

Unit Plan

Unit Title: Light in Our World	Stage: Stage 3 (Year 5)
Term: Term 4	Strand: Physical World
Duration: 60 minutes/ lesson (excluding excursion) = 10 hours	Sub-strand: Light- refracted, absorbed and reflected

Goals

Science and Technology

- **ST3-1VA:** Shows interest in an enthusiasm for science and technology, responding to their curiosity, questions and perceived needs, wants and opportunities.
- **ST3-2VA:** Demonstrates a willingness to engage responsibly with local, national and global issues relevant to their lives, and to shaping sustainable futures.
- **ST3-3VA:** Develops informed attitudes about the current and future use and influence of science and technology based on reason.
- **ST3-4WS:** Investigates by posing questions, including testable questions, making predictions and gathering data to draw evidence-based conclusions and develop explanations.
- **ST3-5WT:** Plans and implements a design process, selecting a range of tools, equipment, materials and techniques to produce solutions that address the design criteria and identified constraints.
- **ST3-7PW:** Uses scientific knowledge about the transfer of light to solve problems that directly affect people's lives.
 - ACSSU080: Light from a source can be absorbed, reflected and refracted
- **ST3-15I:** Describes how social influences impact on the design and use of information and communication systems
 - Systems can be used to transfer information and support communication

Mathematics

- MA3-1WM: Describes and represents mathematical situations in a variety of ways using mathematical terminology and some conventions.
- MA3-2WM: Selects and applies appropriate problem-solving strategies, including the use of digital technologies, in undertaking investigations.
- MA3-3WM: Gives a valid reason for supporting one possible solution over another.
- MA3-14MG: Identifies three-dimensional objects, including prisms and pyramids, on the basis of their properties, and visualises, sketches and constructs them given drawings of different views.
- MA3-16MG: Measures and constructs angles, and applies angle relationships to find unknown angles.
- MA3-18SP: Uses appropriate methods to collect data and constructs, interprets and evaluates data displays, including dot plots, line graphs and two-way tables.
- MA3-9MG: Selects and uses the appropriate unit and device to measure lengths and distances, calculates perimeters, and converts between units of length.

English

- EN3-3A: Uses an integrated range of skills, strategies and knowledge to read, view and comprehend a wide range of texts in different media and technologies.
- EN3-9E: Recognises, reflects on and assesses their strengths as a learner.
- EN3-1A: Communicates effectively for a variety of audiences and purposes using increasingly challenging topics, ideas, issues and language forms and features.
- EN3-6B: Uses knowledge of sentence structure, grammar, punctuation and vocabulary to respond to and compose clear and cohesive texts in different media and technologies.
- EN3-2A: Composes, edits and presents well-structured and coherent texts.
- EN3-8D: Identifies and considers how different viewpoints of their world, including aspects of culture, are represented in texts.
- EN3-7C: Thinks imaginatively, creatively, interpretively and critically about information and ideas and identifies connections between texts when responding to and composing texts.

History

- HT3-1: Describes and explains the significance of people, groups, places and events to the development of Australia.

Creative Arts

- VAS3.1: Investigates subject matter in an attempt to represent likeness of things in the world.
- DRAS3.4: Responds critically to a range of drama works and performance styles.
- DAS3.3: Discusses and interprets the relationship between content, meaning and context in their own and others' dances.
- DRAS3.1: Develops a range of in-depth and sustained roles

Formative Assessment:

Student's learning will be assessed through continual opportunities by the teacher, their peers and each individual student. This will be carried out through; peer assessment, self-assessment and teacher assessment. These will be used for assessment for learning and assessment as learning. This is evident with:

- All lessons: Checklists which will be provided to students for each activity.
- All lessons: Through effective questioning by the teacher to guide and scaffold learning and the development of skills, the teacher can collect anecdotal information as each lesson progresses. The teacher can also assess student learning instantly and help students learn by being responsive and designing questions that help students get to the next level of understanding.
- Lesson 1: Teacher gains prior knowledge of students understanding of the concept through a KWL chart.
- Lesson 3: Students complete a self assessment based on their hypothesis; assessment as learning. This is then documented and used as an assessment for learning.
- Lesson 4: Students will be assessed through questioning to check their understanding of the concept. Students will be provided with rich activities to explore the concept of refraction..
- Lesson 5: While learning about how light travels in a straight line unless interfered, their skills and knowledge is developed when they assess their experiments through their discussions with their group and the class. Students also assess their scientific understanding and skills with how well they can manipulate light and reflection and are able to test their ideas and fix the experiment as it happens.
- Lesson 6: Students assess their skills and learning through a discussion and an experiment.
- Lesson 7 and 8: Open-ended discussion allows teacher to gain an understanding of the students knowledge of the concept. This is seen as assessment for and as learning.

