




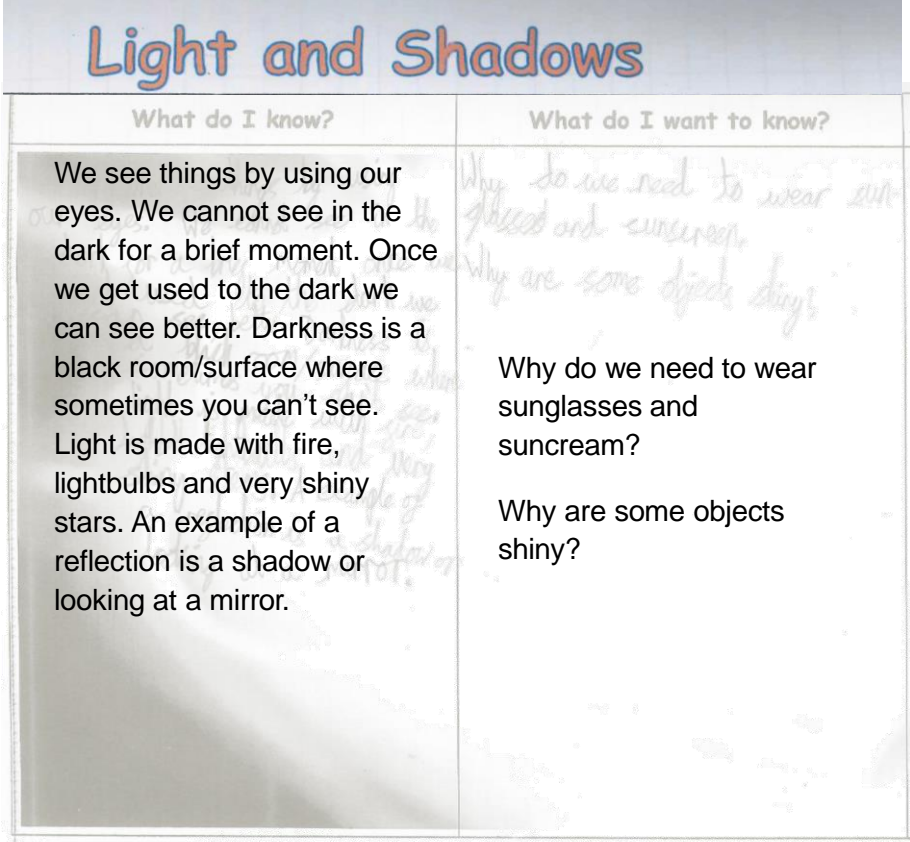
Examples of Work


Johnny

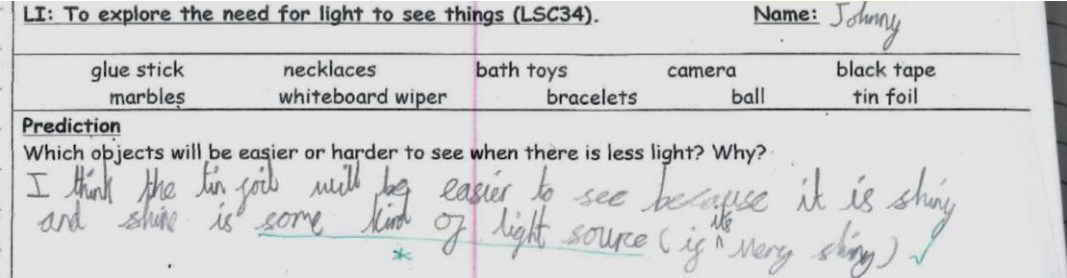
Light - Year 3




	Year	3	Topic	Light
	Focus of assessment (National Curriculum statements)			
	<ul style="list-style-type: none"> Recognise that they need light in order to see things and that dark is the absence of light. 			
	Description of activity			
	The children were asked to think about what they already knew about light and shadow and given some key words to prompt them – see, dark, light, reflection, shadow.			


EVIDENCE OF LEARNING		ASSESSMENT
Oral evidence	Examples of work	Knowledge
		<p>At this point, Johnny does not understand that darkness is the absence of light and therefore we cannot see in the dark, as we need light in order to see things.</p> <p>Johnny can name a range of light sources. Johnny is not clear about the difference between a shadow and a reflection.</p>
Teacher observations Johnny holds a common misconception that we can see in the dark when our eyes adjust to it.		Working scientifically

	Year	3	Topic	Light
	Focus of assessment (National Curriculum statements)			
	<ul style="list-style-type: none"> 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. 			
	Description of activity			
	The children were asked to make predictions about how easy it would be to see different objects if there were different amounts of light.			


EVIDENCE OF LEARNING		ASSESSMENT
Oral evidence	Examples of work	Knowledge
		Johnny is not clear about the difference between a light source and reflected light.
Teacher observations		Working scientifically
Johnny is using the word 'shiny' rather than 'reflective' at this stage.		

	Year	3	Topic	Light
	Focus of assessment (National Curriculum statements)			
	<ul style="list-style-type: none"> 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. 			
	Description of activity			
	Working in pairs, the children chose from a selection of closed boxes that each contained a different object and tried to identify the object by looking through a small eye hole. There was a second small hole in each box so the children could control the amount of light that was entering by covering it with their hand or tracing paper paper or leaving it uncovered.			

