**Year 7 Science**

**Investigating Science Major Assessment Task 2017**

**Dissolving time of tablets**

Introduction:

In this unit of work, we have learnt about safety rules and equipment in the laboratory, scientific practical reports and variables, we have also learnt about the different types of data and how to record and analyze results.

You will work in a small group to design and conduct an investigation into what factors affect the time it takes for a tablet to dissolve in water. You will need to complete a plan of your investigation prior to beginning your practical work. You will be required to write a formal scientific report by following the below guidelines.

Planning**:**

1. In groups of three, plan and design your experiment. First you must think about the different variables which may influence the dissolve time of tablets.
2. Describe how you will carry out this experiment. List all equipment needed and method you will use.

Experiment**:**

1. Collect all of the materials to be used for your experiment.
2. Use your plan to carry out the experiment.
3. Record any changes made to your procedure and the reasons for the changes.

Planning Sheet

You must show this to your teacher prior to starting your practical work

(Don’t forget to include safety precautions, the appropriate equipment and measurements).

1. List all of the possible variables you could investigate for this experiment

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1. (a) What will you investigate?

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1. What will you measure?

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. What factors will you keep the same?

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1. (a) What method will you use for your investigation?

Write a brief summary below explaining how you will undertake this investigation

(b) Draw a labelled diagram showing the setup of your experiment

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Group member names: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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(2 marks)

Hypothesis:

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(2 marks)

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(4 marks)

Method:

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(8 marks)

Results:

1. Complete the following table

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| --- | --- |
|  | Dissolving Time (sec) |
| Beaker 1 |  |
| Beaker 2 |  |
| Beaker 3 |  |

(2 marks)

1. Display your results as a hand drawn bar graph on the below graph paper.

Don’t forget to include labels for your axis, the appropriate units and a title for your graph.

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(6 marks)

Discussion:

1. List all controlled variables in this experiment?

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1. Identify the dependent variable in this experiment?

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1. Identify the independent variable in this experiment?

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1. Why did you only change the independent variable and nothing else?

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1. What else could you do to a tablet to get it to dissolve faster, other than changing the variable you investigated?

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1. Outline how you would test this idea.

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1. How could you improve this experiment?

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(8 marks)

Conclusion:

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(2 marks)

**Criteria Sheet**

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| --- | --- |
| **Criteria** | **Mark** |
| **Title, Date, Group members** | /1 |
| **Planning**   * Questions (half a mark each answer) * Method Summary * Labeled Diagram – all equipment must be listed | /4  /3  /3  **Total: /10** |
| **Aim**  A detailed statement outlining the purpose of this experiment | /2 |
| **Hypothesis**  An educated guess as to what you think will happen | /2 |
| **Materials**  A list of all the equipment and materials needed   * Correct names * All equipment listed | /1  /2  **Total: /3** |
| **Method**   * A step by step account of how the experiment was carried out | /8  **Total: /8** |
| **Results**   * Fill in the results table * Bar Graph   + Label X axis   + Label y axis   + Title   + Scale   + Accurate data points   + Presentation (grey lead/accurate) | /2  /1  /1  /1  /1  /1  /1  **Total: /8** |
| **Discussion**   1. List all controlled variables in this experiment? 2. Identify the dependent variable in this experiment? 3. Identify the independent variable in this experiment? 4. Why did you only change the independent variable and not anything else? 5. What else could you do to a tablet to get it to dissolve faster? 6. Outline how you would test this idea. 7. How could you improve the experiment? | /1  /1  /1  /1  /1  /3  /1  **Total: /9** |
| **Conclusion**   * Which tablet dissolved the fastest compared to the tablet which dissolved the slowest * Restate your results (1 mark) | /1  /1  **Total: /2** |
| **TOTAL** | \_\_\_\_/45  \_\_\_\_\_\_% |