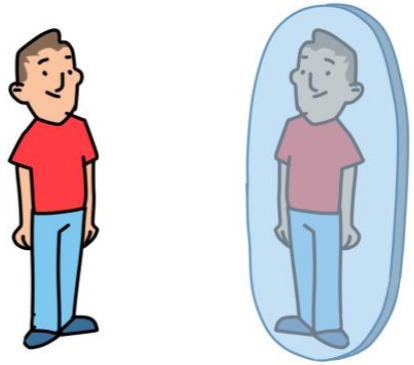
Wednesday 11th February
Morning Challenge

Mirrors are really good at reflecting light because they have a **smooth**, **glass surface** with a **shiny metallic backing**. Humans first made simple mirrors out of **polished obsidian** (black, shiny rock) about 600BC. Then they produced more sophisticated mirrors out of polished metals, e.g. copper, bronze, silver, gold & lead. These mirrors were small because they were **relatively heavy**.

In the 14th century, mirrors similar to those used today began to be made, but the glass was of poor quality & adding the molten metal as backing often broke the glass.

So mirrors could only be bought by wealthy people.
Modern mirrors are made by **silvering**, spraying a thin layer of **silver or aluminium** on the back of a sheet of glass.

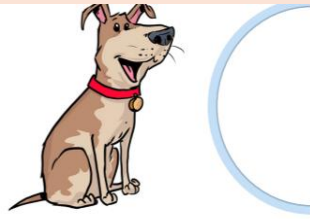


There are plane (flat) and curved mirrors.

In a **plane mirror**, the image is the same size as the object and the same way up. But it is inverted ('back-to-front').

There are two types of curved mirrors. A mirror that bulges outwards is called a **convex mirror**. Convex mirrors show things the right way up and are usually smaller.

A mirror that bulges inwards is called a **concave mirror**. How you appear in a concave mirror depends on how close you are to it. From close up, you look bigger and the right way up. Further away, you look smaller and upside down.



convex mirror

concave mirror

1. Are mirrors translucent, transparent or opaque?
2. The image in a plane mirror will be _____.
3. A mirror that bulges outwards =
4. A mirror that bulges inwards =
5. Alphabet symmetry

Alphabet Symmetry

Are any of the letters in your name symmetrical?
Write your name below and draw any lines of symmetry on them.

Wednesday 11th February

TBAT: spell words from word families based on common words.

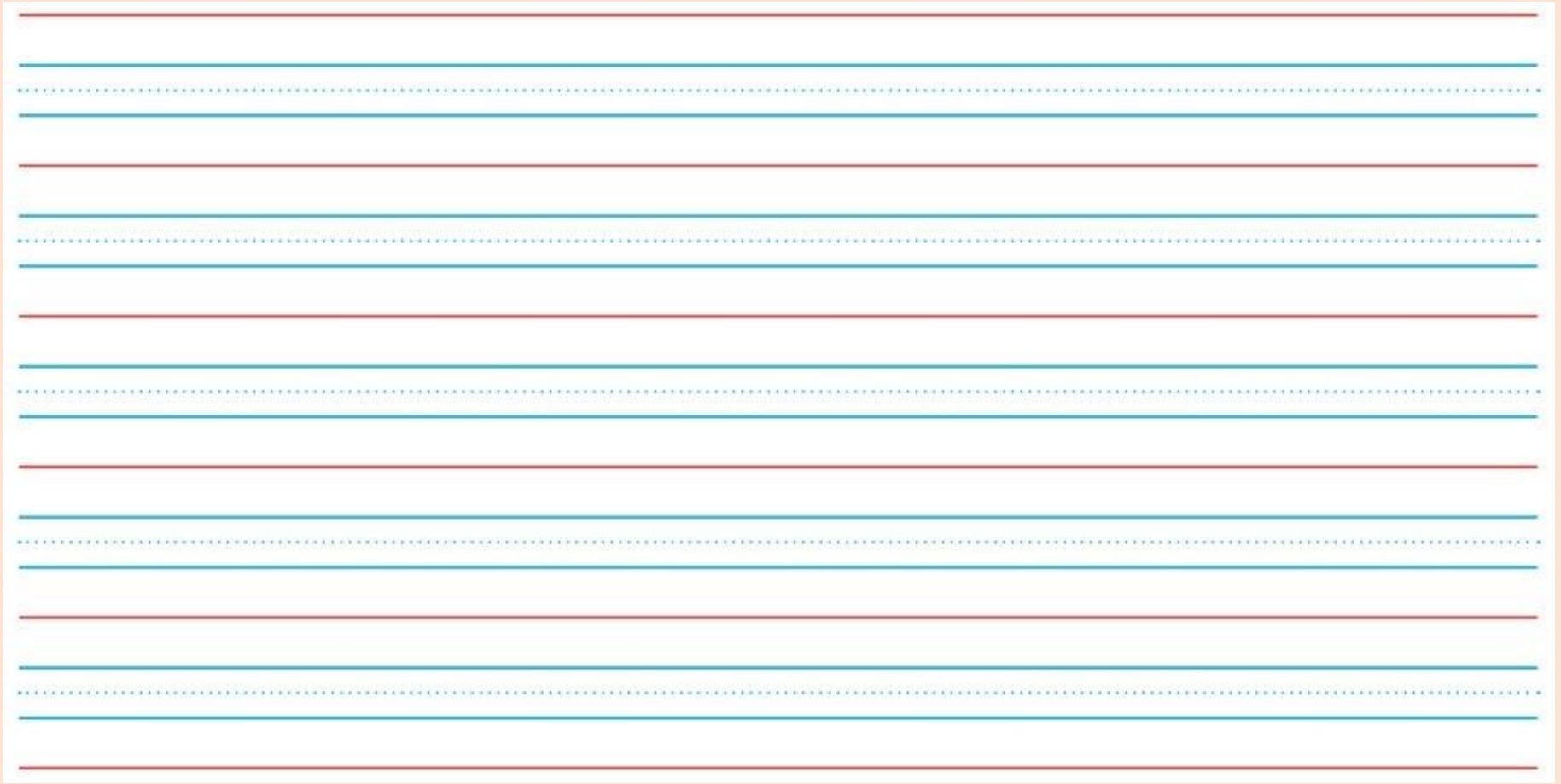
Can you use the clues to unscramble the words below?

