Learning journey	Science	Light	Year 3 Autumn 2	

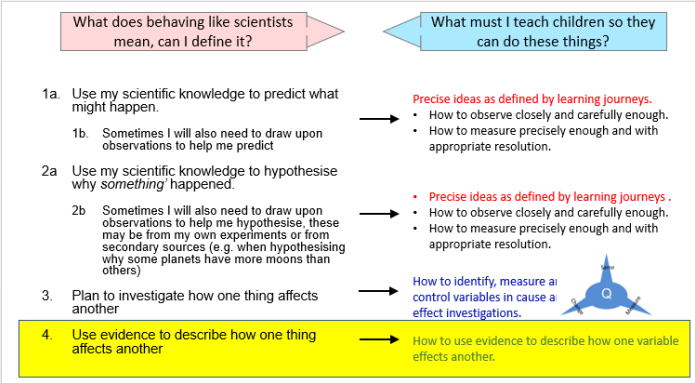
Building on prior learning	Theme overview	Preparing for future learning	Vocabulary
This is new learning. Children will not have learnt about this in KS1. They may know that light comes from sources such as the sun and light bulbs.	Chapter 1: Light and sight There must be light for us to see. We need light to see things, even **shiny** things. Light comes from a **source**. Chapter 2: What light does when it hits materials If an object is **transparent** light will go through it and we will be able to see through it. If an object is **opaque,** it will block the light and no light will get through. If an object is perfectly **reflective** light will bounce back off it and we will see reflections of objects. If the material is **translucent,** it will allow light through, but we won't be able to see through it.	In Y6 children will learn: that when light is emitted from a light source it travels in straight lines until it hits an object. This can be represented by an arrow. Shadows form when light hits an opaque object, the area behind is in darkness because light can only travel in straight lines When light hits a transparent object, it goes through it in a straight line. When light hits a translucent material, it goes through it but is scattered, When light hits a mirrored surface, it reflects off it in straight lines, Sometimes when light hits a material, it reflects off it in many different directions (it is scattered). Shiny surfaces are better reflectors and rough surfaces scatter light more. Opaque objects don't allow any light to pass through them. Animals see objects when light is reflected off the object and enters the eye through the pupil.	Light, dark, shadow, light beam. Transparent, translucent, opaque. Shiny, reflective, reflection.

NC coverage and HWJS skills development

National curriculum coverage for Science

- 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.

HWJS skills development



A Model of Progression.

1. Pose problems that require the application of knowledge being taught.
2. Deconstruct the problem to define what a child must understand and be able to do to tackle the problem (including what they need to observe and measure), teach these skills and knowledge ***at that point.***
3. As children progress through the curriculum they will tackle problems using new ideas, and when the problem requires with closer observation and more precise measurement.

Good enough progression is being able to tackle these problems.

Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions

Knowledge organisers

Chapter 1: Light and sight

We can only see things when there is light and the light had to come from somewhere. All light originally comes from a light source

Chapter 2: What light does when it hits materials

When light hits an object, it can do a number of things

- If the object is transparent, it will go through it and we will be able to see through it.
- If the object is opaque, it will block the light and no light will get through.
- If the object is perfectly reflective, light will bounce back off it and we will see reflections of objects.
- If the material is translucent, it will allow light through but we wont be able to see through it.

Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables Setting up simple practical enquiries, comparative and fair tests – use the Planning Mindmap. Children gather evidence to describe the relationship between variables (cause and effect) by identifying what must be changed, what measured and what must be kept the same.	

Connections / deepening understanding How is the understanding of this area deepened in other areas of the curriculum? What inks are there in the other subjets in the curriculum?	**RADE** Are the rights of the child relevant in this area of study - do they get referred to in the work?	**Assessment** By the end of the unit the children will be able to … Details of the objectives that they will have covered within this unit of work		
English — Note making and report writing. **DT/ ICT** – Making night lights.		We need light to see things, even **shiny** things.	Opaque objects block the light and shadows are formed.	Translucent objects let some light through being Transparent objects let all the light through. For reflective objects light will bounce back off it and we will see reflections of objects.

Assessment recording for the unit - checking the level of pitch of the work			
Key skill(s)/ knowledge to be assessed by the end of the unit	**Lower attaining**	**Middle attaining**	**Higher attaining**
We need light to see things, even shiny things. Opaque objects block the light and shadows are formed. Translucent objects let some light through being	Light allows our eyes to see. Opaque (solid) objects block the light.	Light allows our eyes to see. Opaque (solid) objects block the light. They begin to describe this and draw a simple diagram.	Light allows our eyes to see. We can't see anything without a light source Opaque (solid) objects block the light. They can describe this and draw a simple diagram.

Transparent objects let all the light through. For reflective objects light will bounce back off it and we will see reflections of objects.	Translucent objects let some light through. Transparent objects let all the light through. For reflective objects light will bounce back off it and we will see reflections of objects.	Translucent objects let some light through. They begin to describe that some light gets through but some is reflected back. Transparent objects let all the light through and none is reflected back For reflective objects light will bounce back off it and we will see reflections of objects. They begin to see that reflection will change depending on where we are looking at it from.	Translucent objects let some light through. They can describe that some light gets through but some is reflected back. Transparent objects let all the light through and none is reflected back. They begin to describe and draw this with reasons For reflective objects light will bounce back off it and we will see reflections of objects. The see that the reflection will change depending on where we are looking at it from.

NB: The assessments are completed for two reasons – to enable the class teacher and in turn the subject leader to evaluate the pitch of the learning within the unit in order to consider any necessary updates and for the class teacher to report to parents on the attainment of pupils in the end of year reports