

FAO Parent/Carer

Dear parent/carers,

We do not recommend printing these slides.

Children can work through the lesson on the screen of your device and record their work on blank paper/in a book.

You can take a picture of the finished work and email it over to the teachers.

Thank you for the work you are doing.

Mr Mitchell



A note for parents/carers

Tuesday's lesson involves a practical activity.

You will need the following equipment:

- A torch/phone with a torch function.
- A piece of white paper or card.
- Different materials that you have around the house such as tin foil, a towel, CD/DVD disc, cardboard, a metal spoon (a cooking spoon would be easiest) and something of the children's choosing.

Friday's lesson involves a practical activity.

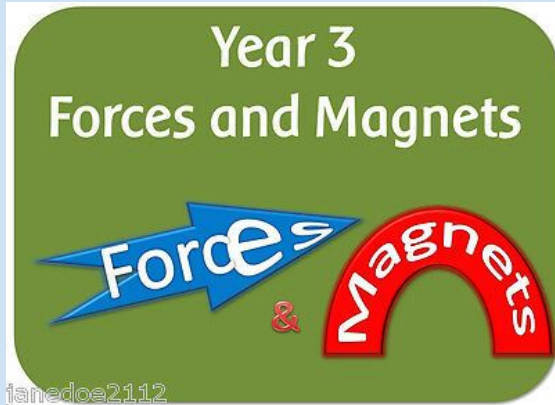
You will need the following equipment:

- A torch/phone with a torch function.
- A ruler or measuring tape.
- An opaque object.

Monday 22nd February 2021

S.K.L.O: To recognise that light is needed to see things and darkness is the absence of light.

W.S.L.O: To classify items using a Carroll Diagram.



REMEMBER MORE: **Previous learning sentences.**

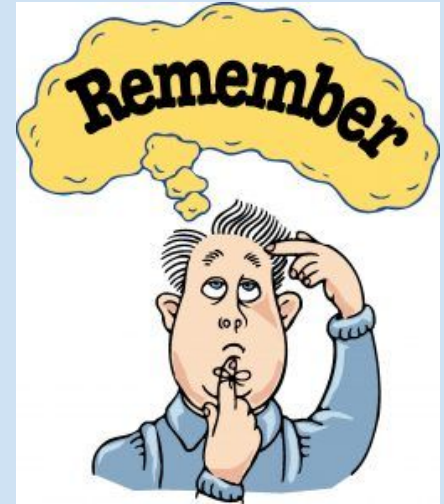
- 1) A force is a _____ or a _____.
- 2) We learned about a type of force, that requires sliding of two surfaces against each other. This is called _____.
- 3) Magnets have two poles, they are known as _____ and _____ poles.

S.K.L.O: To recognise that light is needed to see things and darkness is the absence of light.

W.S.L.O: To classify items using a Carroll Diagram.

REMEMBER MORE: Check it!













- 1) A force is a **push** or a **pull**.
- 2) We learned about a type of force, that requires sliding of two surfaces against each other. This is called **friction**.
- 3) Magnets have two poles, they are known as **north** and **south** poles.



S.K.L.O: To recognise that light is needed to see things and darkness is the absence of light.

W.S.L.O: To classify items using a Carroll Diagram.

Let's quickly say our Science vocabulary!

 question	 observe	 compare	 identify
 conclusion		 classify	 biology
 chemistry	 physics	 evidence	 interpret
 variables			





















S.K.L.O: To recognise that light is needed to see things and darkness is the absence of light.

W.S.L.O: To classify items using a Carroll Diagram.

**Our new topic
vocabulary!**

Practise saying our
topic vocabulary.

How many words
have you heard of
before?

 light	 dark	 ray	 shadow
 mirror	 bright	 dim	 eyes
 reflect	 luminous	 opaque	 transparent
 translucent	 ultraviolet (UV)	 beam	 absorb
 infrared	 natural	 artificial	 source

S.K.L.O: To recognise that light is needed to see things and darkness is the absence of light.

W.S.L.O: To classify items using a Carroll Diagram.

Our new topic in Science is all about light!

We are going to be exploring:

- *What light is and some of its uses.*
- *How light reflects on surfaces.*
- *How shadows are created.*
- *Some of the dangers of light.*
- *How shadows can be manipulated.*

Light is also a Year 6 Science topic. You will use the skills and knowledge you learn in this topic and expand on them when you are older, so make sure you are paying attention!



S.K.L.O: To recognise that light is needed to see things and darkness is the absence of light.

W.S.L.O: To classify items using a Carroll Diagram.

Light is a form of energy that we can see.
Light also helps us to see.

Light travels in waves from a source.

A light source is something that creates light e.g the sun, a light bulb or a firefly.

Waves of light can only travel in straight lines. Take a look at the image of sunbeams shining in a forest.

The waves have not formed curved or swirling lines but straight ones.

Some light sources can be turned off.



Discuss:

Could the light from the sun beams be turned off?

S.K.L.O: To recognise that light is needed to see things and darkness is the absence of light.

W.S.L.O: To classify items using a Carroll Diagram.

There are many different light sources around us.

Some of these are natural and others are artificial (man made).

An example of a natural light source is lightning.

This is because creating light is the function of the source or a reaction.



An example of an artificial light source is a television.

This is because the television has been made by humans.



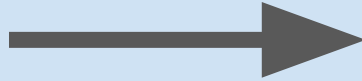
S.K.L.O: To recognise that light is needed to see things and darkness is the absence of light.

W.S.L.O: To classify items using a Carroll Diagram.

When light is absent from a source, this is known as darkness.



The TV is on and producing light, it is currently a light source.



The TV is turned off and no longer producing light.
The TV is no longer a light source.

S.K.L.O: To recognise that light is needed to see things and darkness is the absence of light.

W.S.L.O: To classify items using a Carroll Diagram.

TINY TASK:

Time to show your understanding!

In your own words, explain what the terms light and dark mean.

Can you include an example of when light and dark exist?

S.K.L.O: To recognise that light is needed to see things and darkness is the absence of light.

W.S.L.O: To classify items using a Carroll Diagram.

Watch:

https://www.youtube.com/watch?v=3E10KEDouVA&ab_channel=myGuru

Or search:

I see the light! - A song about light sources.

S.K.L.O: To recognise that light is needed to see things and darkness is the absence of light.

W.S.L.O: To classify items using a Carroll Diagram.

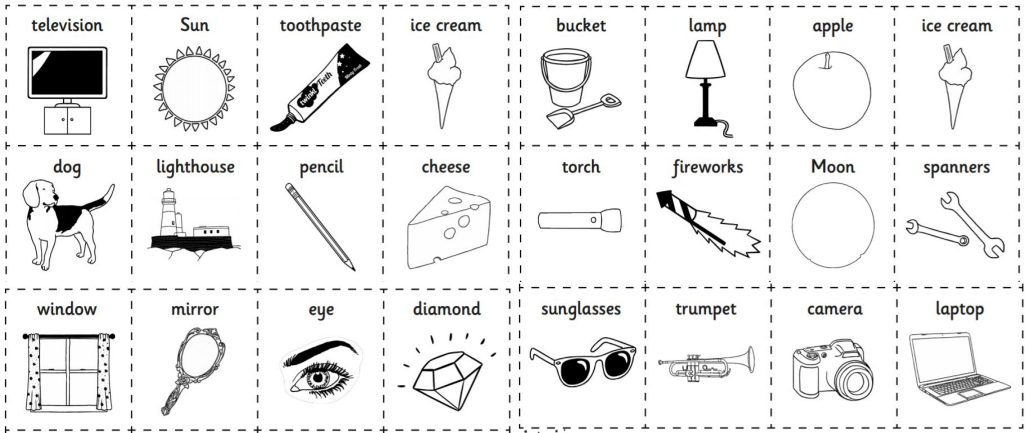
Here are some images of things we see around us.

You are going to classify the items as light sources and non light sources.

To do this, you are going to use a Carroll Diagram.

See below of what you can draw/write to get you started with classifying.

	Light source	Not a light source
Natural item	Sun	Apple
Artificial item	Lamp	Trumpet



These images are bigger on the next slide!

S.K.L.O: To recognise that light is needed to see things and darkness is the absence of light.

W.S.L.O: To classify items using a Carroll Diagram.

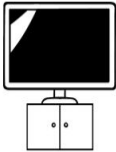
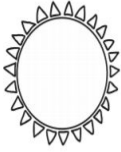




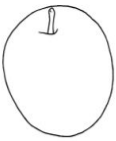




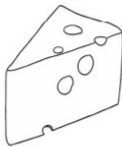
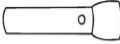











MAIN TASK:

Classify the items using
a Carroll Diagram.

Think:

Does it produce light?

