TAPS Plan for Focused Assessment of Science

Topic: Electricity	Year 4 Age 8-9	Title: Does it Conduct Electricity?

Working Scientifically

Review: Report on findings from enquires, including oral and written explanations, displays or presentations of results and conclusions.

Concept Context

Recognise some common conductors and insulators, and associate metals with being good conductors.
Construct a simple series electrical circuit.

Assessment Focus

- Can children explain results and their conclusions?
- Can children recognise common conductors and insulators?

Activity *Today we are electrical engineers.*

Introduce the terms conductors and insulators.
Example context: soldiers wear 'smart' clothing which conducts electricity: http://www.bbc.co.uk/news/technology-17580666
E.g. a soldier in the desert that has ripped part of 'smart' clothing losing part of the GPS circuit, so unable to provide location for rescue. Explain that the soldier has a pack containing a variety of objects: which could be used to complete a circuit to activate the GPS?
Provide each group with a 'soldier's backpack' containing a collection of objects/ materials (including different metals and plastics). Discuss how to find out whether electricity can pass through the materials. Groups test by putting materials into a gap in a circuit with a bulb/buzzer.
Focus pupil recording/presenting on explaining what the results show. E.g. they could produce a radio or video message to send to the soldier explaining how to produce a working circuit and why they are confident that this will work, providing scientific evidence and a list of all possible conductors (in case some are damaged). Reecap on the terms insulators and conductors.

Adapting the activity

T4

Support: Provide a table template & support children recording their results
Extension: Challenge with extra items to see if they fit the pattern (e.g. lemon, pencil lead, rusty nail.) Challenge children to apply their findings to explain safety rules.

Questions to support discussion

- Which objects completed the circuit? Does that make them conductors or insulators?
- Which things conducted electricity? What materials were they made from?
- Which did not conduct electricity? What materials were they made from?
- Which objects will you advise the soldier to use to repair the circuit? Why?
- Can you think of anything else that might/might not conduct electricity? Explain your choices.

Assessment Indicators

Not yet met: Can identify some (not all) objects that allow/do not allow electricity to pass through them but does not yet make generalisations.
Meeting: Can describe the circuit and explain how their results (orally/written form) show that metals conduct electricity and most other materials do not.
Possible ways of going further: Can also suggest other items to fit into the pattern and explore exceptions to the rule. Can apply the terms conduct/insulate to explain safety rules, e.g. not putting knife in toaster.

T4 Teacher box 4 - gather evidence in a range of ways. See TAPS pyramid for more egs