

Subject: Science – Light and Shadow

Year Group: 1 / 2

Term: Autumn



	What? <i>Learning Challenge Skills Taught</i>	How? <i>Teaching Activities and Differentiation</i>
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Session 1

Question:
What if there was no light?

Objectives:
-Know what senses they are using, with which part of the body.
-Make observations to answer questions.

Optional – Read the Lighthouse Keeper’s Lunch. Talk about Lighthouses and what they are for.

Let’s Think Like Scientists – What if there was no light? Discuss.

-Explain that we will be learning about light. Make links to sight being a sense.

-What other senses do we use every single day? Introduce other senses and body parts used.

-Set up a table with different candles. Ask children to think about what they notice about the candles using their senses.

What can you see, smell or hear?

How do the flames move? Why do you think this happens?

Which candle gives out the most light?

-Help children to link the idea that without light we cannot see and that the word dark means that there is no light. Ask children when they have been in the dark, what it was like and if they could see anything at all.

Activity:

-With small groups of children, light a candle and ask them to watch closely.

-Use the question prompts (OneDrive) to prompt the children’s observations.

Year 1 : Take photos of children taking part in activity – jot down children’s observations on sticky notes.

Year 2: Use observations to draw the candle before, lit, and extinguished. Chn write observations to answer question prompts.

Year 2 Extension – children think of own questions based on observations.

Session 2

Question:
Where does light come from?

Objectives:
-Identify and classify sources of light.
-Explain reasons for choices.

Let's Think Like Scientists – Where does light come from? Discuss.

Activity:

- Talk about 'sources of light' - What do we think this means? children may have shared some during the opening discussion – eg. The sun, torch, candle etc.
- Show children a number of different objects and ask them to sort them into 2 groups – *sources of light* and *not sources of light*. Encourage chn to explain reasons.

Interactive activity:
<http://resources.hwb.wales.gov.uk/VTC/light/eng/Introduction/pop.htm>

Discuss how the moon reflects light from the sun (a bit like a mirror) so is not a source of light.

- How could we compare these sources of light? Use bright, brighter and brightest to compare the objects.

Activity:
Year 1 – sort pictures into 2 different groups – sources of light, not sources of light. With sorting circles. Extension – draw 4 different sources of light and label.
Year 2 – sort pictures into a table and order in terms of brightness. Extension: can you explain why the moon is not a source of light?

Session 3

Question:
Why does my shadow keep following me?

Objectives:
-Test different objects to make shadows.
-Observe and answer questions about different materials.

Let's Think Like Scientists – Why does my shadow keep following me? Discuss.

-Questions to consider - What is a shadow? How are they made? Why are they different shapes? Does everything make a shadow?

-Explain to the children they will be investigating shadows and performing some simple tests. Use a torch and different objects to make shadows against the wall. What do you notice about the object and the shadow? Try a plastic bottle – what do you notice?

-Introduce children to the words transparent, translucent and opaque. Chn will test different objects and make observations on the different shadows they make.

Activity:

		<p>Year 1 – Test different objects using torches. Work in pairs and try to draw different shadows. Partner holds torch while they draw around the shadow. Encourage to verbally explain how the shadow is made.</p> <p>Year 2 – Test different objects using torches and comment on the size, shape, darkness of the shadow. In book, draw a picture of what they did and write sentences to explain how the shadow in made.</p> <p>Extension – can the make the shadows longer/shorter? Investigate. Why do you think this happens?</p>
<p>Session 4</p>	<p>Question: Which materials would make a good shadow puppet?</p> <p>Objectives: -Say which materials they are using. -Choose specific materials based on their properties.</p>	<p>Let's Think Like Scientists – Which materials would make a good shadow puppet? Discuss.</p> <p>-Recap on previous lesson – what materials made good shadows? Talk about transparent, translucent, opaque. -Tell the children a short story that they are familiar with. -Today they will make a shadow puppet play to try and retell the story. -Give the children a variety of materials to choose from – straws or dowelling to hold puppet, paper, card, coloured cellophane (create a colour effect) etc. -Ask children to explain why they are choosing certain materials based on their properties, eg. Opaque, translucent.</p> <p>Activity: -Work in small groups to make a shadow puppet play. -Perform play to rest of the class and record on iPad.</p>
<p>Session 5</p>	<p>Question: Why do leaves change colour? (Seasonal changes - Link to light and shorter days)</p> <p>Objectives: -Collect, sort and order different leaves. -Make observations about size, colour and shape.</p>	<p>Let's Think Like Scientists – Why do leaves change colour? Discuss.</p> <p>How long is the day? Discuss how the days are getting shorter as we head into Autumn. Explain that trees and plants need light for their leaves to grow, so they begin to change colour as they die and fall off the tree.</p> <p>Today we will be collecting a variety of leaves – we need to see how many different colours we can find.</p> <p>Activity ideas:</p>



Assessment

- How many different ways can you sort/order your leaves? Eg. Different colours, shades of colours, size, shape.
- Use chalks or crayons to create a picture of the different colours you have found.
- Use paint to practise mixing different shades of orange, brown, yellow, red, brown.
- Create leaf prints using autumn colours.



Session 6

Assessment