*If yes, is this a natural
or artificial item.*

television 	Sun 	toothpaste 	ice cream 	bucket 	lamp 	apple 	ice cream 
dog 	lighthouse 	pencil 	cheese 	torch 	fireworks 	Moon 	spanners 
window 	mirror 	eye 	diamond 	sunglasses 	trumpet 	camera 	laptop 

S.K.L.O: To recognise that light is needed to see things and darkness is the absence of light.

W.S.L.O: To classify items using a Carroll Diagram.



Mr Ritchie says, “The window in my office is a light source.”

Mr Mitchell thinks he is wrong.

Why is Mr Mitchell’s thinking correct?

Explain your answer in full sentences.

Challenge:

Can you include some of our topic vocabulary in your response?





You have finished today's lesson, well done!

**Remember to send your work from this lesson to Mr Mitchell
at tmitchell@kingsavenue.lambeth.sch.uk**

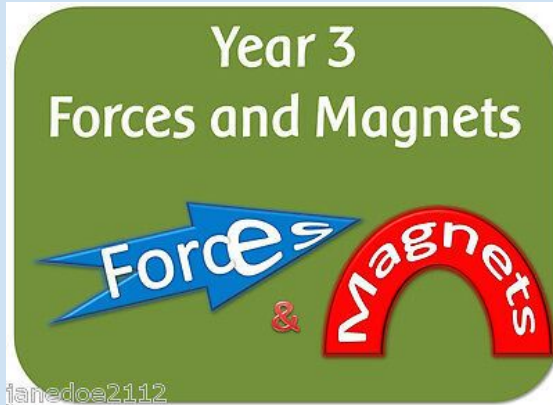


Enjoy the rest of your day!

Tuesday 23rd February 2021

S.K.L.O: To investigate which surfaces reflect light.

W.S.L.O: To produce a labelled diagram.



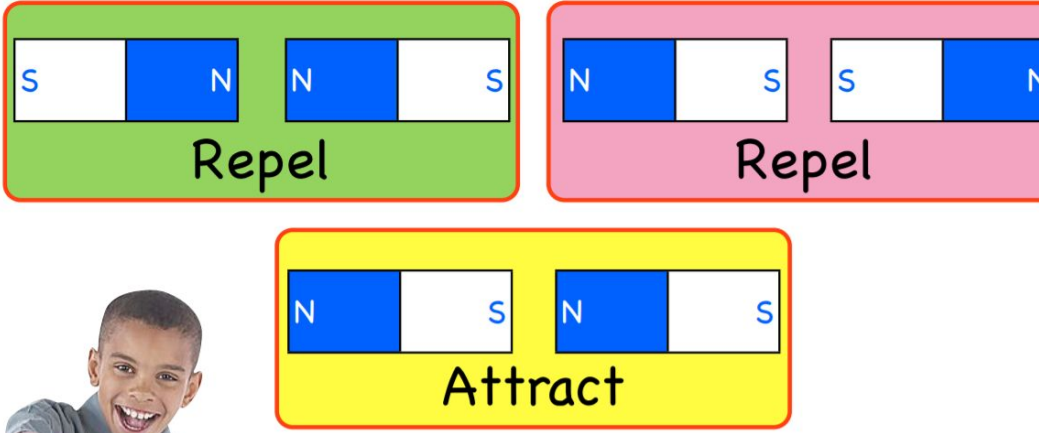
REMEMBER MORE:

Three diagrams of bar magnets are shown. The top row has two magnets: a green one with S (white) and N (blue) poles, and a pink one with N (blue) and S (white) poles. The bottom row has one yellow magnet with N (blue) and S (white) poles. To the right of the magnets is a cartoon boy in an orange shirt, looking up with his hand on his head. A blue speech bubble with a red border points to the magnets and contains the text: "Which of these magnets will **attract** and which will **repel**?"

S.K.L.O: To investigate which surfaces reflect light.


W.S.L.O: To produce a labelled diagram.

REMEMBER MORE: Check it!

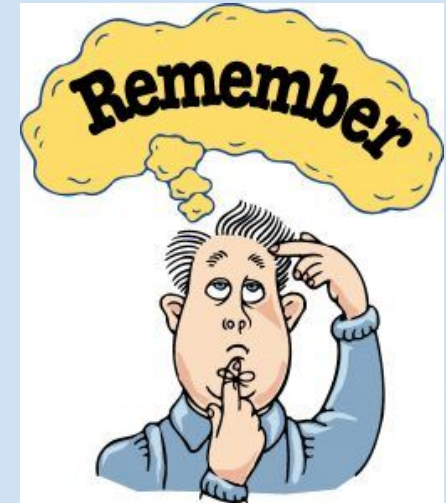


The diagram illustrates the rules of magnetic attraction and repulsion using colored boxes and pole labels:

- Repel (Green box):** Shows two pairs of poles. The first pair consists of a white pole labeled 'S' and a blue pole labeled 'N'. The second pair consists of a blue pole labeled 'N' and a white pole labeled 'S'. The word 'Repel' is written below the boxes.
- Repel (Pink box):** Shows two pairs of poles. The first pair consists of a blue pole labeled 'N' and a white pole labeled 'S'. The second pair consists of a white pole labeled 'S' and a blue pole labeled 'N'. The word 'Repel' is written below the boxes.
- Attract (Yellow box):** Shows two pairs of poles. The first pair consists of a blue pole labeled 'N' and a white pole labeled 'S'. The second pair consists of a blue pole labeled 'N' and a white pole labeled 'S'. The word 'Attract' is written below the boxes.



Did you get each one right? Remember, poles that are the same repel and poles that are opposite attract.



S.K.L.O: To investigate which surfaces reflect light.

W.S.L.O: To produce a labelled diagram.

Let's quickly say our Science vocabulary!



question



observe



compare



identify



conclusion



classify



biology



chemistry



physics



evidence



interpret



variables

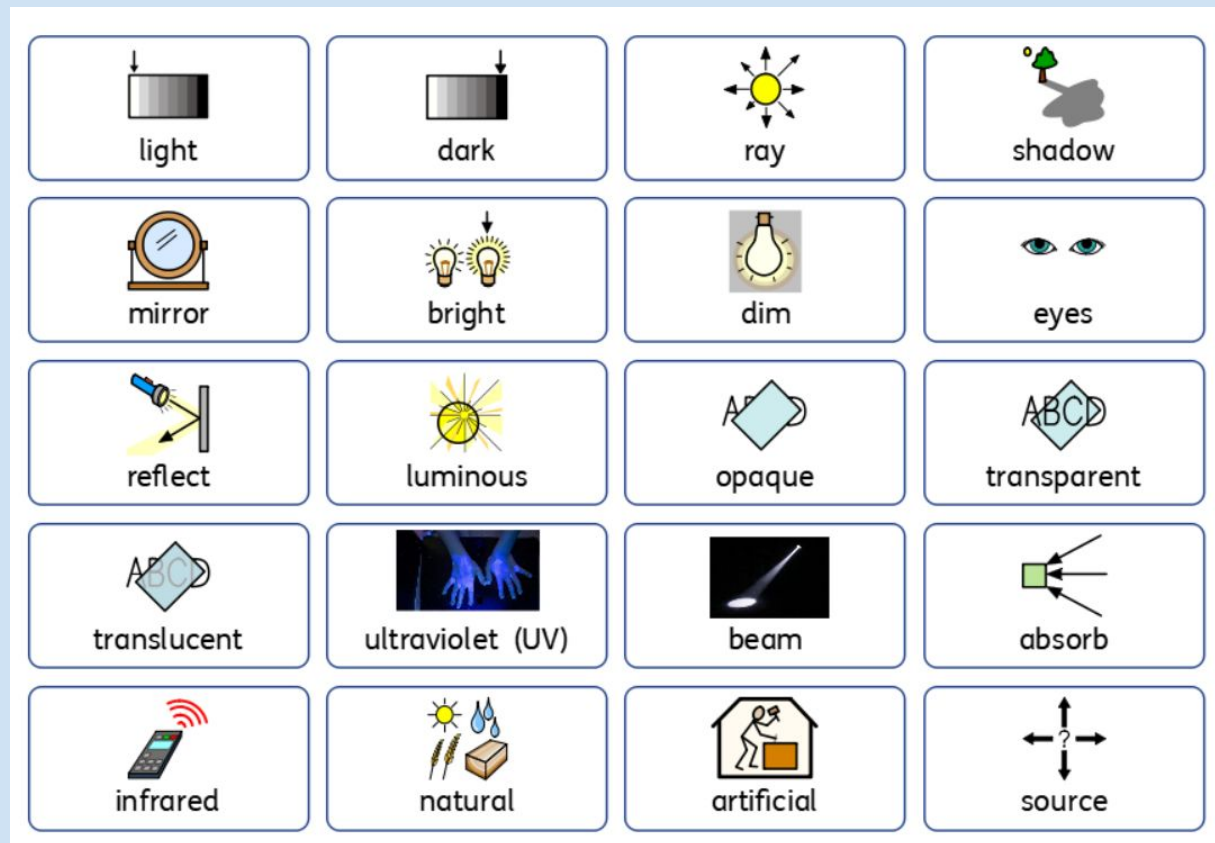
S.K.L.O: To investigate which surfaces reflect light.