1. To send or pass something from one person, place, or thing to another. **t*sanrtim***
2. To give something in for consideration, approval, or marking. **t*ibmus***
3. To promise or pledge to do something. ***mtocim***
4. A group of people chosen to carry out a task or make decisions. ***eetmtoci***
5. A promise or responsibility that you must not break. ***nttimcmoem***

Wednesday 11th February

TBAT: spell words from word families based on common words.

1. The team had to _ _ _ _ _ _ _ to practising every day if they wanted to win.
2. Our class _ _ _ _ _ _ _ _ _ _ met to decide how to spend the charity money.
3. Bees _ _ _ _ _ _ _ _ _ messages to each other by doing special dances.
4. Please _ _ _ _ _ _ _ your finished work before lunchtime.
5. Her _ _ _ _ _ _ _ _ _ _ _ _ to helping others made her a great role model.



Challenge – Write a sentence including a spelling in the past perfect tense.

11.02.26

TBAT: multiply decimal numbers by two digits.

A box holds 16 chocolates. How many full boxes can be made from 827 chocolates?	A school of 683 people are going on a visit to the coast. Each coach holds 46 people. How many coaches are needed?	A school has £572 to purchase new sports equipment. If a cricket set costs £58, how many sets can the school purchase?
_____	_____	_____

11.02.26

Daily 10 - Mental Maths Challenge - Topmarks

TBAT: multiply decimal numbers by two digits.

3 in 3

1. 5% of 90?

2. What are the factors of 16 and 20? What is the highest common factor?

3. 465.374 + 12.45 =

Challenge – What's the same and what's different?

