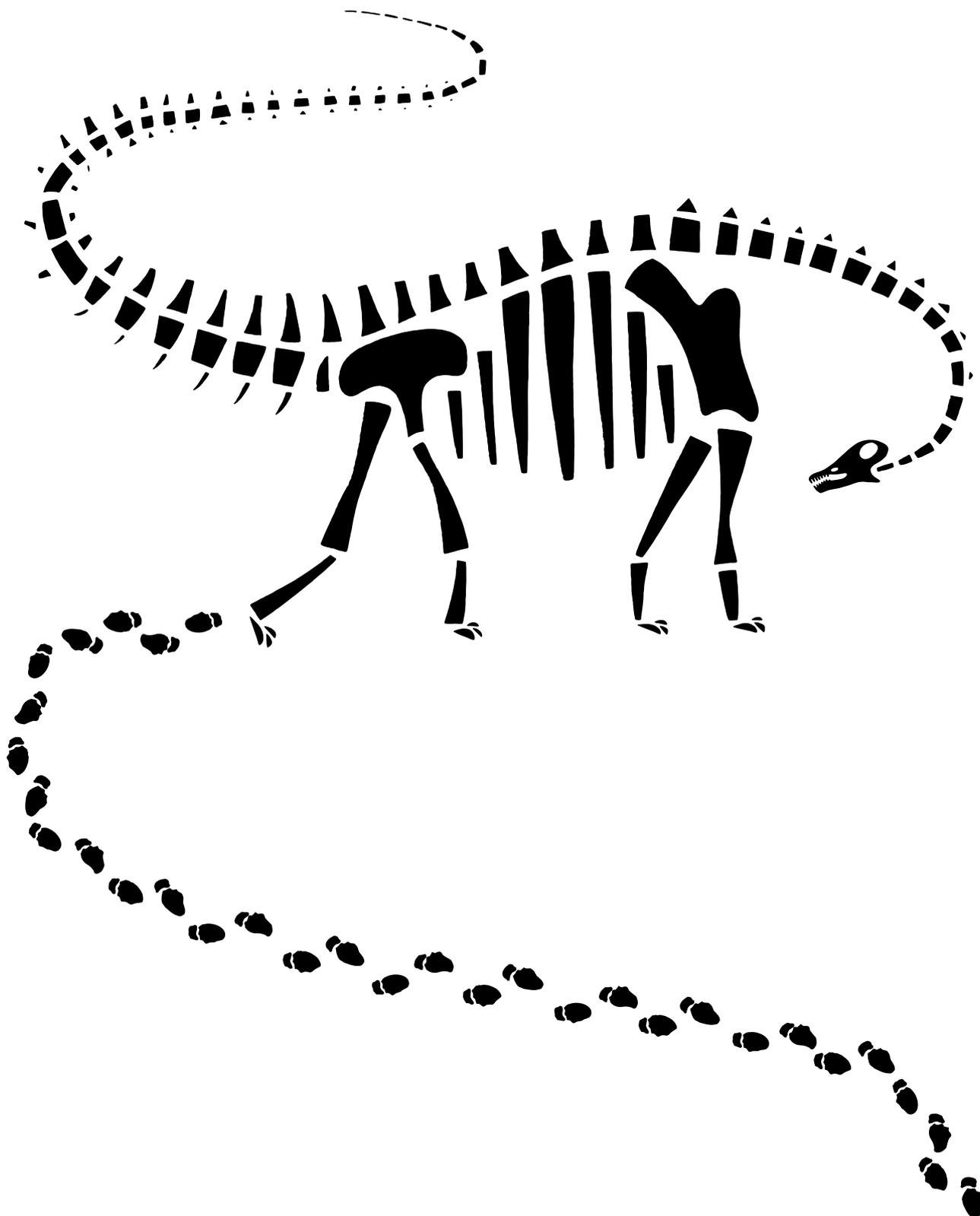


Walk like a dinosaur

Scientists can find evidence about how dinosaurs moved from fossilised footprints and trackways. To help them to interpret the dinosaur tracks, they look at footprints and tracks left by animals and birds that are alive today, and watch how they move while leaving these tracks.



Activity 11: Walk like a dinosaur – calculating my stride

Maths and data presentation: make measurements and record stride length.

Learning outcomes

Children will:

- carry out a scientific investigation to answer a question
- make predictions about possible outcomes for an experiment
- work together to make consistent measurements and to record and present simple data
- understand that other animals have a different stride length to people and that individuals have a different stride length that is linked to height and speed

Resources required

Provided in the Natural History Museum package:

- film clips of dinosaurs walking: nhm.ac.uk/dippy-videos
- images of dinosaur and animal trackways (to view on whiteboard or as printed images)

Activity 11: Walk like a dinosaur – calculating my stride

Elephant footprints.



