National Curriculum:

Pupils should be taught to:

- recognise that they need light in order to see things and that dark is the absence of light
- notice that light is reflected from surfaces
- recognise that light from the sun can be dangerous and that there are ways to protect their eyes
- recognise that shadows are formed when the light from a light source is blocked by an opaque object
- find patterns in the way that the size of shadows change

Working Scientifically:

During years 3 and 4, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:

- asking relevant questions and using different types of scientific enquiries to answer them
- setting up simple practical enquiries, comparative and fair tests
- making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers

- gathering, recording, classifying and presenting data in a variety of ways to help in answering questions
- recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables
- reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions
- using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions
- identifying differences, similarities or changes related to simple scientific ideas and processes
- using straightforward scientific evidence to answer questions or to support their findings.

Context

In science, **light** helps us understand **how we see** , **how shadows form** , and **how reflections work** . In *The Winter's Tale*, light connects to **seeing clearly, truth, time, and change** ~ ideas that also link to scientific thinking.

Darkness ~ Absence of Light

At the beginning of the story, King Leontes makes poor decisions because he does not 'see' the truth clearly. In science, pupils learn that **darkness is the absence of light** and that

without light, objects cannot be seen. This supports pupils' understanding that misunderstanding can occur when information or evidence is missing.

Reflection ~ Revealing the Truth

As the story progresses, the truth about Hermione is gradually revealed. This links to the scientific concept of **reflection** , where light bounces off reflective surfaces such as mirrors. Pupils explore how some materials reflect light better than others, just as some situations allow the truth to be seen more clearly.

Shadows ~ Hidden and Blocked Light

Jealousy and secrecy in the story create emotional 'shadows. Scientifically, pupils investigate how **shadows are formed when light is blocked by an opaque object** . By observing how shadows change, pupils learn that shadows depend on the position of the light source.

The Sun ~ Light, Warmth and Change

The movement from winter in Sicilia to spring in Bohemia symbolises renewal and hope. This is linked to learning about **the sun as a natural light source** , providing light and warmth. Pupils observe how the sun affects shadows over time, reinforcing ideas of change, patterns and cycles.

Year 3- Light

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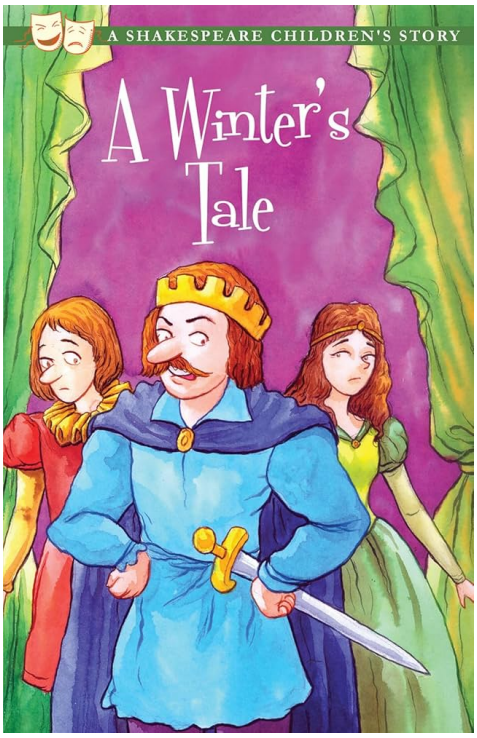

