






















Light: Marvellous Mirrors

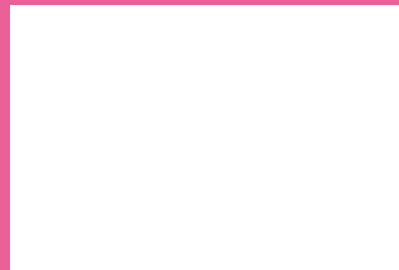
Aim: To notice that light is reflected from surfaces by playing mirror games. I can use a mirror to reflect light and explain how mirrors works.	Success Criteria: I can explain why mirrors are good reflectors. I can use mirrors to reflect light onto different objects. I can explain how mirrors work in different tasks.	Resources: Lesson Pack A mirror per child A wavy chalk line (approximately 3-5m long) drawn on the floor, either outside or in the School Hall.
	Key/New Words: Reflect, mirror, light, smooth, shiny, rays, rough, scatter, reverse, beam.	Preparation: Mirror Games Activity Sheet - 1 per child Marvellous Mirrors Quiz Activity Sheet - 1 per child

Prior Learning: Children will have learnt about reflective surfaces in lesson 2.

Learning Sequence

	Reflective Surfaces: Discuss the characteristics of reflective surfaces using the Lesson Presentation .	
	What is a Mirror? Explain how mirrors are commonly made, and that the image in a plain mirror appears to be reversed.	
	Using Mirrors: Model how to use a mirror to reflect light onto a specific object. Allow children to explore this and discuss how the mirrors had to be angled to be effective	
	Mirror Games: Explain to the children that they will be playing two different games using mirrors. Children complete their differentiated Mirror Games Activity Sheet to draw what they did and explain what happened. <i>(You may want to split the class in half so that each half plays one game, then swap over).</i>  Children explain what they see in the mirror.  Children also explain how the mirror worked.	
	Mirror Messages: In the first game, children should use a mirror to write a short reversed message to their partner. They should then swap messages and try to decipher them with their mirrors.	
	Mirror Maze: For this game, children will attempt to walk along a wavy line while looking only in a mirror held overhead. They will find it tricky because of the apparent reversal of left and right when looking in the mirror.	
	Marvellous Mirrors Quiz: Children use their knowledge of mirrors and reflective surfaces to create a quiz using the differentiated Marvellous Mirrors Quiz Activity Sheet , including the answers to their questions.  Children ask 3 questions.  Children ask 5 questions.  Children ask 7 questions.	
	Marvellous Mirrors Quiz Results: Once they are complete, the children should swap quizzes and try them out. <i>Look for children who are able to use their knowledge to create and answer questions.</i>	

Taskit Drawit: Why not draw a mirror portrait? Look at your face in a mirror and draw what you see! Reflectit: Use a mirror to create a symmetrical pattern. Position the mirror on the center line and ensure the pattern is the same on both sides of this mirror line. Writeit: Can you write a non-fiction book all about mirrors and reflective surfaces? Explain what a mirror is, why it reflects light so well, and how they can be useful. Add some helpful diagrams and illustrations.



Science

Light



Marvellous Mirrors





Aim

- I can use a mirror to reflect light and explain how mirrors work.

Success Criteria

- I can explain why mirrors are good reflectors.
- I can use mirrors to reflect light onto different objects.
- I can explain how mirrors work when carrying out different tasks.



Reflective Surfaces

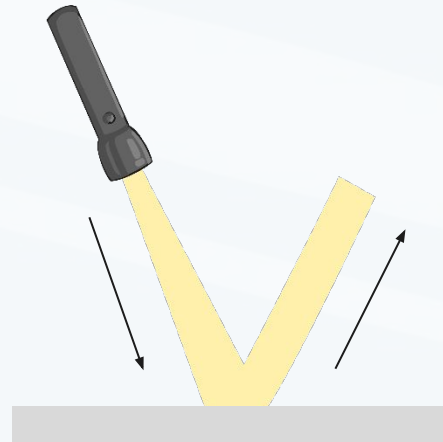


Some surfaces reflect light better than others.

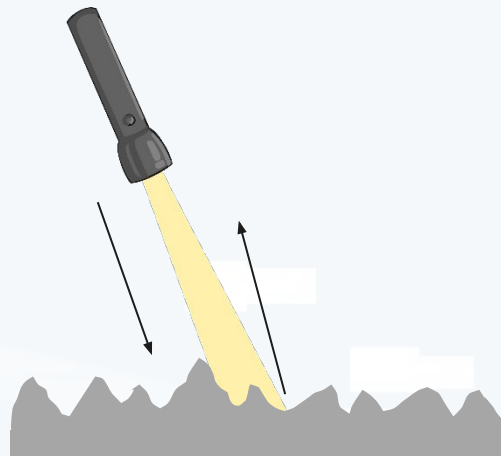
The surfaces that reflect light best are smooth, shiny and flat.

This is because the light rays bounce off these surfaces at the same angle.