a) 60% of 240 =___

b) 60% of ___ = 240

c) ___% of 240 = 60

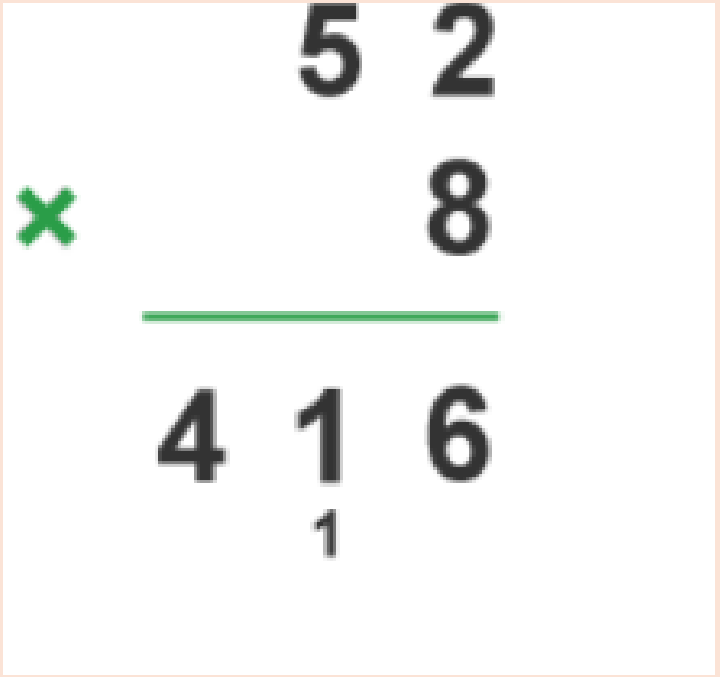
11.02.26

TBAT: multiply decimal numbers by two digits.

Arcadia has answered 5.2 x 8 = 416

Here is her working out.

Do you agree? Explain your reasoning.



11.02.26

TBAT: multiply decimal numbers by two digits.

1.

		1	6	1
x			2	3

2.

		2	3	2
x			2	6

3.

		6	1	4
x			1	8

Challenge – Reece earns £16.54 every week doing a paper round.
How much money will he earn in 14 weeks?

11.02.26

TBAT: multiply decimal numbers by two digits.

Partner discussion -

What is the difference in price between a group of 12 people going to the cinema or bowling?

The table shows the cost per person for different activities.

Activity	Cost
cinema	£4.75
bowling	£5.20
ice skating	£4.90

Challenge – If Kevwe and Percy wanted to do all three activities, how much change would they get from £30?

11.02.26

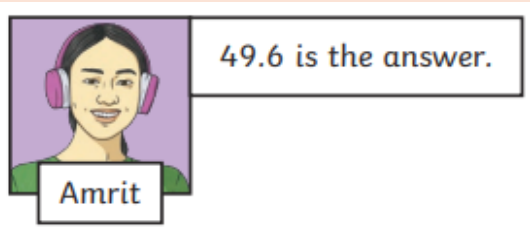
TBAT: multiply decimal numbers by two digits.

1. 254.65 x 45 =
2. 607.6 x 12 =
3. _____ = 45.67 x 11
4. _____ = 56.890 x 19
5. 5763.09 x 28 =
6. 1020.9 x 23 =

RP – Riley has twelve lots of £15.67.
William has eleven lots of £16.02.
Who has more money?
What is the difference between their savings?

Challenge

Amrit is working out 4.02 × 12. Do you agree with her answer? Explain why.



Mastery Challenge

Is this statement true or false? Prove it!

8.05 × 14 > 135.2

6.3 ×1 2 = 14 × 3.15

7.32 × 17 < 8.04 × 16

9.6 × 15 < 18 × 3.12

Mastery with Greater Depth -

Use the number cards to create a calculation with an answer that is greater than 30 but less than 40. Each card can only be used once. Find all possibilities.

___ . ___ ___ x 7

4	8	1	5

Wednesday 11th February

TBAT: understand Tier 2 vocabulary in a poem and apply it in original sentences.

3 in 3

1. Tick **one** box in each row to show whether the underlined words are a **main clause** or a **subordinating clause**.

Sentence	Subordinating clause	Main clause
After we changed into PE kits, we played rounders.		
We ran as fast as we could although it was very hot.		
It was nearly dark when we finished the game.		
Once we had packed away, the other team left.		

2. Insert a **comma** and a **pair of brackets** in the sentence below so that it is punctuated correctly.

After wandering around the museum we watched a film set in

Germany about life during the war.

3. Write a **command** that could be the first step in instructions for painting a picture.

Remember to punctuate your sentence correctly.

Challenge – How many synonyms can you think of for calm?

Wednesday 11th February

TBAT: understand Tier 2 vocabulary in a poem and apply it in original sentences.

Work in pairs to generate synonyms or more precise alternatives.

Quiet

Calm

Dark

Wednesday 11th February

TBAT: understand Tier 2 vocabulary in a poem and apply it in original sentences.

Change the sentences from **simple past** to **past progressive.**

The tranquil fields rested quietly under the stars.

The tranquil fields **were resting** quietly under the stars.

