

# Connections

Every year, the British Science Association holds a ten-day celebration of science, technology, engineering and maths called British Science Week. Its goal is to promote enthusiasm for science and the theme for 2023 is 'Connections'.

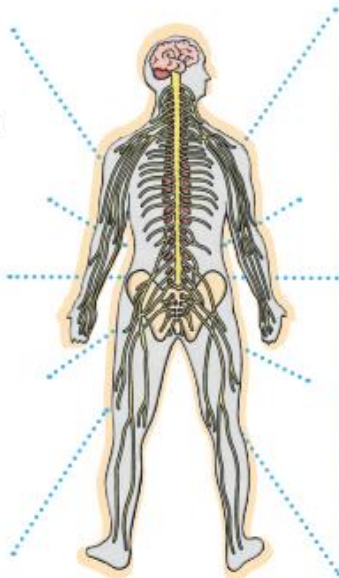


## Human Body Connections

In order for the body to perform many important life processes, various organ systems have to work together.

Made up mainly of the brain and a large network of **nerves**, the nervous system is connected to all other human body systems. By controlling the respiratory system, the circulatory system and the digestive system, it directs the body's ability to breathe, its heartbeat, digestion and much more.

The respiratory system is in charge of breathing and absorbing and moving life-giving oxygen to the bloodstream. The circulatory system is mostly made up of the heart, veins and arteries and carries oxygen from the lungs and nutrients from the digestive system throughout the body.

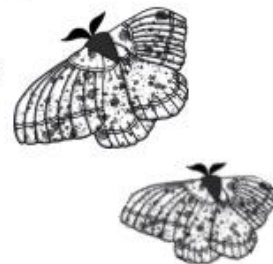


## Environmental Connections

In the 1800s, the UK witnessed a change in peppered moth populations that was directly connected to human technology and industry.

Found widely across the British Isles, the white peppered moth mostly appears white with black spots across its wings but there are a small number of them that appear predominantly black naturally. Normally, the white peppered moth is able to safely camouflage itself among the white **lichen** on trees but the black peppered moth is not, making it easier to spot by predators.

During the Industrial Revolution, it was discovered that the amount of soot and air pollution had altered the moths' different populations. It had affected the growth of the white tree lichen where the white peppered moth liked to hide and the soot-blackened tree trunks made it easier for the black peppered moth to camouflage. As a result, the black peppered moth temporarily had a larger population than the white peppered moth.



## The Internet

Over the years, changes in technology have made connections between countries and remote parts of the world easier. One of these many influential changes is the creation of the Internet.

Brought together by both wireless and cabled connections, the Internet is the system of interconnected computer **networks** that span the Earth. The Internet enables computer users to visit websites and send emails and files within

seconds.

Created in California, USA, ARPANET (Advanced Research Projects Agency Network) was one of the most significant first networks. In 1983, ARPANET used **TCP/IP** to pass information between different computers and the first version of the Internet was born. Today, we use the Internet daily to connect with people and businesses across the world.



### Did You Know...?

ARPANET was created in the late 1960s.

### Glossary

**lichen:** Very small plants that grow on trees.

**nerves:** Long fibres that carry messages between the brain, down the spine and through the body.

**networks:** Smaller groups of computers and other devices, such as phones and tablets, that are connected to each other.

**TCP/IP:** It stands for Transmission Control Protocol/Internet Protocol. A set of universal rules used by all computers talking on a network that was created in the 1970s.

1. What is British Science week a celebration of? Choose one.

- a. technology, industry, engineering and architecture
- b) science, engineering, technology and maths
- c) engineering, business, industry and technology
- d) science, engineering, technology and industry

2. Which system is mostly made up of the heart, veins and arteries? Choose one.

- a. the circulatory system
- b) the respiratory system
- c) the nervous system
- d) the digestive system

3. Where was ARPANET created?

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4. Look at the first paragraph. **Find and copy one word** that means the same as 'a strong feeling of excitement and interest'

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5. Fill in the missing words. During the \_\_\_\_\_ Revolution, it was discovered that the amount of soot and air pollution had altered the moths' \_\_\_\_\_ population.

6. What surprised you the most about the human body?

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7. Summarise what you have learnt about the peppered moths in 25 words or fewer.

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8. Explain how something we do on a regular basis has now changed because of the Internet.

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