

Student Worksheet

Palaeontological Pursuits

Working as a palaeontologist requires being able to solve puzzles. When scientists discovered the dinosaur footprints at Lark Quarry near Winton in outback Queensland, it took a long time to work out what happened.

A dinosaur stampede occurred there about 95 million years ago. It was discovered during the 1960s and excavated by the Queensland Museum and the Australian Army. The Lark Quarry dinosaur trackway is the best example of dinosaur tracks in the world. It has over 3000 footprints from nearly 200 dinosaurs. Some of the footprints left behind measured up to 58cm long!

PART A: DINOSAUR FOOTPRINT PUZZLE

Below is an example of a dinosaur trackway. Examine the pattern of footprints and try to work out what happened here.



Artist: J. T. Bauer.
Image: Queensland Museum, Creative Commons licence BY-NC-ND.

1. How many dinosaurs were there at this site? How can you tell?

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2. Were the dinosaurs the same size? How can you tell?

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3. Look at the footprint patterns and try to decide if they walked on two legs or four. Explain.

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4. In what direction were they moving? How can you tell?

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5. Were they all moving at the same speed? How can you tell?

6. Was the land flat or hilly? What evidence supports your answer?

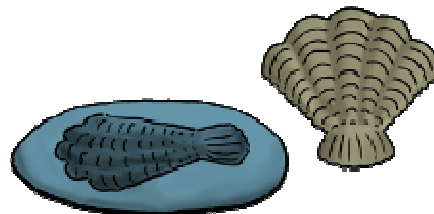
7. Write a short paragraph about what you think happened here.

PART B: MAKING A CAST OF A DINOSAUR FOOTPRINT

Purpose: To simulate the procedures involved in making a cast of a fossil.

Materials: Plasticine

- Petroleum jelly
- Shell or model of a dinosaur
- Plaster of Paris
- Water
- Plastic cup
- Spoon



Artist: J. T. Bauer. Image: Queensland Museum, Creative Commons licence BY-NC-ND.

Method:

1. Compress the plasticine until it is about 2cm in thickness. (The plasticine needs to be wide enough for the impression of the shell or footprint.)
2. Rub some petroleum jelly around the shell or the foot of the model dinosaur. (This is so it will come out easily when you try to remove it.)
3. Press the shell or dinosaur foot down into the plasticine so that it makes a deep impression in the plasticine.
4. Mix up some Plaster of Paris with a little water in a cup. Stir well. Make a thick paste.
5. Spoon the mixture into the mould or depression that you have made.
6. Wait until the plaster is set. It is best to wait overnight.
7. Remove the plaster shape from the plasticine. You now have a cast of the shell or dinosaur foot.
8. You may like to chip away any bits that overflowed from the mould and paint your cast.

Casts are made and taken back to the laboratory where scientists can study the fossil in more detail. Careful measurements can be taken. Often the size of the footprints and the length of the bones found at a fossil site are used to work out the overall mass and height of the dinosaur.