Summative Assessment:

Summative assessment will be used at the completion of the unit of work in lessons 9 and 10. This will allow the teacher to gain an overall understanding of the effectiveness of the activities in teaching the concept of light and inquiry based skills, this is used as an assessment of learning. This is evident in:

- Lesson 9: Through a provided criteria students assess their own learning and of their peers. This provides the teacher with an understanding of the student's knowledge, skills and understandings.
- Lesson 10: Opportunity to reflect on themselves as learners and knowledge gained. Teacher also poses close and open-ended questions that will provide an in-depth discussion regarding the concept of light.

Work Sample:

Provided in Appendix 1 and Appendix 2

Rational

This unit of work, "Light in Our World" aims to educate students about the physical world around them and how light travels in a straight path unless it is interfered by an object and in turn, behaves differently (bends/refracts, reflects, absorbs). In accordance with the Australian Curriculum for Science and Technology (ACARA, 2013) students are required to learn about light as a source that forms shadows and can be absorbed, reflected, and refracted. Learning about light as a source also develops students' understanding of their physical world and enhances their scientific literacy. Scientific literacy is described as the capacity to use scientific knowledge, identify questions and draw evidence-based conclusions to understand the world and make informed decisions to create a sustainable world (macro) and environment (micro) (Department of Education and Communities, 2011).

The following unit of work is designed using a constructivist approach that incorporates Inquiry Based Learning (Murdoch, 1996) and the 5E model. The constructivist approach pioneered by Vygotsky (1978) is the foundation for all the teaching strategies used throughout the following lessons. This involves building knowledge and skills on top of student's prior knowledge and experiences, and having a connection between the classroom, world, student, and family home. Therefore filling the gap of the student's zone of proximal development (Vygotsky, 1978).

All lessons will involve the use of technology to support learning and technological literacy while creating a platform for interaction and authentic learning experiences. Examples of this include the use of the Interactive Whiteboard (IWB), a online classroom; Wikispaces, iPads and applications. The use of iPads and a Wikispace enables students to learn in other environments besides the classroom, this is called mobile learning and has been used to help students interact more effectively and sustain the relationship between the teacher, the student, and their family.

The students immerse themselves in the concept of light travelling straight (refraction, reflection, and absorption) through 'hands on, minds on' sequenced learning experiences. These learning experiences provide opportunities to connect information with practical activities while reflecting on prior knowledge and skills to build a deeper understanding of scientific content and scientific skills.

Students

Number:
24 students

Differentiation:

Unit of work will be catered to students:

Special Needs:

- Various resources, tools and activities are provided that can be manipulated for students who may have a visual or hearing impairment. Example: Students who are visually impaired will have oral instruction and activities will be altered to be more physical.
- Students with behavioural disorders will have the opportunity to complete activities on their own so they do not get distracted as well as providing them with hands on activities. This is shown throughout the lessons and activities.
- As many of the activities are open ended providing students with an opportunity to alter the level of difficulty to their learning level. This also shown throughout the lessons and activities.

Gifted and Talented:

- Students who are gifted or talented have the option of working alone or with likeminded students. Ideally, all students will be in mixed ability groups, but this can be an exception if the student requests it.
- There are extension activities available in the lessons such as continuing work in a different context or using an app to play with light and reflection in a more complex context.
- There are opportunities for students to respond to open-ended questions that do not reply on the level of knowledge or skill therefore allowing students who are gifted or talented to challenge themselves and respond to the question to their best ability.

