MORDA CE PRIMARY SCHOOL

Knowledge Organiser LIGHT: Daffodils Year 2/3 Autumn 2022

Key Skills	Key enquiry questions
Year 2 / Year 3 **Working Scientifically: Planning** Ask simple questions and recognise that they can be answered in different ways. Use simple secondary sources to find answers. Talk about similarities and differences. Respond to suggestions of how to answer questions about the world around them and ask effective and relevant questions. Recognise when and how secondary sources should be used. Discuss the most appropriate type of scientific enquiry to use to answer questions. Recognise that questions can be answered in different ways. **Working Scientifically: Observation & Recording** Carry out instructions for a simple investigation. Talk about and record what is seen and observed. Take accurate measurements using simple equipment, e.g. cm and scales with one interval. Begin to identify and classify data and information. Record data using simple charts, tables and block graphs. Describe what happens when taking part in simple investigations/fair tests. Begin to make decisions about what to observe, how long to observe for? Read simple scales and take accurate measurements using standard units, e.g. Thermometers, graduated beakers and data loggers. Talk about criteria for grouping, sorting and classifying, use simple keys. Record data using a range of charts, tables and block graphs and labelled diagrams.	**What is light?** **Where does it come from?** **What are the differences between light and dark?** I can explain that I need light to see things, and that dark is the absence of light. **What is reflective light?** I can investigate which surfaces reflect light. I can use a mirror to reflect light and explain how mirrors works. **What have you observed?** **How can you record your observations?** I know that light from the sun can be dangerous and that there are ways we can protect our eyes. **How can you block light out?** I can investigate which materials block light to form shadows. **How is a shadow formed?** **Why does a shadow length change?** I can find patterns when investigating how shadows change size/shape. **What fair test could I design to check my thinking?** **How does distance affect light?**

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Working Scientifically: Conclusions

Talk about describe and sort simple similarities and differences, noting patterns and relationships.

Record and communicate findings in a range of ways using simple scientific language.

Talk about what has been found out and how it was discovered.

Talk in simple scientific terms about what might happen and why? (prediction)
Begin to look for patterns and decide what data to collect to identify them.

Talk about data collected from observations and measurements, using drawings, labelled diagrams, notes, simple tables and keys, standard units and simple equipment including data loggers.

Begin to draw and express some conclusions, by looking at changes, patterns, similarities and differences in data.

Begin to identify new questions arising from data, make new predictions for new values within or beyond the data collected.

Light.

Observe and name sources of light, including electric lights, flames and the Sun.

Talk about features of light and dark.

Talk about and describe how a shadow is formed.

Describe the link between brightness and distance.

Recognise that light is needed to see things and that dark is the absence of light.

Recognise that shadows are formed when light from a light source is blocked by a solid object.

Notice that light is reflected from surfaces.

Recognise that light from the sun is dangerous and that there are ways to protect the eyes.

How does light travel?

How can light be changed?

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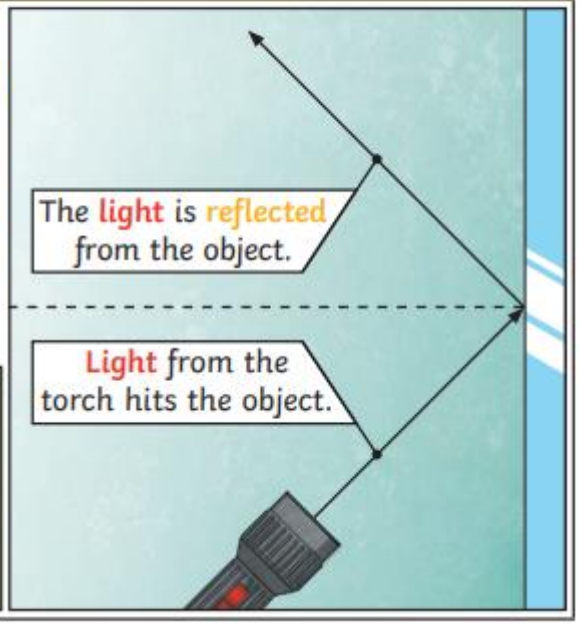
Key Vocabulary	
light	A form of energy that travels in a wave from a source.
light source	An object that makes its own light.
dark	Dark is the absence of light.
reflection	The process where light hits the surface of an object and bounces back into our eyes.
reflect	To bounce off.
reflective	A word to describe something which reflects light well.
ray	Waves of light are called light rays. They can also be called beams.

Key Knowledge

We need light to be able to see things. Light travels in a straight line. When light hits an object, it is reflected (bounces off). If the reflected light hits our eyes, we can see the object. Some surfaces and materials reflect light well. Other materials do not reflect light well. Reflective surfaces and materials can be very useful...

