

Knowledge Organiser – Light and Shadow

Key Questions

1. What is a light source and where can they be found?
2. Where can we find natural and artificial light sources?
3. How does the position of a light source affect shadows?
4. How does the type of material affect the shadow that it makes?
5. What do the words transparent, translucent and opaque mean?
6. What is the best material for use in a blackout during WW2?

Helpful Information

Light sources:

A light source is something that gives off light, either naturally like the sun or artificially (manmade) like a torch. Sometimes we can see light from reflective objects such as cat's eyes, road signs and the moon! These objects reflect the light from another light source, they do not produce their own light.

When a light shines on an object, it can either pass through the object or not depending on the property of the material.. If light can pass through the object then no shadow is created but if light cannot pass through then a shadow is created.

Properties of material:

Transparent: light can pass through easily.

Translucent: some light can pass through.

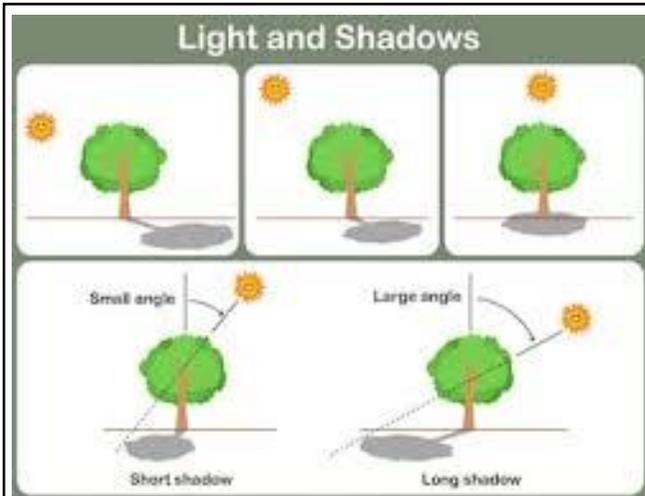
Opaque: no light can pass through so this creates a shadow.

Shadows change size and shape depending on the angle and direction of the light source. This is why your shadow looks different at different times of the day as the sun appears to move across the sky (of course, it is actually the earth that moves around the sun!).

In World War II, people had to cover their windows and doors at night to stop any light escaping their house. This was because they didn't want enemy aircraft to see where the towns and cities were. They needed to use opaque materials to make sure no light escaped.

Vocabulary

Light
Shadow
Dark
Source
Transparent
Translucent
Opaque
Direction
Natural*
Artificial
Reflection
Material*
Prediction
Conclusion
Evaluation
Appear*
Disappear*
Earth*
Length*
Position*



*Year
3/4
Common
Exception