**TAPS Plan for Focused Assessment of Science**

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| **Topic:**  Forces | Year 5  Age 9-10 | | Title: Spinners |
| Logo for doing strand of Working Scientifically**Working Scientifically**  **Do:** Measure, taking  repeat readings | | **Concept Context**  Identify the effect of air resistance that acts between moving surfaces. | |
| **Assessment Focus**   * Can children systematically collect results? * Can children improve accuracy by repeating measurements? | | | |
| **Activity** *Today we are going to be aeronautical engineers*  [TAPS pyramid logo for Teacher box 7](https://taps.pstt.org.uk/responsive-teaching/)Explore: make and drop a spinner. In groups consider variables and formulate a question *e.g. How does the length of wing/number of paper clips/size of paper affect the time it takes to fall?* Group roles may be useful e.g. dropper, timer, recorder, fair test checker. Children design their own table to record measurements with a focus on how they can make their results more reliable – repeat the test and take an average.  Groups or individuals to draw graphs then discuss patterns and accuracy of results.  **Adapting the activity**  **Support:** Provide table to collect readings and axes for graph.  **Extension:** Children spot anomalies in data and provide possible reasons for them. Explore another question to investigate.  **Other ideas:** What if…we dropped it from a higher position, changed the shape of the wings, the material etc. Why do sycamore seeds spin?  **Questions to support discussion**   * **Diagram of paper spinner**How are measuring as accurately as possible? * Why did you repeat your measurements? Are there any measurements which you would repeat again? * What kind of graph will you draw? Why did you choose a (line graph)? How did you choose your scales on the graph? * What happened to the time when you changed the ….? * Is there a pattern in your results? Can you describe it? * Can you explain any anomalies in your results? | | | |
| **Assessment Indicators**  **Not yet met:** With support, measures and records results in given table /graph. Needs help to work out averages.  **Meeting:** Systematically takes repeat measurements and either chooses middle value or finds mean average to accurately plot points on a line graph.  **Possible ways of going further:** Is able to explain why repeat readings improve reliability, and spots anomalous results. Can describe pattern and shows evidence of understanding of forces e.g. *the longer the wings the bigger the air resistance so it takes longer to fall, until the wings get too big*. | | | |

[](https://taps.pstt.org.uk/responsive-teaching/) Teacher box 7 - time to reflect. See TAPS pyramid for more examples.