W.S.L.O: To produce a labelled diagram.

Our new topic vocabulary!

Practise saying our topic vocabulary.

How many words have you heard of before?



S.K.L.O: To investigate which surfaces reflect light.

W.S.L.O: To produce a labelled diagram.

Miss Sutherland is a cyclist.

She usually travels into work using her bike.

When riding her bike, Miss Sutherland wears this jacket.

She told me, “I wear this jacket because it helps drivers to see me as I cycle along the road.”

TINY TASK

- What colour is Miss Sutherland’s jacket?
- What do you notice about the design of it?
- Do you think her reason for wearing the jacket is true?



S.K.L.O: To investigate which surfaces reflect light.

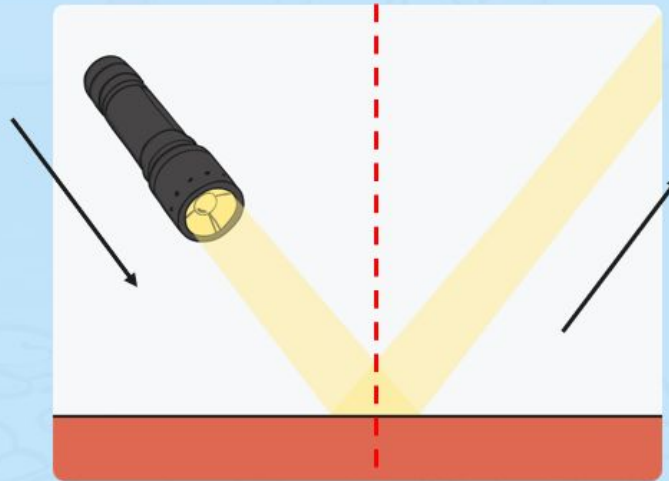
W.S.L.O: To produce a labelled diagram.

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.

Light from the torch hits the object.



The light is reflected from the object.

Watch:

<https://www.bbc.co.uk/bitesize/topics/zbssgk7/articles/zp7f8mn>

TINY TASK:

Look around your home quickly and see if you notice how the light hits objects.

Are some easier to see than others?

S.K.L.O: To investigate which surfaces reflect light.

W.S.L.O: To produce a labelled diagram.

Let's go back to Miss Sutherland's reason for wearing a cycling jacket.

Take a look at this video:

<https://www.bbc.co.uk/bitesize/clips/ztcg9j6>

As you are watching, think about:

What does it look like if a material reflects light well?

Which colours reflect the most light?

Is Miss Sutherland's thinking correct?

*I wear this jacket
because it helps
drivers to see me as
I cycle along the
road.*



S.K.L.O: To investigate which surfaces reflect light.

W.S.L.O: To produce a labelled diagram.

Our first task today involves exploring how reflective some materials are.

You will need to gather the following:

- A torch/phone with a torch function to act as your light source.
- A piece of white paper or card.
- Different materials that you have around the house such as tin foil, a towel, CD/DVD disc, cardboard, a metal spoon (a cooking spoon would be easiest) and something of your choosing to act as your variables.

Reflective material	Not a reflective material

We are going to record our findings in a table.

Once you've sorted your materials, draw the table into your book.

S.K.L.O: To investigate which surfaces reflect light.

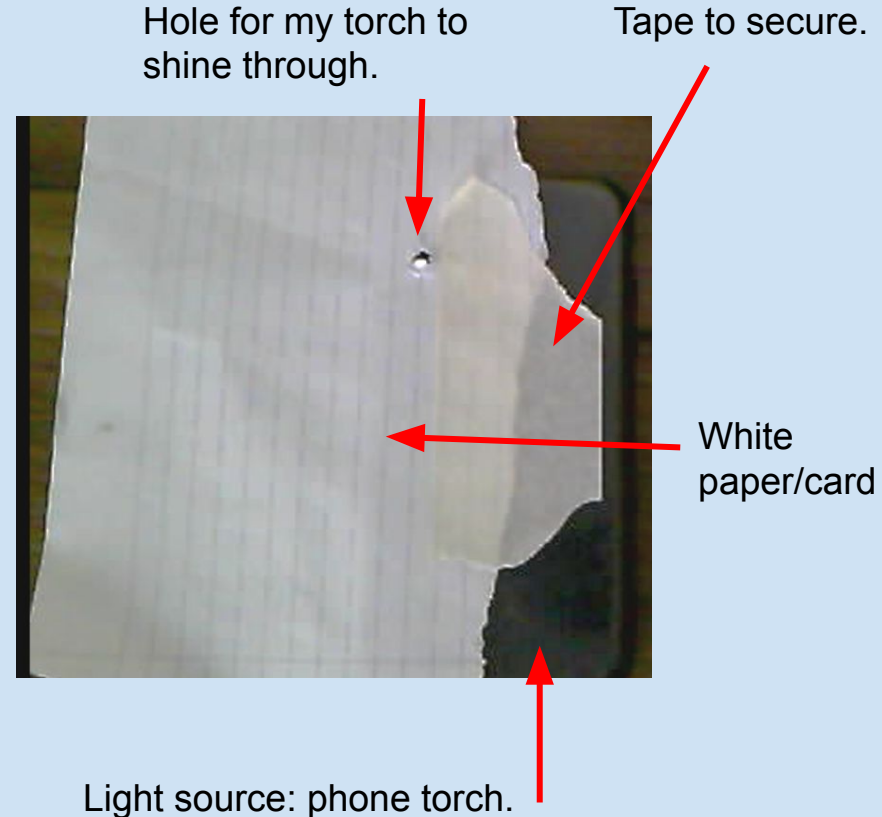
W.S.L.O: To produce a labelled diagram.

Step one:

Take your piece of paper and make a hole that best fits the size of your torch.

I have used my iPhone torch, so I was able to create a hole using a pencil.

For ease, I attached the paper to my phone with a piece of tape. This is optional and you will get the same result by holding the torch in line with hole.



S.K.L.O: To investigate which surfaces reflect light.

W.S.L.O: To produce a labelled diagram.

Step two:

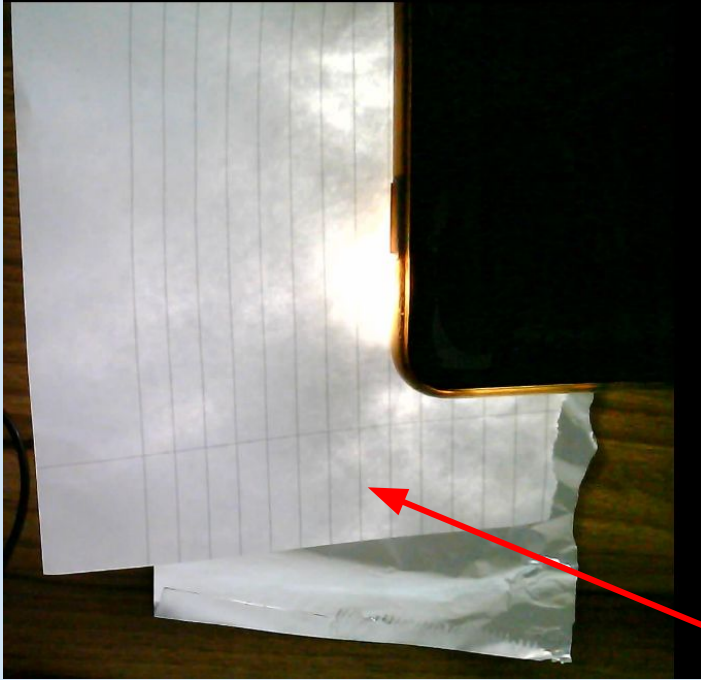
Place your material on a flat surfaces such as a table.

I have used tin foil for my example.



S.K.L.O: To investigate which surfaces reflect light.

W.S.L.O: To produce a labelled diagram.



Step three:

Shine your torch onto your chosen material.

Study how reflective the material is by seeing whether the light bounces off of the material and onto your paper/card.

Record your findings in the table.

Do you notice the small patches of light?

This is happening because tinfoil is a reflective material!

S.K.L.O: To investigate which surfaces reflect light.

W.S.L.O: To produce a labelled diagram.

Step four:

Repeat the process for all of your materials.

Remember to fill in your table.