1. A moonlit path guided us through the open countryside.
2. The silent woods felt calm as we walked past them.
3. The mysterious darkness hid the shapes beyond the hedgerows.

Challenge – Choose one of the sentences and rewrite in past perfect.

Wednesday 11th February

TBAT: understand Tier 2 vocabulary in a poem and apply it in original sentences.

Explain the meaning of each phrase.

And the far-off stream is dumb

Twice or thrice his roundelay

Wednesday 11th February

TBAT: understand Tier 2 vocabulary in a poem and apply it in original sentences.

Match each word to its definition.

Dumb

Roundelay

Belfry

Rarely

Wit

Thatch

A short, simple song that is repeated.

The tower of a church where the bells are kept.

Silent; making no sound.

A person’s senses or powers of thinking.

Very nicely; beautifully; excellently. (This is different from the modern meaning "not often”)

A roof made of straw or reeds, common in older country houses.

A person’s senses or powers of thinking.

Challenge – Find synonyms for each word.

Wednesday 11th February

TBAT: understand Tier 2 vocabulary in a poem and apply it in original sentences.

How many adjectives or descriptive phrases can you think of for these images?

Wednesday 11th February

TBAT: understand Tier 2 vocabulary in a poem and apply it in original sentences.

Write a short descriptive paragraph about the countryside at dusk using **3 or more** of today's words correctly.

Challenge -

Revise descriptive paragraph to include at least two poetic devices, such as:

- personification
- alliteration
- a simile or metaphor
- repetition

Dumb

Roundelay

Belfry

Rarely

Wit

Thatch

11.02.26

After Lunch Booster (10 minutes)

28,257 + 111,290=

999,872 – 20,829 =

2458 x 3 =

364 x 29 =

2346 ÷ 6 =

15,317 ÷ 17 =

8/9 ÷ 7 =

3/9 ÷ 3 =

Wednesday 11th February

KQ – Can I explore the size, colour and features of a shadow?

Quick Quiz

1 Light travels in _____ lines. (Fill in the blank)

2 Which of these are light sources? (Tick **2** correct answers)

- ☐ The Moon
- ☐ The Sun
- ☐ mirror
- ☐ candle

3 In the eye, the opening which allows light to enter is called the _____ . (Fill in the blank)

4 When light is reflected off an object it... (Tick **1** correct answer)

- ☐ is absorbed by it
- ☐ changes direction
- ☐ travels through it

5 What is a periscope? (Tick **1** correct answer)

- ☐ a tool used to measure angles
- ☐ a tool used to see over things and round corners
- ☐ a tool used to look at very small objects
- ☐ a tool used to look at objects very far away

6 Match the property to the description. (Write the correct letter in each box)

a	opaque
b	transparent
c	translucent

	lets some light travel through
	does not let light travel through
	lets light travel through

Keywords

shadow	A **shadow** is formed when an opaque object blocks out the light.
light source	An object that is a **light source** produces its own light.
opaque	Light cannot pass through objects that are **opaque**.
features	**Features** make up the structure, form or appearance of something.
reflection	**Reflections** of objects are images that form when light bounces off a shiny surface.

Wednesday 11th February
KQ – Can I explore the size, colour and features of a shadow?

Scientific Question

How do shadows change?

How is a shadow made? Explain to your partner. **Discuss**

How does a shadow change throughout the day?
Justify.

Challenge – without any source of light at all, is it possible to make a shadow? Explain.