Activity 11: Walk like a dinosaur – calculating my stride

Emu tracks on a salt lake.



Activity 11: Walk like a dinosaur – calculating my stride

Dinosaur footprints on display at Dorset County Museum.



Dinosaur footprints. Owned by and on display at Dorset County Museum.



Activity 11: Teacher notes

Watch film clips of dinosaurs or living birds or animals (including people) walking and running. Some clips are provided but you could also use recent footage from athletics events or local walks or runs. You could include para-athletes.

Ask the children whether they all take the same length of stride. How could we find out?

Look at a photo of a dinosaur trackway. Tell the children that dinosaur scientists use fossilised dinosaur footprints to work out their stride, which can give important clues about both their speed and size. Look at a second photo and tell the children this trackway is left by a different sort of dinosaur. Can they tell whether it has a longer or shorter stride?

Introduce this activity as an experiment to find out whether all the children in the class have the same length of stride, as we are all the same type of animal.

What is the biggest step you can take? The distance between your toes on each foot when you walk or run is called your stride.

Work together to measure and record the stride length for each child. You could use pencil on a paper roll or chalk on a playground to either draw a marker line or draw around both feet. You could also make paint footprints on a paper roll outdoors if you want a record of footprints for an associated art project or for display. As well as making measurements you could encourage the children to make estimates of stride length.

Who in the class has the longest stride? To keep the data consistent make sure everybody measures from the same point on their footprint.

Place in order the stride length data and make a class chart of stride length.

- You could link this to Activity 12 and mathematically compare the children's stride lengths with those of some dinosaurs and other living animals.
- You could investigate whether stride length relates to height. Compare the stride length of each child to their height. Do the tallest children also have the longest stride?
- You could investigate whether stride length varies when you move at different speeds (eg running or skipping).
- You could link this activity to work about identity and individuality.

English curriculum links (Key Stage 1)

Year 2: Mathematics

Statistics

Pupils should be taught to:

- interpret and construct simple pictograms, tally charts, block diagrams and simple tables
- ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity
- ask and answer questions about totalling and comparing categorical data

Measurement

Pupils should be taught to:

- choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm) mass (kg/g) temperature (°C) capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels
- compare and order lengths, mass, volume/capacity and record the results using $>$, $<$ and $=$





Northern Irish curriculum links (Foundation Phase and Key Stage 1)

Mathematics and numeracy

Foundation: Measures

Pupils should be enabled to:

- compare two objects of different length/weight/capacity/ area understand and use the language of comparison
- order three objects of different length, weight, capacity, area talk about the ordering using appropriate language
- find an object of similar length, weight, capacity, area talk about their findings in terms of 'just about the same' length, weight, capacity, area
- begin to explore the notion of conservation of length, weight, capacity in practical situations engage in discussion about their observations
- choose and use, with guidance, non-standard units to measure length/capacity/weight talk about their work

Key Stage 1: Measures

Pupils should be enabled to:

- understand and use the language associated with length, 'weight', capacity, area and time
- use non-standard units to measure and recognise the need for standard units
- know and use the most commonly used units to measure in purposeful contexts
- make estimates using arbitrary and standard units
- choose and use simple measuring instruments, reading and interpreting them with reasonable accuracy

Key Stage 1: Handling data

Collecting, representing and interpreting data

Pupils should be enabled to:

- sort and classify objects for one or two criteria and represent results using Venn, Carroll and Tree diagrams
- collect data, record and present it using real objects, drawings, tables, mapping diagrams, simple graphs and ICT software
- discuss and interpret the data
- extract information from a range of charts, diagrams and tables
- enter and access information using a database

Scottish curriculum links (Early and First)

Numeracy and mathematics: Experiences and outcomes

Number, money and measure: Estimation and rounding

I am developing a sense of size and amount by observing, exploring, using and communicating with others about things in the world around me1. **MNU 0-01a**

I can share ideas with others to develop ways of estimating the answer to a calculation or problem, work out the actual answer, then check my solution by comparing it with the estimate.

MNU 1-01a

Number, money and measure: Number and number process

I can use addition, subtraction, multiplication and division when solving problems, making best use of the mental strategies and written skills I have developed. **MNU 1-03a**

Number, money and measure: Measurement

I have experimented with everyday items as units of measure to investigate and compare sizes and amounts in my environment, sharing my findings with others. **MNU 0-11a**

Welsh curriculum links (Foundation Phase)

Mathematical development

Using measuring skills

- length, weight/mass, capacity

Using data skills

- collect and record data
- present and analyse data
- interpret results