Reflective material	Not a reflective material

S.K.L.O: To investigate which surfaces reflect light.

W.S.L.O: To produce a labelled diagram.

From your test, you would have realised that some surfaces and materials reflect light well, others do not!

Reflective surfaces and materials can be very useful:

- Reflective strips on coats or bags mean you can be seen at night.
- They are also useful for fire-fighters or builders who may work in a dark and dangerous environment.
- 'Cat's Eyes' help drivers see the road by reflecting light from headlamps.
- Mirrors let us see ourselves, and are also useful in cars, to allow drivers to see behind them.
- Retro-reflectors are used for road signs so that drivers can see the signs from their car.

S.K.L.O: To investigate which surfaces reflect light.

W.S.L.O: To produce a labelled diagram.

TASK TWO:

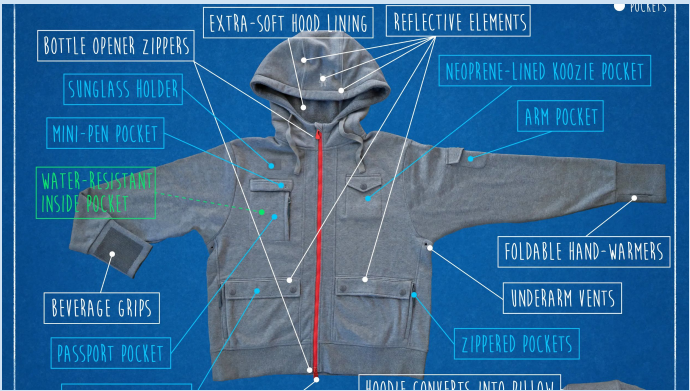
So Miss Sutherland can be even safer on the road, we are going to design her a new cycling jacket!

Thinking about your test results, which material is the most reflective?

As we saw in the earlier video when reflective strips are used, car headlights reflect brightly.

Design and label a diagram of cycling jacket with strips of your most reflective material.

You can also be creative and include other helpful design elements in the jacket e.g a hood helmet.





You have finished today's lesson, well done!

**Remember to send your work from this lesson to Mr Mitchell
at tmitchell@kingsavenue.lambeth.sch.uk**



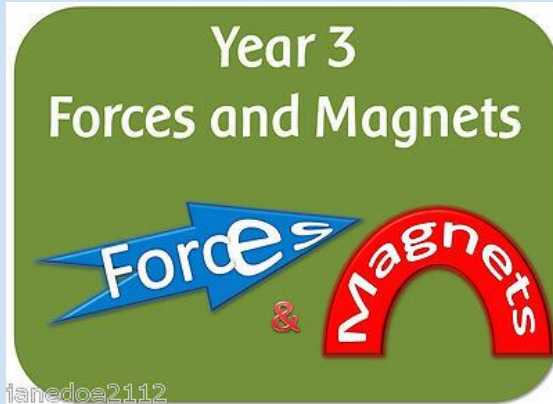
Enjoy the rest of your day!

Wednesday 24th February 2021

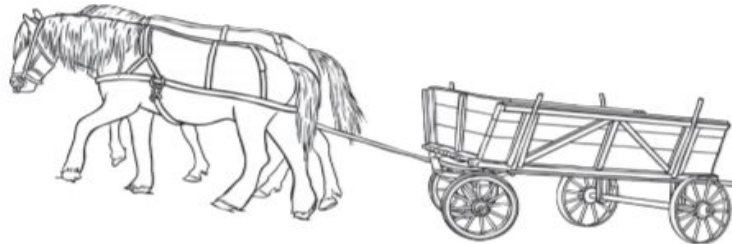
S.K.L.O: To understand and explain how shadows are made.

W.S.L.O: To use key scientific vocabulary.

REMEMBER MORE:















5. Where is the pulling force coming from in this picture?



S.K.L.O: To understand and explain how shadows are made.

W.S.L.O: To use key scientific vocabulary.

Let's quickly say our Science vocabulary!

 question	 observe	 compare	 identify
 conclusion	 classify	 biology	
 chemistry	 physics	 evidence	 interpret
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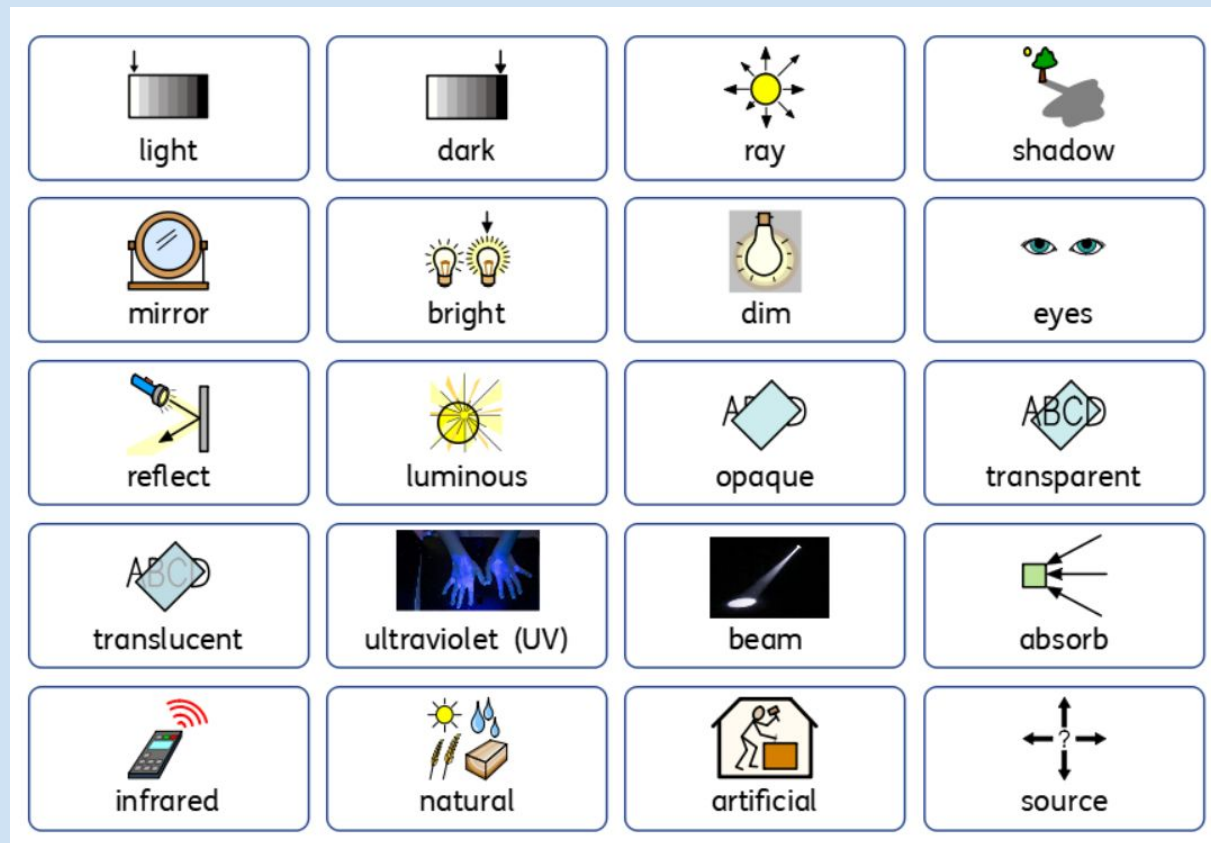
S.K.L.O: To understand and explain how shadows are made.

W.S.L.O: To use key scientific vocabulary.

Our new topic vocabulary!

Practise saying our
topic vocabulary.

How many words
could you check off
as understanding
their meaning so far?



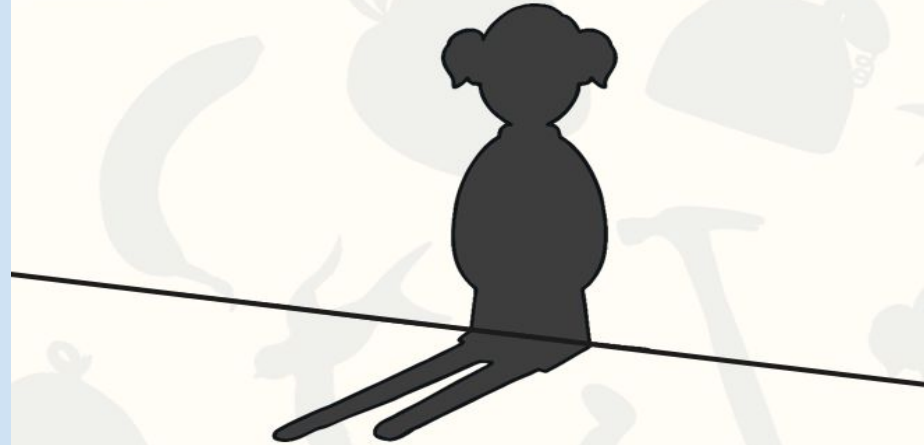
S.K.L.O: To understand and explain how shadows are made.