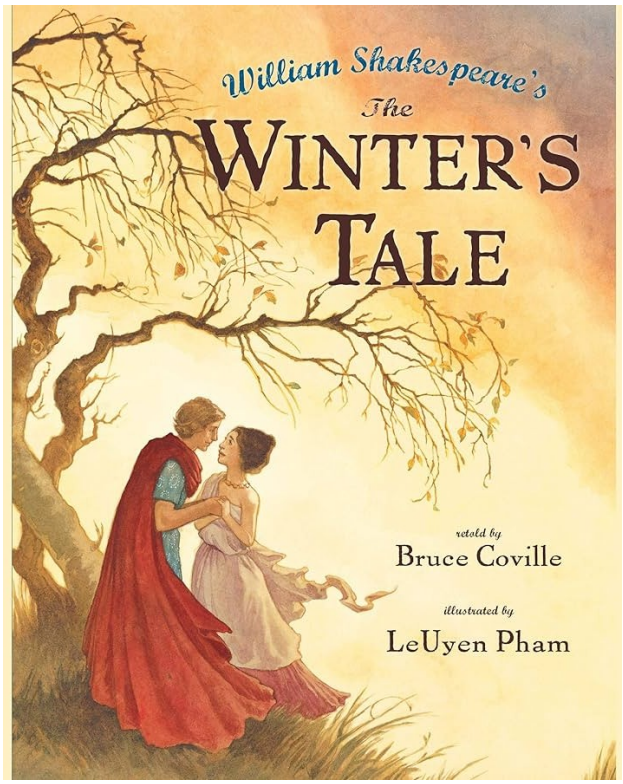

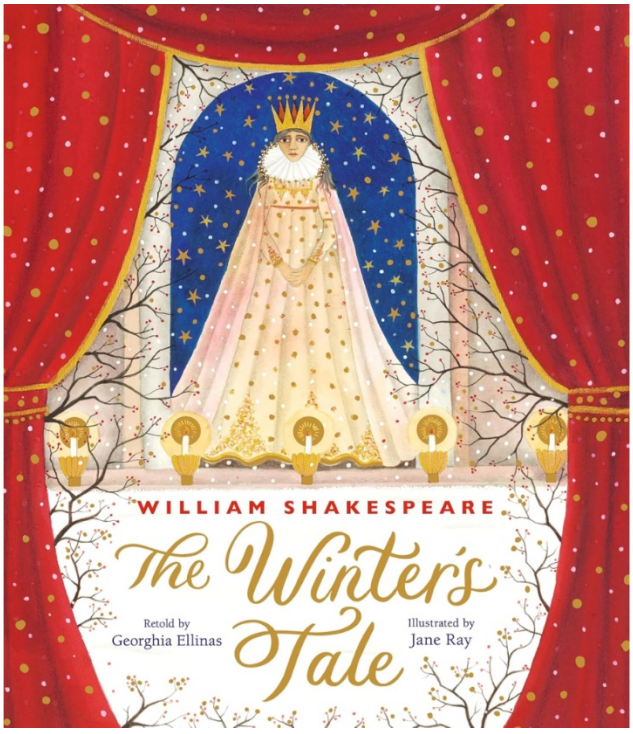

Lesson Sequence: LIGHT (Year 3)

Lesson 1: What Is Light?

Science Focus: Light is needed to see things

Literary Link: Darkness, suspicion, and misunderstanding in *A Winter's Tale*

National Curriculum (Y3)

- Recognise that **light is needed to see things** and that **dark is the absence of light**

Working Scientifically

- Asking questions
- Making observations
- Gathering and recording data

Starter (5 mins)

- Darken the room slightly.
- Show an object briefly, then turn off the light.
- Ask: *"Can you still see it? Why/why not?"*

Year 3- Light

Lesson Outline

- Read a short-adapted extract where Leontes makes false accusations. (Source 1)
- Discuss: *What happens when we don't "see clearly"?*
- Complete activity 2 sheet below. Focus on purpose, equipment and prediction. Write in bullet points or chn to write straight into their books with headings.
- Explore a **dark box** with objects inside~children observe what they can/can't see.
- Introduce torches and repeat observations. Complete activity 3

Source 1 - Adapted Extract: Leontes' False Accusations

Leontes speaks to his court, suspicious and angry.

Leontes: "I cannot believe it! My queen, Hermione, has been untrue to me! She loves another while I am her husband. I see it in her eyes—I feel it in my heart!"

Camillo (loyal courtier): "Your Majesty, I do not think this is true. She is loyal and good."

Leontes: "No! I will not be fooled. I will punish her for her betrayal!"

Hermione enters, calm and dignified.

Hermione: "Leontes, you are mistaken. I have done nothing wrong. My heart belongs only to you and to our child."

Leontes: "I do not believe your words! You have lied to me, and now all shall see your guilt!"

