Dinosaur Maths Challenge

Jump right in to the world of the dinosaur with this fun mathematical challenge!

These 3 activities can be completed in groups in a carousel system.

Footprints!

Investigate the area of the footprints and the mass of two types of dinosaur using the foot casts in the museum.

On The Move

Investigate the step of a *Brachiosaur*.

Compare your step to that of a large dinosaur!

Your investigation will include:
Comparisons
Calculations

You will also travel back in time by constructing a timeline!

Dinosaur Data

Find out how long and how tall a large *Brachiosaur* was!

Compare, measure and calculate!

Estimate the height of the *Brachiosaur* and compare this to everyday objects.

Student name: _____

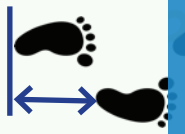
ON THE MOVE

Walking with Dinosaurs

Let's investigate!

Let's find out how far a *Brachiosaur* can step.

Firstly, measure your own walking step.
Measure from heel to heel.



My step measures _____cm

An adult *Brachiosaur* step would have been about 3 metres long.

Measure out the step of a *Brachiosaur* on the ground.

- How long is it in centimetres? _____centimetres
- How many of your steps would fit into one *Brachiosaur* step? _____
- **How much longer** than your step is the *Brachiosaurus* step?

Now investigate a running stride.

My running stride _____cm

What is the difference between your running stride and your walking step?

_____cm

Estimate the length of a Brachiosaur running stride.

How many metres?

_____m

What is that in centimetres?

_____cm

Difference between *Brachiosaur* walking step and running stride

_____m

DINOSAUR EXPEDITIONS

DINOSAUR EXPEDITIONS

ON THE MOVE

INFORMATION

- The first d… million ye…
- *Brachiosa… years ago (Jurassic Period)
- The last dinosaurs disappeared 65 million years ago
- Man's ancestors appeared about 6 million years ago
- Modern man has been around for the last 200,000 years (0.2 million yrs).

1million = 1000,000
1000 x 1000
100 x 10,000
10 x 100,000

1 metre = 100cm
1000mm

Time Travel

How could you draw a timeline that shows 230 million years? That's a long time!

CHALLENGE

1. If you were to draw a timeline where 1 metre represented 1 million years, how long would the timeline be?
2. … be now?
3. How many years will 1cm represent?

Draw out this timeline and mark out every 50 million years.

Label it with the events in the information box (left).

- What do you notice?

_____

_____

_____

DINOSAUR DATA!

1 Measuring a Brachiosaur!

Length

An adult *Brachiosaur* measured up to 26 metres long. (2600cm)

- Measure the length of your classroom in centimetres.

My foot measures _____ centimetres

Estimate first and then use a calculator to find out how many of your feet would make 2600 centimetres.

My estimate: _____

My calculation :_____

If there is room, measure this length out.

2 Height

Use the life size *Brachiosaur* model, whilst looking at a metre stick.

Look and Estimate

Estimate the height of the *Brachiosaur* head: _____m

Calculate

Look at the drawing on the back wall. This drawing is not life size. It is a

Use the wall chart to work out the actual

Now, ask your partner to measure your height .

My height _____m _____cm ***or*** ____ . _____m

Alternatively your teacher may ask you to draw around one child and then use the paper as a measure.

3 Now find the mounted Brachiosaur Leg

Measure up the leg to find how high you would come. This is the leg of a young *Brachiosaur*. An adult would have been even bigger.

Go back to the wall chart

The skeleton man represents 2 metres in height.

- How far up the adult *Brachiosaur* leg is the man's head ? _____
- Can you work out where your height would be on this drawing?
- How many times taller than you would the adult *Brachiosaur* be? _____

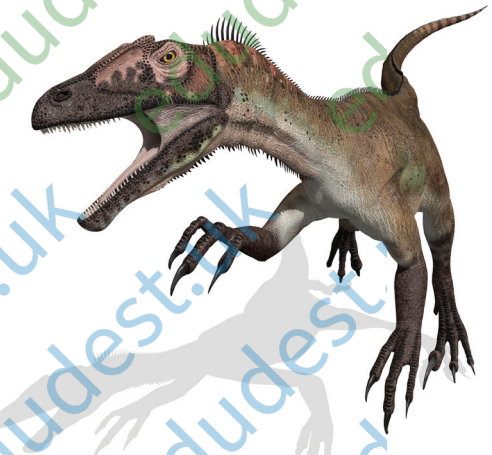
DINOSAUR EXPEDITIONS

DINOSAUR DATA!

Extension Activity

Find out the lengths and heights of things to compare with the *Brachiosaur*.

	Length	Height
Brachiosaur		
Double decker bus	10m	4m
Family car	4m	1.5m
Bed	2m	
Me		



FOOTPRINTS!

Find the two casts of dinosaur footprints.

One is from a *Brachiosaur*, the other is from an *Iguanodon*.

Measure and compare

Working in a group, use one of the card templates to measure the area.

How many of your footprints fit inside the dinosaur footprint?

- ✓ Draw around your foot
- ✓ Cut it out
- ✓ How many of your feet fit inside the lines without overlapping?

- ▶ Discuss how you can use squared paper to measure the area of the footprints.
- ▶ How many squares does one of your feet cover? _____
- ▶ Find a way you could use this estimate to help work out the number of squares the dinosaur footprint would cover...

These are the shapes of the front and back footprints of a *Brachiosaur.*

Which do you think the foot cast in the museum is?

_____

The area of the dinosaur footprint

My estimate : _____ squares

Now do the same with the other dinosaur footprint.

I estimate the area of the ***Brachiosaur*** footprint is _____cm²

I estimate the area of the ***Iguanodon*** footprint is _____cm²

Write sentences to compare the footprints using the words *greater than* and *less than*:

_____

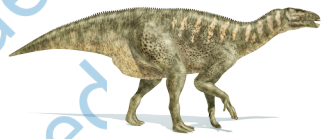
_____

_____

Can you write a number sentence using the signs < or > ?

_____

_____



MASS

Find out your mass. Use some weighing scales.

My mass = _____ kilograms

Brachiosaur mass =_____kilograms

Calculate the mass:

10 x my mass = _____kg

100 x my mass = _____kg

1000 x my mass = _____kg

Write a sentence comparing your mass with the mass of an adult *Brachiosaur*.

_____

_____

BACK AT SCHOOL

Find out the mass of other objects to compare with the dinosaur.

E.g. How many elephants?

How many buses?