

## THE GREAT FOSSIL FIND

In this activity, you and the members of your team will play the roles of paleontologists working in the field in Montana, near the town of Randak. One clear crisp afternoon in October, you find four well- preserved and complete fossil bones.

(Withdraw **four** fossil bones from your envelope. Make sure you take them out **without** looking at the ones remaining in the envelope!)

It is too late in the day to continue with the dig, so you return to camp with your find.

**A.** That night, in camp, after dinner, around a Coleman lantern, you and your colleagues begin to assemble the 4 bones you found earlier. Since the bones were all found together and in an undisturbed layer, you assume that they are all from the same animal. You spend the rest of the evening trying different arrangements of the bones in hopes of identifying the animal.

(Use the next 3-5 minutes to try various combinations.)

As the night wears on, you get weary and decide to retire and begin anew in the morning.

(Before you go to bed, jot down on your worksheet the type of animal you **think** it might be.)

**B.** Montana mornings are marvelous. They are clear, cool, and clean. Just the kind of day you need to get work done at the dig. The rock layers that hold your fossils are very hard and only grudgingly give up **three** more specimens. With the day at an end, you make your way back to camp for another try at assembling this mystery animal.

(Withdraw 3 more bones from the envelope. Use the next 3-5 minutes to incorporate your new finds in your fossil reconstruction.)

It's getting late, and you are getting weary. Maybe tomorrow you will find the answer to the puzzle. (Be sure to record on your worksheet your latest suspicion of the type of animal suspected.)

**C.** The next day is cold. It is the last day of the digging season. Winter lurks behind the mountains, and you must leave. Just as the day is about to end in disappointment and defeat, one member of the group cries out "I've got them! I'VE GOT THEM!"

(Withdraw 3 more bones from the envelope. Use the next 3-5 minutes to incorporate these latest finds. Record what you think it is now.)

**D.** Back in the lab at Randak, you go searching in the resource library, and you find some partial skeleton drawings from another group working at a different location but dealing with the same geological period. They have found a skeleton similar to yours, but with some additional bones that you don't have. You use this information to add to your own data.

(Take the next 3-5 minutes to compare your findings with those of a team near you, looking for clues that might help you in your reconstruction, and possibly even suggest an entirely different

animal than your earlier ideas. Apply these latest clues to the assembly of your skeleton as best you can Record the type of animal suspected now Be as specific as you can.)

**E.** Once you are back in your own laboratory at Kimmel College Five and Dime, you find a **Skeletal Resource Manual** with drawings of the skeletons of some existing animals. You notice some interesting similarities between some of the drawings and your unknown fossil.

(Use the drawings to assist you in your final assembly of the fossil skeleton. Record your final interpretation)

**F.** Answer the questions on your worksheet. When done, be sure to return all of the "fossil bones" to the envelope.

Name \_\_\_\_\_ Period \_\_\_\_\_ Date \_\_\_\_\_

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- A. Day 1 (4 bones): Type of animal suspected: \_\_\_\_\_
- B. Day 2 (7 bones): Type of animal suspected: \_\_\_\_\_
- C. Day 3: (10 bones): Type of animal suspected: \_\_\_\_\_
- D. Day 4: (collaboration with another team): Type of animal suspected: \_\_\_\_\_
- E. Day 5: (after consulting resource booklet): Type of animal suspected: \_\_\_\_\_

### QUESTIONS

1. Did you make any assumptions at the beginning of the activity that kept you from assembling the "right" skeleton? For example, you might have assumed it was a mammal.
2. Did the discovery of new bones cause any disagreement within your group? \_\_\_\_\_ Explain:
3. Did any of your group members not want to change their idea, even though the bones showed they needed to change?? \_\_\_\_\_ Explain:
4. Did the information from another group change anything? \_\_\_\_\_ If so, what?
5. Did the skeleton drawings **confirm** your group's ideas, or did it cause you to rework your arrangement of the fossil parts? \_\_\_\_\_ Explain.

6. Explain what you learned about the process of science. This might include whether science can change or how we infer as scientists.

7. From looking at the fossil and the resource manual, what could you say about how and where this animal lived?

8. Is it possible for scientists to do studies about things that happened millions of years ago? \_\_\_\_\_ Explain.

9. Below, or on the back of this sheet, list what you see as the 3 goals of this experience.