

Lesson/Activity Planner

Name:	Date:	Subject: Science	Whole class/Small group	Year group: 3
Professional Development Focus (PDF) (This target comes from your weekly review meeting/previous lesson observation) To model using equipment and recording results so that children know how to use the equipment and what to do.		What have you learnt in relation to your own professional development?		
Any other implications for your teaching from previous evaluations and feedback I will need to review prior learning, and the vocabulary from the last lesson.				
Learning outcome related to the NC: (This may be the same for several lessons) Place of this lesson/activity within the sequence of lessons				
Learning Objective for this lesson/activity (with context if appropriate): To notice that light is reflected from different materials.		Success Criteria Investigate the materials - Plan investigation and work as a group to make decisions - Use equipment to measure reflected light - Record findings - Organise findings and provide some reason for results		
Key vocabulary: (<i>consider how you will introduce this, display this and assess its use</i>) Light, dark, natural, artificial, source, blocked, bright, smooth, transparent, opaque, translucent		Resources: (Include health and safety issues, outdoors if appropriate) All children experienced light and dark last week and began to talk about the amount of light that is blocked by different materials. Some children spoke about mirrors, reflecting light.		
Potential misconceptions/Errors We can still see even where there is an absence of any light Eyes 'get used to' the dark Moon and reflective surfaces are light sources Recording errors		Pupils' prior learning for this lesson Children have investigated how light can be blocked by opaque objects		
Who will you focus your assessment on and how will this be done? A and B: what is light? Can they explain what the difference is between light and dark? LA children: what happens when an object is in the path of a light source? Can they explain that light is blocked? Is there a difference depending on the material used?				

HA children: Can children identify how the surface influences the amount of light reflected. Same material, different surfaces/shapes. Can they provide examples of this?
AfL using whiteboards, explanations during TTYP activities, listening and questioning when circulating during activities.

Lesson/activity outline - Think about the inclusivity of your lesson and how you are meeting the needs of all pupils.				
Learning episode & timeline (for example, retrieval, exposition, repetition, practice)	What are the children learning? (What do you want children to do, know, or understand? What are they learning, not just doing?) Consider challenge for all which may include adaptations for those working towards to those working mastery (consider scaffolds and resources/equipment) Will the children be working independently, in pairs, groups?	What is your role during the lesson? <i>Key teaching points</i> <i>Formative assessment including key questions</i> <i>How will you manage transitions between the different elements of your lesson which may include children moving around the room?</i>	What adaptations are needed? Do you have an additional adult? <i>How will you ensure all pupils are supported in their learning?</i>	Overall Assessment of Learning <i>How do you know that the children have learnt this, so that you can go onto the next teaching point?</i> <i>What are you looking to see/ hear?</i> <i>How do you assess this learning?</i> <i>What is your hinge question?</i>
Introduce (L.O.)	Children understand the learning objective and the lesson within the sequence.	Explain L.O. and explain how this lesson links to previous lesson.	Refer to WW from last lesson and remind children of key vocab on wall - supports lower-attaining pupils.	Children can explain what they will learn today. Q: What will you be able to do by the end of this lesson?
Recap exercise	Children are sitting on the carpet with TP and are recalling what they remember about light. Ask children to TTYP before taking responses Some children will draw lines and be able to do this. Children on carpet and have whiteboards to draw ideas- AfL	Q: What is light? What is darkness? Can you see the sun at nighttime? Yes/No? Assessment - Focus on A and B and ask to explain to check their understanding. Could the children see when there was no light? <i>If any children are unsure – revisit bear cave activity and articulate exactly what happens.</i> What happens when light is emitted from a light source? Where does it go? Children draw their ideas on their whiteboards. <i>Clarify that light is emitted from an source in all directions</i>	Mrs B is sitting with A and B and supporting TP activity. Refer to WW and key vocabulary. Mrs B records children's ideas on whiteboard. Mrs B checks understanding of those who I cannot see.	A and B explain that light is emitted from a light source and travels in all directions. Children can use the terms <i>reflect, mirror, source, object</i>
I do (modelling)		Watch: https://www.bbc.co.uk/bitesize/topics/zbssgk7/articles/zqdx82 What did you notice about the mirror and black wall?	When describing what is happening, articulate thought process – acting	Children can explain that we need light to see anything

