Key Stage **KS1** Topic **Light & Shadows** Class **1** Range **1** (2)

End of Unit Goals

Pupils will be able to:

- Observe the apparent movement of the sun during the day
- Observe light coming from a light source. Observe light being blocked by an object to create a shadow.
- Investigate how to make a place lighter and darker.
- Know light and dark safety.

Explaining Science

- Remember some simple science facts
- Use & remember science words during activity
- Describe what is happening using science (help)

Data, Tables & Graphs

- Use a simple table by recording in words & numbers
- Add to block charts by counting up

Key Terminology:

Light, dark, lighter, darker, light source (various), light ray, shadow, day length

Lesson	Content Objective	Skill Objective	Possible Activities
1	Where does light come from?	Describe what is happening using science	• Make observations: Find light sources (natural/artificial). Sort, describe. • Explore: where is the lightest/darkest place in school? Use simple analogue light meter or number of yellow/black stickers to record (relative lightness/darkness). Turn lights on/off (what happens in both? Come up with ideas about why it changes). • Reflect light from a torch into eyes; what happens? What happens when you put your hand between your eyes and the light source? • Use sparklers / torches to draw shapes (care!).
2	How can we make a dark place light?	Use a table by recording in words & numbers	• Create a dark room. What can they see / not see? Can they use other senses? Do we have shadows in the dark? How can we make it lighter (use different light sources)? Develop concept that light enters the eye from a light source. • Read 'The owl that was afraid of the dark'.
3	How can we make a light place dark?	Add to block charts by counting up	• Under the table. Use blankets, different materials, etc to make it is as dark as possible. Link light 'blocking' to degree of darkness. • Investigate: which materials block the light the most? Make a pictogram of light transmission. • Make a habitat for a nocturnal animal.
4	Where do we find shadows?	Use some science words during activity	• Read: 'Can't you sleep little bear'. What are the grey shapes on the cave wall? Discuss which made bear the most afraid? Draw around shadows from different objects. What do they see? • Explore: What do we need to make shadows? 'Shadow hunt' – take pictures using iPad. Try to catch your shadow.
5	Are all shadows the same?	Add to block charts by counting up	• Read: 'The Gruffalo's Child'. Explore ways to create the same effect with a teddy (could create living graph by cutting out paper to the size of the shadow. Measure with number track and plot on block chart). • Explore: Who can make the biggest shadow with their hand? Who can make the darkest shadow? Do different shapes make different shadows? • Concept cartoons: e.g. 'My shadow will stay the same because its mine!' • Investigate: different materials, closer/further away (Measure size using a number track ruler), change the light source, change position of the light source. Relate cause to effect. Draw around shadows on the playground then make them change/grow/shrink. • Design a shadow hand puppet (materials, shapes, movement, size, etc) • Measure stick shadow with the movement of the sun during the day (construct block chart in standard/non-standard units or sun pictogram). Shadows on sunny/cloudy days.
6	How can we stay safe in the light and dark?	Remember some science facts	• Discuss dangers. • Design: sunglasses, reflective clothing • Investigate: which materials are best to wear at night? How can we be seen at night?