W.S.L.O: To use key scientific vocabulary.

My shadow, it follows me everywhere,
I can see my feet, I can see my hair.
I can see my fingers, all from one to ten,
When I open them up and when I close them.



My shadow, it is the same shape as me,
But it's just my outline, I can see.
I move here and I move there,
My shadow, it follows me everywhere.



S.K.L.O: To understand and explain how shadows are made.

W.S.L.O: To use key scientific vocabulary.

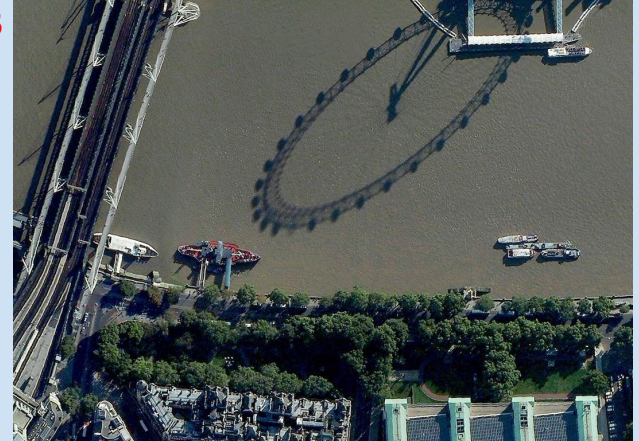
1



2



3



4



5



TINY TASK:

Can you identify what or who these shadows belong to?

S.K.L.O: To understand and explain how shadows are made.

W.S.L.O: To use key scientific vocabulary.

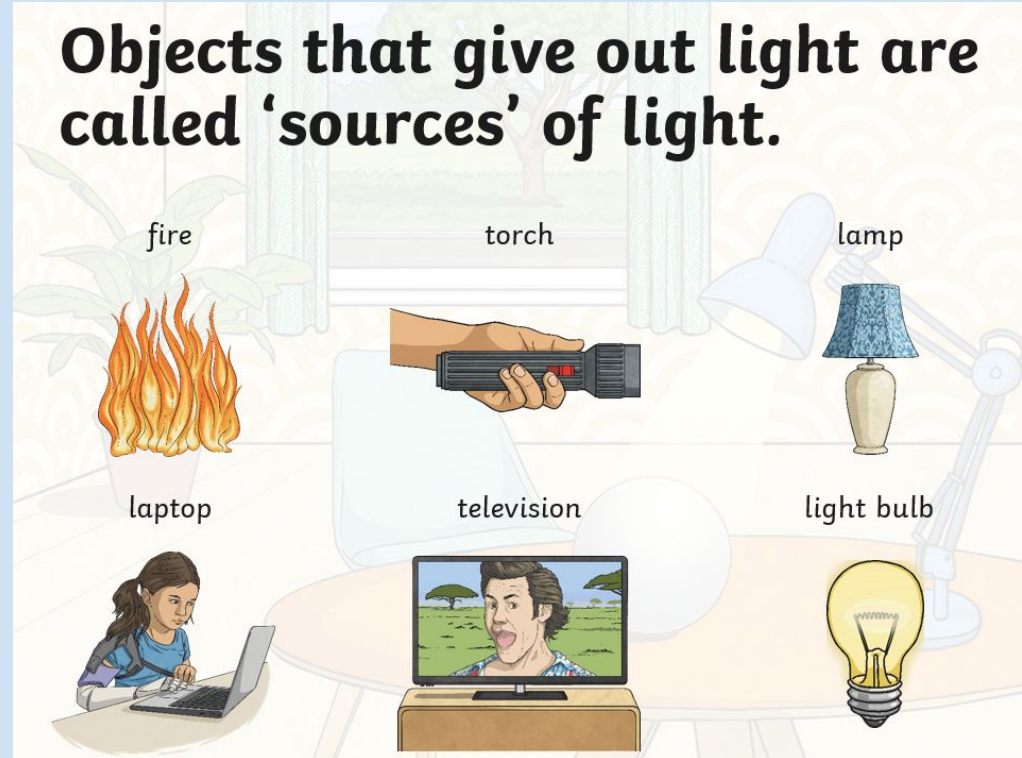
What we know:

Light is a beam of energy that travels in a wave from a source.

A wave of light can only travel in a straight line.

Waves of light are called light rays.

Light can reflect by bouncing off of other objects.



S.K.L.O: To understand and explain how shadows are made.

W.S.L.O: To use key scientific vocabulary.

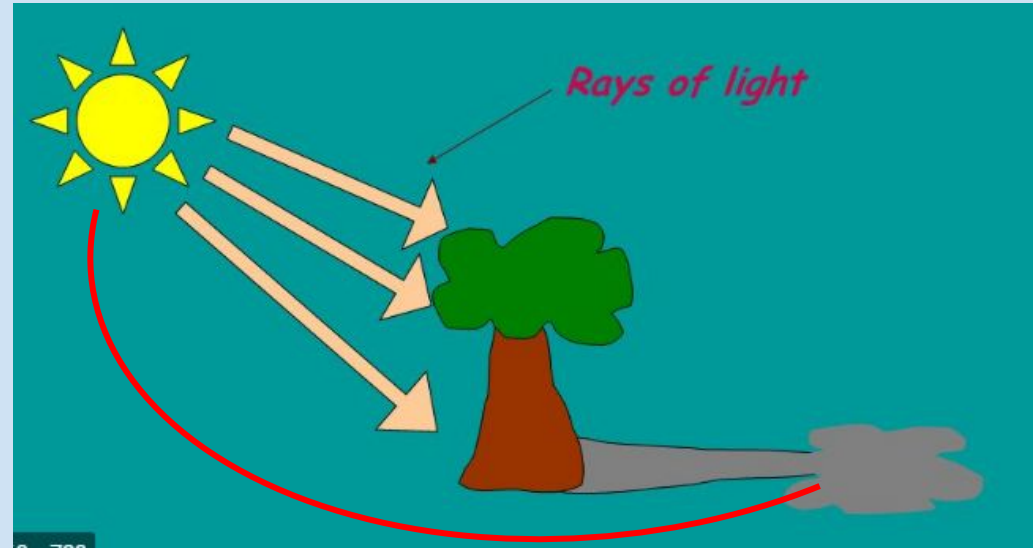
When light is blocked, it can create a shadow.

Some objects are opaque, this means they do not allow light to pass through them.

In the image, we can see the light rays from the sun being blocked by the tree.

Because the tree is a solid object, light cannot pass through it. The light is only on one side of the object.

Therefore a shadow of the object appears.



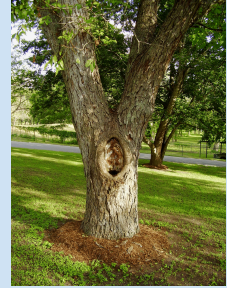
A shadow will ALWAYS appear on the opposite side of the light source. The red line shows this.

S.K.L.O: To understand and explain how shadows are made.

W.S.L.O: To use key scientific vocabulary.

We know that **opaque** objects such as trees do not allow light to pass through them.

Can you think of an example of another opaque object?



Some objects are **transparent**, this means they let light through them. For example, a glass.

What other objects may be transparent?

Objects can also be **translucent**, this is when some light passes through the object, such as tracing paper.

Are there any other examples of objects that let *some* light through them?



S.K.L.O: To understand and explain how shadows are made.