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Activity 2- I can explore the need for light activity.

Purpose (This is what we want to find out.)

Equipment (This is what we will use.)

Prediction (This is what we think will happen.)

Children predict what they will see inside the box and learn that without light, objects remain unseen. As they shine a torch through the holes, they gradually discover the outlines and colours of the objects. The activity encourages systematic observations and recording findings using simple scientific language. Discussions throughout the activity help reinforce concepts such as the source of light and the absence of light in darkness. The conclusion emphasizes that darkness is simply the absence of light, and the more holes made, the clearer the objects become.

Introduce torches and repeat observations.

- https://www.bbc.co.uk/bitesize/articles/zmbvgwx show video and explain what is light.

Assessment

- Watch Tigtag video and children to write a short explanation. Chn can add diagrams.
- Can pupils explain that light is required to see?
- https://www.youtube.com/watch?v=1PsHHKwtXQU

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Year 3- Light

Activity 3

Learning outcome: I can explore the need for light to see things

image courtesy of: https://www.dltk-teach.com/alphabuddies/mhabitat.html

Can the object be seen with very little light?	Can the object be seen with more light?	What might the object be?	Were you correct? Why? Why not?

Explain why some objects were easier to see than others.

Try to use these scientific words in your explanation: material, shiny, dull, bright, surface, light, dark

Lesson 2: Reflective Surfaces Light Bounces

Science Focus: Light is reflected from surfaces

Literary Link: Truth being revealed; Hermione's innocence

National Curriculum

- Notice that **light is reflected from surfaces**

Working Scientifically

- Fair testing
- Observing and recording results
- Using simple equipment

Starter

- Pass around a mirror.
- Ask: *"What do you see? Why?"*

Lesson Outline

- Show the statue scene. Hermione revealed at last. Use the class text/the short summary below or the video clip. Stop at the statue scene. Activity 1

https://www.youtube.com/watch?v=Xyl39TxEoXo

- Discuss: *What helps the truth come to light?*
- Investigate which materials reflect light best (mirror, foil, paper, fabric).
- https://www.thenational.academy/teachers/programmes/science-primary-ks2/units/introduction-to-light-and-shadows/lessons/reflected-light-do-and-review#worksheet Go through the slides and watch video.
- Shine a torch at different materials- Activity 2
- Children rank materials from **most reflective to least reflective**

Assessment

- Can pupils identify reflective surfaces and explain reflection?

Activity 1

A Winter's Tale The Statue Scene (

Many years after Queen Hermione was accused unfairly, King Leontes feels deep regret for his actions. He knows that his jealousy caused great sadness to his family and friends.

Paulina, a loyal friend, invites Leontes and others to see a statue she has kept hidden. The statue looks exactly like Hermione. Everyone is amazed by how lifelike it appears, and Leontes is filled with emotion when he sees it.

Paulina asks everyone to be patient and to believe. Slowly, the statue begins to move. Hermione is alive. She was kept safe until the right time, so that the truth could be revealed.

Leontes finally understands that Hermione was always innocent. The family is reunited, and the story ends with forgiveness, hope, and happiness after a long time of sadness.

Activity 2

Material	Amount of light reflected

Most reflective:

Least reflective:

Year 3- Light

Lesson 3: Shadows Blocking the Light

Science Focus: Shadows are formed when light is blocked

Literary Link: Secrets, jealousy, and hidden truths

National Curriculum

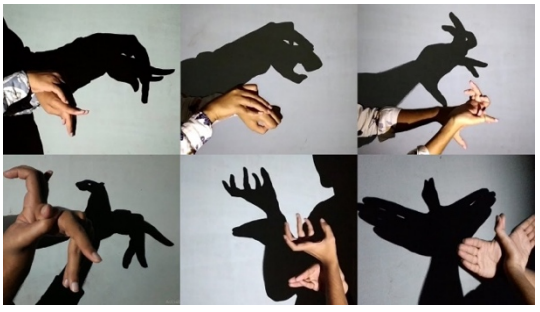
- Recognise that **shadows are formed when light from a source is blocked by an opaque object**

Working Scientifically

- Setting up simple comparative tests
- Measuring and observing changes
- Recording findings

Starter

- Make hand shadows on the wall
- Ask: *"What happened when I blocked the light?"*



Lesson Outline

- Explore how Leontes' jealousy "casts a shadow" over others.

