**TAPS Plan for Focused Assessment of Science**

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| **Topic:** Electricity | Year 6Age 10-11 | Title: Bulb brightness |
| **Logo for planning section of Working ScientificallyWorking Scientifically** **Plan:** Plan a scientific enquiry to answer a question, recognising and controlling variables. | **Concept Context**Compare variations in how electrical components function. |
| **Assessment Focus*** Can children create a scientific question which identifies the ‘change’ and ‘measure’?
* Can children identify control variables to plan a fair test?
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| **Activity** *Today we are going to be electrical engineers.*  Provide a mix of basic circuit components and challenge pairs or trios to make a quick simple circuit. Compare and discuss the differences in bulb brightness and how to measure/observe this e.g. light seen through layers of paper, datalogger, observation.Main task: to investigate how they can change the brightness of the bulb choosing from the available equipment (to include different lamps, cells and different thickness/length of high resistance/fuse wires). Each pair/trio to generate a list of variables which could be changed in their circuit and how they will observe/measure the effect of this change. Create a scientific question which identifies the ‘change’ and ‘measure’. Record their plan e.g. question, variables and diagram of test circuit. Carry out and discuss investigations.**Teacher box 4 -  gather evidence in a range of ways.** **Adapting the activity** **Support:** Planning framework to scaffold. Help to decide how to measure the brightness.**Circuit diagram with note about adding extra cellsExtension:** Repeat using a different measurement technique. Choose another question to investigate. **Other ideas:** Try with motors or buzzers.**Questions to support discussion:*** What factors could affect the bulb brightness?
* Which variable will you change? (independent variable)
* Which variable will you measure / observe? (dependent variable)
* Which variables will you keep the same? (control variables)
* What is your question? Does it include the ‘change’ and ‘measure’?
* Have you found an answer to your question? If yes, what? If not, can you explain why your investigation wasn’t able to give you a clear answer?
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| **Assessment Indicators** **Not yet met:** Can identify what they would like to change but may need support to explain what must be kept the same.**Meeting:** Identify a range of factors which may affect the brightness of the bulb and define a succinct scientific question to test, *e.g. What will happen to the (brightness of the bulb), if we change the (length of wire)?* Able to plan a fair test unaided, identifying the different types of variables: what to measure, what to change, what to keep the same**Possible ways of going further:** Can identify control variables for a range of investigation questions, *e.g. if we look at wire length we need to keep the voltage the same but if we look at voltage we need to keep the wires the same.* Notes difficulties with the ‘life’ of the components.  |

 Teacher box 4 - gather evidence in a range of ways. See TAPS pyramid for more egs