EVIDENCE OF LEARNING		ASSESSMENT																								
Oral evidence	Examples of work	Knowledge																								
	<table border="1"> <thead> <tr> <th>Can the object be seen with very little light?</th> <th>Can the object be seen with more light?</th> <th>What might the object be? Can you describe it?</th> <th>Were your predictions correct?</th> </tr> </thead> <tbody> <tr> <td>Yes I can see something</td> <td>Yes I can see something shiny</td> <td>needle</td> <td>my prediction is correct</td> </tr> <tr> <td>No I can't see anything</td> <td>Yes I can see something soft</td> <td>Soft toy <i>both toy green and yellow</i></td> <td>my prediction was correct</td> </tr> <tr> <td>No I can't see anything</td> <td>yes I can see something black</td> <td>black top</td> <td>my prediction is correct</td> </tr> <tr> <td>No I can't see anything</td> <td>Yes I can see a box</td> <td>camera</td> <td>my prediction is correct</td> </tr> <tr> <td>No I can't see anything</td> <td>No I still can't see anything</td> <td>marbles <i>in foil</i></td> <td>my prediction was incorrect</td> </tr> </tbody> </table>	Can the object be seen with very little light?	Can the object be seen with more light?	What might the object be? Can you describe it?	Were your predictions correct?	Yes I can see something	Yes I can see something shiny	needle	my prediction is correct	No I can't see anything	Yes I can see something soft	Soft toy <i>both toy green and yellow</i>	my prediction was correct	No I can't see anything	yes I can see something black	black top	my prediction is correct	No I can't see anything	Yes I can see a box	camera	my prediction is correct	No I can't see anything	No I still can't see anything	marbles <i>in foil</i>	my prediction was incorrect	Johnny is not showing evidence, as yet, of being secure with the concept that you need light to see things.
Can the object be seen with very little light?	Can the object be seen with more light?	What might the object be? Can you describe it?	Were your predictions correct?																							
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Teacher observations	<p>*<i>What do you now know about shiny things? Are they light sources? why are they shiny?</i></p> <p><i>They are not light sources but they reflect very well light</i></p>	Working scientifically																								
<p>In response to the teacher's marking, Johnny shows an understanding of the difference between a light source and a reflective object.</p> <p>Johnny has identified that some objects are easier to see depending on their colour and how shiny they are.</p>	<p>Explain why some objects are easier to see than others when there is less light. Try to use these words: material shiny dull bright colour big small</p> <p><i>Some objects are easier to see because if the object is shiny and big, bright and has lots of colour it is easier. I think dull objects are harder to see because they don't have much colour.</i></p>																									

	Year	3	Topic	Light
	Focus of assessment (National Curriculum statements)			
	<ul style="list-style-type: none"> 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. 			
	Description of activity			
	A writing frame was provided for Johnny to clarify his thoughts.			

EVIDENCE OF LEARNING		ASSESSMENT
Oral evidence	Examples of work	Knowledge
		<p>Johnny is developing an understanding that light is required in order to see things. He has also demonstrated again that he can name some light sources.</p> <p>He is not demonstrating a good understanding of reflection at present.</p>
<p>Teacher observations</p> <p>With prompting by the teacher's marking, Johnny demonstrates an understanding that the moon is not a light source.</p>		<p>Working scientifically</p>

	Year	3	Topic	Light
	Focus of assessment (National Curriculum statements)			
	<ul style="list-style-type: none"> Recognise that they need light in order to see things and that dark is the absence of light. 			
	Description of activity			
	To enable the children to experience true darkness, the teacher set up a black out tent in the classroom. The children went inside two at a time to see what they could see.			

EVIDENCE OF LEARNING		ASSESSMENT
Oral evidence	Examples of work	Knowledge
<p>Johnny: "It was really dark in the tent. I couldn't see anything at all, not even my hand right in front of my face. When Miss let a little bit of light in, I could see Adam."</p> <p>Teacher: "Could you see when your eyes got used to the dark?"</p> <p>Johnny: "No, even though we were in there for quite a while, I still couldn't see. Getting my eyes used to the dark didn't help me see."</p>		<p>This additional experience has helped Johnny to show that he now understands that, when there is no light present, it is not possible to see anything.</p>
Teacher observations	Illustrative image only	Working scientifically
		<p>This shows that, through this experience, Johnny has corrected his previous misconception about being able to see in the dark when his eyes got used to it.</p>



Year

3

Topic

Light

Focus of assessment (National Curriculum statements)

- Notice that light is reflected from surfaces.

Description of activity

The children were given some different materials and a torch and allowed time to explore their reflectiveness.

EVIDENCE OF LEARNING

ASSESSMENT

Oral evidence

Examples of work

Knowledge

Object	Describes what it looks like	How shiny is it?
Tin Foil	Silver, Shiny	4/5 shiny (scratched up to shine)
Table	hard, smooth, rough, dull	1/5 not on the dull side very shiny
CD	shiny, smooth	5/5 not shiny at all (not a fair test)
Whiteboard	plastic, smooth, hard, a little shiny	3/5 not shiny
Black Paper	dark, dull, smooth, flat, flexible	0/5 Not shiny at all


Johnny continues to use the basic vocabulary of 'shiny' and 'dull', rather than 'reflective'.

