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Measuring is believing: quantifying adaptation behaviour of *Hydra*

Worksheet 1 answer sheet

I. Observation and documentation

Students will be able to observe contraction, elongation or bending. Somersaulting happens over long timescales, so students will not observe it. When moving the dish, if elongated, the *Hydra* will contract.

Example hypothesis: *Hydra* sense and adapt to repetitive water current changes so they can respond to new acute stimuli.

II. Experimentation

Generally, the *Hydra* will contract only once or twice for the 5 s stimulus as it is adapting to the stimulus. However, it will contract every time for the 30 s stimulus.

III. Analysis and interpretation

By drawing when contractions occur, the students will be able to see the adaptation response more clearly.

IV. Review the scientific method

Activity	**Scientific method step**
Comparing the number of *Hydra* contractions as a class	Conclusion
Predicting how the *Hydra* will react to different time periods of water movement	Hypothesis
Counting the number of *Hydra* contractions to a specific time period of water movement	Experimentation
Generating a list of questions to build a hypothesis	Questioning
Determining if your hypothesis is supported by evidence	Analysis
Identifying different behaviours of the undisturbed *Hydra*	Observation