


Knowledge Organiser	Subject	Topic
Year 4	Science	Scientists and Inventors

This 'Science and Inventors' unit will include famous scientists and inventors linked to the Year 4 science curriculum. Pupils will have the opportunity to explore and learn more about the world around them.

Pupils will learn about the dangers posed to living things in Madagascar, and Gerald Durrell's conservation efforts on the island. Pupils will learn about Alexander Graham Bell and his invention of the telephone. Pupils will find out about the discovery of oxygen and observe conducted experiments which investigate the effects of oxygen on burning objects. Furthermore, they will learn about Lord Kelvin, the man who determined the temperature of absolute zero. Pupils will also explore the works of Thomas Edison. They will discover the origins of toothpaste and how it was invented.

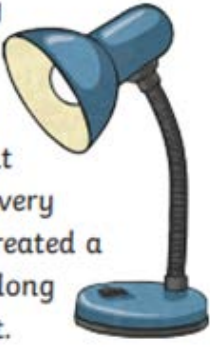
These lessons will help pupils develop their scientific enquiry skills by making observations, predictions and conclusions.

The Lightbulb



Edison's most famous invention was the lightbulb. However, he did not actually invent it!

The lightbulb had already been invented. Unfortunately, it burnt out quickly and could not provide light for very long, so it was not very useful. Edison created a new lightbulb that would stay lit for a long time, so that people could benefit from it.



Solar Energy

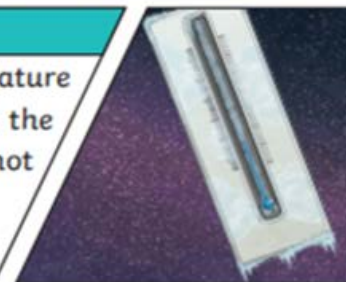
Solar power is a renewable energy source, which means that it will not run out – just like wind or water power (Hydro-).



Absolute Zero

Lord Kelvin created a new temperature scale to show absolute zero. It is called the Kelvin scale; it is measured in kelvins, not degrees Celsius.

-273°C is the same as 0 K



Conservation in Madagascar

The Durrell Trust runs eight main conservation sites in Madagascar focusing on the most **endangered species** on the island, including lemurs, the angonka tortoise and the Madagascar pochard (a species of duck).

The aye-aye is a type of lemur.



Oxygen

Animals and plants take in **oxygen** for **respiration**. **Oxygen** makes up around 21% of the air around us. We now know that **oxygen** combines with a fuel to burn. Objects cannot burn without **oxygen**. The candle under the glass jar will go out when there is not enough **oxygen** to burn.

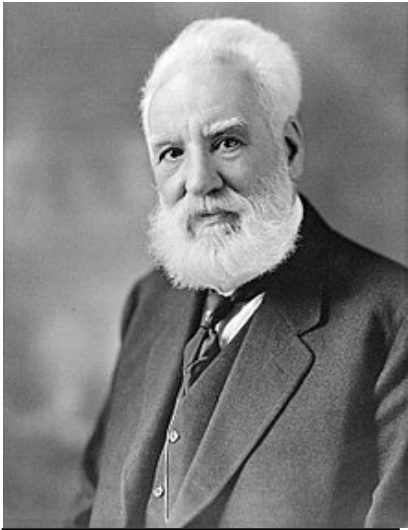


Key Vocabulary	
Gerald Durrell	Gerald Durrell was a conservationist who worked hard to save Madagascar's unique plants and animals.
Alexander Graham Bell	Alexander Graham Bell was a Scottish scientist and inventor. His most famous invention was the first telephone.
James West and Gerhard M. Sessler	West and Sessler invented the electric microphone which is used in most modern phones.
Maria Telkes	Maria Telkes was a famous scientist who made a lot of discoveries around solar power .
Garrett Morgan	Garrett Morgan was an American inventor, famous for inventing the first modern gas mask and the first three-signal traffic lights.
Antoine Lavoisier and Joseph Priestley	These two scientists were mainly responsible for the discovery of oxygen .
Lord Kelvin	William Thomson, who is better known as Lord Kelvin, determined the temperature of absolute zero (the coldest possible temperature).
Thomas Edison	Thomas Edison's inventions made it possible for people to enjoy the benefits of electricity. Among his many inventions were an efficient version of the lightbulb, the carbon microphone and an electric distribution system.
Washington Sheffield	Washington Sheffield was an American dentist and he was famous for inventing the first modern toothpaste in a tube.