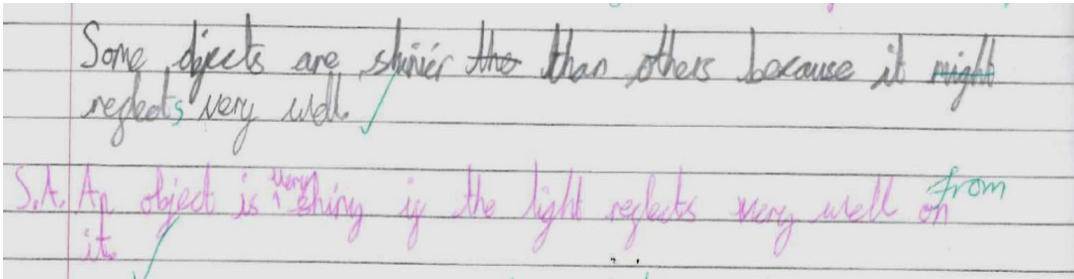
Working scientifically


Johnny sets up a simple comparative test. He records his findings in a table and chooses to use a scoring system out of 5 to compare the reflectiveness of each material.

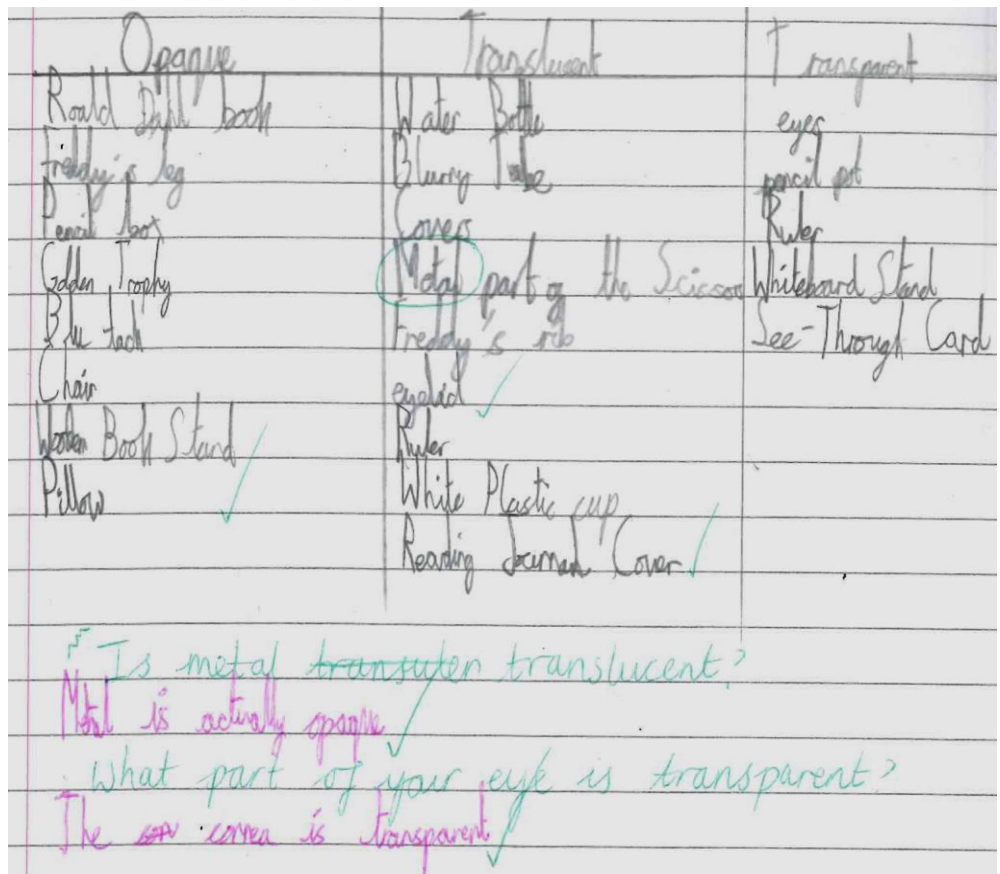
Teacher observations


Johnny's group shone a torch onto each material to see how reflective it was.