Aboriginal and Torres Strait Islander:

- The incorporation of 8 ways of Aboriginal Framework allows the students to learn more about the land and become connected with light as a natural resource. This framework is used to also teach students about the Indigenous interpretation of the origin of light and the cultures understanding of it.
- Some of the 8 Ways of Aboriginal Framework incorporated learning maps when students are to draw in order to express their knowledge on the concept of light.
- Land links from the Aboriginal Framework is met because water is used in the lessons. Choice is given for a summative assessment for students to explain their understanding of the concept.
- Story-telling is one of the ways of the framework and is used in Lesson 1, 2, and 4. The students are to dramatize their knowledge of the concept of light.
- It also meets the non-verbal element of the framework when they had an excursion to see the Shadow Land and the extension activity of a 'lens decoder'. These activities/ experience do not require communication skills through speaking.

Learning Styles:

- There will be many visual aids to support visual learners through drawing, photographing, videos, models etc. Learners who benefit best from oral and listening experience will have many opportunities to learn as this unit of work includes discussions in groups and as a whole class, as well as many opportunities for listening to videos.
- Throughout the unit, hands-on activities will be encouraged to cater for kinaesthetic learners. The students will be given choice to present their understanding of the concept. The hands-on activities will also nurture the constructivist approach to teaching as students are "hands on, minds on".

Skills, Interests and Prior Knowledge

- The students have had academic and everyday experiences with light through learning outcomes about the sun, heat and electrical lights.
- The students are familiar with the roles to take when doing Science- a manager, a director and a speaker.
- The students are ICT literate because of the ubiquitous use of technology of their generation. They have access and have been experienced in using technology. They are capable to use programs and applications (apps), and to publish both online and print. The use of technology enhances student engagement. The students know the responsibility of being safe-users of the internet.
- Students have shown interest in light beforehand such as through the Vivid show in Sydney a few months back where a unit for Visual Arts was completed in response to their interests. Students have always shown a fascination for the way lights work.
- Students have some skills in creating narratives and procedural texts as they have covered these text-types in English lessons in the beginning of the year. This unit of work helps bring those skills back and has them practice them in a different context.

Learning Matters

Essential understandings

Students will learn about:

- Identify different sources of light.
- Light is a form of energy.
- Determine the path the light takes from a given light source. (Light travels in a straight line)
- Light can be absorbed by materials, reflected off the surface of materials, and refracted at the surface between two materials when it passes through.
- Illustrate the path the light takes after hitting a mirror. (Reflect)
- Discuss the difference between reflection and refraction.
- White light is a blend of all colours of the visible spectrum and can be separated into individual colours. Identify what different surfaces can absorb light and reflect light.
- Demonstrate how white light is a combination of all colours of light.
- Describe how we see different colours in our environments.

Essential skills

Students will learn to:

- Generate testable questions and questions that need to be answered using print resources.
- Revise questions to be testable
- Observe objects and describe commonalities and differences among them.
- Observe how light travels and the properties of light
- Classify in a variety of ways based on properties.
- Predict what might happen.
- Design a fair test to answer an investigable question.
- Revise plan based on observation/ results.
- Conduct simple investigations.
- Investigate the properties of light
- Investigate and explain how various objects affect how light travels
- Collect and record data using appropriate tools, such as:
 - Metric ruler
 - Timer
 - Scales
 - Non-standard measuring devices
- Organize appropriate and accurate measurements and observations, using:
 - Charts and graphs
 - Illustrations or diagrams
 - Journaling
- Draw conclusions based on data, observations, or findings.
- Communicate results or information in an appropriate manner, using:
 - Presentations
 - Visuals
 - Simple reports

Related text-types

Students learn to understand and construct an array of text types, including their purpose and language features. They include:

- *Narratives*: Students are required to create their own story in lesson 2 using shadows and are expected to use prior knowledge to construct it. Students also learn about narratives through the Dreaming story in lesson 1 as they pull apart the features to find meaning.
- *Procedures/Procedural Recount*: Students participate in multiple lessons that require them to understand the purpose and language features of a procedural text and Procedural Recount. They start from deconstructing one and being exposed to them, then create parts of it, then they are required to create their own experiment/procedure as evidence in lessons 4-6.
- *Explanations*: Students provide explanations in different mediums, such as through written text, photographs, drawings, orally, and video recording. Students are given the freedom to choose the way they explain their understandings.

