<table>
<tr><td>KS2.CB.T1</td><td colspan="3">Area of study: Light

Unit aims / outcome:
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 a solid object.
Find patterns in the way that the size of shadows change.</td></tr>
<tr><td colspan="4">Scientific concepts to organise knowledge:
Physics- studies matter and motion and how it interacts with energy and forces.

Working Scientifically- disciplinary knowledge required to think and work as a scientist.</td></tr>
<tr><td colspan="4">Key strands of learning:</td></tr>
<tr><td colspan="2">Hierarchical Strands: (see progression)</td><td colspan="2">Cumulative Strands:
(key features throughout NC)</td></tr>
<tr><td rowspan="2">Learning in Reception:
.</td><td>Tier 2</td><td colspan="2">Tier 3</td></tr>
<tr><td><u>New</u>
Surfaces
reflects

<u>Review –</u>
Light
Dark
Shadow
Opaque
transparent</td><td colspan="2"><u>New</u>
Source</td></tr>
<tr><td>NC objective:</td><td colspan="3">Vocabulary and crucial knowledge:</td></tr>
<tr><td></td><td colspan="3"><u>Context of study:</u>

This is a stand-alone unit where pupils learn about light as part of the discipline of physics. It is important to assume that all pupils have very little prior knowledge in this unit. During teaching, extra attention must be given to explicitly teaching the precise meaning of subject specific vocabulary as pupils may be unfamiliar with this. This unit does not link directly with any future science teaching so it is important that knowledge is secured during the unit. In this unit pupils identify what light sources are and how light is reflected from surfaces. The children also learn that light is the absence of dark. They will also recognise that light from the sun can be dangerous to their eyes. The knowledge of light acquired in this unit will help pupils find patterns between the distance the light source is away from the object and how big the shadows are.</td></tr>
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	Pupils will revisit information taught in KS1 science, whereby think about how to keep their body healthy and how to stay safe. Sun safety was mentioned during this unit so this will lead on. Also, they will revisit knowledge taught in KS2CAT2 whereby they must be able to identify solid objects and also materials in KS1CAT2 to know which objects are opaque and which objects are transparent. Crucial Knowledge: Light To know that light is visible to the human eye. To know light is a type of energy that lets us see things. If there is no light, we cannot see anything. To know objects/sources create light and that the absence of light is dark. To know some light sources are the sun, candles, torches, fire, lightbulbs. To recognise that light from the sun can be dangerous and you can protect yourself by using sun cream, hats and glasses. To know that light can be reflected on different surfaces e.g. mirrors, windows, glass. To know our eyes can see objects because the light reflects of the surface. Shiny objects reflect light best. Shadows To know shadows are formed when the light from the source is blocked by a solid object. To understand that opaque objects block light and it forms shadows. To understand that transparent objects let light through however this can be in different forms and different patterns. To understand that shadows can change shape depending on how big an object is, the position of the light and the distance from the light source. To investigate that we can change the size of the shadow by changing the position of the light source or object. Working Scientifically: Pattern Seeking Children will explore and demonstrate how light reflects off different surfaces to help them answer questions about how light behaves. Children will also work scientifically by looking for patterns in what happens to shadows when the light source moves or the distance between the light source and the object changes. How will I be a scientist?

	• Ask questions: about how they think light will behave when it reflects off two different objects: a glass window and a mirror. • Observe: what the light does. • Report: write a summary of how the light behaved against each of the objects. Use the same light source for both objects to keep the investigation fair. **Fair test** How will I be a scientist? • Ask questions: what could we do with the light source? Discuss if we could change the position and distance of it and how we are going to measure the shadows formed. • Plan/Set up: Set up the investigation, deciding which opaque objects we will use and the distances we are going to move the light source away from the opaque object. • Measure: our results and the distances in a chart so we can draw our conclusions. • Interpret: what have we found out about the size of shadows and the patterns between these and the object and light source. Scientist: Thomas Edison- inventor of the first commercially practical incandescent lightbulb.