

Science	
Science Exploring Light	Year 5
Lesson 1 60 mins	<p>What is light? Where Does it come from?</p>
<p>Ways of Working:</p> <p>pose and refine simple questions, and make predictions to be tested</p> <p>communicate scientific ideas, data and findings, using scientific terminology and formats appropriate to context and purpose</p> <p>identify and apply safe practices</p> <p>reflect on and identify different points of view and consider other people's values relating to science</p> <p>reflect on learning to identify new understandings and future applications.</p>	<p>Science Understanding</p> <p>Physical sciences</p> <p>Light from a source forms shadows and can be absorbed, reflected and refracted (ACSSU080)</p> <p>Science as a Human Endeavour</p> <p>Nature and development of science</p> <p>Science involves testing predictions by gathering data and using evidence to develop explanations of events and phenomena (ACSHE081)</p> <p>Science Inquiry Skills</p> <p>Questioning and predicting</p> <p>With guidance, pose questions to clarify practical problems or inform a scientific investigation, and predict what the findings of an investigation might be (AC SIS231)</p> <p>Planning and conducting</p> <p>With guidance, plan appropriate investigation methods to answer questions or solve problems (AC SIS086)</p> <p>Use equipment and materials safely, identifying potential risks (AC SIS088)</p> <p>Processing and analysing data and information</p> <p>Construct and use a range of representations, including tables and graphs, to represent and describe observations, patterns or relationships in data using digital technologies as appropriate (AC SIS090)</p> <p>Compare data with predictions and use as evidence in developing explanations (AC SIS218)</p>

Evaluating

Suggest improvements to the methods used to investigate a question or solve a problem ([AC SIS091](#))

Communicating

Communicate ideas, explanations and processes in a variety of ways, including multi-modal texts ([AC SIS093](#))

The Australian Curriculum: Science for Prep (F) – 10
<http://www.australiancurriculum.edu.au/Science/Curriculum/F-10#cdcode=ACSSU080&level=5> Retrieved 6th October 2013.

The purpose of this lesson is to elicit questions about light, find out what they know and understand about light sources. This will give me some ideas for adjusting and planning future lessons.

This lesson is constructed so that the students will generate ideas about light and justify their identification of light and its sources.

I will organise the students to work effectively in teams, this will be achieved by giving each member an identified role in the group. Groupings also apply some social constructivism to the learning environment.

Introduction:

I will introduce this lesson by shining a torch on the wall and initiating a discussion about light. Some focus questions would be:

- What can you see?
- How do we know the light is there?
- What happens when you try and hold the light?
- How could you change the light?

Body of lesson:

I will introduce the concept map, this will be done on Bubbl.us, if that technology isn't available I will proceed with enlarged copies of the resource pages provided in Primary Connections, light fantastic.

The class will then discuss light where it comes from, and record and organise thoughts through concept mapping. The questions for this portion will be:

- What gives us light?
- How does light help us to see?
- How does light travel?
- How far does light travel?
- What is a shadow?

These questions will be explained through scientific process throughout this unit.

I will then introduce think boxes, after the discussion I would like to find out what the class understandings are. I will give each student a prepared resource sheet with the questions, student then will answer them from their understandings of the topic, I will explain that there is no need to put names on the sheet and there are no wrong answers.

Science is about challenging ideas and thoughts and proving theories through fair testing and experiments.

Each question should be placed in the right think box, this will give me an opportunity for diagnostic assessment of the students ideas.

The next activity will be explaining working in groups. Each group member will have a group, the teacher will nominate teams, and within the groupings the team members will have a role. We will identify and explain the roles and allocate each member with a role and role badges.

Five team directors will then select a box and share the answers out with directors that did not get a box. The team members will then read the answers, sort them into response categories and paste them onto a sheet of paper by those categories. This sorting allows for discussion and an acknowledgment that there can be a range of views and understandings of the concept. I will assist in clarifying differing views and assist teams to form and name categories.

I will then introduce the class science journals, we will discuss its purpose, each team will present their findings and record a summary of student's responses in their journals.

Conclusion:

I will introduce the chat board; this is a place that students can write questions, record words and pictures and record ideas or information. I will also have a word wall with words used in the unit we will record key vocabulary about light.