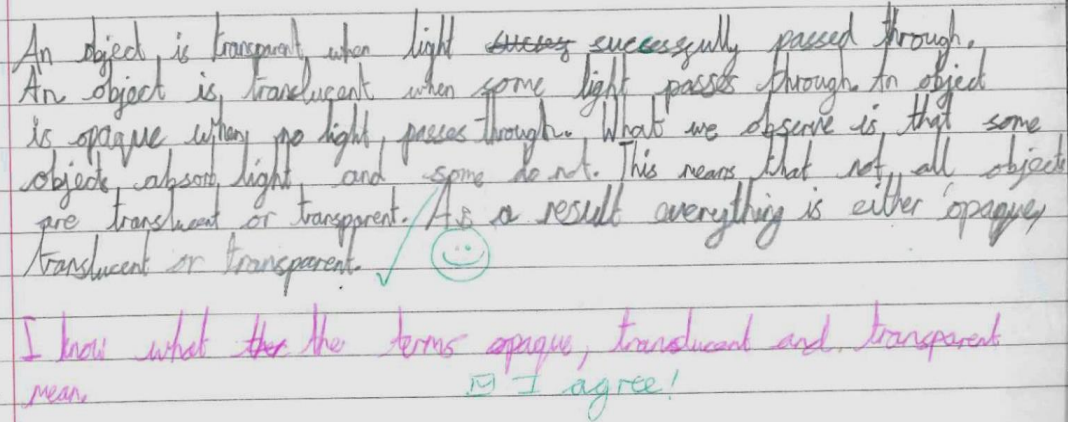
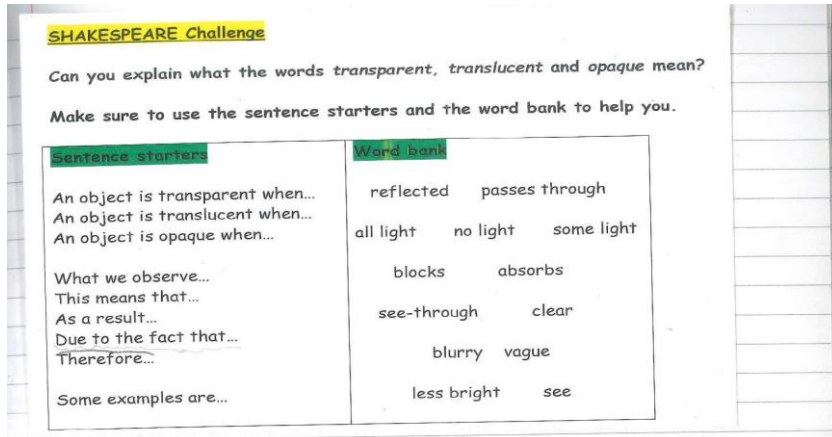
	Year	3	Topic	Light
	Focus of assessment (National Curriculum statements)			
	<ul style="list-style-type: none"> Notice that light is reflected from surfaces. 			
	Description of activity			
	The children were asked to write about their findings.			


EVIDENCE OF LEARNING		ASSESSMENT
Oral evidence	Examples of work	Knowledge
		This short clear piece of writing shows that Johnny now understands the link between a shiny material and the light being reflected. He shows he has a secure understanding of this statement as he recognises that light is reflected better by some surfaces than others.
Teacher observations		Working scientifically

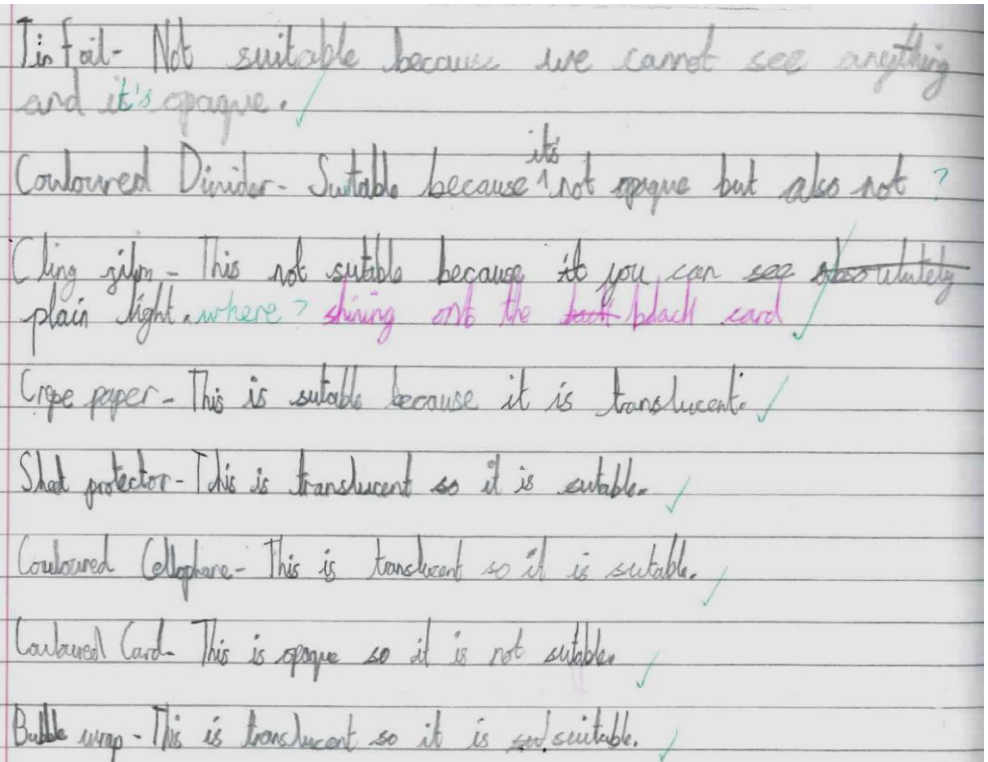
	Year	3	Topic	Light
	Focus of assessment (National Curriculum statements)			
	<ul style="list-style-type: none"> Recognise that shadows are formed when the light from a light source is blocked by an opaque object. 			
	Description of activity			
	The teacher defined the key vocabulary – opaque, transparent and translucent. The children were then asked to find objects around the room and record whether they were opaque, transparent or translucent.			


