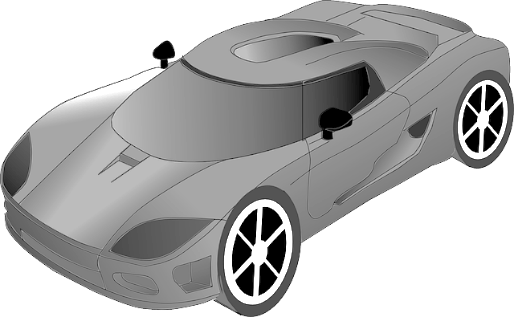
Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Due date: \_\_\_\_\_\_\_\_\_\_\_\_

**Year 10 Physics Investigation**

Measure the speed of a toy car



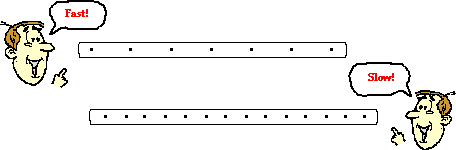
You have been hired by Toys R Us to check the velocity of a

new toy car model

You will conduct some research to determine the speed over time

of the toy car on different slopes and report back to Toys R Us

*based on Activity 8.1 Pg 260 Pearson Science 10*



*Your task is to determine how the speed of a toy car/trolley changes depending upon the slope of the surface it is rolled down.*

Your group will choose two angles to push your toy car/trolley down and use ticker tape to measure the speed at which it travels.

Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Class:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| **Part** | **Details** | **Available**  **mark** | **Your**  **mark** |
| Title | Descriptive NOT Physics Investigation | 1 |  |
| Aim |  | 1 |  |
| Hypothesis | Correctly worded  Includes dependent and independent variables | 1 |  |
| Variables | Independent  Dependent  Controlled | 4 |  |
| Materials | Complete  Listed | 2 |  |
| Method | Step by step with numbers  Written in past tense  Complete  Labelled Diagrams  Explain how reliable results are achieved | 1  1  1  2  2 |  |
| Results | Table - neat & clear with units | 3 |  |
| Graph | Showing  Includes Title, labels on each axis, correct units, regular spaced, legend for each line graph | 5 |  |
| Discussion | Explain dot pattern  Describe constant speed  Errors  Effects of errors  Solutions | 2  1  1  1  1 |  |
| Conclusion | What did the results show ?  Use figures from your results  Does this support your hypothesis? | 1  1  1 |  |
| **Total mark** | | **33** |  |

**TITLE: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** (1 mark)

AIM: **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** (1 mark)

1. What is the independent variable? (the factor you changed)

(1 mark)

2. What is the dependent variable? (the factor you measure)

(1 mark)

3. List the controlled variables? (the factors you keep the same)

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(2 marks)

4. Write a hypothesis (1 mark)

5. Materials List the Materials apparatus/equipment you will use? (2 marks)

6. **Method :** Write, in point form, what you plan to do in your experiment. (3 marks)

(step by step with numbers, write in past tense, is complete)

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Labelled Diagram of your equipment (2 marks)

How will your group make sure reliable results are obtained? (2 marks)

**TABLE:** Record your results in an **appropriate** table into this space.

(neat and clear – include units) (3 marks)

What type of graph will best suit your results?

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3. Draw the graph. (5 marks)

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(Remember: Title, Label Axis, Measurements, Regular Scale, Neat , Accurate graphing,

Use Pencil, Use legend for each type of material tested)

3. Draw the graph.

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(Remember: Title, Label Axis, Measurements, Regular Scale, Neat , Accurate graphing,

Use Pencil, Use legend for each type of material tested)

**Discussion**

Explain why a region of tape with dots further apart indicates a faster speed than where dots are bunched close together (2 marks)

Describe the pattern of dots made by constant speed (1 mark)

How could the fairness /accuracy of the experiment be improved? (3 marks)

Errors

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Effect of Errors

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Ways to improve experiment

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#### Conclusion

What did the results show? Use figures from your results (2marks)

Does this support your hypothesis? (1 mark)

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