Australian Government

Nuclear-based science benefiting all Australians

First-hand investigation of ionising radiation

Student worksheet

Design and perform a first-hand investigation of ionising radiation

As a class, you will design an experiment to investigate ionising radiation.

Before you perform your experiment via videoconference, you will:

- Write an aim for your experiment
- Select equipment
- Write a hypothesis
- Design and write a method (including a diagram of the experimental set up)
- Draw up a table for collecting results (if appropriate)
- Your teacher may ask you to do some background research about ionising radiation

During the videoconference you will:

- Communicate the method to your ANSTO Education Officer
- Record your results
- Discuss the reliability, validity and accuracy of your experiment
- Discuss the real-life applications of your results

After the videoconference you will:

- Graph your results (if appropriate)
- Write a discussion of your results
- Write a conclusion for your experiment

Aim:

(A short statement about what question you hope to answer in your experiment)

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Hypothesis:

(Remember, the hypothesis is a statement that you can test during the experiment)

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Equipment list:

(What equipment from the list will you use in your experiment?)

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Method:

(When deciding on your method, identify your controlled, independent and dependent variables, and think about whether you'll need replicates to get accurate results)

Experimental set up:

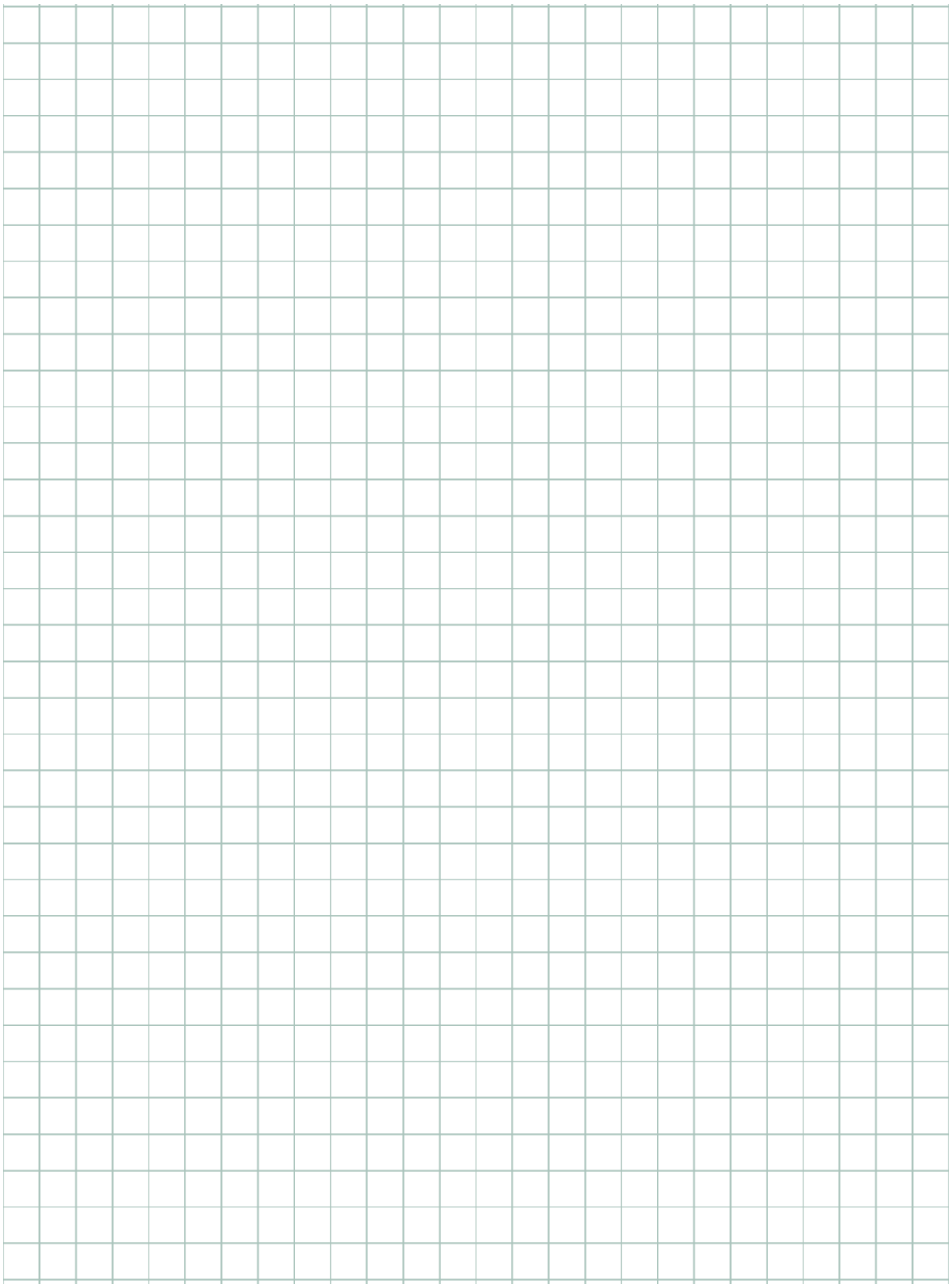
(Draw a labelled scientific diagram of your experiment)

Results:

(Record your results as data in a table, diagrams or as written observations)

Results graph (if appropriate):

(Draw your own graph to display your results. Make sure to label your graph and the axes)



Discussion:

- Did your results prove or disprove your hypothesis?

- Was your experiment reliable, accurate and valid? Why or why not?

- Identify at least two sources of error in your experiment

- Suggest two ways to improve the experiment

- How might your results have real-life applications?

Conclusion:

(Remember, a conclusion is an answer to the question in your aim)