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*.

You will need to find out the known distance of an adult *Brachiosaur* step and the length of its leg to the hip.

Your investigation will include:
Estimates
Use of data
Comparisons
Calculations

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

Dinosaur Data

Use scale and ratio to find out the facts about dinosaurs!

Make a scale drawing of an adult *Brachiosaur*.

Compare, measure and calculate!

Estimate the height of the *Brachiosaur* and work out the actual height compared to an average man.

Student name: _____

ON THE MOVE

Walking with Dinosaurs

DINOSAUR EXPEDITIONS

Investigate the step of a *Brachiosaur*.

Use the grid below to record all your answers.

- Estimate the length of an adult *Brachiosaur* step.
- Find out the length of an average adult *Brachiosaur* step. Record the length. Measure it out on the floor.
- Compare with your own [illegible] the difference.
- How many times bigger is the *Brachiosaur* step than your own?

Estimate of *Brachiosaur* step	
Actual	
My step	
Difference between my step and Brachiosaur step	
How many times bigger...	

Extension Task

Use your research skills to find out about the steps of other dinosaurs. Compare their foot size with the size of their step.

Create a table.

Dinosaur	Length of step	Foot size

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 showing 230 million years? That's a long time!

…esented 1 millio…n years, how

- What if 1 metre represented 10 million years?

- Or 1 metre represented 100 million years?

1. Find a suitable scale for your own time line. This could be measured out on the floor or on paper, depending on space and scale.
2. Mark out your timeline showing every million years.
3. Label it with the events in the information box.

What do you notice about the time modern man has been around?

_____

_____

DINOSAUR DATA!

Find the large drawing on the back wall.

Look and Estimate

Estimate the height of the *Brachiosaur* _____m _____cm

Why do you think this is? _____

_____

_____

Measure and Calculate

If the skeleton of the man represents the height of 1.80m, use the measuring bar at the side of the wall chart to work out the actual height of a *Brachiosaur.*

_____m _____cm

Compare

Notice how far up the *Brachiosaur* leg the man's head is on the drawing.

How many cm does this represent? _____cm

Find this place on the mounted *Brachiosaur* leg.

Measure how high this is from the base: _____cm

What do you notice? _____

_____

How could you explain this difference? _____

_____

DRAWING TO SCALE

Using the information available to you, make a scale drawing of an adult *Brachiosaur* on cm squared paper. Don't forget to label your drawing with the scale used:

1cm=1m (1:100)

HINT: You could imagine that each square is one metre long.

Part of dinosaur	Length in metres	To scale in cm
Overall length		
Overall height		
Height of leg to hip		
Height of shoulder		
Height of tail join		
Length of		
Length of		

FOOTPRINTS!

Find the two casts of dinosaur footprints.

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

Measure and compare

- ✓ Draw around your foot on squared paper
- ✓ Cut it out
- ✓ Work out the area by counting the squares

How many squares does one of your feet cover? _____

How could you use this to estimate the number of squares the dinosaur footprint would cover?

_____

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

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 : _____cm²

Can you find a way of calculating the area of the dinosaur footprint without counting every single square?

_____

_____

My measurement: _____cm²

Now do the same with the other dinosaur footprint.

Record

The area of the ***Brachiosaur*** footprint is _____cm²

The area of the ***Iguanodon*** footprint is _____cm²

What is the difference in area? (Remember to include the unit used)

_____

MASS

Find out your mass. Use some weighing scales.

My mass = _____kilograms

We believe an adult *Brachiosaurus* would have weighed about 56 metric tons.

Calculate:

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*:

_____

_____

_____

_____

_____

DINOSAUR EXPEDITIONS

How many times greater than your mass is 56 metric tons? _____

Extension (at school)

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

E.g. How many elephants?

How many buses?