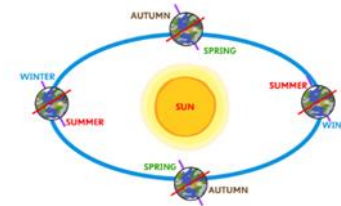


Year 3 – Summer 1 – ‘Light’

NC Science- Light

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



I can explore how light is formed

The light we can see is called **visible light** and it is sometimes described as **white light** but it does not begin that way.

Children to make their own rainbow spinners coloured in the seven colours of the **visible light spectrum**: red, orange, yellow, green, blue, indigo and violet. The investigation will explore what happens when those colours travel extremely fast like the speed of light.

POSE: teacher to work with class to decide on a collective enquiry question. What are we trying to find out?

PLAN and PICK: How can we ensure our spinners are accurate? What about the colours? How will we spin the spinners? What will we use?

PREDICT: What will happen when we spin our spinners? What does speed have to do with our experiment? What do we know about how light travels?

PRESENT: Children to present their findings. What happened when you spun the spinner slowly, in the middle, fast?

PROVIDE: Was your prediction correct? What did you manage to replicate? What would you do next time to make your experiment more accurate and reliable?

I can investigate which colours reflect light better

We have explored what makes light and what create darkness and we now know what colours create white light but do some colours reflect light better than others? Does this depend on the material?

Investigation

Chn to focus purely on colour for this experiment. Materials can be discussed when the children provide a conclusion.

POSE: Children to work together to mind map possible questions to lead their experiment.

PLAN and PICK: How are we going to conduct our experiment? What equipment do we need? How can we make sure our experiment is fair?

PREDICT: Children to independently write a prediction. Which colour do they predict will be most visible in dark light? Why?

PRESENT: Children to conduct experiment in small groups. Chn to then present their results in a table.

PROVIDE: Was your prediction correct? Which colours did your eyes see first? Did your eyes adjust to any of the colours? Can children explain their findings?

Do you think using a material aside from paper would have changed your results? Discuss transparent, translucent and opaque materials.

Color absorbed	Color observed
Violet	YellowGreen
Blue Violet	Yellow
Blue	Orange
BlueGreen	Red
Green	Purple
YellowGreen	Violet
Yellow	Blue Violet
Orange	Blue
Red	Bluegreen

I can explore how the Earth welcomes light

We know how light travels and that the sun is the largest form of natural light but how does light travel from the sun to Earth?

Chn to explore how light works to produce night and day and to create seasons around the world.

<https://www.bbc.co.uk/bitesize/clips/z9ffpyrd>

Chn will learn about why seasons are different in the Northern and Southern Hemisphere and how the tilt of the Earth's axis creates night and day.

What would happen if the Earth spun quicker? Or slower? Why do some countries have longer summer or winter seasons than others?

I can classify and identify natural and artificial light sources

Children to explore and classify natural and artificial light sources.

Children to sort given items into artificial (man-made) and natural light sources on a Venn diagram. Where would you place fire? (Discuss that fire is in fact a natural source but is man made/artificial in that it is created by man so could arguably be placed in the middle of the Venn diagram.)

Are there any more ambiguous objects e.g. traffic signs, eyes, the moon that do not generate light but reflect it? Where could they be placed?

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I can explore what light is

What is light? Children mind map what they already know and what they want to find out.

Share video to show children how light travels to eyes from the source and reflects directly into the eyes.

<https://www.bbc.co.uk/bitesize/topics/zbssgk7/articles/zp7f8mn>

Chn to complete two diagrams. One showing how light travels to our eyes. The second diagram, how we see colour through the absorption of every colour other than the colour of the object. Children can choose their own object to use an example. E.g. a red apple.

NC Working Scientifically (LKS2)

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.



Year 3 – Summer 1 – 'Light'