Wednesday 11th February

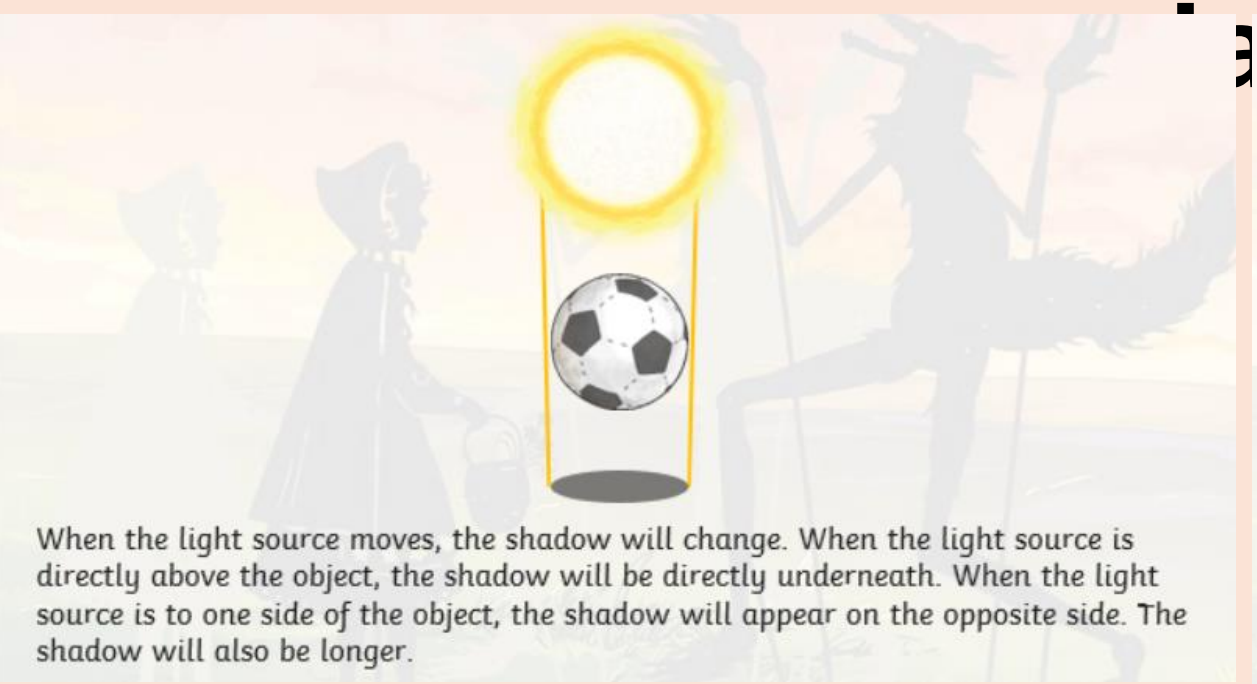
KQ – Can I explore the size, colour and features of a shadow?

Science KS2: How are shadows made? - BBC Teach

Wednesday 11th February

KQ – Can I explore the size, colour and features of a shadow?

How do shadows change during the



When the light source moves, the shadow will change. When the light source is directly above the object, the shadow will be directly underneath. When the light source is to one side of the object, the shadow will appear on the opposite side. The shadow will also be longer.

The oak trees in Eva's garden blocked sunlight and caused a shadow. When Eva sat down in the garden, it was midday so the sun appeared to be directly overhead. This meant the shadow was shorter. As the day went on, the sun appeared to be lower in the sky. This angle meant the oak trees cast a longer shadow.

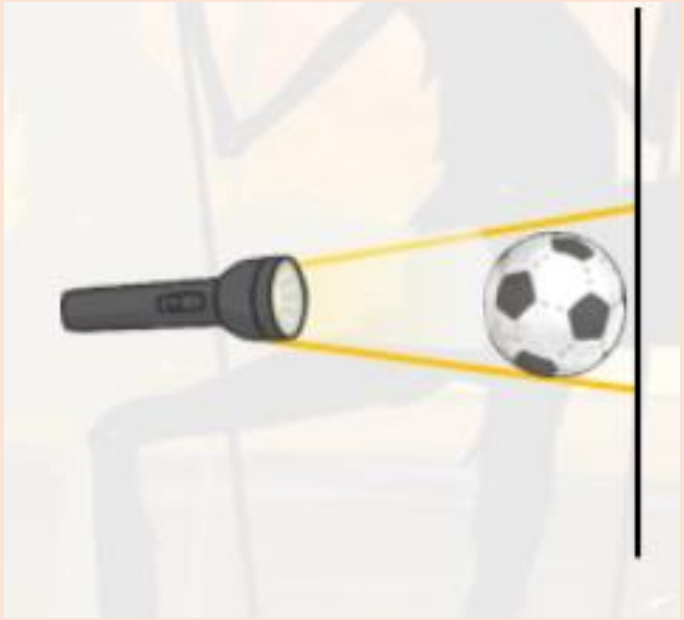
Wednesday 11th February

KQ – Can I explore the size, colour and features of a shadow?

Draw the shadow that would be created here.

B

G



Challenge – how large would a shadow be at mid-day?

shadow of a person

Shadows are everywhere.

But what are they?

Light travels away from a **light source** until it meets an object

Shadows are dark shapes that form when some or all of the light is blocked by an object.

