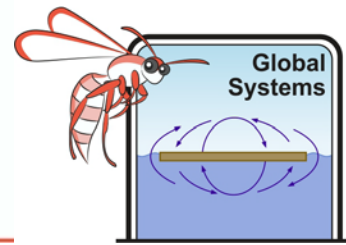


## Human Population Statistics – Teachers Notes



It is sometimes easy to forget that the recent increase in numbers of humans on the planet has a compounding effect on changing Earth Systems and on the survival of other life forms which share this planet.

Visit the website of the American Museum of Natural History and find the video “human population through time”. It is also available through YouTube.

It is a good idea to encourage students to scan the question sheet before they watch the video. That way they know what relates to the questions. I also recommend watching once to get the ideas and then watch it again to answer the questions.

The first part describes the spread of modern mankind from Central Africa to almost cover all the landmasses of our planet, except Antarctica. Use the map below to draw the path that generations upon generations of early humans took to arrive in Australia and become the Australian Aboriginal population.

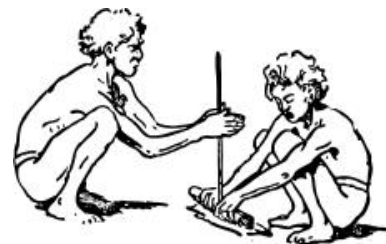


When did modern humans evolve? [About 200,000 years ago](#)

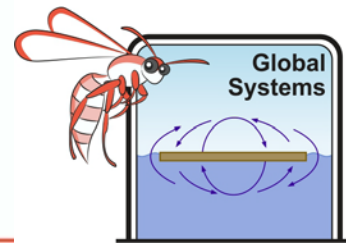
When did the major move to spread across the world begin? [About 100,000 years ago](#)

At this time did population numbers increase, decrease or stay the same? [Stay the same](#)

According to this video, at what time was Australia first populated by humans and from where did they travel? [Between 40,000 and 50,000 years ago, arriving from the islands to the north.](#)



## Human Population Statistics – Teachers Notes



Until very recently, did the overall population of Earth increase much? **No. It stayed much the same.**

Why do you think this was so? **It was limited/constrained by the natural ability of the land to support humans and the technologies available to them.**

The second part of the video suggests factors that might have affected population size.

How many people were alive in 1AD? **About 1 million**

Why did they plot the spread of the Mongol, Islamic, Indian, Mayan and Roman empires? **To see if they were responsible for increased population or changes in population distribution.**



Why did they plot times of smallpox outbreaks, bubonic plague and major wars? **These factors cause untimely death.**

Only one of these factors affected the steady slow increase of world population. Which was it and how long did its effect slow the steady rise of world population? **Bubonic plagues slowed the rise but for only 40 years.**

What factor caused markedly increased population numbers? **The Industrial Revolution, which started at about 1700AD.**

How many years did it take to reach a world population of 1 billion humans? **About 200,000 years.**

Only 200 years later the population had rapidly risen to 7 billion people, all making choices which affect species variation and the climate of our planet.

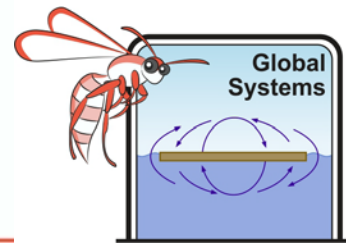
Ten thousand years ago people would have only used water directly for drinking and washing themselves. Each human would have needed a minimum of 20 litres each day. Indirectly water would also be required by the animals they hunted and the cereals and vegetables they collected. The amount of water taken was easily balanced by rainfall.

Statistics suggest that an average Australian household now uses 340 litres of water per day. Most of this is spent supporting the garden.

My water bill tells me that I only appear to use 123 litres per day. Although I collect water from the roof in winter for the vegetable patch and am careful to conserve as much water as possible, I know that there must be some other reason that my usage appears low.



## Human Population Statistics – Teachers Notes



Statistics suggest that each Australian uses 356,000 litres per day. When I looked at my household use of 123L per day I obviously haven't considered the indirect water use that is necessary to provide me with food, education, employment, industrial products, health services, transport etc.

**Predict** the "hidden" water costs it takes to produce these goods.

Arrange them in order from the one requiring the most water to the one requiring least.

1 pizza, 1 cup of tea, 1 car, 1kg chicken, 1kg chocolate, 1 pair of jeans, 1 kg steak, 1kg wheat.

The correct answers but not in the correct order are: 108L, 1,239L, 3,178L, 3,900L, 11,000L, 15,415L, 17,196L and 400,000L

Material	Hidden water cost
1 car	400,000 litres
1 kg chocolate	17,196 litres
1kg steak	15,415 litres
1 pair of jeans	11,000 litres
1kg chicken	3,900 litres
1 kg cheese	3,178 litres
1 pizza	1,239 litres
1 cup of tea	108 litres