**TAPS Plan for Focused Assessment of Science**

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| **Topic:** Forces | Year 6/7 Transition  Age 10-12 | Title: Formula 1 tubs |
| **Working Scientifically**  **Do:** Record and present measurements using tables and/or graphs | **Concept context**  Friction acts against something that is moving  Distance moved depends on the mass for the same force | |
| **Assessment Focus**   * Can children take accurate measurements and repeat tests? * Can children record results in appropriate tables/graphs, calculating averages? | | |
| **Activity**  Introduce the scenario: F1 cars are very lightweight. Why must they be lightweight? Plan an investigation to see if the mass of the car affects how far it can go. We will use margarine tubs (or similar) for cars and elastic bands for the force to make them move.  Discuss key variables including the variables that must be controlled. Discuss how many repeat tests they could carry out.  Ask children to draw a table for their results before beginning the practical. Discuss how many different masses to test (do 5 for a line graph).  You could stop here to peer assess before starting the activity.  After collecting results ask children to calculate averages and draw an appropriate graph.    **Adapting the activity**  **Support:** blank tables; graph axes with or without scales  **Extension:** identify and explain anomalous results, repeat experiment with a different variable changed e.g. force.  **Other ideas:** explore the effect of: streamlining, changing the surface  Elastic bands around the legs of a stool, with a plastic margarine tub leaning against the band. A newton meter is being used to pull back the elastic band ready to fire the tub.**Questions to support discussion**   * How will you ensure that your results are reliable? * How many times should you repeat a reading? * How will you ensure that only the independent variable affects the distance moved? * How will you calculate the average? * Which variable goes on each axis for your graph? * What type of graph should you draw? Why? | | |
| **Assessment Indicators**  **Not yet met:** Needs help drawing a table or needs a blank table. Needs prompting to repeat tests. Needs help to calculate averages. Needs a blank graph with or without scales drawn.  **Meeting:** Needs no help drawing a table. Units for measurements at the top of each column and column headings make it clear what is being measured e.g. distance pot travels rather than just distance. No prompting to repeat tests. No help to calculate averages but may use inappropriate number of decimal places. Appropriate graph drawn with help with scales if needed.  **Possible ways to go further:** all of above but with averages expressed to correct decimal places. Attempt, with help if needed, to show range of readings on graph. Anomalous results recognised from graph and reasoned explanation given. Improvements suggested to avoid anomalies if test repeated. | | |