EVIDENCE OF LEARNING		ASSESSMENT
Oral evidence	Examples of work	Knowledge
<p>Teacher observations</p> <p>Johnny corrected his mistake about metal.</p> <p>The final purple comment about the eye is beyond the Key Stage 2 curriculum.</p>		<p>Working scientifically</p> <p>Johnny records his evidence in a table. Other children drew circles and recorded using a Venn diagram.</p>

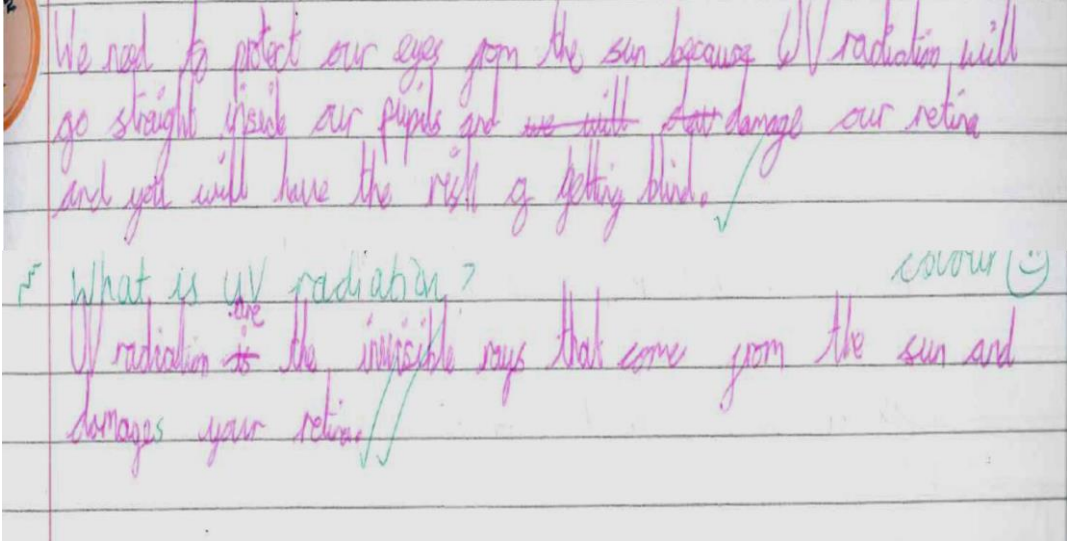
	Year	3	Topic	Light
	Focus of assessment (National Curriculum statements)			
	<ul style="list-style-type: none"> Recognise that shadows are formed when the light from a light source is blocked by an opaque object. 			
	Description of activity			
	The children were given a word bank and sentence starters to help them write definitions for the key vocabulary.			


EVIDENCE OF LEARNING		ASSESSMENT
Oral evidence	Examples of work	Knowledge
		This concise piece of writing shows that Johnny has a clear understanding of the key vocabulary 'opaque', 'transparent' and 'translucent'.
Teacher observations		Working scientifically

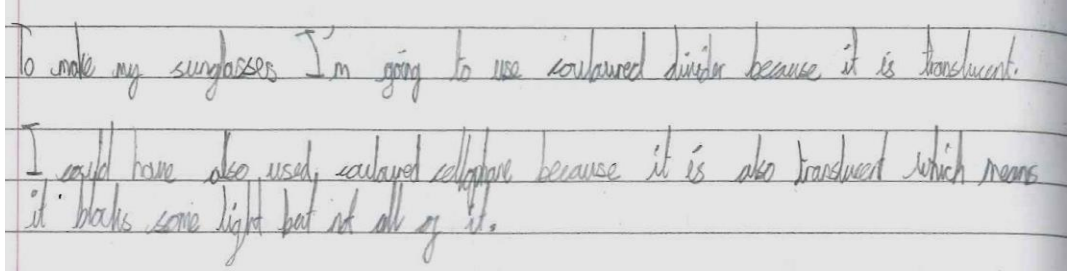
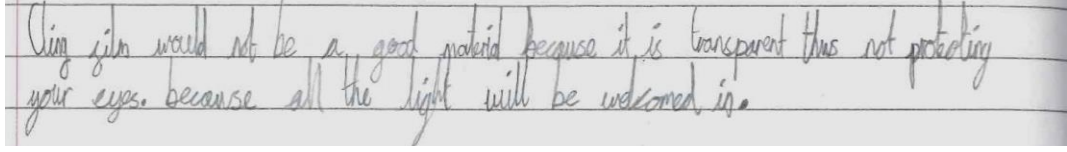
	Year	3	Topic	Light
	Focus of assessment (National Curriculum statements)			
	<ul style="list-style-type: none"> Recognise that light from the Sun can be dangerous and that there are ways to protect their eyes. 			
	Description of activity			
<p>The children were asked to think back to when they had watched the eclipse. The teacher also showed a film of people watching the eclipse. The children were asked to consider why people were wearing glasses or looking through colanders. They were reminded that this was to prevent people damaging their eyes. The children were then given a range of materials and asked to test them to consider which would be most suitable for making a pair of sunglasses. The children shone a torch through the material and observed the light coming through.</p>				


EVIDENCE OF LEARNING		ASSESSMENT
Oral evidence	Examples of work	Knowledge
<p>“Even if you are wearing sunglasses, you should not look at the Sun. When we watched the eclipse, we had to wear special sunglasses.”</p>		<p>Johnny is now consistently using the words 'opaque', 'transparent' and 'translucent'. He understands that the sunglasses need to be made of a material that is translucent.</p>
Teacher observations		<p>Working scientifically</p> <p>Johnny carries out a simple comparative test and uses his findings to suggest which materials are suitable to use for a pair of sunglasses.</p>