I will display the responses from the think box activity, as the unit progresses the students will collect evidence and information about light. The students will use evidence, information and experimentation to challenge or confirm their

<p>Knowledge and understanding: Science as a human endeavour.</p> <p>Scientific ideas can be used to explain the development and workings of everyday items</p> <p>Science can contribute to people's work and leisure</p>	<p>original understandings about light.</p> <p>Resources:</p> <ul style="list-style-type: none"> • Prepared word wall chart. • https://bubbl.us/ Free concept mapping tool. • If is not possible to use this technology this could be done on the whiteboard or paper. Or enlarged copy of thoughts about light resource from "Light fantastic" • Science Journals • The prepared resource," thoughts about light" from "light fantastic" • Torch <p>For Teams:</p> <ul style="list-style-type: none"> • Badges for team roles, Manager, Director, Speaker. • Paper for concept mapping for each team • Marking Pens • Scissors • Glue
<p>Evidence of learning:</p> <ul style="list-style-type: none"> • Students will be able to identify light sources. • Describe how light travels • Discuss how light enables us to see • Identify sources and uses of light in and around the home. 	<p>General Capabilities:</p> <p>Literacy</p> <p>Word Knowledge</p> <ul style="list-style-type: none"> • Understand learning area vocabulary <p>Composing texts through speaking, writing and creating</p> <ul style="list-style-type: none"> • Compose texts <p>Compose spoken, written, visual and multimodal Grammar knowledge</p> <ul style="list-style-type: none"> • Use knowledge of sentence structures • Use knowledge of words and word groups • learning area texts

Critical and Creative Thinking:

The particular elements of Critical and creative thinking addressed by this content description

Inquiring – identifying, exploring and organising information and ideas

- Organise and process information
- Pose questions
- Identify and clarify information and ideas

Reflecting on thinking and processes

- Reflect on processes

Analysing, synthesising and evaluating reasoning and procedures

- Evaluate procedures and outcomes

Personal and social capability

The particular elements of Personal and social capability addressed by this content description

Self-management

- Become confident, resilient and adaptable
- Work independently and show initiative

Social management

- Communicate effectively

Information and communication technology capability

The particular elements of Information and communication technology capability addressed by this content description

Creating with ICT

- Generate ideas, plans and processes

Investigating with ICT

- Define and plan information searches

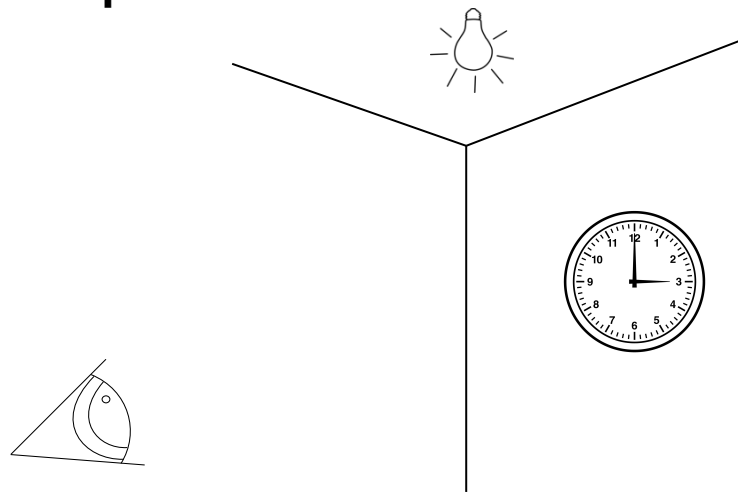
	<p>Mathematics:</p> <ul style="list-style-type: none"> Sort and group blocks into categories and describe the reasons for the groupings.
<p>Helpful Teachers Resources:</p>	<ul style="list-style-type: none"> https://bubbl.us/ This is a free concept mapping tool http://fuse.pha.jhu.edu/~wpb/spectroscopy/basics.html useful information http://www.andor.com/learning-academy/what-is-light-an-overview-of-the-properties-of-light this is a good explanation of light and may be useful in creating a reading comprehension sheet. http://www.learner.org/teacherslab/science/light/color/index.html This site has some great interactive activities for students that may need extension.
<p>Possible Alternative conceptions or misunderstandings about light.</p>	<p>Students might believe that the Moon is a light source. Explain that the Moon reflects light from the Sun and as such is not a light source.</p> <p>Students might believe that stars are not light sources. Remind students the Sun is a star, and thus all stars are light sources</p>

My Thoughts

Use drawings or words to show what you think about these questions.

1. What things give us light?

2. How does light help us see?



Draw arrows to show your answer

3. How does light travel?

4. How far does light travel?

5. What is a shadow?

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2. How does light help us see?

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5. What is a shadow?