

Topic: Light

Year: 3

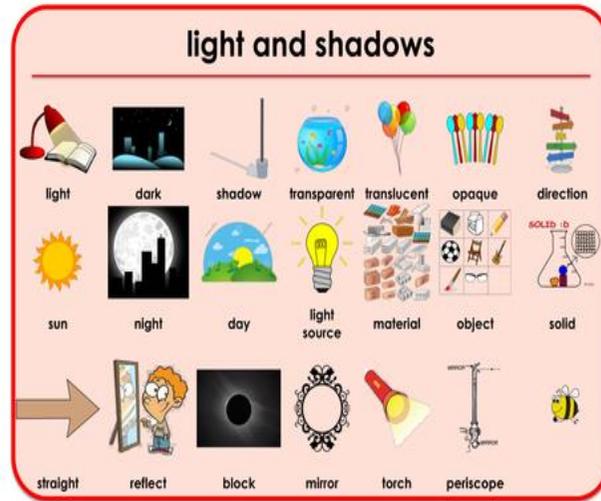
Physics

What should I already know?

Diagrams

Vocabulary

Certain things produce light, usually by burning (e.g. the Sun) or electricity (e.g. street lights)
 Shiny materials do not make light but do reflect it.
 Shadows are caused when certain materials block light.
 Objects can be described as transparent (you can see through them) or opaque (you cannot see through them).



Light

A form of energy that is bright and that lets you see things. It travels in a straight line.

Light Source

A light source is something that emits light by burning, electricity or chemical reactions.

Chemical reaction

A process that involves changes in the structure of something. Lights that are caused by chemical reactions happen when different chemicals react and light is a product of that reaction. Examples can include glow sticks and fire flies.

Energy

Energy is how things change and move. It's everywhere around us and takes all sorts of forms. It takes energy to cook food, to drive to school, and to jump in the air.

Angle

The direction from which you look at something.

Vocabulary

Shadows

A dark shape on a surface that is made when something stands between a light and the surface. The size of a shadow changes as the light source moves. The further away the light source is, the smaller the shadow is. The closer the source of the light, the bigger the shadow.

Reflection

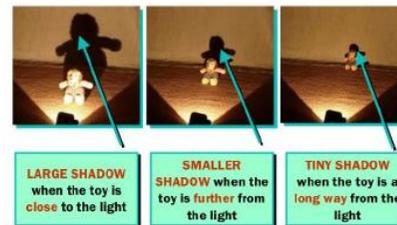
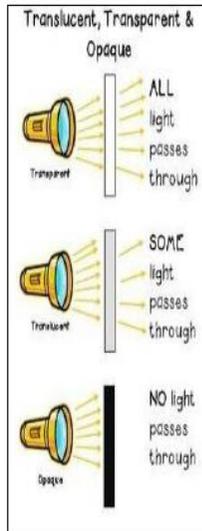
When light bounces off a surface.

Emit

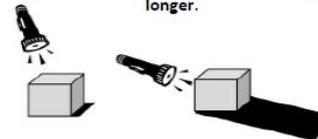
To emit a sound or light means to produce it.

Translucent

If a material is translucent, some light can pass through it.



As the **light source** moves **higher** in relation to the **object**, the **shadow** gets **shorter**. As the **light source** moves **lower**, the **shadow** gets **longer**.



The Big Picture

By the end of our project we will know that

Physics

P1: The universe follows unbreakable rules that are all about forces, matter and energy.

P2: Forces are different kinds of pushes and pulls that act on all the matter that is in the universe. Matter is all the stuff, or mass, in the universe.

P3: Energy, which cannot be created or destroyed, comes in many different forms and tends to move away from objects that have lots of it.

Light is a form of energy. We need light to see things and darkness is the absence of light. Light travels in straight lines and is reflected when it travels from a light source and then 'bounces' off an object. Everything that we can see is either a light source or something that is reflecting light from a light source into our eyes. The Sun is a light source, but the Moon is not and is merely reflecting light from the Sun. Many light sources give off light and heat. Sunglasses can protect eyes from sunlight but looking at the Sun directly – even with sunglasses – can damage the eyes. Opaque objects block light creating shadows and light passes through transparent objects. Opacity/transparency and reflectiveness are properties of a material. When objects move towards a light source, the size of the shadow increases. Be able to show changing of shadow size by drawing a diagram with straight lines .presenting light