Alexander Hosea Curriculum Map – Year 3 **Subject: Science – Light (Energy)**

Programme of Study Statements

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.

Key Vocabulary

Light, light source, dark, absence of light, transparent, translucent, opaque, shiny, matt, surface, shadow, reflect, mirror, sunlight, dangerous

Investigations and Skills for thinking like a Scientist





Comparative Tests	Identify & Classify	Observation over time	Pattern seeking	Research
How does the distance between the shadow puppet and the screen affect the size of the shadow? **Which pair of sunglasses will be best at protecting our eyes?**	How would you organise these light sources into natural and artificial sources?	When is our classroom darkest? Is the Sun the same brightness all day?	Are you more likely to have bad eyesight and to wear glasses if you are older?	How does the Sun make light?

Sticky Knowledge:

There must be light for us to see. Without light it is dark.

- We need light to see things even shiny things.
- Transparent materials let light travel through them, and opaque materials don't let light through.
- Beams of light bounce off some materials (reflection).
- Shiny materials reflect light beams better than non-shiny materials.
- Light comes from a source

Prior Knowledge:

- Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. (Y1 - Animals, including humans)

Potential Evidence to support our Scientists (I can..):

Can describe patterns in visibility of different objects in different lighting conditions and predict which will be more or less visible as conditions change

- Can clearly explain, giving examples, that objects are not visible in complete darkness
- Can describe and demonstrate how shadows are formed by blocking light
- Can describe, demonstrate and make predictions about patterns in how shadows vary
- Can describe how we see objects in light and can describe dark as the absence of light
- Can state that it is dangerous to view the sun directly and state precautions used to view the sun, for example in eclipses
- Can define transparent, translucent and opaque

Future Knowledge:

- Recognise that light appears to travel in straight lines. (Y6 - Light)
- Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye. (Y6 - Light)
- Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes. (Y6 - Light)
- Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them. (Y6 - Light)

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<tr><td colspan="2">

- Can describe how shadows are formed

BIG Question: What is a Shadow?

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<tr><td colspan="3">Cultural Capital</td></tr>
<tr><td>Visits and visitors

Shadow puppet show
We the Curious (Bristol)</td><td>Experiences and events

There maybe opportunities to look at larger events like Solar Eclipse etc.?</td><td>Key texts

The Owl Who Was Afraid of the Dark
(Jill Tomlinson)
The Dark
(Lemony Snicket)
The Firework-Maker's Daughter
(Philip Pullman)</td></tr>
<tr><td>Community events and links</td><td>Global issues
Solar Eclispe
Midnight sun</td><td>Famous people/ Key Scientists

James Clerk Maxwell
(Visible and Invisible Waves of Light)</td></tr>
<tr><td>Life Skills
Curiosity
Team work
Making Links</td><td>Key places
Playground
Classroom
School field</td><td></td></tr>
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