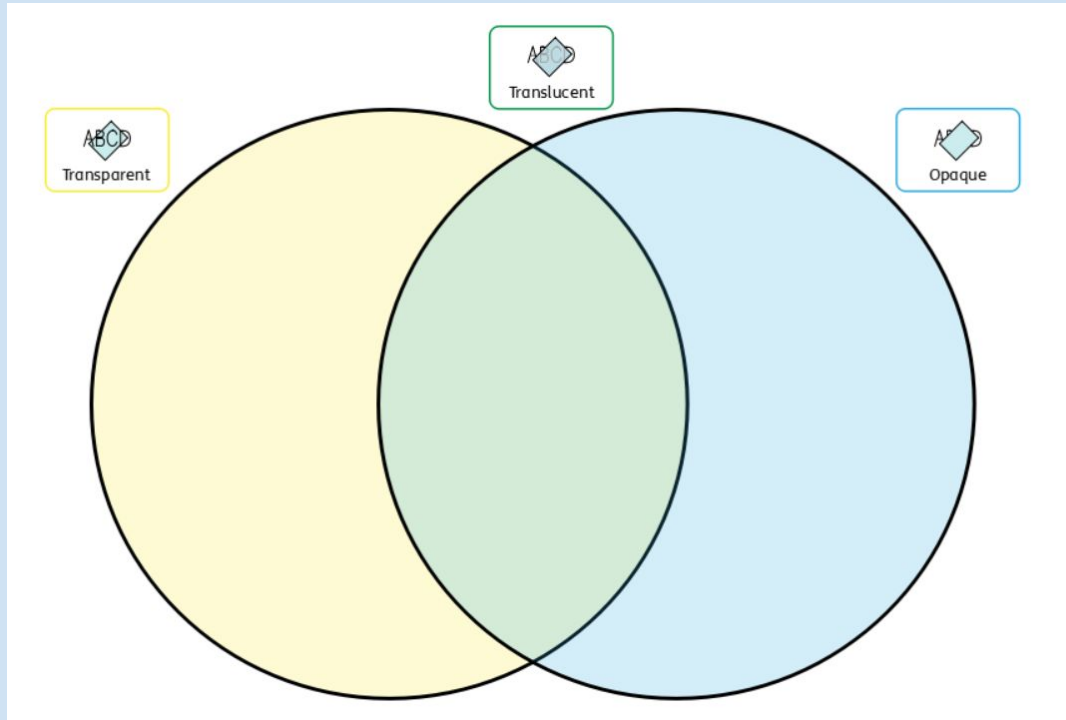
W.S.L.O: To use key scientific vocabulary.




TASK:

Draw a Venn Diagram
and sort the items.

You can draw or list the
items on the diagram.

Remember if the object
lets some light in, it is
translucent.



 wood	 tissue
 card	 bucket
 newspaper	 container
 white	 shirt
	 curtains
 plastic bottle	 sunglasses

S.K.L.O: To understand and explain how shadows are made.

W.S.L.O: To use key scientific vocabulary.

Developing our understanding!

We know that light travels in straight lines from a light source.

In this image the light source is the _____.

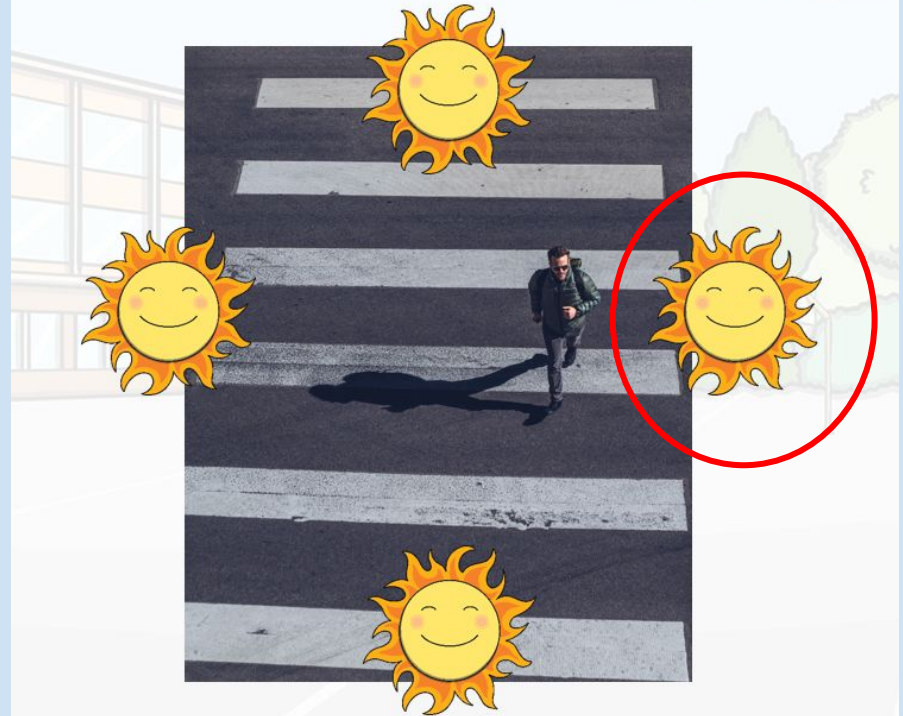
In the image is a person's shadow.

We know people are _____, light cannot pass through them.

A shadow is always on the opposite side to the light source.

We can see the person's shadow is to the left.
Therefore, the direction of the sun is on the _____.

Which Direction Is the Sun?



S.K.L.O: To understand and explain how shadows are made.







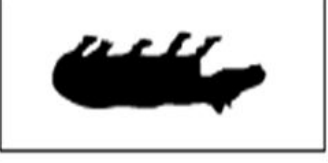

W.S.L.O: To use key scientific vocabulary.

TASK- YOUR TURN!

Look at the images of the shadows.

Identify what objects the shadows belong to.

Copy the drawing of the shadow and add the light source in the correct direction.

	→	
	→	
	→	
	→	

S.K.L.O: To understand and explain how shadows are made.

W.S.L.O: To use key scientific vocabulary.

What do you think?

**Shadows can be changed based on
how near or far a light source is.**

You will find out soon!





You have finished today's lesson, well done!

**Remember to send your work from this lesson to Mr Mitchell
at tmitchell@kingsavenue.lambeth.sch.uk**



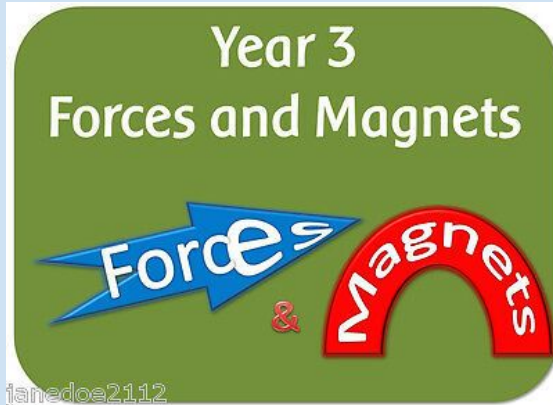
Enjoy the rest of your day!

Thursday 25th February 2021

S.K.L.O: To understand the dangers of sun light and how to protect myself from harm.

W.S.L.O: To present information based on findings.

REMEMBER MORE:



Here are the results of the magnet investigation

Magnet	Distance when attracted paperclip
Medium sized horseshoe magnet	6cm
Large bar magnet	10cm
Fridge magnet	2cm

Which is the strongest magnet?

.....

Which is the weakest magnet?

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Let's quickly say our Science vocabulary!



question



observe



compare



identify



conclusion



classify



biology



chemistry



physics



evidence



interpret



variables

S.K.L.O: To understand the dangers of sun light and how to protect myself from harm.

W.S.L.O: To present information based on findings.

**Our new topic
vocabulary!**

Practise saying our
topic vocabulary.



light



dark



ray



shadow



mirror



bright



dim



eyes



reflect



luminous



opaque



transparent



translucent



ultraviolet (UV)



beam



absorb



infrared



natural



artificial



source

S.K.L.O: To understand the dangers of sun light and how to protect myself from harm.

W.S.L.O: To present information based on findings.

Thinking cap:

Read through each statement and decide if they are true or false.

The hotter the sun feels, the more likely you are to get burnt.

The worst time to sunbathe without protection is between 10AM and 2PM.

Clothes completely protect you from sun light danger.

It isn't possible to get burned by the sun in the shade.

S.K.L.O: To understand the dangers of sun light and how to protect myself from harm.

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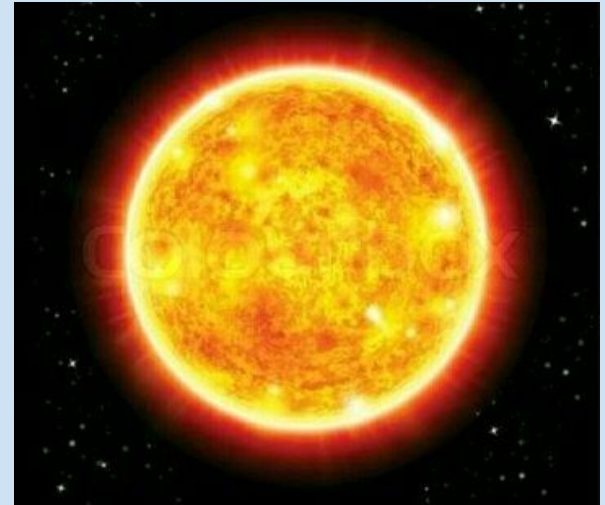
Today we are thinking about a source of light known as the sun.

The sun is a star in our solar system, it sits in the centre and the planets travel around it.

The sphere shaped, hot ball of glowing gas is the closest star to Earth. However, it still takes eight minutes and 20 seconds for the light leaving the sun to reach earth!

The sun is large enough to fit more than a million Earths inside it!

