Foxford Learning Plan

Year 9

Spring 2

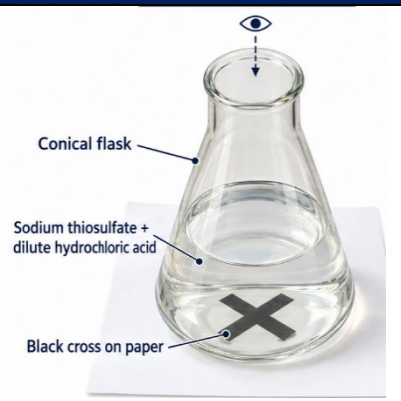
Working Scientifically

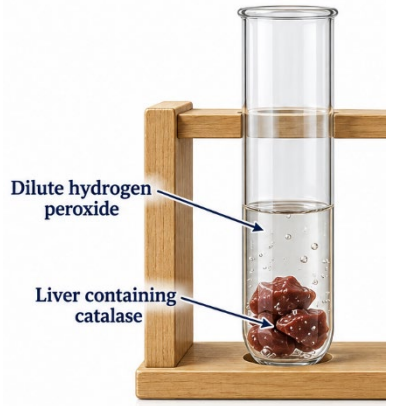
Key Vocabulary	
Independent variable	The factor deliberately changed in an investigation.
Dependent variable	The factor measured or observed in response.
Control variable	A factor kept the same to make a test fair.
Precision	How closely repeated measurements agree.
Mean	The sum of the readings divided by the number of readings.
Proportional relationship	A relationship with a constant ratio between two quantities.
F = kx	Force = spring constant × extension, within the limit of proportionality.
Rate	How much a quantity changes per unit time.
Anomaly	A result that does not fit the pattern of the other results.
Random error	Unpredictable variation that causes readings to differ.
Systematic error	An error that shifts measurements in a consistent way.
Risk assessment	Identifying hazards and deciding how to reduce the risks.

Over this course I will be able to

Key Skills

- Ask scientific questions and identify independent, dependent and control variables.
- Plan investigations with support and progress onto working independently.
- Measure accurately, improving precision and recording time-based measurements.
- Draw line, proportional and comparative graphs to identify patterns and explain results.
- Calculate means, use F = kx, compare rates and evaluate evidence through peer review.





I will understand

- How a fair test uses clearly identified variables and a suitable method to answer a scientific question.
- How I can progress from taking basic readings to taking measurements with greater precision.
- How line graphs, proportional graphs and comparisons show relationships, including F = kx and differences in rate.
- Why repeated measurements, anomalies and random or systematic errors affect the quality of evidence.
- Why a risk assessment is important for lab safety.