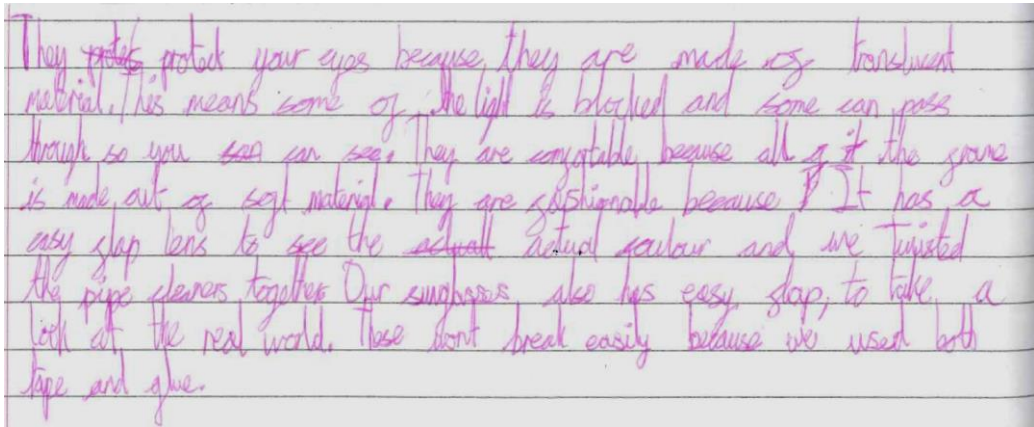
	Year	3	Topic	Light
	Focus of assessment (National Curriculum statements)			
	<ul style="list-style-type: none"> Recognise that light from the Sun can be dangerous and that there are ways to protect their eyes. 			
	Description of activity			
	The children were asked to explain why they should protect their eyes from sunlight.			


EVIDENCE OF LEARNING		ASSESSMENT
Oral evidence	Examples of work	Knowledge
Teacher observations		Johnny understands that sunlight can damage eyes.
The detail about the parts of the eye and UV radiation is beyond the Key Stage 2 curriculum.		Working scientifically


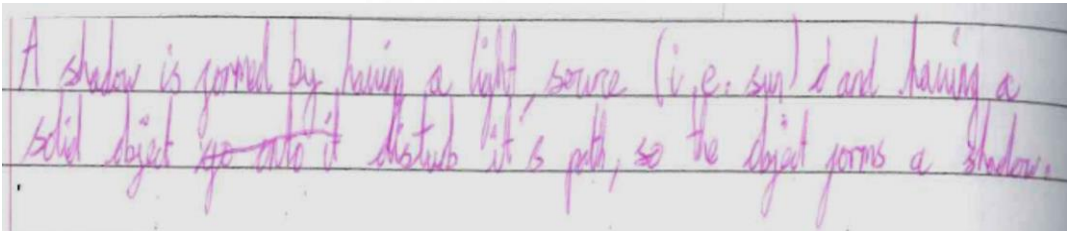
	Year	3	Topic	Light
	Focus of assessment (National Curriculum statements)			
	<ul style="list-style-type: none"> Recognise that light from the Sun can be dangerous and that there are ways to protect their eyes. 			
	Description of activity			
	The children were asked to explain why they would choose, or not choose, materials to make sunglasses.			


EVIDENCE OF LEARNING		ASSESSMENT
Oral evidence	Examples of work	Knowledge
		Johnny is consistently using the key vocabulary. He shows a clear understanding that the sunglasses need to be made of a material that is translucent, rather than transparent, so that some light, but not all, is blocked, protecting your eyes.
Teacher observations		Working scientifically Johnny applies his knowledge about how light travels through different materials to answer the enquiry question.

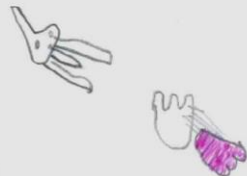
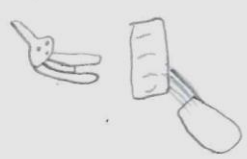
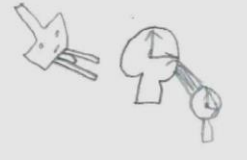
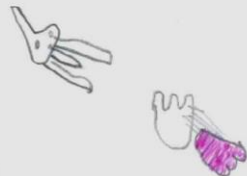
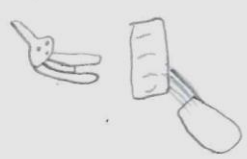
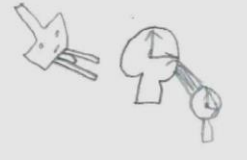
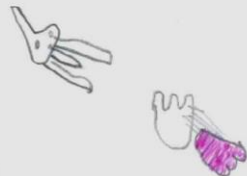
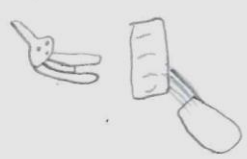
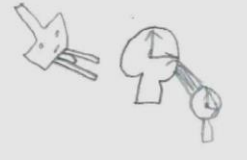
	Year	3	Topic	Light
	Focus of assessment (National Curriculum statements)			
	<ul style="list-style-type: none"> Recognise that light from the Sun can be dangerous and that there are ways to protect their eyes. 			
	Description of activity			
	The children made their sunglasses and verbally tried to 'sell' their glasses to their partner, ensuring they covered the key questions below. They also made posters. After the talk activity, the children then wrote a persuasive piece about their sunglasses.			


