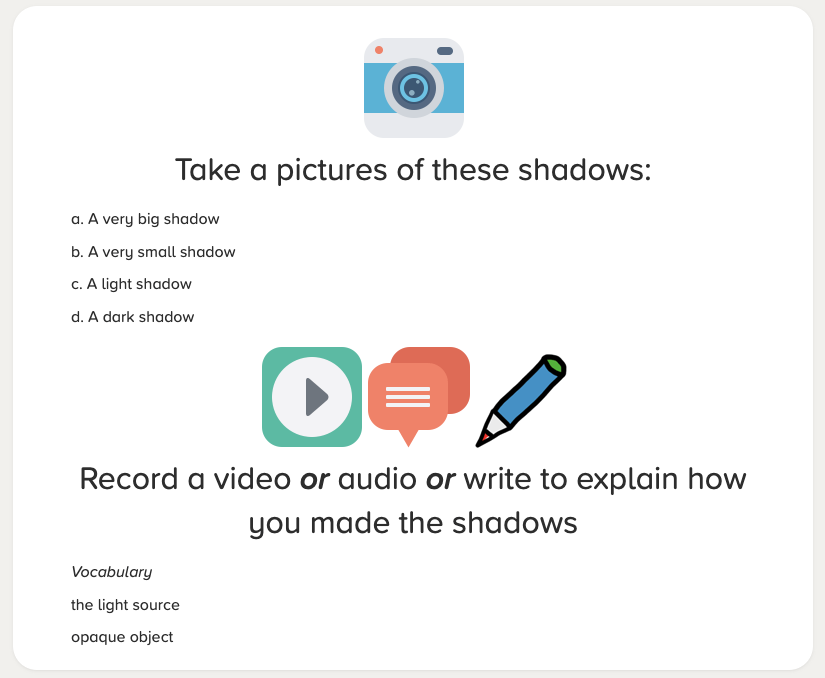
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| **Science – Year 3** | | | **Light – Week 4** | | | |
| **Lesson Objectives:**  1. To recognise that shadows are formed when the light from a light source is blocked by an opaque object.  2. To find patterns in the way that the size of shadows change. | | **Working Scientifically Objectives:**  - asking relevant questions and using different types of scientific enquiries to answer them  - setting up simple practical enquiries, comparative and fair tests  - making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers  - gathering, recording, classifying and presenting data in a variety of ways to help in answering questions  - recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables  - reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions  - using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions  - identifying differences, similarities or changes related to simple scientific ideas and processes  - using straightforward scientific evidence to answer questions or to support their findings. | | | | **CENTURY Nuggets:**  1. Shadows [PS8.04]  2. Shadow Experiments WS [PS8.05] |
| HOMEWORK – R - **Assignment** ‘Shadows - size and shade’ \* / A&G **Drawing a Results Table [PS13.05]\*\*** | | | | | | |
|  | | | | | | |
| ***LO: To recognise how shadows are formed*** | | | | | | |
| *Starter* | *Whole Class Teaching* | | | *Activities* | *Reasoning / Plenary* | |
| Opaque and not-opaque objects whiteboard activity in pairs.  Encourage use of Venn diagrams/tables/formal methods of recording.**A picture containing shape  Description automatically generated**    **A picture containing shape  Description automatically generated**    *Opaque materials do not let light through.*  *Images are taken from the CENTURY nuggets so they can be copied and displayed on the IWB.* | **1. Shadow hunt:**  In table groups – find/make a shadow. Roles:   1. Feedback to class (talking) 2. Demonstrator to class 3. Class board scribe (the shadow’s location) 4. Leader (decides roles) 5. Reporter 1 (whiteboard – list of opaque objects on table) 6. Reporter 2 (whiteboard – list of light sources)   **2. Class discussion:**   * What do we know about shadows? * When do we get a shadow? * How can we make a shadow lighter and darker? * When do shadows change? Think about personal shadow/earth’s shadow   3. Watch **Shadows [PS8.04]** together as a class, stopping the video at each chapter to discuss the key learning.  *This allows the teaching to come from a different media source to aid with knowledge acquisition while the discussion and assessment of the children’s understanding is conducted by the teacher.* | | | **Carousel**:  1. Practical activity with a variety of objects and torches. Which objects create a shadow? Record in a Venn Diagram.  Diagram, venn diagram  Description automatically generated  2. CENTURY – children watch the video **Shadows [PS8.04]** and answer the questions independently.  *This provides the assessment for the teacher to see whether the children have understood the learning objective of the lesson. The results can be viewed in real time so the teacher has time to intervene if there are misconceptions.*  3. Practical activity with an object, a torch and measuring equipment – create the longest possible shadow. Record the shadows’ length.  Table  Description automatically generated  4. Practical activity with an object and a torch – Make different shades of shadows – how do you make it a dark/light shadow?  Table  Description automatically generated with low confidence  5. Practical activity with a torch and your hand. Investigate how to make different sized shadows. Trace different sized shadows on paper. Write how you did this. | Why does day and night happen at different times around the world?  Icon  Description automatically generated with medium confidence  Or – look through data from **Shadows [PS8.04]** and answer a question together that many of the children got wrong. | |
| ***LO: To find patterns in the way that the size of shadows change*** | | | | | | |
| *Starter* | *Whole Class Teaching* | | | *Activities and Differentiation* | *Reasoning / Plenary* | |
| What is a fair test? Discussion as to good/poor examples of a fair test. | Display the slideshow **from Shadow Experiments WS [PS8.05]**  Discuss sensible predictions based on what the class learnt last lesson. Model writing a prediction. Class to write their own prediction.  Show the equipment’s slide and demonstrate the experiment to the class. Make mistakes such as moving the light source and using different sized cards. (Why is this wrong?)  Letter  Description automatically generated with low confidence  Display Method slide and get children to set up the apparatus on their table. | | | Children complete the experiment in pairs, one person holding the object, the other drawing around it.  Children measure the shape and record their results in the table:  Diagram  Description automatically generated  R – Given the table, and the distances. Expected to complete 3 different recordings.  A – Same as R but choose their own distances and measure up to 5 different recordings.  G – Same as A but choose their own method of recording the data.  Extension - Answer questions from **Shadow Experiments WS [PS8.05]**  *This provides an opportunity for assessment against the Working Scientifically objectives.* | Graphical user interface, text, application, chat or text message  Description automatically generated  *This lesson follows the nugget so that students are given scaffolding for the completion of the experiment, including appropriate methods of data collection and presentation. This scaffolding can be removed for high ability students. The slideshow provides the teaching material needed for the lesson.* | |

\*Example Assignment



*The text is able to be read by a read aloud extension or application so students can hear the assignment even if they can’t read. Alternatively, you can record yourself speaking the instructions for students that struggle with reading. The assignment gives the students the option to record their answer rather than writing, if they struggle with either typing or writing with a pen.*

*\*\*This nugget provides opportunities for assessment against the Working Scientifically objectives and follows on from lesson 2 - assessing if the children understand the principles of drawing a table.*