Year 6 – Spring Term 1 – How can you light up your life?

How does light travel? How does light help us see? What are the main parts of the human eye? Which parts of the eye allow us to see? How do our eyes adapt to the dark? What is the visible light spectrum and what colours does it include?	What causes a reflection? How does light travel through different objects? How does the material of an object affect the shadow it makes? What is refraction and when does it occur?	How can we create a circuit which lights up a bulb? What are the main parts of a circuit and which symbols represent them?

Working scientifically

Identifying, classifying and grouping: How does the material of an object affect the shadow it makes?

Pattern seeking: How does the earth move in relation to the sun?

Observation over time: Why do shadows change over the course of the day?

Art and Design:	Design Technology:	Geography	History
Use light, tone and shadow inspired by the works of Constable and Cezanne. Create an eye collage in 3D form.	Design and make a periscope.	Understand the geographical similarities and differences between Hammerfest (Norway) and Mossley.	Understand how use periscopes were used in WWI trenches and submarines. Learn about the life and work of Alan Turning.

Questions I would like to be answered during this topic:
1.
2.
3.
4.
5.

Asking Questions	Observing	Making Predictions	Setting up Tests	Recording data	Evaluating	Communicating Results





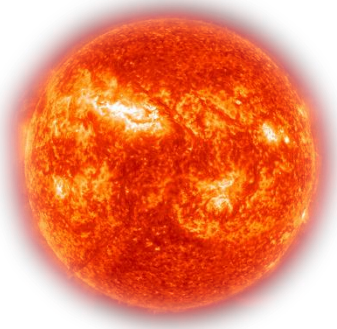


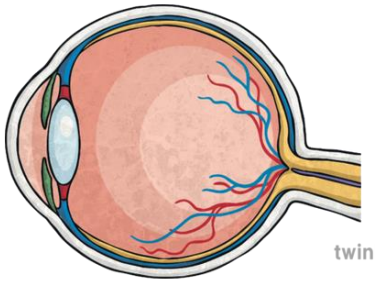
LIVINGSTONE PRIMARY AND NURSERY SCHOOL
Grow, Learn, Achieve Together

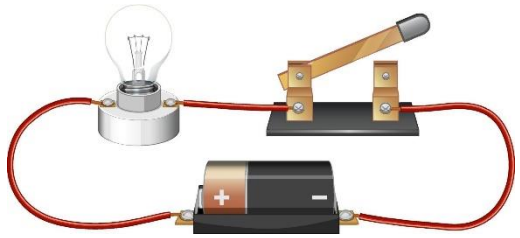
Year 6 – Spring Term 1 – How can you light up your life?

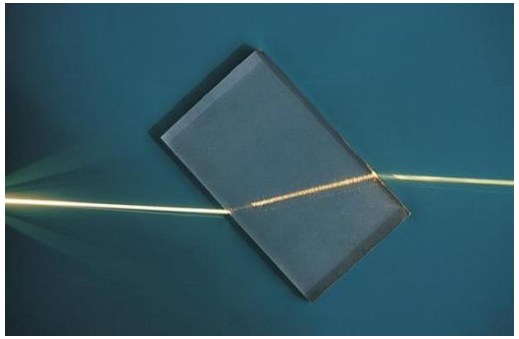
KEY VOCABULARY

Light source	An object which emits light.
Shadow	A dark area or shape created by an object coming between rays of light and a surface.
Opaque	Does not let any light through.
Translucent	Allows some light, but not all, to pass through.
Transparent	Allows all light to pass through so that objects behind can be distinctly seen.
Reflection	When light or sound waves bounce off the surface of an object and change direction.
Refraction	The bending of a light wave (which would otherwise travel in a straight line) when it travels from one medium to another.
Cornea	The clear tissue at the front and centre of the eye which allows light to pass into the eye.
Iris	The coloured part of the front of your eye which controls the size of your pupil.
Pupil	The opening in the centre of the iris- the 'circular black dot' which allows light to pass through.
Lens	The part of the eye which allows us to focus on objects at varying distances.
Retina	Located at the back of the eye, it receives light that the lens has focused and turns them into electrical signals.
Optic Nerve	Sends the electrical signals, which the retina has created, to the brain.

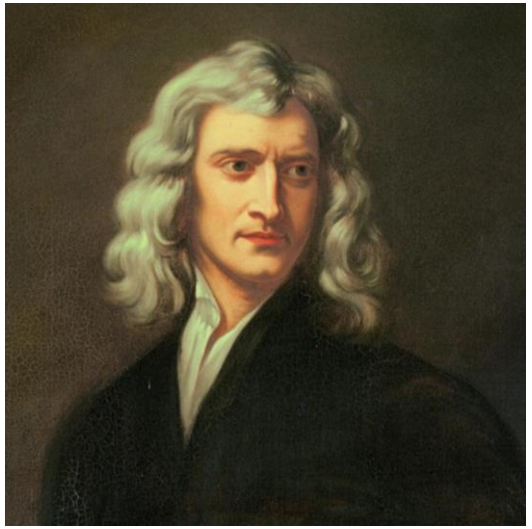








Sir Isaac Newton



Many scientists have worked to help develop our understanding of light. In the first century, the Greeks Euclid and Hero realised that light travels in a straight line, and in 1000AD, Arab physicist Alhazen demonstrated how light reflects from an object to the eyes in order to be seen. However, the most known scientist responsible for the study of light was Isaac Newton who showed how white light was made up of a combination of all colours- the rainbow as we commonly know it. He concluded that light was responsible for producing colour and reflecting it into the human eye.