

WEIGHING A DINOSAUR

Purpose

To find the weight of a dinosaur.

This activity also shows how the volume of an irregularly shaped object can be found and it is a good mathematical exercise in using scales.

Instructions

- 1. Fill the displacement can until it just overflows. Wait until it stops overflowing.*
- 2. Empty the measuring cylinder and place it under the spout.*
- 3. Slowly lower the dinosaur until it is completely covered with water. You may need to press it down with a thin stiff wire. Do not put your fingers in the water.*
- 4. Record the volume of water that is now in your measuring cylinder: this is the volume of your dinosaur model.*

Calculations

If the model was made to a scale of 1 to 40 then to get the size of the actual dinosaur you will need to multiply the volume of the model by 40×40 .

Once you have done this you have the volume of the real dinosaur.

Nearly all living animals have about the same density as water; that is, they either only just float or just sink. It is assumed that dinosaurs were the same. One ml of water weighs exactly one gram.

In other words, the weight of your dinosaur in grams is numerically the same as its volume in ml.

To get its weight in tonnes divide your answer by 1, 000, 000.

Teacher's Section

Requirements

A large displacement can

100 ml or 250 ml measuring cylinder

Small models of dinosaurs, ones which state the scale used

Block of wood to support displacement can

Notes

The volume can also be obtained by weighing the model in air and in water

Results

Depends on dinosaur and model but typically Triceratops 7 tonnes,

Diplodocus 12 tonnes