5E Model	Time (Minutes)	Learning Engagement	Resources and Preparation	Outcomes
Engage	<ul style="list-style-type: none"> • 10 	<p>Lesson 1: 'Let There Be Light'</p> <ul style="list-style-type: none"> • Establish a KWL chart, acknowledging students prior knowledge, experiences and understandings regarding light 	KWL chart	EN3-7C
Engage	<ul style="list-style-type: none"> • 20 • 20 • 5 	<ul style="list-style-type: none"> • Students explore a dreaming story 'How the Sun was Made' through a discussion • Students will explore life in the dark through a scavenger activity. • Same activity repeated in the light. • 'Think, Pair, Share' activity discussing feelings and thoughts of the scavenger in the dark and light as well as the differences between both experiences. • Extension: Students create a vocabulary wall where students add words throughout the unit. • <i>Risk Assessment:</i> Activities completed in dark, potential for self-harm. Prior to commencement of activity teacher goes through safety precautions. For example: no running. <p>Lesson 2: Shadowland</p> <ul style="list-style-type: none"> • <u>Part 1: Prior to excursion</u> • Teacher lead discussion on real life examples of light completed on the IWB and then uploaded onto the Wikispace 	Paper Internet to access- 'How the sun was made'- dreaming story Items for scavenger hunt (hidden before commencement of activity)- pencils, notebooks, teddy bears, pebbles	ST3-4WS ENS3.6 VAS3.1 DRAS3.4 DAS3.3 ST3-7PW
	<ul style="list-style-type: none"> • 5 • 5 • 10 • 10 • 10 • 20 	<ul style="list-style-type: none"> • Students discuss what happens to light once hitting the Earth (shadows formed) • Students spend time exploring shadows either their own or on the internet. • Teacher introduces new information to students: Sundials were used to tell time. • Students and Teacher explore concept of sundials on the internet and post their ideas on their wiki • Students create their own sundials individually. • <i>Risk Assessment:</i> Students will be engaging with torches creating possible harm to the eyes if misused. Teacher will prior to commencement of activity explain 	IWB Interne- to explore sundials Chalk iPads cameras	

Explore/ Explain	½ day	<p>safety measures regarding torches. For example: Do not shine the torch above the belly button to anyone. Students will also be completing sundial outside creating the possibility of sunburn and injury. Students will be advised to wear sunscreen and hat. Teacher will also go through playground safety rules. For example: No running during this activity.</p> <ul style="list-style-type: none"> • <u>Part 2: Shadowland</u> • Students will be attending an excursion to the capitol theatre to watch Shadowland. • Students will reflect on their experience on the wikispace under the tab 'Shadowland' • <i>Risk assessment:</i> Students will be leaving the school premises therefore an excursion risk assessment will be undertaken. However, teacher will go over safety precautions to students regarding out of school experiences. For example: Do not leave the group, what to do when lost, hold buddies hand at all times. 	Shadowland excursion	
Explore/ Explain	<ul style="list-style-type: none"> • 10 • 20 • 20 • 10 	<p>Lesson 3: Light Play Box</p> <ul style="list-style-type: none"> • Students will individually hypothesis whether certain materials will allow light to shine straight or through • Students will manipulate materials to gain understanding of what effects each material can do to light. • Students will observe and record their findings through various means. ie: show me app, drawing, writing, photographs. • Students will then place materials in under the correct sections in the room. Sections include 'Refraction, reflection and absorption' • Students will then reflect on their experience by answering questions on the wikispace 	Paper Pencils Materials to manipulate- milk bottles, paper, contact, mirrors, glass Signs (to be placed around classroom)- refracted, reflection and absorption	EN3-3A EN3-9E MA3-1WM MA3-2WM MA3-3WM ST3-3VA ST3-4WS ST3-1VA, ST3-2VA