EVIDENCE OF LEARNING		ASSESSMENT
Oral evidence	Examples of work	Knowledge
	 <p>Why are your sunglasses the best?</p> <p>Answer these questions in your reply:</p> <p>How do they protect your eyes? ✓</p> <p>Why are they comfortable? ✓</p> <p>What makes them look fashionable? ✓</p> <p>Will they break easily? Why not?</p>	<p>This additional piece of writing has provided Johnny with another opportunity to show that he understands how the sunglasses protect the eyes by blocking some of the light.</p>
Teacher observations		Working scientifically

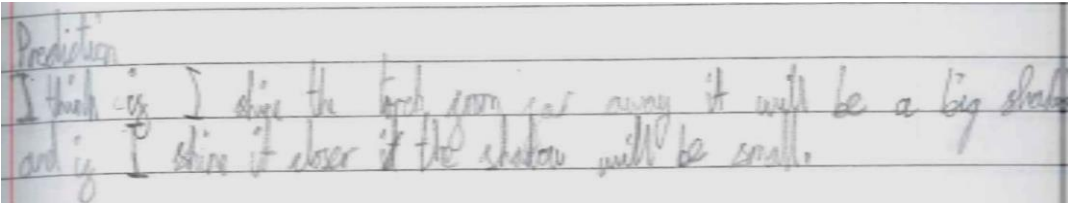
	Year	3	Topic	Light
	Focus of assessment (National Curriculum statements)			
	<ul style="list-style-type: none"> Recognise that shadows are formed when the light from a light source is blocked by an opaque object. 			
	Description of activity			
The children went outside into the playground and explored making different shaped shadows with their bodies.				


EVIDENCE OF LEARNING		ASSESSMENT
Oral evidence	Examples of work	Knowledge
<p>"My shadow is very black. It joins at my feet. I can make it not be joined if I jump in the air. I can make the shadow different shapes by changing the shape of my body."</p>		<p>Johnny knows that to create a shadow a light source and object are required.</p>
<p>Teacher observations</p> <p>Johnny has made the common mistake of using solid as a synonym for opaque.</p> <p>Johnny writes about the path of the light being disturbed. More accurate vocabulary would be 'blocked'.</p>		<p>Working scientifically</p>
		

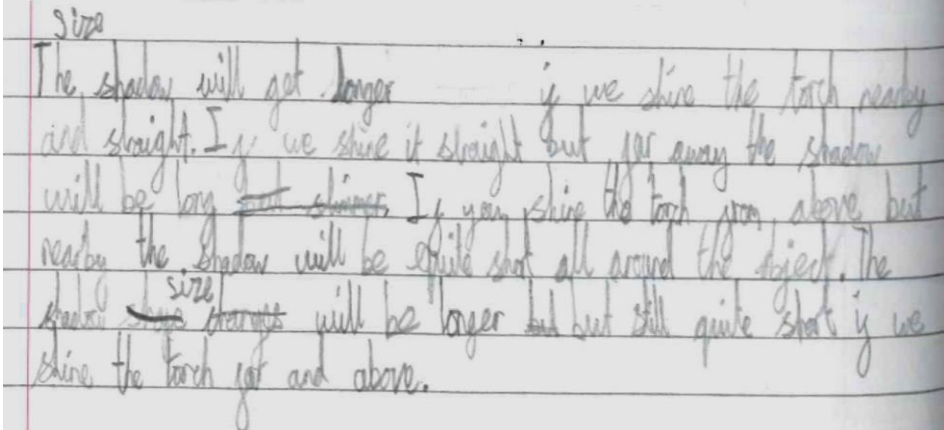
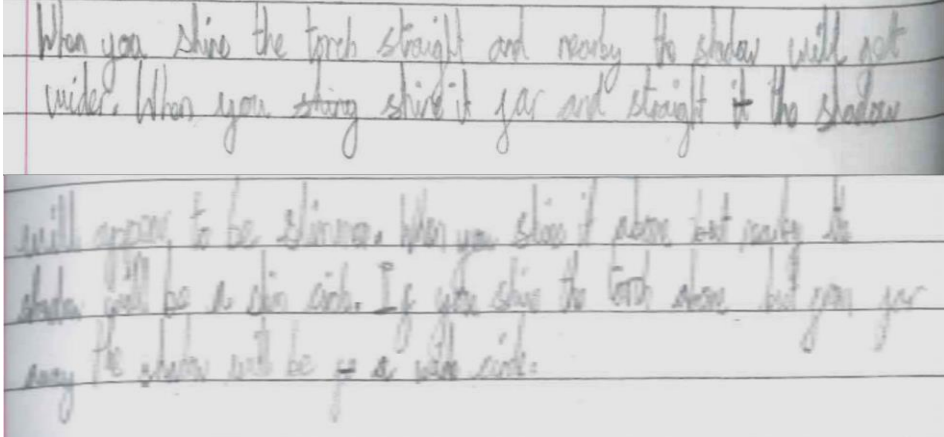
	Year	3	Topic	Light
	Focus of assessment (National Curriculum statements)			
	<ul style="list-style-type: none"> Recognise that shadows are formed when the light from a light source is blocked by an opaque object. 			
	Description of activity			
	The children were asked to explore the difference in the shadow when using a transparent, translucent and opaque object.			


