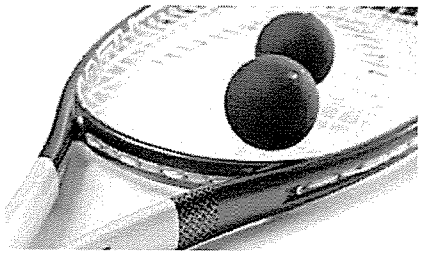
ANSWER KEY

10 SCIENCE INVESTIGATION

SQUASH BALL

Name:_____

Form:_____



Teacher:_____

Due date:_____

ANSWER KEY

IMPORTANT INFORMATION

Plagiarism

- The experiment is to be done in your science group but your write-up and results are to be done individually.
- Plagiarising = instant zero on assignment and you will have to re-do it.

Presentation

- Neat writing (if you struggle with this, type your information).
- Correct spelling, grammar and full sentences.
- Assignment neatly stapled together with this sheet attached to the front.

Assessment policy

Have sick note/legitimate reason from parent = new negotiated due date.
Assignment not submitted on due date and no sick note from parents = -20% mark
Assignment not submitted on new negotiated due date = -40% mark
+ Letter home to parents
+ Must attend academic completion to complete assignment

OR

Submit assignment to student services before academic completion date and academic completion not necessary.

Academic completion not attended = zero on assignment + Saturday detention

If you know that you cannot submit your assignment on the due date, let your teacher know BEFORE the due date (email them if you are not in school) or just email them your assignment the night before.

Introduction: The Wallaby Bouncing Rubber Company has produced a new type of squash ball which you have been contracted to evaluate. Squash ball height (h) is greatly affected by the temperature of the ball so for this contract you must investigate the temperature and bounce characteristics of the squash ball.

Aim: Investigate how bounce height is affected by the ball's temperature.

Materials (write materials in a list): **(2 marks)**

Beaker 400ml
Water 300ml
Kettle
Squash ball
ice blocks
1m ruler

Hypothesis (one sentence statement of what you think will happen): **(2 marks)**

The hot squash ball will bounce higher than the ball at room temperature and the cold squash ball.

Independent variable: **(1 mark)**

Temperature of squash ball

Dependent variable: **(1 mark)**

Height ball bounces

Two controlled variables: **(2 marks)**

Any 2

- Surface ball is dropped on
- Type of ball
- Height ball is dropped

Method (starting from step one, list the steps that were taken): (3 marks)

- 1 mark (not in numbered steps)
- 1 mark (not in past tense)
- 1 mark (missing information)

Results: Table (show results taken from experiment). **(3 marks)**

- 1 mark (not in pencil)
- 1 mark (not using ruler)
- 1 mark (missing units of measurement)
- 1 mark (missing information)

Graph: show your group results, Draw on graph paper and attach. **(6 marks)**

- Use graph paper.
- Use a sharp pencil and ruler.
- Have a title at the top (independent variable versus dependent variable).
- Work out whether you need to draw a bar graph (different groups of data) or a line graph (showing data changing over time).
- Put the independent variable and dependent variable on the correct axis.
- Label each axis.
- Record the units of measurement in brackets next to each label.
- Use an appropriate scale that has the same pattern the whole way along.

(can be bar or line graph)

Discussion (describe at least two mistakes/errors that occurred, explain how these affected the results and how they could be avoided next time).

(6 marks)

- mistake (1)
- how it affected the results (1)
- how to avoid in next time (1)

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- how it affected the results (1)
- how to avoid it next time (1)

Conclusion (two sentence statement. First sentence gives general result of experiment, second sentence states whether the hypothesis was proven or not proven.) **(2 marks)**

The ball with a hot temperature bounced higher than the room temperature and cold ball. (1)
Therefore the hypothesis is was proven / not proven. (1)

