer: An adult and a juvenile traveled together. The adult made the larger tracks, the juvenile the smaller tracks.)*

# Who Walked Here?

Name: \_\_\_\_\_

Look at the trackway. Color each animal track as indicated in the key (the first is done for you).



- How many different kinds of animals walked here? Circle the right answer.
 

1     
  2     
  3     
  4     
  5     
  6
- Did the animal that left the red tracks move on two or four feet?
 

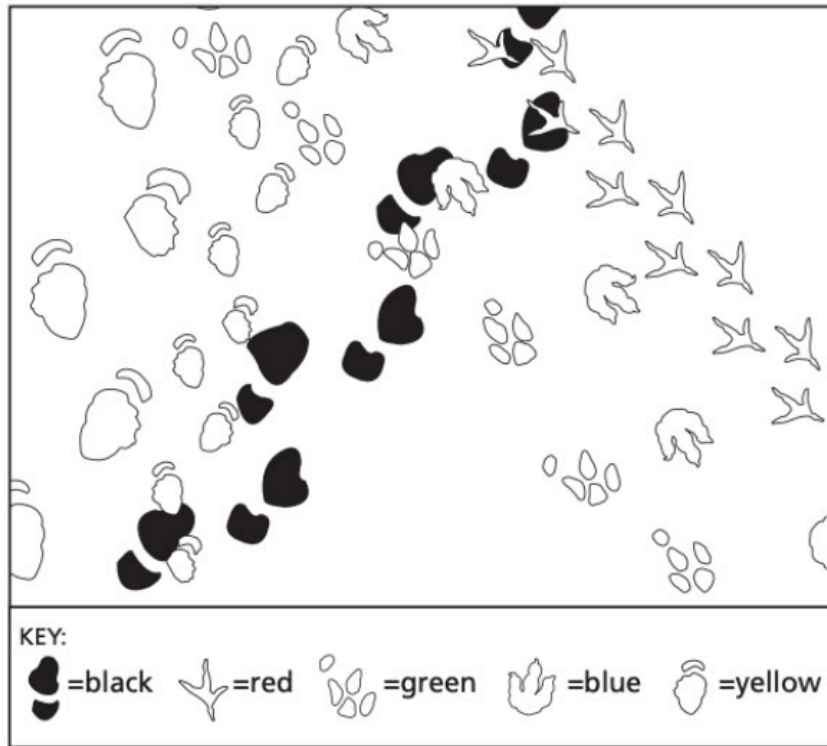
Two feet     
  Four feet
- Which animal walked across the area first?
 

Black     
  Red     
  Green     
  Blue     
  Yellow

# Who Walked Here?

## Answer Key for Grades 3-5

Look at the trackway. Color each animal track as indicated in the key (the first is done for you).



1. How many different kinds of animals walked here? Circle the right answer.

- 1     
  2     
  3     
  4     
  5     
  6

2. Did the animal that left the red tracks move on two or four feet?

- Two feet     
  Four feet

3. Which animal walked across the area first?

- Black     
  Red     
  Green     
  Blue     
  Yellow