EVIDENCE OF LEARNING		ASSESSMENT												
Oral evidence	Examples of work	Knowledge												
<p>"This shadow (referring to the shadow made by the poster) was grey. Not as dark as outside."</p>	<p><i>Prediction:</i> I think opaque opaque materials will make the best shadows because it blocks every single bit of light.</p> <table border="1"> <thead> <tr> <th>Object/material</th> <th>Diagram of the object and its shadow</th> <th>What was making the shadow?</th> </tr> </thead> <tbody> <tr> <td>pencil pot (transparent)</td> <td></td> <td>The object</td> </tr> <tr> <td>poster (opaque)</td> <td></td> <td>The object</td> </tr> <tr> <td>poster toy clock (transparent)</td> <td></td> <td>The of object</td> </tr> </tbody> </table>	Object/material	Diagram of the object and its shadow	What was making the shadow?	pencil pot (transparent)		The object	poster (opaque)		The object	poster toy clock (transparent)		The of object	<p>Johnny is able to use his knowledge about opaque objects to explain why this shadow will be the best (darkest).</p>
Object/material	Diagram of the object and its shadow	What was making the shadow?												
pencil pot (transparent)		The object												
poster (opaque)		The object												
poster toy clock (transparent)		The of object												
Teacher observations		Working scientifically												


	Year	3	Topic	Light
	Focus of assessment (National Curriculum statements)			
	<ul style="list-style-type: none"> Find patterns in the way that the size of shadows change. 			
	Description of activity			
	The children were given a circular object and asked to move the torch in various ways to see the effect on the shadow.			

EVIDENCE OF LEARNING		ASSESSMENT
Oral evidence	Examples of work	Knowledge
	<p>What happens to the <u>size</u> of the shadow when:</p> <ul style="list-style-type: none"> ➤ You shine the torch straight onto the object from nearby? ➤ You shine the torch straight onto the object from further away? ➤ You shine the torch onto the object from above from nearby? ➤ You shine the torch onto the object from above from further away? <p>What happens to the <u>shape</u> of the shadow when:</p> <ul style="list-style-type: none"> ➤ You shine the torch straight onto the object from nearby? ➤ You shine the torch straight onto the object from further away? ➤ You shine the torch onto the object from above from nearby? ➤ You shine the torch onto the object from above from further away? 	<p>Johnny is aware that the shadow will change size when the torch is moved, but his prediction is incorrect.</p>
Teacher observations	<ul style="list-style-type: none"> ➤ You shine the torch straight onto the object from nearby? ➤ You shine the torch straight onto the object from further away? ➤ You shine the torch onto the object from above from nearby? ➤ You shine the torch onto the object from above from further away? 	Working scientifically
		

	Year	3	Topic	Light
	Focus of assessment (National Curriculum statements)			
	<ul style="list-style-type: none"> Find patterns in the way that the size of shadows change. 			
	Description of activity			
	The children are asked to write about what they found out about how the size of the shadow changes when the light source is moved.			

EVIDENCE OF LEARNING		ASSESSMENT
Oral evidence	Examples of work	Knowledge
	 <p>The shadow will get longer if we shine the torch nearby and straight. If we shine it straight but far away the shadow will be long and thinner. If you shine the torch from above but nearby the shadow will be quite short all around the object. The shadow size ^{size} changes will be longer but still quite short if we shine the torch far and above.</p>	<p>This writing shows that Johnny has observed that the size and shape of the shadow varies depending on the position of the light source; but he is struggling to describe the pattern clearly. This is simplified in the next task.</p>
Teacher observations	 <p>When you shine the torch straight and nearby the shadow will not widen. When you shine it far and straight it the shadow will appear to be thinner. When you shine it from above but nearby the shadow will be a thin circle. If you shine the torch above but far away the shadow will be a wide circle.</p>	<p>Working scientifically</p>

	Year	3	Topic	Light
	Focus of assessment (National Curriculum statements)			
	<ul style="list-style-type: none"> Find patterns in the way that the size of shadows change. 			
	Description of activity			
	The children were asked to make shadow puppets for the characters in a story they had been reading in English. They then used the shadow puppets to retell the story by casting the shadows onto a screen made of white fabric.			

EVIDENCE OF LEARNING		ASSESSMENT
Oral evidence	Examples of work	Knowledge
<p>"I used tin foil to make my shadow puppet as it is opaque and blocks all the light, so the shadow was dark and easy to see.</p> <p>"I showed the character growing up by making the shadow bigger. I moved the puppet closer to the light."</p>		<p>Johnny has shown consistently in different activities that he understands the meaning of the terms 'opaque', 'transparent' and 'translucent', and he knows how this affects the shadow produced. He is also able to demonstrate and describe the pattern of how the size of a shadow changes depending on position of the object and light source.</p>
<p>Teacher observations</p> <p>Johnny chose an appropriate material to use for his shadow puppet.</p> <p>Johnny was able to demonstrate how to make the shadow bigger and smaller.</p>	<p>Illustrative image only</p>	<p>Working scientifically</p>



Overall summary

Secure

Through different activities, Johnny developed the understanding that without light you cannot see, even if you give your eyes time to adjust to the dark. He understands that shiny objects reflect light and that some materials reflect light better than others. He shows understanding of how to protect his eyes from being damaged by the Sun. He shows a good understanding of the difference between opaque, transparent and translucent materials and how these affect the quality of a shadow produced. He is able to demonstrate how to change the size and shape of a shadow and can talk generally about the pattern he observed, linking shadow size and shape to relative positions of light source and object.