

Buster Bone Search

Palaeontology is the study of ancient life. Palaeontologists are scientists who study fossils, or traces of animal and plant life. They keep detailed notes, measurements and drawings of fossils, like the picture on the right. Using this data, how do palaeontologists learn about what existed in the past?

In this lesson, you will learn how Royal BC Museum’s curator of palaeontology, Dr. Victoria Arbour, learned more about the mountain dinosaur of BC called *Ferrisaurus sustutensis* (nicknamed Buster).

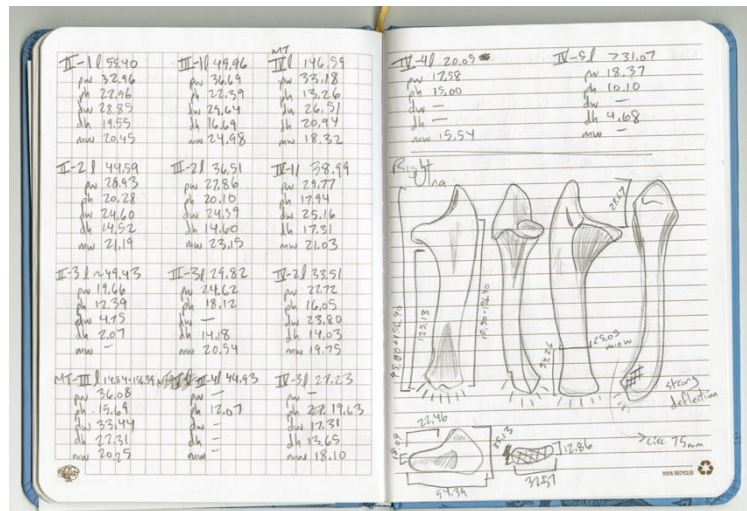


Figure 1. Dr. Victoria Arbour’s research notebook.

Task

1. Visit the Royal BC Museum’s [Mountain Dinosaur of BC Learning Portal](#) pathway. Read the [overview](#) page, and then click on the Look section to access images of Buster’s bones.
2. **Draw** a sketch of Buster’s bones below. Play around with the 3D gallery to see the bones from different angles!

<p><i>Ulna</i> (lower arm bone)</p>	<p><i>Radius</i> (lower arm bone)</p>
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<i>Scapula (shoulder bone)</i>	<i>Coracoid (shoulder bone, attached to the scapula)</i>
<i>Toe bone</i>	<i>Toe bone—digit III</i>
<i>Tibia and fibula (shin bones)</i>	

3. Dinosaurs and humans are **vertebrates**, or animals with backbones.

Can you identify the following bones on the human skeleton? **Circle** the words on the image below: ulna, radius, tibia, fibula, metatarsal, phalanges (toe bones) and scapula. Can you feel some of these bones in your own body?