<p>Explore/ Explain</p>	<ul style="list-style-type: none"> • 10 • 10 • 20 • 10 • 10 	<ul style="list-style-type: none"> • Teacher explains discoveries incorporating scientific terms adding to the word wall • <i>Risk assessment:</i> Students will be using torches and lasers creating possible eye injuries if used inappropriately. Prior to commencement of activity students will be notified of the safety precautions when using torches and lasers, ie: nothing about the belly button. Students will be also notified of the consequences if the materials are abused. <p>Lesson 4: Refraction ‘Light Illusions’</p> <ul style="list-style-type: none"> • Whole class activity: On the IWB students complete activity with teacher using this website http://www.scootle.edu.au/ec/viewing/L3061/index.html. • Teacher lead discussion ‘How do you believe light works?’ • Spot the target activity’: Students are to recreate the scootle activity using materials provided • Students develop the concept that light travels in a straight line • Student’s trial and error until they reach their target. • Students record findings using iPads, drawings, writing or symbols and place on the wiki page under tab; light illusions. • Teacher concludes lesson by reflecting with the students via the wikispace discussing their findings and incorporating scientific literacy and explanations to their findings. • Extension: Students add a prism or multiple prisms to alter the light path. • <i>Risk assessment:</i> Students will be accessing the internet therefore prior to access teacher will advise students of safe use of the internet. Students will also have access to lasers creating possible harm to student’s sight. The teacher will prior to commencement will cover safe use of lasers with students, explaining the harm it could bring if used inappropriately. <p>Lesson 5: ‘Law of Reflection’</p>	<p>IWB Internet- to access wiki and scootle Post it notes Black paper Prisms Lasers Flashlights</p>	<p>EN3-1A EN3-6B EN3-2A MA3-1WM MA3-14MG MA3-16MG MA3-18SP DRA-S3.1 ST3-3VA ST3-4WS ST3-1VA ST3-2VA</p>
<p>Explore/</p>	<ul style="list-style-type: none"> • 10 	<p>Lesson 5: ‘Law of Reflection’</p>		

Explain	<ul style="list-style-type: none"> • 10 • 20 • 10 	<ul style="list-style-type: none"> • Teacher lead brainstorm of student's understandings and experiences with mirrors. This will be placed on the wikispace under; Law of reflections • Teacher poses question: What will happen if light hits a mirror? • Individually students create a hypothesis and write it down on the discussion board on the wikispace. • Students will be experimenting reflection of light using mirrors • Outside students are required to explore and come to a conclusion of their hypothesis. This can be done individually or in pairs. • Students document their learning by drawing the angles in which light is reflecting off the mirrors as well as labelling their diagram • Students can take photographs of the process or their diagrams and upload to the wiki • Teacher facilitates learning by explaining concepts and introducing new vocabulary during the process of exploring • Extensions: Students can add more than one mirror and tests using different objects • <i>Risk assessment:</i> Students will be using mirrors and the reflection of the sunlight if used inappropriately may cause permanent damage to the eye. To decrease the chance of this happening teacher will demonstrate and instruct on the appropriate way of using the mirrors and state the consequences if done wrong. <p>Lesson 6: Absorption</p> <ul style="list-style-type: none"> • Students learn: Light is a source of energy known as heat • Teacher lead discussion: 'Why do we wear dark coloured clothes in winter and bright coloured clothes in summer?' - Completed on a discussion board on the wikispace • Students test out theory outside using a variety of objects provided. • Students will also apply maths knowledge of thermometers to their experiment • Students will record their observations and upload to the wikispace under the tab; absorption. 	<p>IWB- to complete brainstorm Internet- to access wikispace Mirrors Paper Pencils iPads cameras</p> <p>Dark coloured clothing Dark paper Dark boxes White/ light clothing Bright boxes Internet- access wiki Pencils</p>	<p>EN3-8D EN3-9E EN3-3A MA3-1WM MA3-2WM MA3-18SP MA3-9MG MA3-16MG ST3-3VA ST3-4WS ST3-1VA ST3-2VA</p> <p>ST3-3VA ST3-4WS ST3-1VA ST3-2VA</p>
Elaborate	<ul style="list-style-type: none"> • 10 • 20 	<p>Lesson 6: Absorption</p> <ul style="list-style-type: none"> • Students learn: Light is a source of energy known as heat • Teacher lead discussion: 'Why do we wear dark coloured clothes in winter and bright coloured clothes in summer?' - Completed on a discussion board on the wikispace • Students test out theory outside using a variety of objects provided. • Students will also apply maths knowledge of thermometers to their experiment • Students will record their observations and upload to the wikispace under the tab; absorption. 	<p>Dark coloured clothing Dark paper Dark boxes White/ light clothing Bright boxes Internet- access wiki Pencils</p>	<p>ST3-3VA ST3-4WS ST3-1VA ST3-2VA</p>

