

# Population 7 billion

We now have an estimated world population of over 7 billion and it is predicted to increase by over 2 billion this century. How did this population increase happen and can the Earth support so many people?

Possibly the first attempt to calculate how many people there were in the world was made by Antoni van Leeuwenhoek in 1677. He estimated the population of Holland as 1 million and then multiplied this by the estimated inhabited land area of the planet to arrive at a total of over 13 billion. But it wasn't correct, partly because he couldn't calculate accurately the population of the inhabited world and assumed that the population density would be similar to Holland, which at the time was considered to be densely populated. Historians now calculate that there were probably only about half a billion people at that time. In fact the population didn't reach 1 billion until 1800. It then took 130 years to reach 2 billion, 44 years to reach 3 billion and since then the population has gone up by 1 billion every 12–14 years.

There are several reasons for this recent dramatic increase. Firstly, improvements in sanitation, health care and the introduction of vaccination programmes have reduced child mortality. But it usually takes a generation before parents start having fewer children, so during that time the population increases. There have also been improvements in agriculture with the introduction of chemical fertilisers, high-yield seeds and pesticides, which means fewer people die of starvation. Because of improvements in medical science, life expectancy has also increased dramatically. For example, in India life expectancy increased from 38 years in 1952 to 64 today.

However, calculations and predictions can be unreliable. For example, in 2001 it was predicted that the UK population was about 60 million, but the census showed it was about 59 million. There are also problems because some countries haven't had a census for decades and other countries don't have accurate censuses. Predictions are also unreliable as they assume trends will continue, but this is not always the case.

People have often worried about whether the planet can support its population, including as early as the 3rd century when there were only about 200 million people. Optimists point out that when there is a serious problem, humans usually find a solution. For example, in the 19th century people predicted that chimney smoke would choke cities, but the invention of smokeless fuel prevented that from happening. Let's hope the optimists are right and that human ingenuity can save the day.

**1** Before reading the text, think about possible reasons for the population growing so fast in last two centuries. Now read the text. How many of your ideas are talked about in the text?

**2** Which paragraph in the text (2–5) talks about each of the following?

- |   |  |                 |
|---|--|-----------------|
| 1 | Worrying about the future is nothing new               | paragraph _____ |
| 2 | The growth in the population in the last few centuries | paragraph _____ |
| 3 | Problems with estimating and predicting the population | paragraph _____ |
| 4 | Reasons for the increase in population                 | paragraph _____ |

**3** Here are some numbers from the article. Match them with the correct information. Then read the article quickly to check your answers.

12–14	38	64	130	1677	1800	1952
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- Probably the first calculation of the world's population was in \_\_\_\_\_ .
- The population reached 1 billion in \_\_\_\_\_ .
- It took \_\_\_\_\_ years for the population to increase to 2 billion.
- Now the population is increasing by 1 billion every \_\_\_\_\_ years.
- In India life expectancy was \_\_\_\_\_ in \_\_\_\_\_ and is \_\_\_\_\_ today.

4 The table below contains verbs and nouns from the text. Complete the missing forms.

verb	noun		verb	noun
assume				improvement
increase				solution
calculate				starvation
predict				invention

5 Which verbs from exercise 4 have the following meanings?

- 1 to believe that something is true, without evidence \_\_\_\_\_
- 2 to become better \_\_\_\_\_
- 3 to say what you think will happen in the future \_\_\_\_\_
- 4 to discover a number or amount using mathematics \_\_\_\_\_
- 5 to design or create something that did not exist before \_\_\_\_\_
- 6 to suffer or to die because there is not enough food \_\_\_\_\_
- 7 to become larger in amount or number \_\_\_\_\_
- 8 to find or provide a way of dealing with a problem \_\_\_\_\_

6 Use the correct form of a noun or verb from exercise 4 to complete the sentences.

- 1 The population \_\_\_\_\_ from 1.6 billion to 6.0 billion between 1900 and 2000.
- 2 Farmers \_\_\_\_\_ their yields by using chemicals and fertilisers.
- 3 The United Nations \_\_\_\_\_ that there could be an extra 2–4 billion people by 2050.
- 4 Better agriculture has meant that fewer people \_\_\_\_\_ to death.
- 5 It's very difficult to \_\_\_\_\_ how many people there are in the world.
- 6 Humans often find \_\_\_\_\_ for problems they face.
- 7 The \_\_\_\_\_ of chemical fertilisers led to larger yields.
- 8 van Leeuwenhoek made an incorrect \_\_\_\_\_ about the population of the world.

7 Discuss these questions with your partner(s).

- What did you find interesting or surprising in the text?
- Predictions are not always reliable. What could happen to make the increase larger or smaller than predicted?
- What could happen as a result of population growth in your country?
- What could happen as a result of population growth in different parts of the world?

### Glossary

**assume** (*verb*) – to be based on the idea that something is true  
country and record other information about them

**census** (*noun*) – an occasion on which government officials count the people who live in a

**choke** (*verb*) – to fill a place so that it is difficult to move or to stop something developing

**dramatic** (*adj*) – sudden and surprising or easy to notice **dramatically** (*adv*)

**estimate** (*verb*) – to say what you think an amount or value will be **estimated** (*adj*)

**ingenuity** (*verb*) – the ability to solve problems in new and clever ways

**inhabited** (*adj*) – a place that is inhabited has people living in it

**life expectancy** (*noun*) – the length of time that someone is likely to live

**point out** (*verb*) – to tell someone something (phrasal verb)

**sanitation** (*noun*) – conditions and processes relating to people's health, especially the systems that supply water and deal with human waste

**support** (*verb*) – provide money, shelter or other things that someone needs in order to live

**vaccination** (*noun*) – treating a person or an animal with a vaccine to protect them against a disease

**yield** (*noun*) – an amount of something that is produced