It provides us with light and warmth that makes things grow and helps us to see. However, there are some attributes of the sun that make it dangerous. This is what we are going to explore today.



S.K.L.O: To understand the dangers of sun light and how to protect myself from harm.

W.S.L.O: To present information based on findings.

Discuss:

What things do you do when the sun is shining?

List five activities.



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Hopefully the things you listed make you feel happy, that is one of the benefits of the sun!

You may have said you sunbathe/relax in the warmth.

In the UK, the peak (the highest point) of our summer is during the month of August.

Where we live (London), the average august temperature is 23 degrees celsius.

TINY TASK:

Pick 5 other UK cities from the map to research the average august temperature.



S.K.L.O: To understand the dangers of sun light and how to protect myself from harm.

W.S.L.O: To present information based on findings.

Below are some other effects of the sun.

Discuss: which ones have a positive impact and which ones are not so good.

Causes sunburn.

Helps people make
Vitamin D.

Provides warmth.

Causes wrinkles.

Helps plants make
food.

Makes people feel
happier.

Damages the eyes.

Can cause skin
cancer.

Is a source of light.

S.K.L.O: To understand the dangers of sun light and how to protect myself from harm.

W.S.L.O: To present information based on findings.

Let's look at the dangers of the sun as a light source in more detail.

You may want to make notes throughout the video as it is quite long!

Link: https://www.youtube.com/watch?v=kvAw2N2E_ZM&ab_channel=PeekabooKidz

S.K.L.O: To understand the dangers of sun light and how to protect myself from harm.

W.S.L.O: To present information based on findings.

The sun emits (gives out) rays of light.

We can't see all the types of light that come from the sun.

The visible spectrum is the name for the light that we can see, and is made up of the colours of the rainbow:



Another type of light that the sun emits is called UV light.

UV light is invisible to humans, but we can see and feel its effects.

S.K.L.O: To understand the dangers of sun light and how to protect myself from harm.

W.S.L.O: To present information based on findings.

Some UV rays are blocked by the ozone layer, but most of the UV light from the sun reaches us on earth.

The amount of UV light that reaches us depends on different things.

It is stronger at midday and in the summer.

If there are no clouds there is more UV light.

It also gets stronger nearer to the equator.

The location can make a difference too - water, sand and snow all reflect UV light, making it stronger.

UV light causes sun burn, wrinkles and skin cancer, damages the eyes and can change the colour of some materials.

S.K.L.O: To understand the dangers of sun light and how to protect myself from harm.

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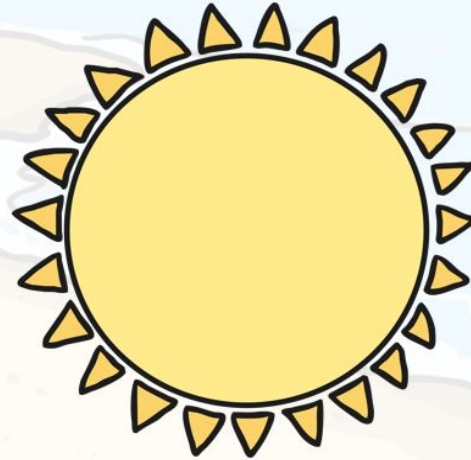
The Eye

If too much light comes through the pupil, it can damage the retina.

It causes pain, so that you instantly close your eyes, or turn away from a bright light.

It is very important that you never look directly at the sun, as the light can damage your eyes very quickly.

Bright lights indoors can also damage your eyes, so you should never look at them, or shine lights into anyone's eyes.



S.K.L.O: To understand the dangers of sun light and how to protect myself from harm.

W.S.L.O: To present information based on findings.

MAIN TASK:

Now you have some information about the dangers of the sun, create an A3 sized information poster about the risks of the sun and include ways to keep safe from them e.g wearing sunglasses.

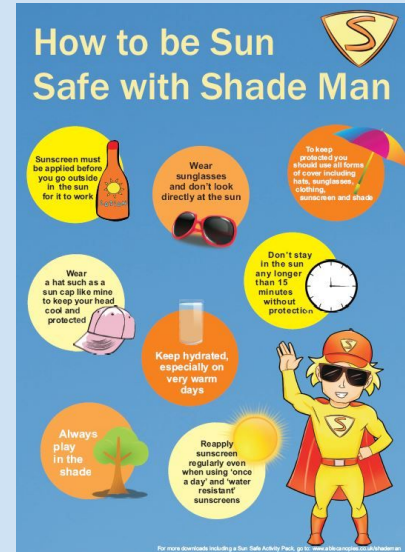
Make it colourful and informative.

If you want to do some more research before starting, visit:

<https://kidshealth.org/en/kids/summer-safety.html>

<https://www.bbc.co.uk/newsround/48609398>

<https://www.funkidslive.com/learn/environment/s-is-for-stay-safe-in-the-sun/>



(if working in a book you can turn your book vertically on a double page, if working on paper stick/tape two pieces together to create an A£ sheet)

S.K.L.O: To understand the dangers of sun light and how to protect myself from harm.

W.S.L.O: To present information based on findings.

Knowing more cap:

Read through each statement and decide again if they are true or false.

The hotter the sun feels, the more likely you are to get burnt.

The worst time to sunbathe without protection is between 10AM and 2PM.

Clothes completely protect you from sun light danger.

It isn't possible to get burned by the sun in the shade.

S.K.L.O: To understand the dangers of sun light and how to protect myself from harm.

W.S.L.O: To present information based on findings.

Knowing more cap:

Read through each statement and decide again if they are true or false.

The hotter the sun feels, the more likely you are to get burnt.

False- it is about the light not the heat!

True- this is when the sun is strongest.

The worst time to sunbathe without protection is between 10AM and 2PM.

Clothes completely protect you from sun light danger.

False- thin clothes can let the light in. Clothes and other measures such as sun creams should be used.

It isn't possible to get burned by the sun in the shade.

True- The shade is absent of light.

S.K.L.O: To understand the dangers of sun light and how to protect myself from harm.

W.S.L.O: To present information based on findings.



Twins



Chronic sun exposure



Reduced sun exposure

This is an example of why keeping safe in the sun is very important.

Do not let this be you!



You have finished today's lesson, well done!

**Remember to send your work from this lesson to Mr Mitchell
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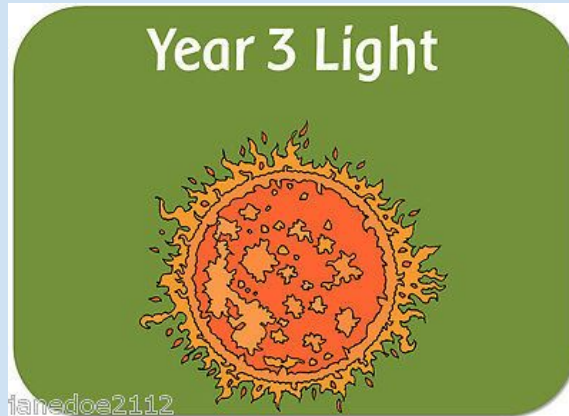
Enjoy the rest of your day!

Friday 26th February 2021

S.K.L.O: To explore the patterns formed when shadows change size.

W.S.L.O: To represent data using a bar chart.

REMEMBER MORE:



Key Vocabulary	
light	A form of energy that travels in a wave from a source.
light source	?
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	?
reflective	A word to describe something which reflects light well.
ray	?

S.K.L.O: To explore the patterns formed when shadows change size.

W.S.L.O: To represent data using a bar chart.

Let's quickly say our Science vocabulary!



question



observe



compare



identify



conclusion



classify



biology



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physics



evidence



interpret



variables





















S.K.L.O: To explore the patterns formed when shadows change size.

W.S.L.O: To represent data using a bar chart.

Our new topic vocabulary!

Practise saying our topic vocabulary.

Make a note of any words you feel you don't know the meaning of yet.

 light	 dark	 ray	 shadow
 mirror	 bright	 dim	 eyes
 reflect	 luminous	 opaque	 transparent
 translucent	 ultraviolet (UV)	 beam	 absorb
 infrared	 natural	 artificial	 source

S.K.L.O: To explore the patterns formed when shadows change size.

W.S.L.O: To represent data using a bar chart.

Recap chat- no writing needed!

Light travels in _____ lines from a _____ of light, which bounces off an object. We can see the object because the _____ enters our eyes. Wood and cardboard are _____ objects, which light cannot travel through. _____ is a _____ material which allows light to pass through. Tissue paper is _____ which will let some light travel through. When an object blocks out the _____, a _____ is formed. Shadows are _____ at midday and _____ at the end of the day.

light opaque longest shadow
transparent translucent source
straight glass shortest

S.K.L.O: To explore the patterns formed when shadows change size.

W.S.L.O: To represent data using a bar chart.