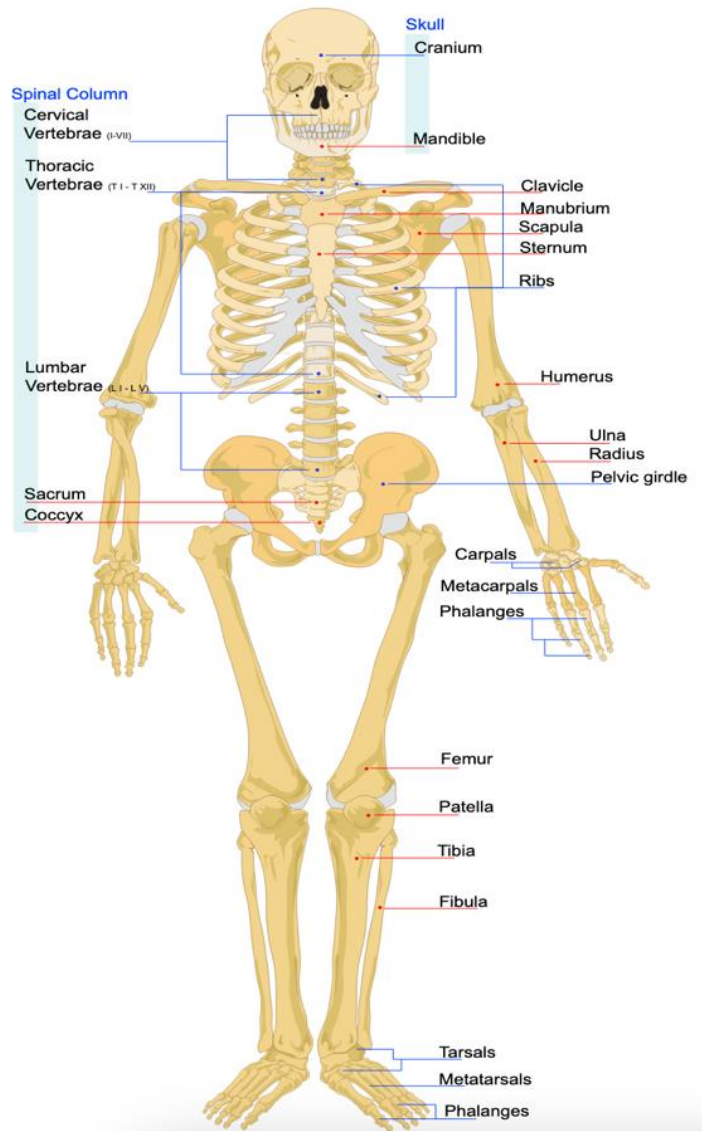


Figure 2. Human skeleton.

Note: Metatarsal is missing from the 3D gallery of Buster’s bones but will be used in the activities that follow.

4. Buster (*Ferrisaurus sustutensis*) belongs to a group of dinosaurs called **leptoceratops**. They are small herbivorous dinosaurs about the size of a sheep. Leptoceratops are known for their large jaws and head that were used to eat plant matter like seeds, nuts and bark. The well-known triceratops (horned dinosaurs) are also a part of the leptoceratops group.

Using what you learned about the human skeleton above, can you find these same bones in the leptoceratops? **Label** the following bones on the image below: ulna, radius, tibia, fibula, metatarsal, phalanges and scapula.

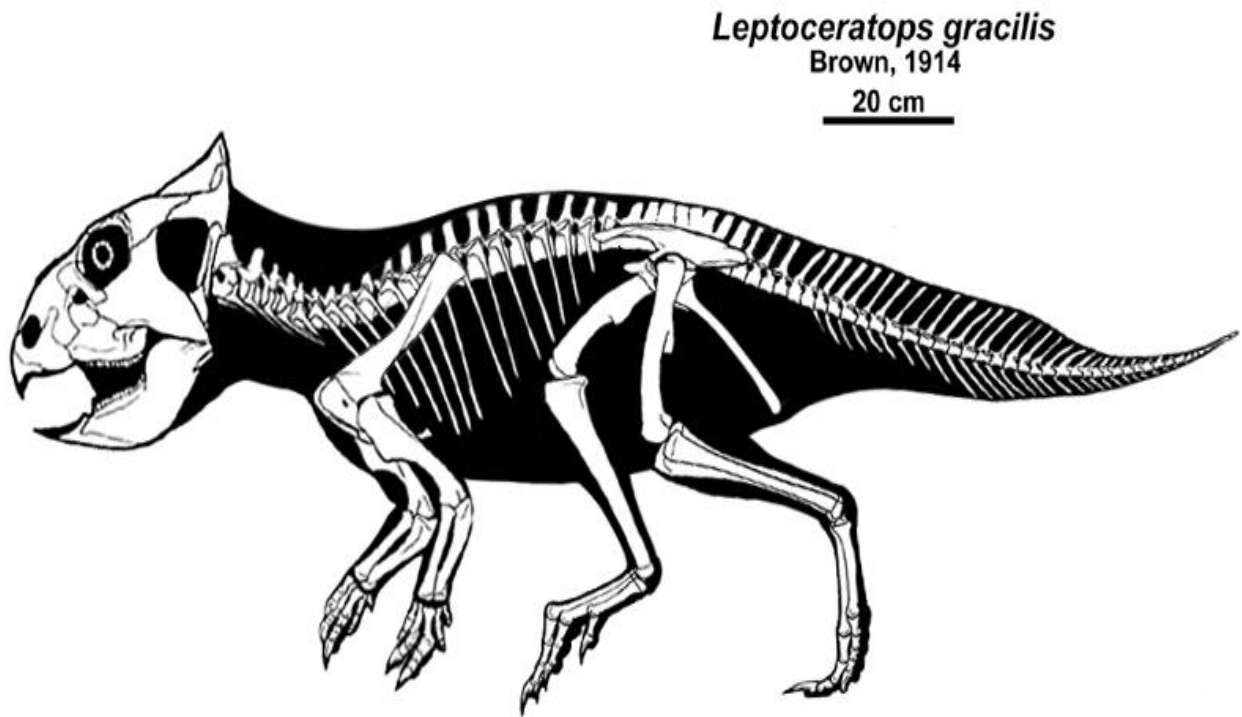


Figure 3. Leptoceratops. Illustration by [Jaime A. Headden](#).