- Demonstrate shadow formation using a torch and objects.
- Investigate how moving the object changes the shadow size.

Activity

- Pupils create shadow shapes (link to characters or symbols: crown, bear, baby).
- Measure shadow length at different distances. Activity 1

Example

distance between torch and object (cm)	height of shadow (cm)
10	23
20	15
30	12
40	9
50	8

Activity 1

Distance between torch and object (cm)	Height of shadow (cm)

Assessment

- Can pupils explain how and why shadows change?

Lesson 4: The Sun as a Light Source

Science Focus: The sun is a source of light

Literary Link: Winter to spring; hope and renewal

National Curriculum

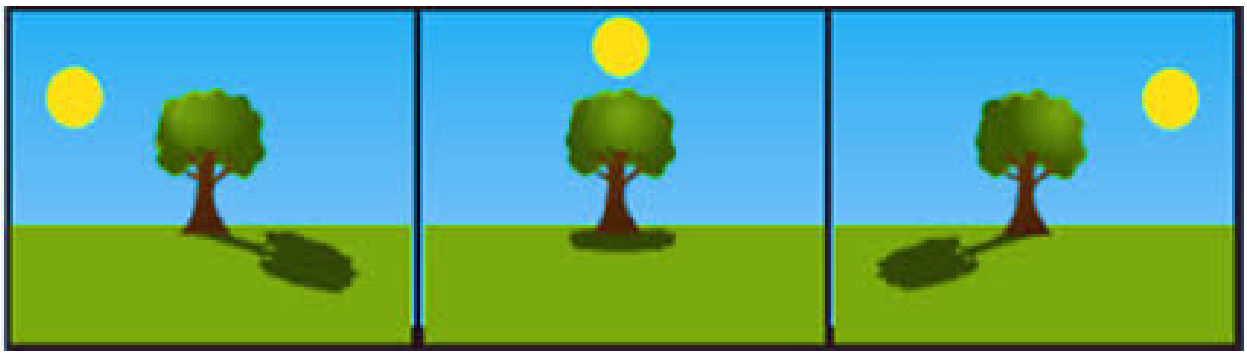
- Recognise that **the sun is a light source**

Working Scientifically

- Observing over time
- Identifying patterns
- Recording results

Starter

- Show pictures of shadows at different times.
- Ask: *"Do they look the same?"*



Year 3- Light

Lesson Outline

- Discuss the shift from winter (Sicilia) to spring (Bohemia).
- Observe shadows outside at different times of day.
- Link changing shadows to the sun's position.

