TAPS Plan for Focused Assessment of Science

Topic: Irreversible changes	Year 6-7 Transition Age 10-12	Title: Cleaning coins

Working Scientifically	**Concept context**
Review: Evaluate the reliability of methods and suggest possible improvements	Give reasons, based on evidence, for the particular uses of everyday materials (KS2) The pH scale for measuring acidity/alkalinity (KS3)

Skills progression focus

- Can children draw conclusions by examining their evidence?
- Can children discuss their method and how it could be improved?

Activity *Today we will be archaeologists.*

Link to topic, for example, found artefacts which need cleaning but not sure what to use because only allowed to use 'household chemicals' in the classroom. Need to test cleaning substances, will use coins for testing (so that artefacts are not damaged by testing).
Give each group small pots of substances (e.g. ketchup, mustard, vinegar, water, milk, orange juice etc), a coin for each and cotton buds to apply the substance to the coin.
Each group can decide how they apply the substances e.g. blob and leave, 20 rubs, apply to half only (to see how much each has changed) etc.
Pupils can report their findings by ranking the substances. Follow up with class discussion: did everyone find the same results? Why might some be different? How could we make the test a more fair comparison?

Adapting the activity

Support: Provide a smaller number of substances to test.
Extension: Test the pH of the cleaning substances using pH paper or an indicator.
Other ideas: Perform test over a longer period of time. Immerse coins in liquids.

Questions to support discussion

- How will you know which is the best cleaning substance?
- Which do you think is the best cleaner? Why?
- Which do you think is the worst at cleaning the coins? Why?
- How fair do you think the method was?
- How do you think we could be more fair in comparing the substances?

Assessment indicators

Not yet met: Pupils can talk about what they have done and say what happened to the coins. They begin to compare the substances by saying which one was best or worst.

Meeting: Pupils make comparisons between the substances based on their own evidence. They begin to compare their results to those from other groups. When prompted, they make a suggestion about how to improve their method e.g. *we need to time how long we leave it, the coins need to be the same dirtiness, have we got something to make it the same amount of sauce?*

Possible ways to go further: Pupils make generalised comparisons between the substances e.g. *the stronger flavours clean better, the more acidic ones attack the dirt, if we could make it fizz then that would get the dirt off.* They question the reliability of their results, noting how their comparison needed to be more fair.