MARKING KEY

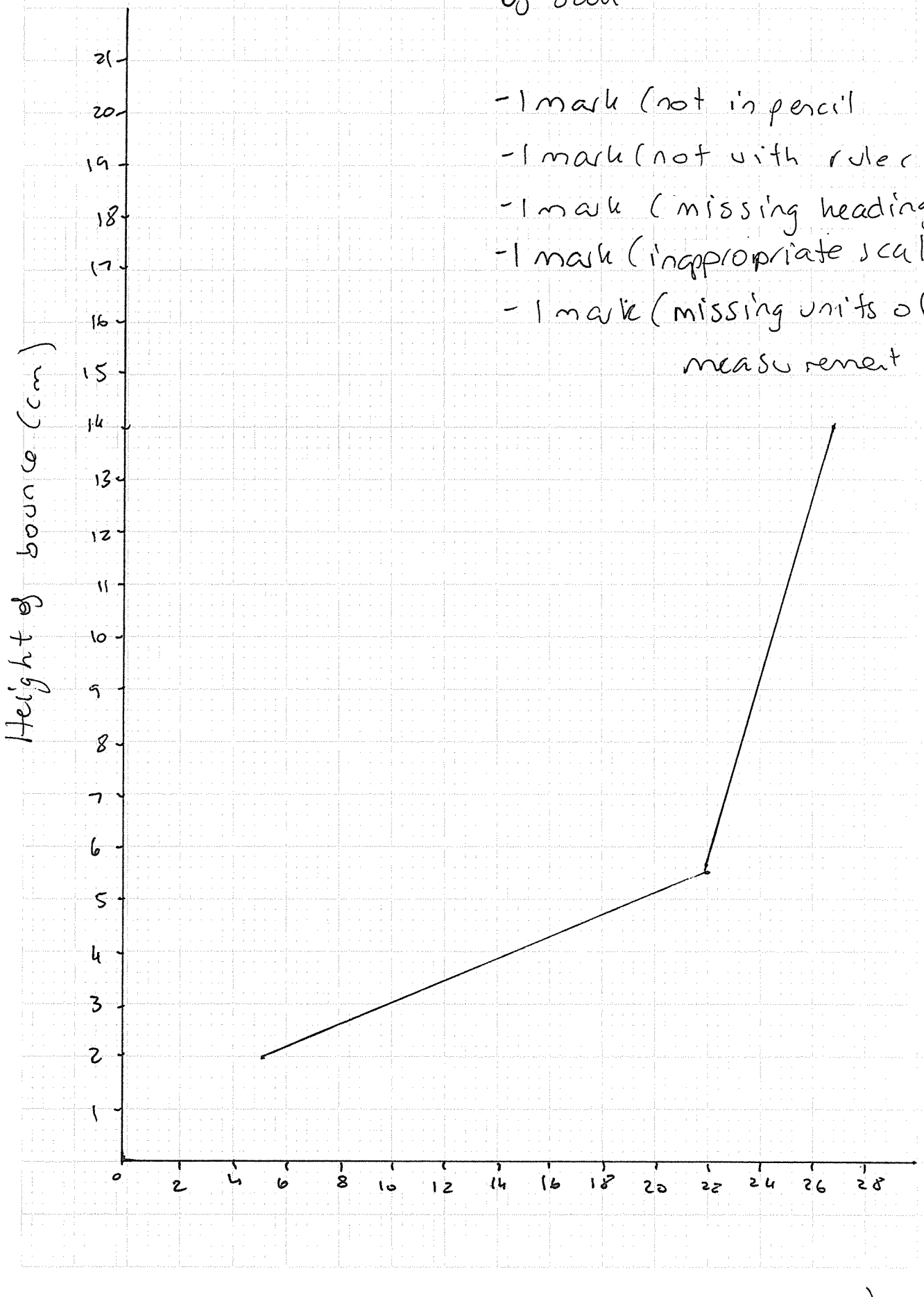
Content	Description		Your mark
Materials	Is written in a list Includes all materials and amounts	1 1	
Hypothesis	Includes both independent and dependent variable. Does not use 'I', 'we' etc.	1 1	
Independent Variable	Listed the independent variable.	1	
Dependent Variable	Listed the dependent variable.	1	
Controlled Variables	Listed two controlled variables.	2	
Method	Is written in past tense. Is written in numbered step-by-step. Includes all the steps completed in experiment.	1 1 1	
Results table	Drawn neatly in pencil and using a ruler. Includes the headings and units of measurement. Includes all the data collected during the experiment.	1 1 1	
Results graph		6	
Discussion	Describes at least two mistakes/errors that occurred. Explains how these mistakes/error have affected the results. Explains how these mistakes/errors could be avoided.	2 2 2	
Conclusion	One sentence stating the result of the experiment. One sentence stating whether the hypothesis was proven or disproven.	1 1	
Presentation	Correct spelling, grammar, full sentences. Written neatly or typed up neatly.	1 1	
Total mark		30	

Mark as percentage %

Teacher's comments:

Height of ball bounce versus temperature of ball

- 1 mark (not in pencil
- 1 mark (not with ruler
- 1 mark (missing headings
- 1 mark (inappropriate scale
- 1 mark (missing units of measurement



Height of bounce versus temperature of ball