	<ul style="list-style-type: none"> Students will have access to literature <ul style="list-style-type: none"> Burnie, D. (1998). <i>Light (Eyewitness Guides)</i>. Teacher lead discussion: both students and teachers brainstorm language that can be used. This enables the teacher to recognise students development in scientific literacy. Students will have opportunities throughout the day to research information from their investigation and use inquiry based skills. Students will be expected to post findings on their groups project page. Extension: Students can research how different cultures use heat or sunlight and present to the class <i>Risk assessment:</i> Students will be accessing the internet which could provoke inappropriate use of the internet. Teacher will at the beginning of the lesson discuss the correct usage of the internet. 		
• 10			
	<p>Lesson 8: Designer Fire</p> <ul style="list-style-type: none"> Students spend five minutes in their groups reflecting on the previous lessons findings. Teacher and students complete a discussion reflecting on their findings. Students will identify and compare their group’s findings with other groups. Their discussion will be completed on a mind map and placed on the classrooms wiki. Teacher asks open ended questions where students are able to provide examples to justify their findings. In groups, teacher poses problem ‘During summer how can we keep the classroom cool?’ In groups, students begin to design a device to solve the problem posed. Students are required to purpose a detailed plan of the device, a procedure on how they produce this device and an explanation. Students will be required to consider various cultures during their design 		
• 5			
• 10			
• 10			
• 20			
		IWB Wikispace Internet Paper Pencil Colouring pencils Literature scanner	ST3-7PW ST3-4WS ST3-5WT MA3-2WM MA3-3WM MA3-18SP EN3-1A EN3-6B EN3-2A EN3-3A EN3-7C

Elaborate		<p>process.</p> <ul style="list-style-type: none"> To support this aspect of their learning, students will have access to the internet and a variety of books. Some of the books may include: <ul style="list-style-type: none"> -Parker, L.K. (1896). <i>Australian Legendary Tales</i>, Ballantyne Press, Melbourne: Australia -Berndt, K. (1979). <i>Land of the Rainbow Snake</i>, Collins Publishing, Sydney: Australia Students designs will be scanned and uploaded on their wiki page. Extension: research the development of products in the 21st century in utilising natural light. This is an extension activity however is not directed just for the gifted and talented students. It is open to all learners. <i>Risk assessment:</i> Students will have access to protractors which are sharp objects and may cause potential harm. Students will also have access to iPads and the internet which may lead to misuse. Prior to the commencement of the lesson, teacher will go through internet safety guidelines and safety measures when using a protractor. 		VAS3.1
Evaluate	<ul style="list-style-type: none"> 5 10 5 20 10 10 	<p>Lesson 9: Trial and Error; Constructing your designs</p> <ul style="list-style-type: none"> Teacher and students spend five minutes at the beginning looking through other groups designs on the wikispace. Teacher will also lead a discussion where students will contribute to the word board, expanding their vocabulary. Teacher lead; students will revisit the KWL chart, adding on anything new they have learnt. Students will be provided will various recycled materials to create their devices. Their creations will be in moderation using a box or a container. At the end of the lesson students will present their products to the class. Post presentation students and teacher will ask groups a series of open ended and closed questions regarding their design and their knowledge of the concept of light. 	<p>Internet Wikispace Recycled materials: containers Boxes, paper, string iPads pencils paper</p>	<p>ST3-1VA ST3-2VA ST3-3VA ST3-4WS ST3-5WT ST3-7PW MA3-2WM</p>

