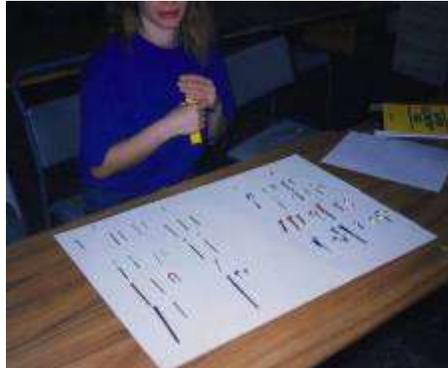


Evolution

Evolution using screws and nails

A P F 45 min

A variety of screws and nails are painted in five different colours, each colour representing a different age. Students make evolutionary trees from the screws and nails. Students must then give examples of the different types of evolution: radiation, convergence, stasis etc from their tree.



Evolution using dice

A P F 15 min

This activity is to show how gradual change preserving successful characteristics is much more likely than chance creation of the complete creature.

Evolution of micraster

E P F 30 min

Students describe the changes in size, depth of anterior groove, height of anus, position of mouth, size of petals etc between two species of Micraster using either plaster casts or diagrams.

Evolution of graptolites

A P F 10 min

Students are given 15 or so cards 5cm by 5cm. On each card is a different type of graptolite representing an evolutionary sequence from 32 to 16 to 8, 4, 2 stipes and then changes in attitude and then biserial and lastly Monograptus. Students have to put the cards into an evolutionary sequence.

Evolution of the horse

A P F 10 min

Students examine replicas of the earliest horse, Eohippus. They then calculate the rate of change in size per million years from Eohippus 15cm tall to a modern horse 1.5m tall in 58ma. Also the rate of change per generation assuming each generation is 10 years. Students should also

evaluate the reliability of the data. It shows how small the increase per generation is; about 0.00023mm per generation.

Change in limb size in humans

*A I **F** 10min*

Students compare the leg and arm lengths and height of "Lucy" a 3.5 ma fossil with a modern female and calculating the ratios. Although Lucy at 1m tall was much smaller than modern humans the arms were relatively long compared to her legs.

Human evolution

*E P **F** 60 min*

Students compare the heating effect of the sun on quadrupedal and bipedal forms to determine the advantages of becoming bipedal.

Actual size of Lucy

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To show students the actual size of "Lucy" make life size models of "Lucy" both her skeleton and her reconstruction. These are made by enlarging diagrams from books by photocopying and then sticking the photocopies onto a piece of hardboard 110cm by 40cm and cutting round the shape. She was 1m tall.