Key Vocabulary	
conservationist	A conservationist is a person who works to protect and care for the environment and living things.
endangered species	A plant or animal that has not many of their species left. Scientists are concerned that the species may become extinct.
solar powered	If something is solar powered , it means that it runs off the energy we get from sunlight.
respiration	A process where plants and animals both use oxygen gas from the air to turn their food into energy.
oxygen	Oxygen is a gas at room temperature.



Gerald Durrell



Alexander Graham Bell



Garrett Morgan



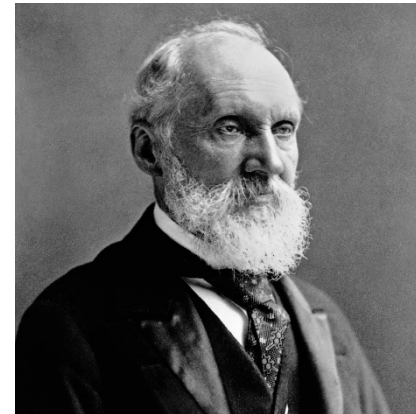
James West and Gerhard M. Sessler



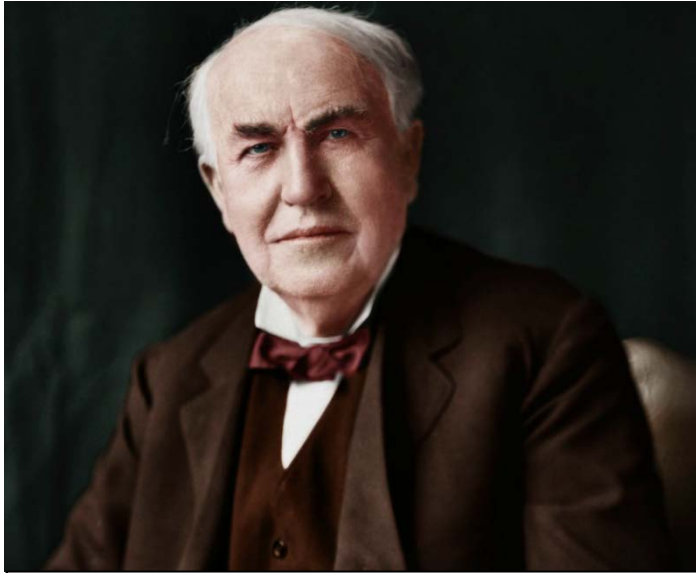
Antoine Lavoisier and Joseph Priestley



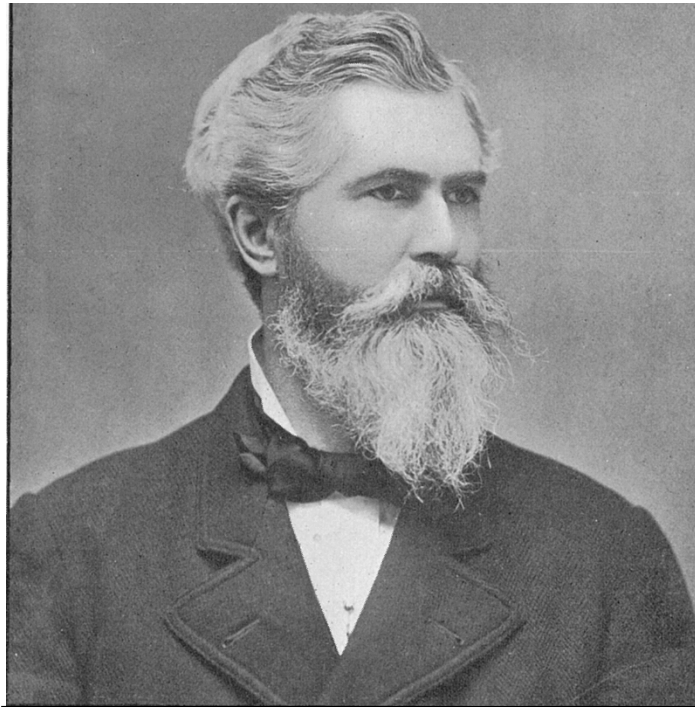
Maria Telkes



Lord Kelvin



Thomas Edison



Washington Sheffield