	<ul style="list-style-type: none"> • 15 • 10 	<ul style="list-style-type: none"> ▪ Does your product or device absorb, scatter or reflect light? ▪ How does it absorb, scatter or reflect light? ▪ Did you face any challenges during the design and production process? ▪ What did you learn about natural light? <ul style="list-style-type: none"> • <i>Risk assessment:</i> Students will have access to the internet. Safety instruction and guidelines will be stated to the students prior to lesson commencement. <p>Lesson 10: Think and Reflect</p> <ul style="list-style-type: none"> • Reflect on themselves as learners and as a group. This can be represented through writing, drawing and symbols. This will not be shared. • Teacher lead: Teacher poses questions on wiki and students place themselves in a particular area of the room based on their answers. • Questions and answers will include: <ul style="list-style-type: none"> - Did you enjoy learning about light? <ul style="list-style-type: none"> ▪ Yes ▪ No ▪ Not sure • Did you learn something new during this unit of work? <ul style="list-style-type: none"> ▪ Yes ▪ No ▪ Not sure • Did you find the activities challenging? <ul style="list-style-type: none"> ▪ Yes ▪ No ▪ Not sure 	<p>Wikispace Internet IWB</p>	<p>MA3-3WM EN3-1A EN3-2A EN3-9E</p> <p>EN3-1A EN3-3A EN3-6B EN3-7C EN3-9E ST3-1VA ST3-4WS</p>
	<ul style="list-style-type: none"> • 12 	<ul style="list-style-type: none"> • The unit will conclude by looking through the wikispace as a class. Students are able to comment on the process and the wikispace itself. • <i>Risk assessment:</i> Students will be required to move around in the classroom creating possible injuries. Prior to commencement teacher will go through safety indoor guidelines with the children ie; no running. 		

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Resources

20113157, 20110182, 20102143, 20112004

Text:

Berndt, K. (1979). *Land of the Rainbow Snake*, Collins Publishing, Sydney: Australia

Parker, L.K. (1896). *Australian Legendary Tales*, Ballantyne Press, Melbourne: Australia

Burnie, D. (1998). *Light (Eyewitness Guides)*.

Audio/Visual:

- Showme (Version 4.3.0) [app]
- *Light & Optics - Reflection*. Retrieved July 1, 2014, from <http://www.neok12.com/video/Light-Optics/zX55506f6d5e64527161720a.htm>
- Light and Colour Bill Nye [Video file]. Retrieved from <https://www.youtube.com/watch?v=gtgBHsSzCPE>

On-line:

- *Flip out with this light experiment - Science (5) - ABC Splash*. From <http://splash.abc.net.au/media/-/m/103396>
- *Light travels in a straight line*. From <http://www.scootle.edu.au/ec/viewing/L3061/index.html>
- *8 Weird Ways to Cool Down for Summer « The Secret Yumiverse*. Retrieved from <http://thesecretyumiverse.wonderhowto.com/how-to/8-weird-ways-cool-down-for-summer-0129206/>
- *No Central AC, No Problem: Six Ways to Keep Your Home Cool All Summer*. Retrieved from <http://lifelifehacker.com/no-central-ac-no-problem-six-ways-to-keep-your-home-c-729713655>
- *Ancient Australian History: Dreaming - How the sun was made*. Retrieved from <http://www.australianhistory.org/dreamtime>
- *Yearfivelight.wikispaces.com- Online classroom*.

Place:

- Excursion – Shadowland – at State Theatre.
- Outside courtyard
- classroom

Human:

- Students
- Teacher
- Shadowland – People who helped produce it
- Parents/caregivers

Materials (Real life):

- Mirrors
- Interactive Whiteboard,
- Sundials,
- chalk,
- Ipads,
- milk bottles
- paper
- Contact and cellophane
- Safe glass
- Cubic zirconia
- Signs – absorption, reflection, refraction.
- Post it notes
- Black and white materials (clothes, paper, cups)
- Prisms
- Lasers
- Flashlights
- Coloured pencils
- Thermometers

References:

Australian Academy of Science. (2012). *Primary Connection: Linking literacy into science - Light Shows - Year 5*. Canberra: Australian Academy of Science.