5. Now, see if you can put together Buster’s bones like a palaeontologist! **Cut** out the bones below, and **glue** these on Buster’s body on the next page. Here are some tips:
- You will notice that some parts of the bones are shaded grey. The lighter parts are those that are preserved at the Royal BC Museum—the same fossils that you explored in the 3D gallery above. They make up a part of a larger bone that scientists have not yet discovered.
 - Digits III and IV are toe bones (phalanges). Digit III is the middle toe, and digit IV is the ring toe. Buster had four toes on each foot, and would have had five fingers on each hand. (Horned dinosaurs lost the fifth digit, or pinky toe.)
 - Tibia joins with two ankle bones called *astragalus* and *calcaneum*. They make up the little knob at the end of the bone.

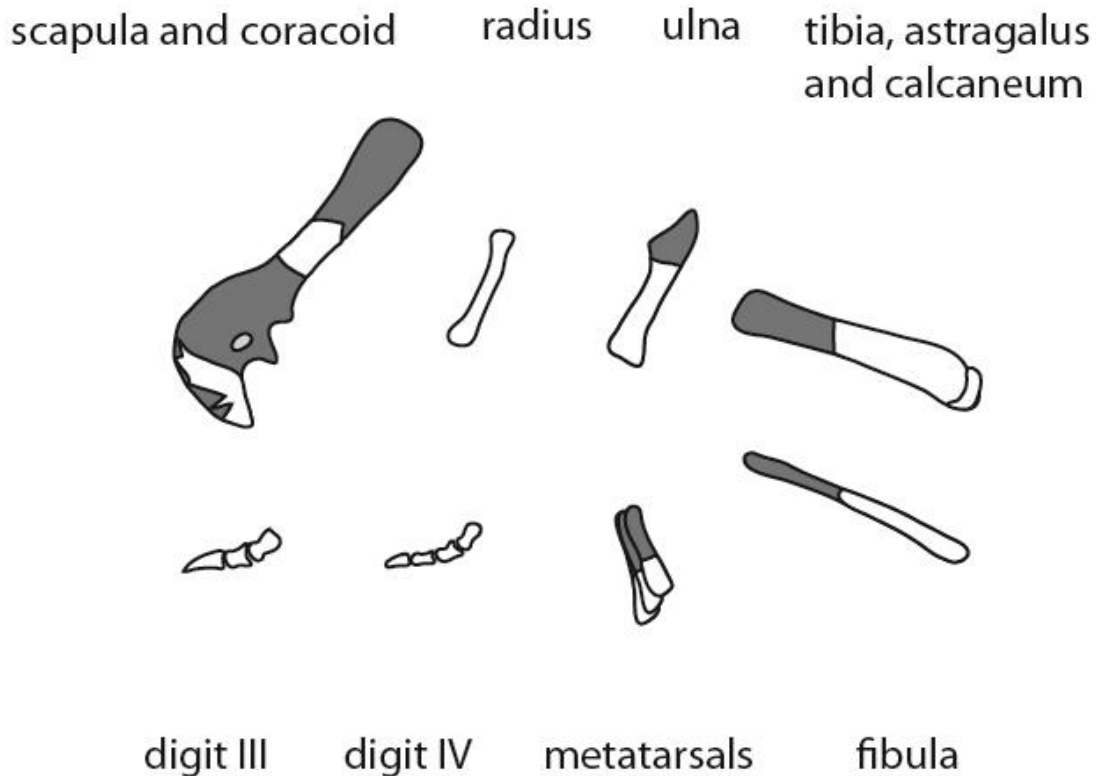
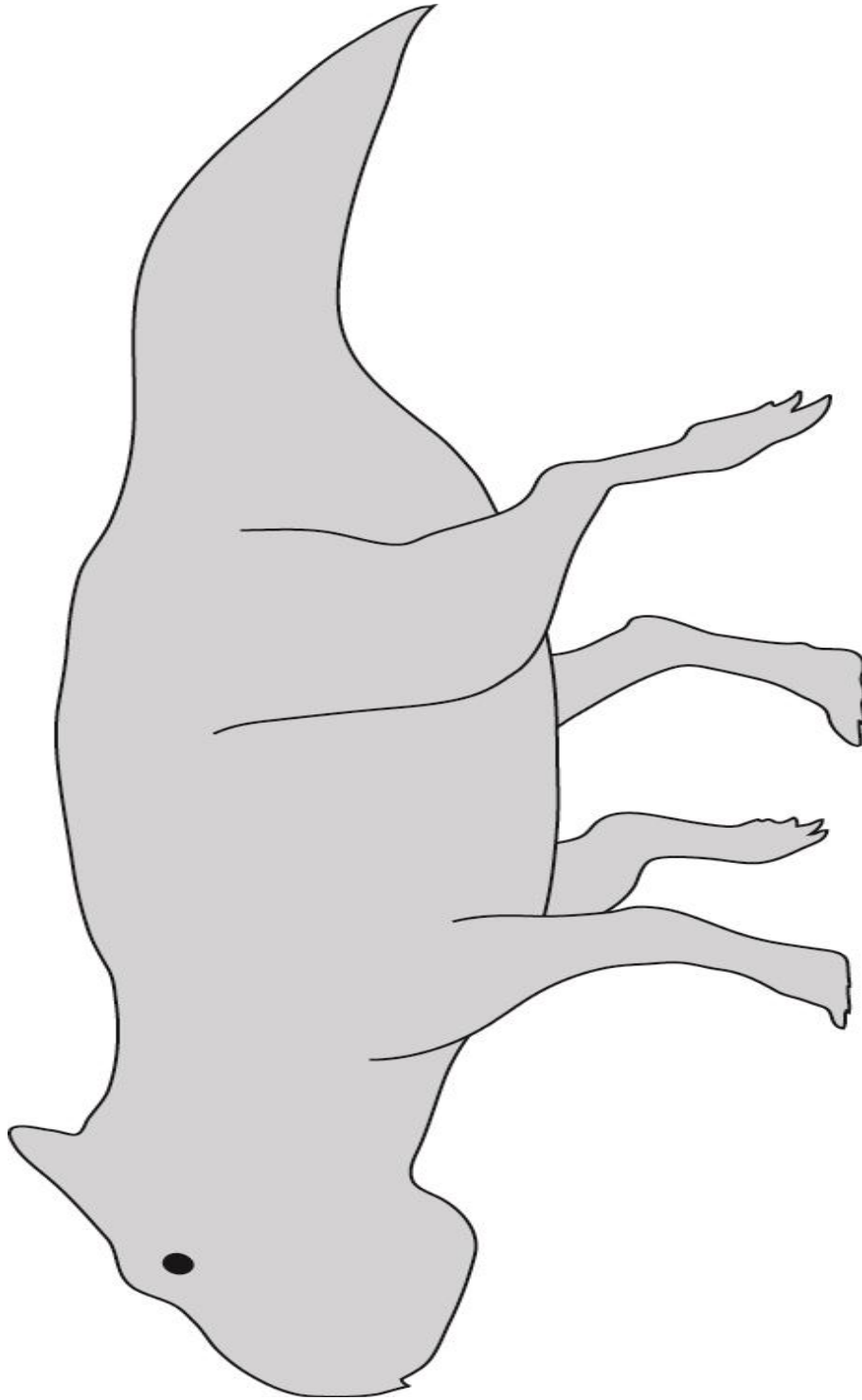


Figure 4. Buster’s bones.



Discussion Questions

1. **Justify** how you put the bones together on Buster. For example, how did you use the images of the human skeleton (figure 2) or the leptoceratops (figure 3) to decide where to put the bones on Buster?
2. **Compare** your completed bone structure with another group's in the class. How was their skeleton structure similar to yours? Different from yours?
3. **Explain** how the work that you completed above is similar to what palaeontologists do.

Extension

If you have time, explore other parts of the Mountain Dinosaur Learning Portal pathway, such as:

- [Meet](#) Dr. Victoria Arbour, and learn how she became a palaeontologist.
- [Watch](#) other videos related to the mountain dinosaur, such as "[The Journey of a Fossil.](#)"
- [Listen](#) to Dr. Victoria Arbour explain how palaeontologists discover the age of fossils.