Recap chat- no writing needed!

Light travels in straight lines from a source of light, which bounces off an object. We can see the object because the light enters our eyes. Wood and cardboard are opaque objects, which light cannot travel through. Glass is a transparent material, which allows light to pass through. Tissue paper is translucent, which will let some light travel through. When an object blocks out the light, a shadow is formed. Shadows are shortest at midday and longest at the end of the day.

S.K.L.O: To explore the patterns formed when shadows change size.

W.S.L.O: To represent data using a bar chart.

From our learning this week we have learnt that a shadow occurs when an opaque object is lit by a light source.

This happens because there is no light present on the other side of the object.

We know a shadow is always on the opposite side to its light source.

Today we are going to think about how shadows change, whether that is naturally or through manipulation.



S.K.L.O: To explore the patterns formed when shadows change size.

W.S.L.O: To represent data using a bar chart.

A natural light source is one that occurs as part of its function or as a reaction to something.

The sun is a natural light source.

The sun can create a shadow on any solid opaque object.

Watch this video:

https://www.youtube.com/watch?v=yJo674TYGMS&ab_channel=NoticeSomething

TINY TASK: Write a brief explanation of what you think is happening.



S.K.L.O: To explore the patterns formed when shadows change size.

W.S.L.O: To represent data using a bar chart.

The video displayed a shadow created by the sun from a pole that was stood in the grass.

However, as the time progressed the shadow moved.

This occurred because the pole was exposed to the light source from different angles as the day went on.

This is not because the sun moved, but because in fact the earth is turning on its axis.

Yes, as you sit completing this lesson the earth is slowly turning! But we cannot feel this.

Therefore, this change in shadow was caused naturally.

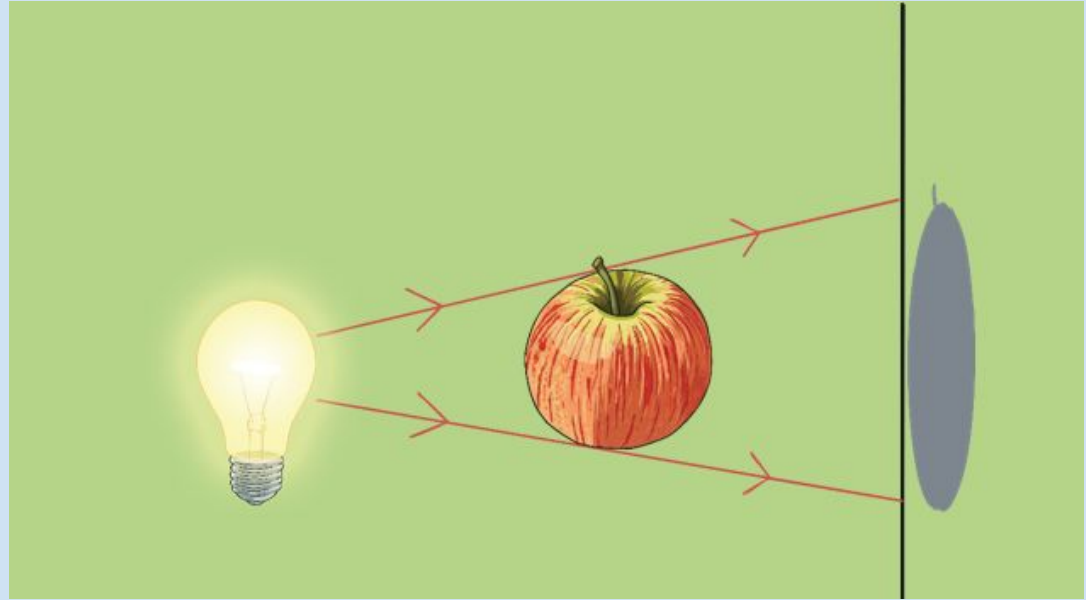
S.K.L.O: To explore the patterns formed when shadows change size.

W.S.L.O: To represent data using a bar chart.

Take a look at the shadow of this apple.

What do you notice about the size of it?

Predict why you think this is.



S.K.L.O: To explore the patterns formed when shadows change size.

W.S.L.O: To represent data using a bar chart.

You are going to investigate how a shadow can change size.

You will do this by picking one opaque object (such as an apple) and using a torch as a light source. You will also need access to a small area of clear wall.

Method:

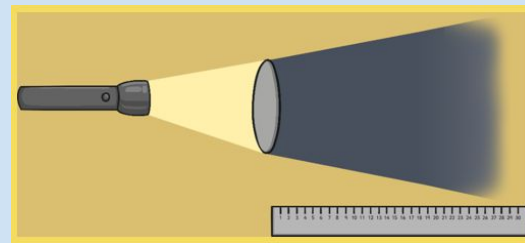
Set the object on a flat surface near a wall.

Project the torch onto the object.

Throughout the investigation you will increase the distance between the light source and the object in 10 cm increments. This will be up to 60cm (the size of two standard rulers).

After you've increased the distance, you can use a ruler to measure the size of the shadow created.

Record your findings in note form initially and then you will transform them into a bar chart.



S.K.L.O: To explore the patterns formed when shadows change size.

W.S.L.O: To represent data using a bar chart.

TASK 2

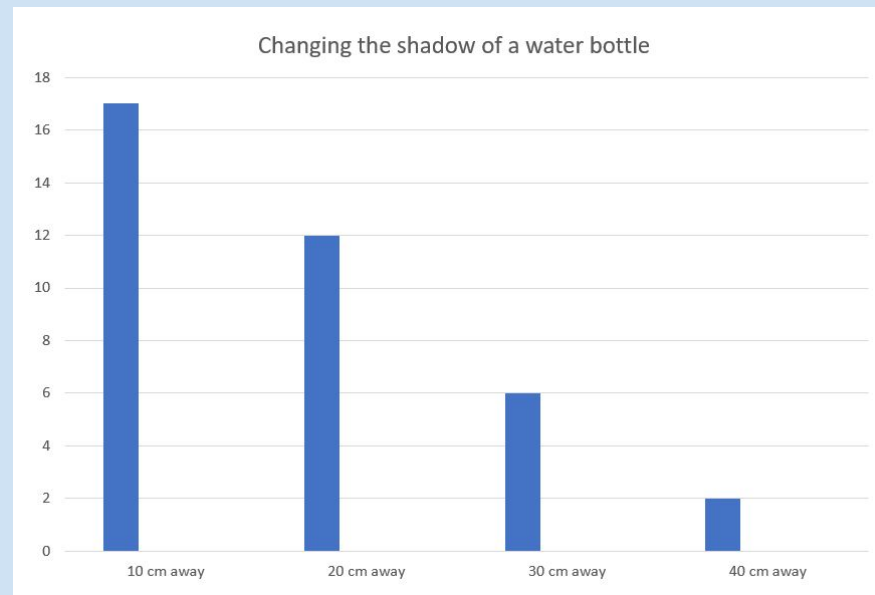
Time to convert your findings into a bar chart.

Each of your bar charts will vary as you are using different sized objects.

Along your X axis (bottom) have your centimetres away from light source increments e.g 10 cm away, 20 cm away, 30 cm away.

On your Y axis (left) have the size of the shadow. Go up in sensible increments according to your chosen object.

For example with an apple I may go up by 2cm each time. This wouldn't work for a larger object.



S.K.L.O: To explore the patterns formed when shadows change size.

W.S.L.O: To represent data using a bar chart.

TASK 3: Answer the questions below about your investigation.

Look at the results you have collected. Do you notice a pattern? Does the size of the shadow change when the distance between the object and the light source changes?

Explain what you notice:

Are there any results that do not fit your pattern? _____

If there are, can you think why? _____

Make a concluding statement to explain what you have found out:

I have found out that _____

S.K.L.O: To explore the patterns formed when shadows change size.

W.S.L.O: To represent data using a bar chart.

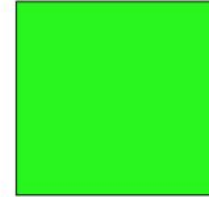
You have completed your light topic, well done!

You have explored:

- *What light is and some of its uses.*
- *How light reflects on surfaces.*
- *How shadows are created.*
- *Some of the dangers of light.*
- *How shadows can be manipulated.*

Go through each L.O from the week again and self assess your work from this week.

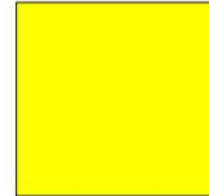
Traffic Light Self-assessment



I have met my learning objective!

I can.....

I feel confident to move on to my next step...



I am still working towards my learning objective!

I need more time to practise my skills...



I haven't met my learning objective.

I need help or explanation from an adult to move my learning forward...



You have finished today's lesson, well done!

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Enjoy the rest of your day!