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| First-hand investigation of ionising radiation  |
| Student worksheet |
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**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)*

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**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?*

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**Conclusion:**

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

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