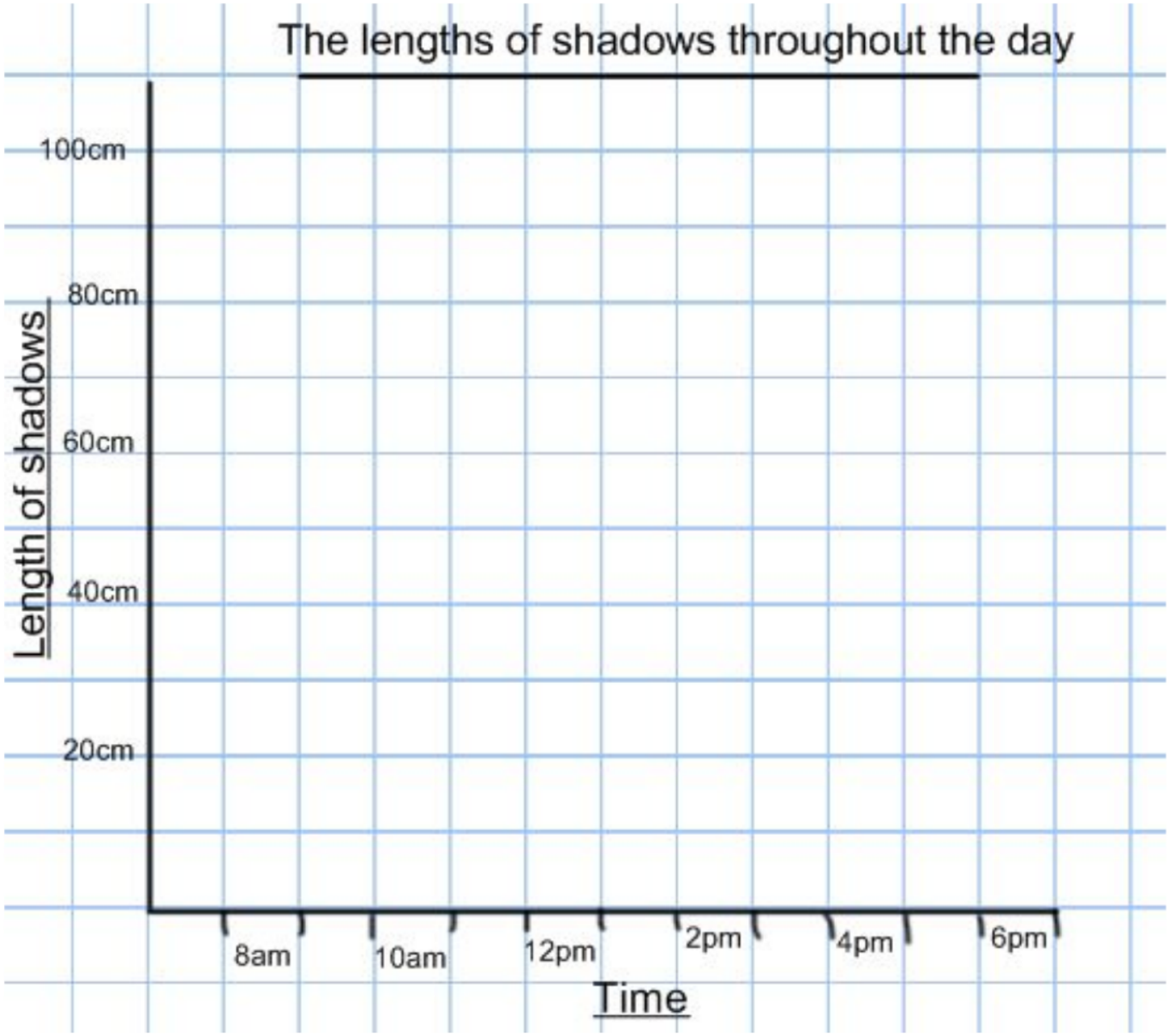
Activity

- Create a simple shadow tracker- use chalk and go outside. Create a compass. Record every hour the shadow of the sun (must be a sunny day).
- Record shadow length and direction- us metre stick. Chn to draw table into their books. Activity 1
- Create a bar chart and record the results. Activity 2

Activity 1

Time	Length of shadow

Activity 2



Assessment

- Can pupils identify the sun as a light source and describe its effects? Can they explain their results?

Questions to ask about their bar chart. Example answers given.

What is your bar chart telling us? My bar chart is showing me that the shadow length is longest at the start and end of the day when the sun is lowest in the sky.

At what time was the shadow shortest? The shadow was the shortest at 12pm.

At what time was the shadow longest? The shadow was the longest at 8am.

How long was the shadow at 10am? At 10am the shadow is 65cm long.

How long was the shadow at 12pm? At 12pm the shadow is 40cm long.

At what time did the shadow start getting longer again? Why do you think this was? The shadow became longer again at 4pm (to 80cm). I think this because the sun was lowering in the sky. The lower the sun's position, the longer a shadow becomes.

