

Learn to Light:

Light and Dark Light is a form of energy. Light is made up of photons and travels in a straight line as a light wave. The strength of the light depends on how much energy the photons contain. Light sources are luminous objects that give off light, like the sun, torches, TVs, candles, fireworks and some animals. We need light to see and light sources allow us to see in the dark. Dark is the opposite of light - dark is the absence of light.



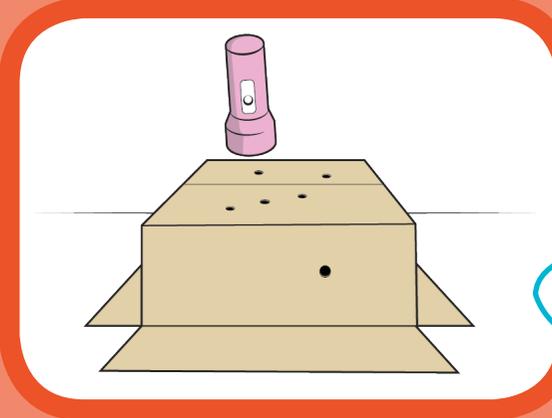
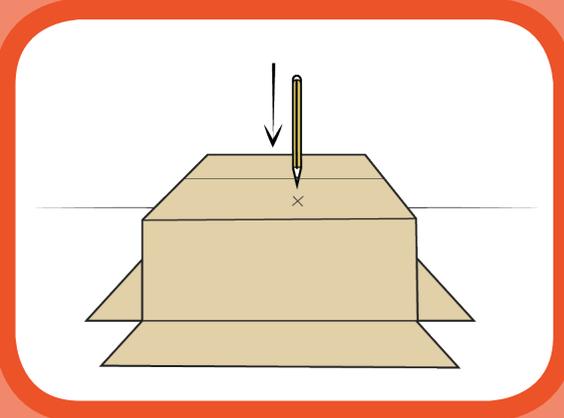
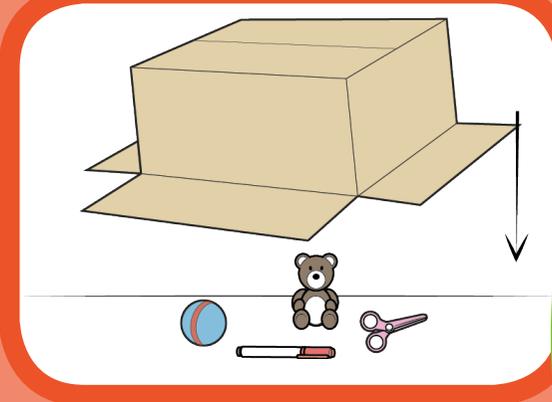
Experiment

Making a dark box

You will need:

A cardboard box, a sharp pencil, some objects from around the house, a torch

1. Turn your box face down on the table with any flaps folded out. What do you think it is like inside the box? Place your objects under the box.
2. Make a hole in the top of the box with a sharp pencil - what can you see through the hole? Make some more holes in the top - what can you see now? Try making holes in the side - can you see any of the objects?
3. Try shining a torch through one of the holes and looking through another - what can you see now?



FUN FACTS

Light travels incredibly fast. Nothing can travel as fast as light. Light can travel up to 300,000 km per second (186,000 miles per second). Light travels faster than sound so that's why we see lightning before we hear the thunder.

Artists and photographers often use the contrast (difference) between light and dark to create striking images.



Plants use light energy to make their 'food'. The process is called 'photosynthesis'.

The moon does not give off light. The light we see is sunlight reflecting off the moon.



Findings

Can you see in the dark ?



What do you need to be able to see ?



Does having more light make it easier to see ?

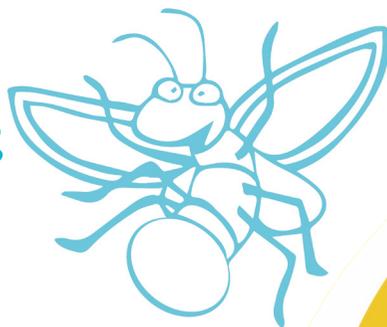


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Conclusion Light lets us see things, light provides warmth and energy, light helps things to grow and animals to communicate with each other. Without light there would be no life on earth. Light from the sun can be used to help generate green (renewable) energy, called solar energy. The sun is the biggest light source. When the sun sets at night we often describe it as being dark, but it is rarely completely dark as there's always a little bit of light. This is why we can still see.

A firefly is a bioluminescent insect, which means it can make its own light. You might have even heard a firefly called a lightning bug.

The flashing part of a firefly is called a lantern. Can you colour in the lantern on the firefly...



CAN YOU FIND
These words?



Word search grid:

E	X	W	V						
T	S	A	R	T	N	O	C		
E	R	S	U	N	L	I	G	H	T
E	E	F	A	F	D	A	R	K	L
W	S	F	W	A	V	E	X	X	C
J	U	L	W	T	H	S	P	E	E
P	L	E	N	O	T	O	H	P	X
Q	L	C	E	J	E	N	E	R	G
J	T	N	U	G	L	A	M	P	I
A	G	O	W	A	R	M	T	H	M
D	S	O	U	R	C	E	L		
J	G	R	V						

SEE
DARK
LAMP
WAVE
SPEED
ENERGY
PHOTON
SOURCE
WARMTH
REFLECT
CONTRAST
SUNLIGHT

Which of
These ARE LIGHT
Sources?

Colour them in...



Table lamp



TV



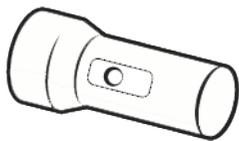
Sun



Owl



Fire



Torch



Moon

Draw a circle around the one you think is the brightest (the one which gives off the most light).

Grown-ups: A few other activities you can do... See how many different light sources you can find in your home; try turning each one on and discuss how the light emitted is different. Is it brighter or dimmer? Warmer or cooler? What shape is the beam? Treasure hunt in the dark; write down some words to do with light on white paper and stick up around a dark room or hide some treats. Set a challenge to find them all using just torch light.

Answers: FINDINGS - no, light, yes FIREFLY - the lantern is the last/tail section of the body LIGHT SOURCES - table lamp, TV, sun, torch, fire