Australian Broadcasting Association. (n.d.). *Flip out with this light experiment - Science (5) - ABC Splash*. Retrieved July 2, 2014, from <http://splash.abc.net.au/media/-/m/103396>

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Appendices

20113157, 20110182, 20102143, 20112004

Appendix 1

<http://yearfivelight.wikispaces.com/>

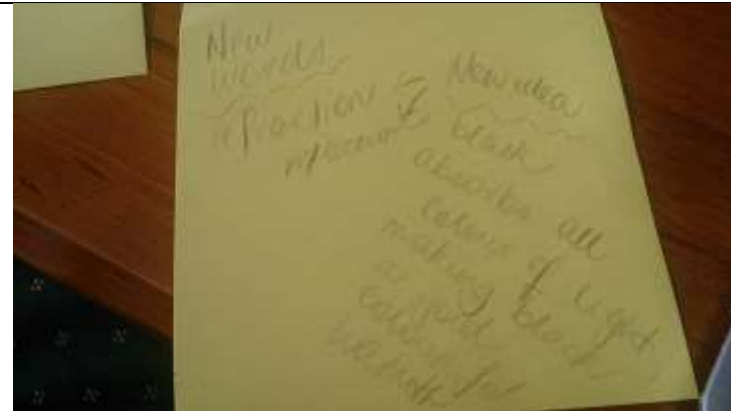
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Password: Stephen

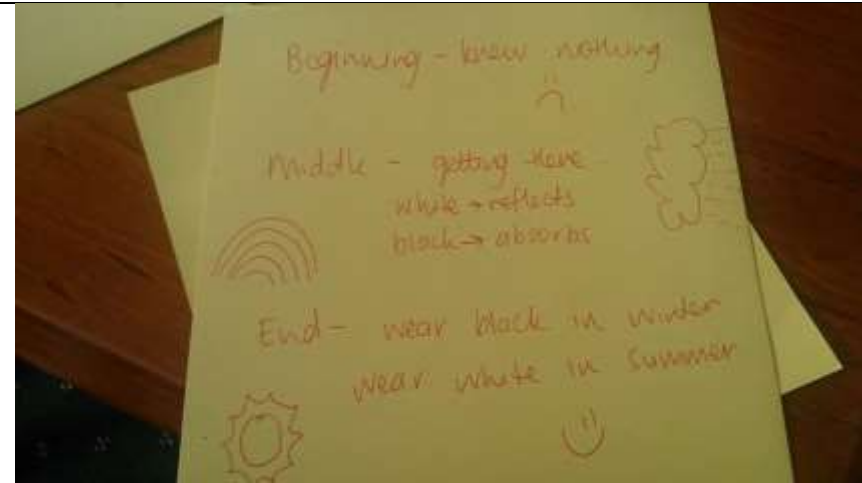
Appendix 2

Some examples of work done in the presentation:

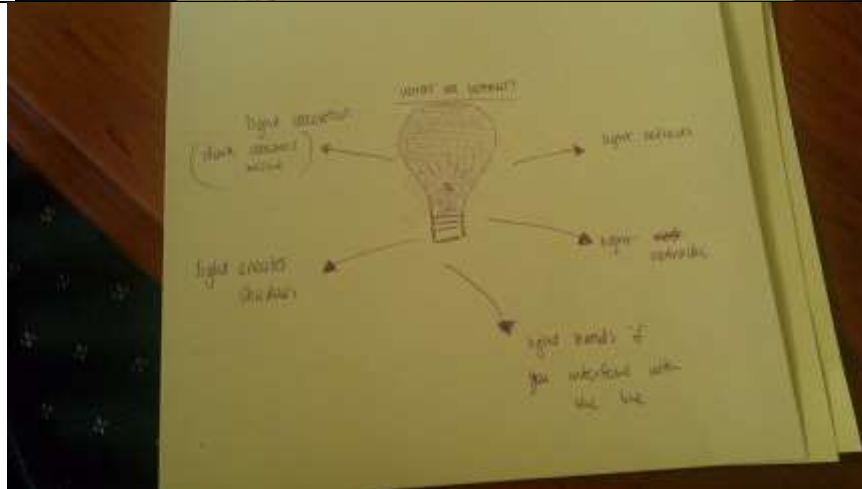
Jottings as a form of
evaluation for lesson 10



Listing as a form of evaluation for lesson 10



Mind-map as a form of evaluation for lesson 10



Drawing as a form of evaluation for lesson 10



Drawing from Lesson 5 with mirrors.