How can we make a prediction about how long the shadow might have been at 10:30am? We could make a prediction about the shadow at 10:30am by looking at the results before and after this time. I notice at 10am, the shadow length is 65cm and at 12pm it is 40cm. Therefore, I predict the shadow length could be around 55cm.

https://www.bbc.co.uk/bitesize/topics/zp397ty/watch/zq32fg8

Year 3- Light

Lesson 5: Light and Safety Using Light Wisely

Science Focus: Protecting eyes from bright light

Literary Link: Learning from mistakes; wisdom and responsibility

National Curriculum

- Recognise that **looking directly at the sun is dangerous** and describe how to protect eyes

Working Scientifically

- Research using secondary sources
- Communicating findings
- Presenting information

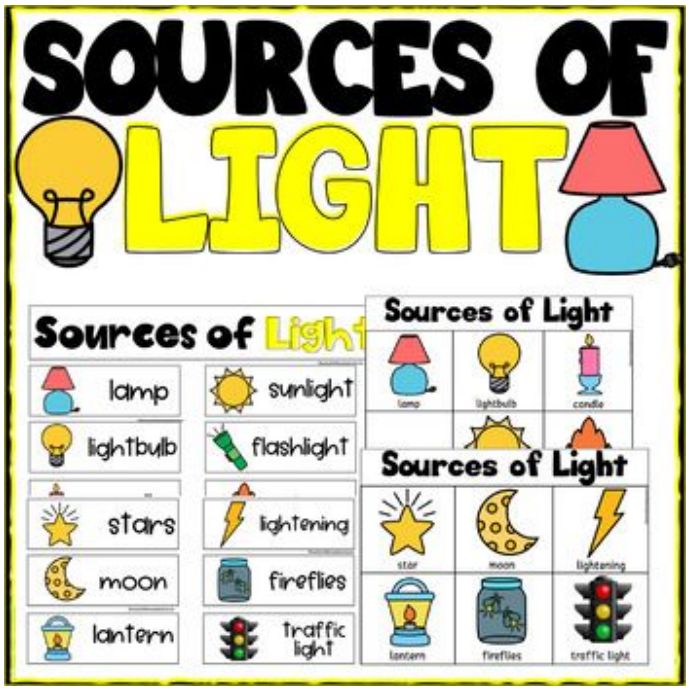
Starter

- Show sunglasses.
- Ask: *"Why do people wear these?"*

Lesson Outline

- Reflect on Leontes' mistakes and what he learns.

- Discuss safe and unsafe light sources.
- Research eye safety using books or videos



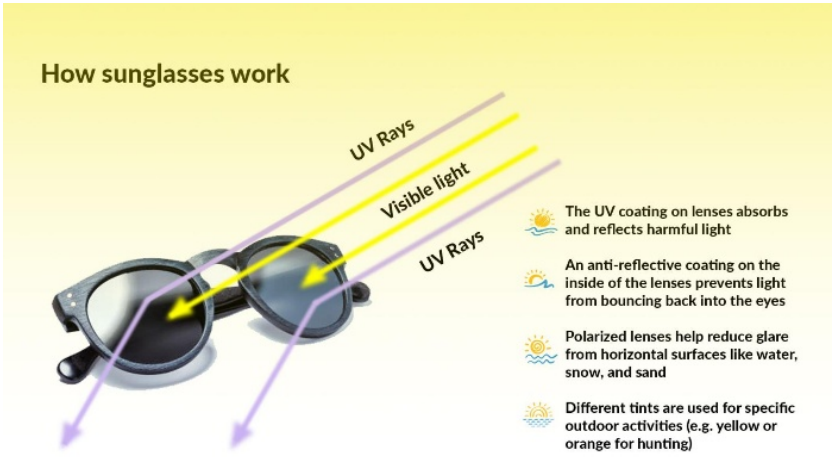
Top Safe Search Engines & Tips for KS2:

- **Swiggle.org.uk** : *Designed specifically for children to search safely, powered by* Google.
- **KidzSearch.com** : *Filters content for a child-friendly browsing experience.*
- **Google Safe Search** : *Ensures that explicit results are filtered out.*
- **BBC Teach** : *Offers safe, educational videos and resources.*

Activity

- Pupils create a **"Light Safety Guide "** for younger children.

- Include drawings and rules.



Assessment

- Can pupils explain light safety rules clearly?
- Can they present their posters to a younger audience?

Vocabulary Progression

Light, dark, reflection, reflective, shadow, opaque, light source, sun, brightness

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Cross Curricular

- **Science & English:** Children write a short explanation or poem:
  "How light brings truth and helps us see"
- **Art:** Shadow artwork linked to key scenes