Different materials and objects let different amounts of light travel through them.

Some of them let all light travel through them.

Some of them let some, but not all light travel through them.

Some of them do not let any light travel through them.

I can’t remember the words used to describe these physical properties.

Jacob

Can you?

Shadows!

The object must be **opaque** or **translucent** to make a shadow. A **transparent** object will not make any shadow, as the light will pass straight through it.

Opaque

Opaque materials do not let any light pass through them. They **block** the **light**. **Wood** is an example of an opaque material.

Translucent

Translucent materials let **some light through**, but they scatter the light in all directions so that you cannot see clearly through them. **Tissue paper** is an example of a translucent material.

Transparent

Transparent materials let the light pass through them in **straight lines** so that you can see clearly through them. **Glass** is an example of a transparent material.

Can you think of any other examples of opaque, translucent or transparent materials or objects?

Shadows!

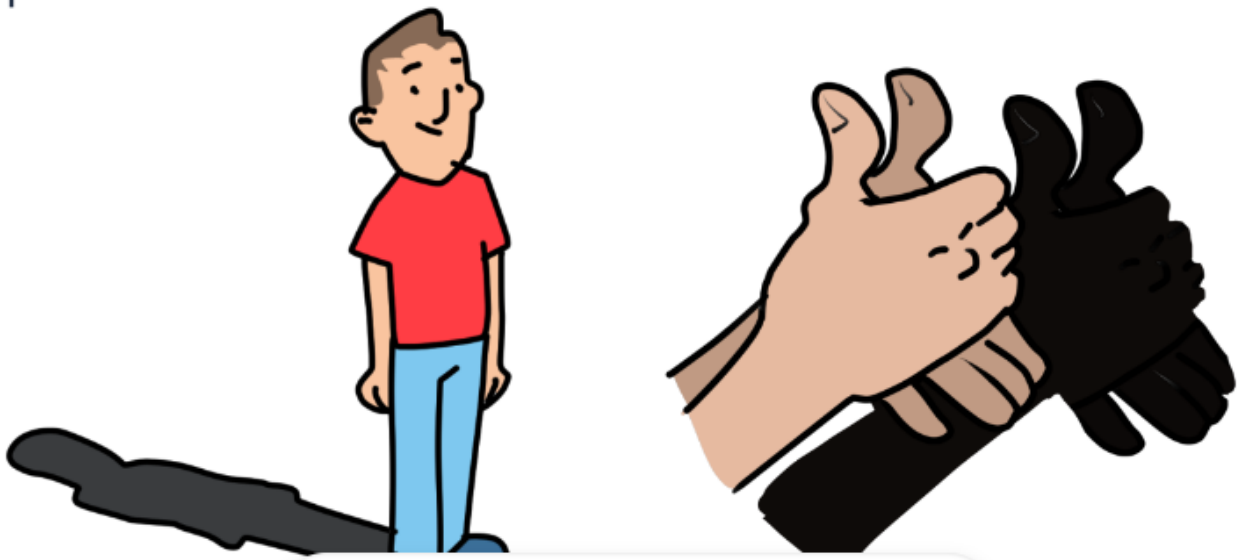
A shadow is made when an **object blocks light**. The shadow appears on the side of the object furthest from the **light source**. The object must be **opaque** or **translucent** to make a shadow. A **transparent** object **will not make any shadow**, as the light will pass straight through it.

Opaque objects make dark shadows. **Translucent** objects make faint shadows.

Shadows!

Shadows don't have details on them as objects do. It is just a space that light cannot get to. **Our shadows don't have our face details on them!**

However, a shadow is always the **same shape** as the **object that casts it**. This is because when an object is in the path of light travelling from a light source, it will **block** the light rays that hit it while the rest of the light can continue travelling. Therefore, the shadow it casts is exactly the same shape.



Why do our shadows chase us?

If the source of the light is **moving**, the direction of the light rays that fall on the object also **changes**. This movement of light from the source makes the **shadow move**. When the object is moving, the shadow moves as it is formed where the **moving object blocks light**.

Wednesday 4th February

KQ – How does changing the angle of a mirror change the angle of reflection?

Task 1:

Exploring shadows

Use a torch, or natural sunlight, to cast shadows and make notes about what you observe.

For each shadow, record:

- its size
- its colour
- anything else interesting

Work like a scientist to explore different transparent, translucent and opaque objects and materials.

Challenge

Can a shadow show details of an object, or only its outline?