If light hits a rough surface, the light rays all bounce off at different angles, meaning the light is scattered. It does not reflect well.



When the light rays hit the smooth mirror, they all bounce off at the same angle, creating a clear reflection.



When the light rays hit a rough surface, they scatter in all different directions, so it doesn't reflect well.



What Is a Mirror?

The most familiar type of mirror is a plain mirror, which has a flat surface.

Plain mirrors are commonly made of a flat, polished piece of glass with a shiny metal backing, such as silver or aluminium.

The light reflected by a mirror preserves most of the characteristics of the original light, so it creates a clear image.

An image in a mirror appears to be reversed. For example, if you look in a mirror and raise your right hand, the mirror image appears to raise its left hand.





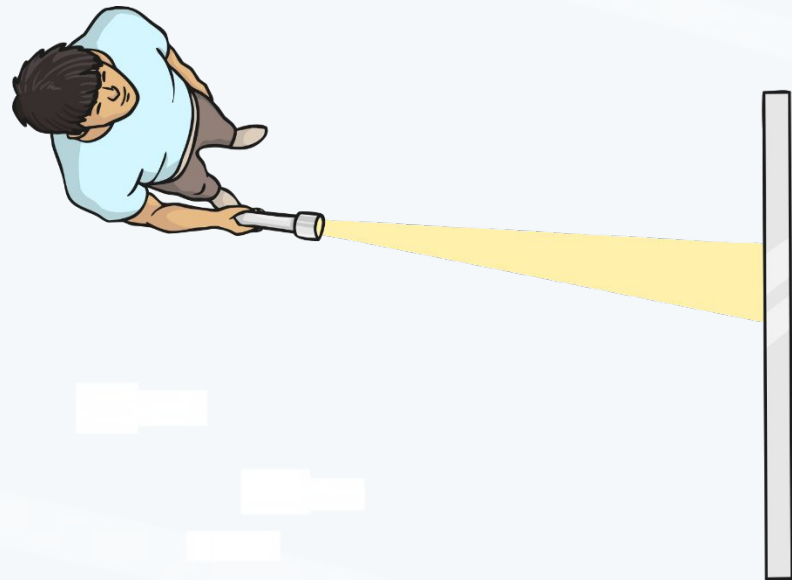
Using Mirrors



Click the light bulb to try the 'How we see things' activity.



Can you use the mirrors to reflect the beam of light onto the different objects?





Mirror Games

You are going to play two different mirror games.

While you are playing the games, think carefully about how the mirrors are reflecting light.

Use your Mirror Games Activity Sheet to record your thoughts and ideas.

Mirror Games

Mirror Messages
Draw what you did in the box below.

Mirror Maze
Draw what you did in the box below.

What did you see in your mirror?

What did you see in your mirror?

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Mirror Games

Mirror Messages
Draw what you did in the box below.

Mirror Maze
Draw what you did in the box below.

How did the mirror reflect light so you could read each other's messages?

How did the mirror reflect light to make this game tricky?

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Mirror Messages



In this game, you should use your mirror to write a mirror message to your partner.

1. Write a short message in normal writing (between one to three words is enough). Then hold a mirror at the right hand side of the page, so you can see your message reflected in the mirror.
2. Copy the message you see in the mirror onto another piece of paper, so that your writing is reversed.
3. Swap messages with your partner, and hold the mirror at the left hand side of the page. Can you read their message in the mirror?
4. Think about how the mirrors helped you read the messages.

Reflect





Mirror Maze



Outside or in the Hall you will find a wavy line on the floor.

Hold a mirror over your head so you can see the line and your feet reflected in it.

By looking only in the mirror, try to follow the wiggly line from one end to the other.

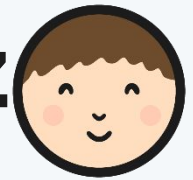
Take your time when carrying out this task and be very careful.

Why does only being able to look in the mirror make this hard?





Marvellous Mirrors Quiz



For this task, you will become the quiz master!

You will create a quiz for someone else in your class to try out.

You should think of questions about mirrors and reflective surfaces.

Remember to make an answer sheet so that the person who does your quiz can mark their work!

Marvellous Mirrors Quiz

Question 1:
Partner's Answer:

Question 2:
Partner's Answer:

Question 3:
Partner's Answer:

Question 4:
Partner's Answer:

Question 5:
Partner's Answer:

Quiz

Use these words and pictures to help.

mirror

reflect

light

bounce

smooth

rough

reverse

surface

bright

see

useful

Science | Year 3 | Light | Marvellous Mirrors | Lesson 5



Marvellous Mirrors Quiz Results



When you have finished, swap quizzes and see if you can answer the questions correctly.

Marvellous Mirrors Quiz	ous Mirrors Quiz
<input type="text"/>	<input type="text"/>
Question 1: Partner's Answer:	
Question 2: Partner's Answer:	
Question 3: Partner's Answer:	
Question 4: Partner's Answer:	
Question 5: Partner's Answer:	
Question 6: Partner's Answer:	
Question 7: Partner's Answer:	





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