## DAY 1: Forms and Transfers of Energy

A battery flashlight transforms stored chemical energy to electrical energy and then light and thermal energy.

1. Identify the flashlight's initial energy store.

2. Name the energy carrier in its circuit.

3. Name two observable outputs.

4. Draw a labeled energy-flow model.

5. Explain why the flashlight eventually stops shining.

6. Is all battery energy becoming light accurate? Why?

7. Define thermal energy in this context in age-appropriate terms.

8. Describe another familiar device and its energy input and output.

## DAY 2: Questions, Variables and Fair Comparisons

Two toy cars roll from ramps of different heights; measure travel distance while keeping other conditions comparable.

1. Write the testable question.

2. Name the planned independent variable.

3. Name the measured dependent variable.

4. List two controls for a fair comparison.

5. Why should each condition be tested more than once?

6. Write a measurement table heading with units.

7. Explain why releasing a car with a push would change the test.

8. Design a safe alternative using paper ramps and small objects with adult supervision.

## DAY 3: Insulators and Conductors

Metal and wooden spoons transfer heat differently. For any observation, use only comfortably warm water and adult supervision.

1. Define a thermal conductor.

2. Define a thermal insulator.

3. Which spoon is predicted to transfer heat more readily?

4. What should be kept the same in a comparison?

5. What makes boiling water unsuitable for this student investigation?

6. Name a safe observation to record.

7. Why might touching a spoon alone be less precise than a thermometer?

8. Explain why an oven mitt can help protect a hand.

## DAY 4: Data Tables, Graphs and Evidence

Sample data, not actual student measurements: trial distances were 42 cm, 46 cm and 44 cm.

1. List the three recorded distances.

2. Identify the greatest distance.

3. Identify the least distance.

4. Calculate the range.

5. Calculate the mean distance.

6. State suitable graph axis labels.

7. Does the data prove all toy cars travel 44 cm? Explain.

8. Write one supported conclusion and one unanswered question.

## DAY 5: Independent Science Assessment

Two identical cups contain equal amounts of comfortably warm water at the same initial temperature. One is wrapped in cloth. Both cool in the same room for ten minutes. No results have yet been measured.

1. State a testable question.

2. Identify the independent variable.

3. Identify the dependent variable.

4. Name two conditions that should remain constant.

5. Why is an initial temperature measurement necessary?

6. Write table headings including units.

7. Explain why a prediction is not the same as a result.

8. Describe what evidence would support the claim that cloth slowed cooling.