Mastery

Maria drew a picture of herself and her shadow. She then discovered more about shadows and realised she had made five mistakes. She put a number next to each mistake on her picture.

The Sun is in front of me. **(1)**

My shadow is reflected on the ground. **(2)**

1. Mistake number 1 was that she drew the Sun in front of her. Where would the Sun have to be to make her shadow in front of her?

2. Mistake number 2 was to write that the shadow is **reflected**. Explain how a shadow is formed. 3

4

3. Look again at the mistakes labelled 3, 4 and 5. Describe what Maria **should** have drawn on the labels 3, 4 and 5. 5

At **3** she should have drawn

At **4** she should have drawn

At **5** she should have drawn

Wednesday 4th February

KQ – Can I investigate how changing the angle of a mirror changes the angle of reflection?

Exit Quiz

1 What do shadows look like? (Tick **2** correct answers)

- ☐ white shapes
- ☐ shapes which are the same colour as the object making them
- ☐ dark shapes
- ☐ shapes showing no features of the object
- ☐ shapes showing the same features as the object

2 Which of these would show the features of the object causing it? (Tick **1** correct answer)

- ☐ reflection
- ☐ shadow

3 Which type of objects do not let light to travel through them? (Tick **1** correct answer)

- ☐ transparent
- ☐ translucent
- ☐ opaque

4 What makes a shadow? (Tick **1** correct answer)

- ☐ a shadow is made only by the Sun
- ☐ a shadow is made when light shines out of an object
- ☐ a shadow is made when light is stopped or blocked by an object

Wednesday 11th February

TBAT: explain the positives our school community.

This Is My Place

Each year, there is a week dedicated to Children's Mental Health. The theme of the week changes each year.

Where would you say, '**This is my place**'?

This year, the theme is:

This Is My Place

The theme was chosen to support the systems around children and young people to help them feel they belong. A sense of belonging can improve mental health, relationships and overall wellbeing.

Take some time to think about when you feel a sense of belonging and feel part of an inclusive and nurturing environment.

Wednesday 11th February

TBAT: explain the positives our school community.

This Is My Place

Where we feel we belong can be different for each person.

Please remember to be respectful of people's opinions and show kindness to yourself and others.
Places people may feel they belong might include:

- a home
- a classroom
- a school
- local communities
- religious communities
- youth groups
- sporting communities

Wednesday 11th February

TBAT: explain the positives our school community.

Belonging

Belonging can also have a wider effect on people.

Being able to say, "This is my place," can:

- develop friendships and support networks;
- support people to contribute to the local community and wider world;
- empower people to do their best and support others to do the same in their network and communities.

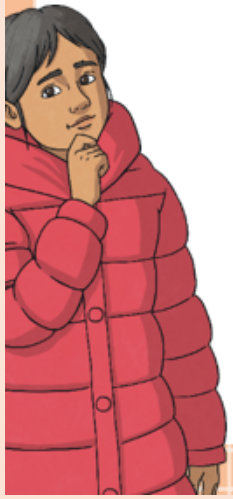
Wednesday 11th February

TBAT: explain the positives our school community.

Where Is Your Place?

Take some time now to think about yourself.

- Where do you feel comfortable?
- Who helps you to feel comfortable?
- Where do you feel able to express your opinions?
- When you feel comfortable and included, how might you behave?



Wednesday 11th February

TBAT: explain the positives our school community.

This Is My Place

When people spend time in an inclusive, supportive environment, they may experience comfortable feelings and effects.

These effects will be different for people but could include:

- improved wellbeing
- a growth mindset
- resilience
- increased self-confidence
- empathy and understanding of self and others
- increased self-awareness
- building trusting and helpful relationships
- opportunities to share and express emotions and opinions
- developing respect for our own and other people's opinions

Wednesday 11th February

TBAT: explain the positives our school community.

Support Network

Having a sense of belonging can be boosted when people have a support network that allows them to be themselves.

Everyone's support network will again be different and unique to that person. A support network may often include peers and trusted adults.

These trusted adults might include:

- parents
- carers
- teachers
- coaches
- community leaders
- family members
- grandparents
- school staff
- neighbours

Wednesday 11th February

TBAT: explain the positives our school community.

We are going to create an 'Our school community' collage. Drawings, words and pictures.

Think about:

- What does our school offers for everyone?
- How do we support each other?
- Who would we talk to?