

Question: What is the difference between light and dark?

National Curriculum Link

KS1 Science: Y1 Seasonal changes (Light and dark)

KS1 Science Working Scientifically

IB Learner Profile Links

Inquirers – Nurture skills for research and curiosity

Knowledgeable – Develop conceptual understanding and engage with issues and ideas

Principled – think and act with integrity and honesty

Reflective – Consider the wider world and our own ideas and experience

Communicators – express yourself confidently and creatively

Prior Skills – Y1 (Earlier in year / Seasons)

- Observe changes across the four seasons
- Name the four seasons in order
- Observe and describe weather associated with the seasons
- Observe how day length varies in different seasons
- asking simple questions and recognising that they can be answered in different ways
- observing closely, using simple equipment
- performing simple tests
- Explore, using the senses (see, touch, smell, hear or taste)
- Record observations and results to a test using drawings and in simple tables
- Use their observations and ideas to suggest answers to questions
- Gather and record data to help in answering questions.

New Skills – Y1

- Know that electricity is an important source of light
- Identify and name the sources of light, including electricity being an important source of light
- Identify and name sources of light
- Understand what darkness is
- Compare sources of light using scientific language (brightest, duller, darker, lighter)
- Observe and describe shadows during the day
- Know that the Sun lights up the Earth and safety with the sun
- asking simple questions and recognising that they can be answered in different ways
- observing closely, using simple equipment
- performing simple tests
- Explore, using the senses and talk about they see (see, touch, smell, hear or taste)
- Record observations and results to a test using drawings and in simple tables
- Use simple equipment to help them make observations

Future Skills – Y3

- Recognise that they need light in order to see things
- Recognise that dark is the absence of light
- Understand and 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 a solid object
- Find patterns in the way that the size of shadows change.
- Make and record a prediction before testing
- Measure using different equipment and units of measure
- Record their observations in different ways (labelled diagrams, charts etc.)
- Describe what they have found using scientific words
- Make accurate measurements using standard units
- Explain what they have found out and use their measurements to say whether it helps to answer their question

	<ul style="list-style-type: none"> • Tell other people about the testing they have done • Record their findings in a table or chart 	
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Knowledge, Skills and Understanding for topic area

- Know that electricity is an important source of light
- Identify and name the sources of light, including electricity being an important source of light
- Identify and name sources of light
- Understand what darkness is
- Compare sources of light using scientific language (brightest, dimmest, darker, lighter)
- Observe and describe shadows during the day
- Know that the Sun lights up the Earth and safety with the sun

Knowledge, Skills and Understanding for Working Scientifically

- asking simple questions and recognising that they can be answered in different ways
- observing closely, using simple equipment
- performing simple tests
- Explore, using the senses and talk about they see (see, touch, smell, hear or taste)
- Record observations and results to a test using drawings and in simple tables
- Use simple equipment to help them make observations
- Tell other people about the testing they have done
- Record their findings in a table or chart

Challenge

- Can they describe changes in light that result from action/s?
- Do they know that the Sun moves across the sky during the day?
- Can they explain why they can't see stars in the day time?

Resources

- torches with bright beams, shiny objects, *eg reflective strips from bags, clothing, tinsel*
- dark area in the classroom or a classroom that can be darkened
- collection of light sources including torches
- black boxes
- Photographs of different seasons, showing clear differences in each season.
- Shadows stick, chalk, different objects to block light
- Meter stick etc for measuring shadows.

Suggested Quality Texts

The owl who was afraid of the dark by Jill Tomlinson

Website/Apps

Brilliant video clip to show children how day is light with the sun and darkness is the absence of sunlight. Super moving clip to get ICT to download <http://www.youtube.com/watch?v=Tp6HQCb70yM>

Extended Writing Opportunities

Write a recount of investigative work to explain what they tested and what they found out.

Numeracy Skills

Reading scales accurately to measure temperature at different times of year. Opportunities to set things out in charts, especially in relation to the weather, keep a record of the temperature over a night and day time in degrees celsius and also measuring rainfall. Present information on a chart. Measure and record the lengths of their shadows. Present information on a chart. Measure and record the lengths of their shadows.

Wow starter/experience

Immersion room experience of a walk through each season with photographs, change in temperature of room settings and lighting to show changes.

Cross Curricular Links/ enquiry time activities:

Art: Children to look at the work of the artist Van Gogh and his Starry Night paintings and they will then use his 'swirly' style to recreate their own night time pictures. This could be done on black sugar paper with coloured chalks using swirly style patterns.

DT: Make shadow puppet boxes. Going into a room which is pitch black and describing what it is like.

Outdoor enquiry time learning: Brainstorming session of how many different sources of light the children can think of. Go on a 'light' walk around local area to find different types of light e.g. Traffic lights, stop lights, car lights, street lights, sunlight etc.