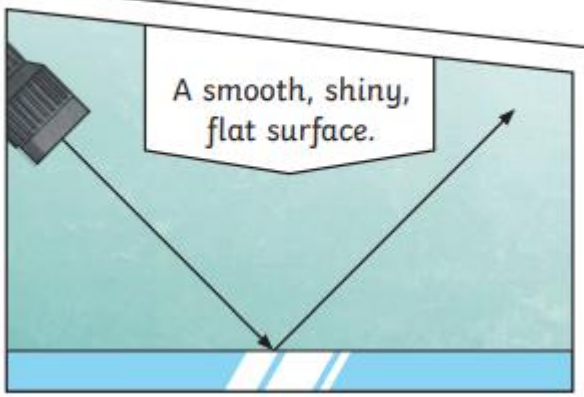

hi-vis jacket

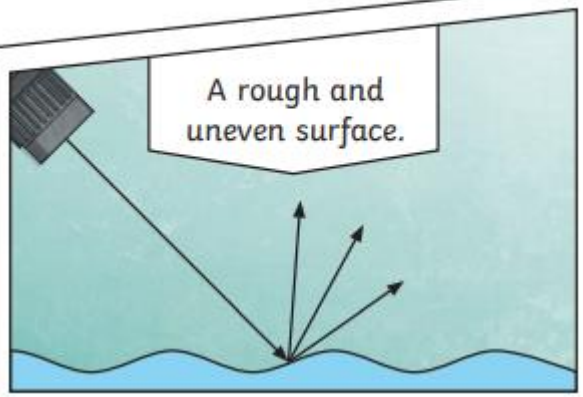

cat's eyes



Mirrors reflect light very well, so they create a clear image. An image in a mirror appears to be reversed. For example, if you look in a mirror and raise your right hand, the mirror image appears to raise its left hand.

The surfaces that reflect light best are smooth, shiny and flat.





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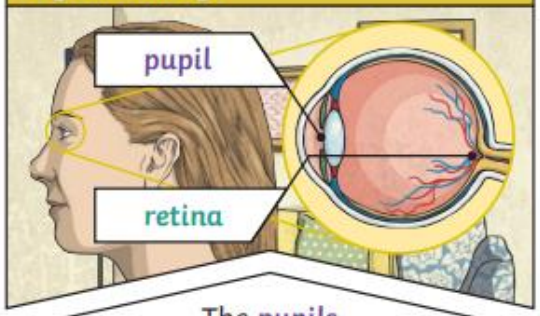
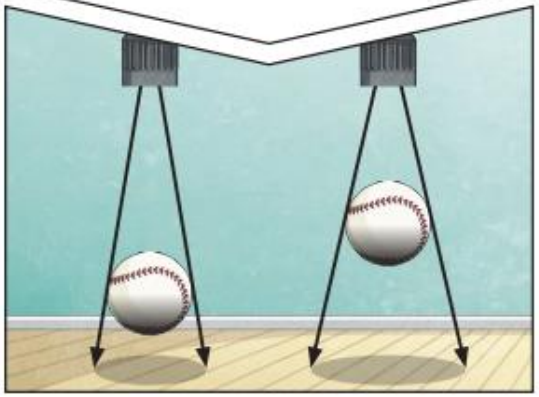
Key Vocabulary	
pupil	The black part of the eye which lets **light** in.
retina	A layer at the very back of the eye. The **retina** takes the **light** the eye receives. It then changes it into nerve signals to send to the brain.
shadow	An area of darkness where **light** has been blocked.
opaque	Describes objects that do not let any **light** pass through them.
translucent	Describes objects that let some **light** through, but scatter the **light** so we can't see through them properly.
transparent	Describes objects that let **light** travel through them easily, meaning that you can see through the object.

Key Knowledge



The pupils control the amount of **light** entering the eyes. If too much **light** enters, then it can damage the **retina**. To help protect the eyes, you can wear a hat with a wide brim and sunglasses with a UV rating.

A **shadow** is caused when **light** is blocked by an **opaque** object. A **shadow** is larger when an object is closer to the **light** source. This is because it blocks more of the **light**.



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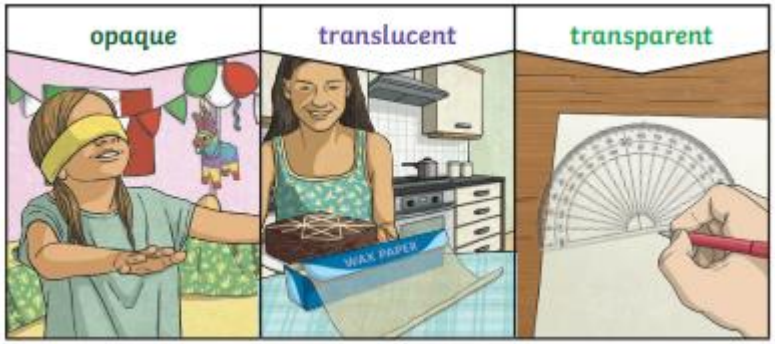

When the **light** source is directly above the object, the **shadow** will be directly underneath.

When a **light** source is to one side of an object, the **shadow** will appear on the opposite side. The **shadow** will also be longer.