	Children are listening to the video and looking at my modelling	Explain and draw on IWB: • When light from an object is reflected by a surface, it changes direction. • It bounces off the surface • Smooth, shiny surfaces such as mirrors and polished metals reflect light well. • Dull and dark surfaces such as dark fabrics do not reflect light well. <i>If an object can be seen, it must reflect, or emit, light</i>	as a scientist	
Assess	Use TTYP to give children time to think and construct responses	Qs: • What do you know about reflection? • What is reflection? • Can you think of any reflective surfaces? • What and where?	Mrs B to work with A and B and then to circulate and listen to other TPs. Model use of WW to support use of vocab	Children can describe experiences involving reflective surfaces. Children can name various reflective surfaces and begin to identify key features
I do (modelling)	Children looking at material and watching how to conduct the investigation	Use a range of mirrors and reflective surfaces as prompts, if necessary. Can chn make links to real-life situations? Explain we are going to think about reflective and non-reflective surfaces. Show children a range of different materials in a gratnell tray. Explain that they will be looking at different materials and thinking about what happens when they shine light on them. Model how to use the torches and data loggers/ipads– care when using and clarify expectations. With Mrs W, model how to shine light on each material and record light measurement in lux - what do they notice? Discuss making predications and why this is important in science	Mrs B to work with A and B and then to circulate and support others – prompts to use vocab of source, reflect, light meter, lux, brighter.	Children can explain why the activity is set up as it as and identify potential issues with the process of recording data. Children can explain what they would expect to observe.
We do (Practice)	Give each group one material, a light meter and a torch. Working together, they use the torches to shine light on a surface and recording the light level reflected. Explain that they will be investigating the	Organise children into groups of 4 They need to work as a group, and each have a go at holding the torch and selecting materials. They need to record the light reflected from the materials. Model with Mrs W. Gather feedback and record on ww.		Children can explain what they are doing and why they have set up the activity in the way they have. They begin to identify the need for accuracy, and some can identify when there is an

	materials and then sharing findings.			anomaly or an unexpected result
You do (Task)	Pupils work in groups to apply skills and observed.	Give the groups a range of different materials and a torch. E.g. tin foil, paper, wood, metal, fabric. Explain that they will be working in these groups and will need to explain/record/note what happens when they shine the torch on the surface. <i>Transition children to tables, one group at a time</i> Give them time to explore the reflectiveness of each material. Bring back as a class after a few minutes and establish that they all now have some findings. <i>'1, 2, 3 eyes on me'</i>	Mrs B to distribute gratnell trays with all resources.	
Assess		<i>While seated at tables, ask:</i> What did they notice? What is being 'recorded'? How can we RECORD these findings? Why do we need to record results in science? What if scientists didn't record anything? What could we do? Explain we need to record findings in a table.		Some children can identify unexpected results and offer some explanations for these, linking this with real-life situations.
I do (modelling)		Model drawing a table on visualiser (use A4 sheet – these will be kept in floor book) and take responses/findings from each group. Use a ruler and agree on titles for rows and columns. Clarify expectations.		Children can explain what they observed and can present findings in some way.
We do (Practice)		On w/b, children work in groups to construct a table and add one set of information		Children can offer reasons for presenting information in a particular way. They understand why recording results is important in science.
You do (Task)		Send children off again to complete activity in groups and move between groups.		Children collate findings on a chart/diagram/ipad

		Check for understanding and listen to ideas and vocabulary being used. Assess for understanding and revisit ideas about reflection if any children are unsure – possible mini plenary Give children a 5-minute notice period and remind of SC and expectations. Ask children to return all equipment to trays and leave in centre of tables <i>Transition back to carpet, with results on sheets. One group at a time</i>		
Plenary		What did the children notice? Ask children to explain what happens when they shine the torch on the surface. Could the recording be done another way? Take suggestions Show: https://explorify.uk/en/activities/what-if/we-didnt-have-mirrors Discuss and share ideas. When do we use mirrors in everyday life? Make vocabulary expectations clear- sentence stems: I know a surface is reflective because... All reflective surfaces...		Children can explain which materials reflected most light and provide evidence. Children present data in an organised way. Some children will recognise anomalies and identify unexpected results. Children can explain how reflection is used in everyday life. Children can use sentence stems to structure responses.
Lesson Evaluation				
What did the children learn?				
How do you know?				
Which teaching strategies worked most effectively in this lesson?				

Which teaching strategies were less effective in this lesson/activity? Why do you think this was the case?	
What did you learn about your own practice and developmental needs?	
What are the implications for you? What will you do to turn this into action during the next lesson/activity?	