



ORANGE HIGH SCHOOL

ASSESSMENT TASK NOTIFICATION

Subject	Science – Assessment 1 Planning and Conducting a First-Hand Investigation
Topic	Body Systems
Class Teachers	K Collins, J Mansur, M Nicholson, E Ruwona, S Townsend & J Huggett
Head Teacher	Ms J Huggett
Year	8
Date Given	Week 7A Term 1
Date Due	Week 11A Term 1
Weighting	30%

Assessment Outline

You will be expected to:

Individually plan and conduct a First-Hand Investigation Task based on a practical you complete in class.

To complete your scientific investigation, you will need to:

- Design an Investigation to determine to impact of exercise on the body
- Write a literature review
- Conduct the practical
- Collect reliable data
- Communicate your results in appropriate formats such as a table and a graph
- Evaluate and analyse your results in the discussion by answering set questions
- Draw conclusions from the investigation, refer to your hypothesis
- Write an abstract for your report
- Present your investigation in an appropriate format

You will need to submit the following:

A scientific report either typed up or written on the scaffold provided by your classroom teacher.

Non-completion of Task:

If you know you are going to be away on the day that the task is due, you must make alternative arrangements with your teacher beforehand. If you are suddenly away on the day that the task is due, you must contact your teacher or Head Teacher on your return to school. Documentation will be required in both cases.

Plagiarism:

Plagiarism, the using of the work of others without acknowledgement will incur serious penalties and may result in zero award. Any cheating will also incur penalties.

Failure to follow the above procedures may result in a zero award.

The policies and procedures that are outlined on the ROSA booklet will be followed regarding the non-completion of assessment tasks.

Outcomes Assessed

SC4-4WS Identifies questions and problems that can be tested or researched and makes predictions based on scientific knowledge

SC4-5WS Collaboratively and individually produces a plan to investigate questions and problems

SC4-6WS Follows a sequence of instructions to safely undertake a range of investigation types, collaboratively and individually

SC4-7WS Processes, analyses and evaluates data from first-hand investigations and secondary sources to develop evidence-based arguments and conclusions

SC4-9WS Presents science ideas and evidence for a particular purpose and to a specific audience, using appropriate scientific language, conventions and representations



ORANGE HIGH SCHOOL

ASSESSMENT TASK

Year 8 Science Semester 1, 2022 Assessment Task

The aim of this assessment is to plan and conduct a first-hand practical investigation on the effect of exercise on the body. You have to show the skills that you have learnt in class when conducting a practical investigation.

In class you would have gained some background knowledge of the body systems. You will create a proper scientific investigation to link a body system to exercise.

Your investigation should address the question: How does exercise affect heart rate?

Outcomes Assessed

- Identifies questions and problems that can be tested or researched and makes predictions based on scientific knowledge **SC4-4WS**
- Collaboratively and individually produces a plan to investigate questions and problems **SC4-5WS**
- Follows a sequence of instructions to safely undertake a range of investigation types, collaboratively and individually **SC4-6WS**
- Processes and analyses data from a first-hand investigation and secondary sources to identify trends, patterns and relationships, and draw conclusions **SC4-7WS**
- Presents science ideas, findings and information to a given audience using appropriate scientific language, text types and representations **SC4-9WS**

CHECKLIST

- | | |
|--|--|
| <input type="checkbox"/> Variables (5 marks) | <input type="checkbox"/> Teacher check |
| <input type="checkbox"/> Aim & Hypothesis (7 marks) | <input type="checkbox"/> Teacher check |
| <input type="checkbox"/> Literature Review (5 marks) | <input type="checkbox"/> Teacher check |
| <input type="checkbox"/> Method (5 marks) | <input type="checkbox"/> Teacher check |
| <input type="checkbox"/> Results (table & graph) (10 marks) | <input type="checkbox"/> Teacher check |
| <input type="checkbox"/> Discussion (15 marks) | <input type="checkbox"/> Teacher check |
| <input type="checkbox"/> Conclusion (2 marks) | <input type="checkbox"/> Teacher check |
| <input type="checkbox"/> Title (3 marks) | <input type="checkbox"/> Teacher check |
| <input type="checkbox"/> Abstract (5 marks) | <input type="checkbox"/> Teacher check |
| <input type="checkbox"/> Check spelling, grammar &
presentation (3 marks) | <input type="checkbox"/> Teacher check |

Use the following scaffold to guide you through the steps required to complete a proper scientific investigation.

Student Name: _____

Teacher: _____

Title (3 marks): Write a title that tells the reader what you are doing

Abstract (5 marks): An abstract is a summary of the investigation that you have completed. This should be done after you have finished the investigation. It should tell the reader what your investigation is about.

Needs to be included in your abstract - one sentence about aim/purpose of investigation - one sentence about how the experiment was done - one sentence about the results that were collected (include numbers) - one sentence about the outcome of the experiment (discussion and conclusion)

Aim (3 marks): What are you trying to achieve in this investigation? Try to include what you are going to change, and what you are going to measure.

Literature Review (5 marks):

Research 5 key points that relate to the investigation that you are doing. List the source of your information.

Variables (5 marks):

Independent variable (what is changed):

-

Dependent variable (what is measured):

-

Controlled Variables (Variables that are kept the same – at least 3):

- 1.
- 2.
- 3.

Hypothesis (4 marks): Written as an 'IF THEN.....' statement. This is what the predicted outcome of the investigation is (what you think will happen).

If _____ (this variable is changed).

Then _____ (this is what will be measured).

Method (5 marks): Write down the method (the steps) to complete the investigation. In your method, remember to include:

- Steps
- Third person
- Past tense
- Independent, dependent and controlled variables
- How you measured the variables
- How many times you repeated the investigation

Method:

Results (5 marks): Create a table and a graph to show your results in a visual format.

Table: Remember to include

- Title
- Units (in headings only)
- Neat and enclosed
- Include averages
- Independent Variable in left hand column

(Use the space provided below to do this - Please ask your teacher for assistance if needed)

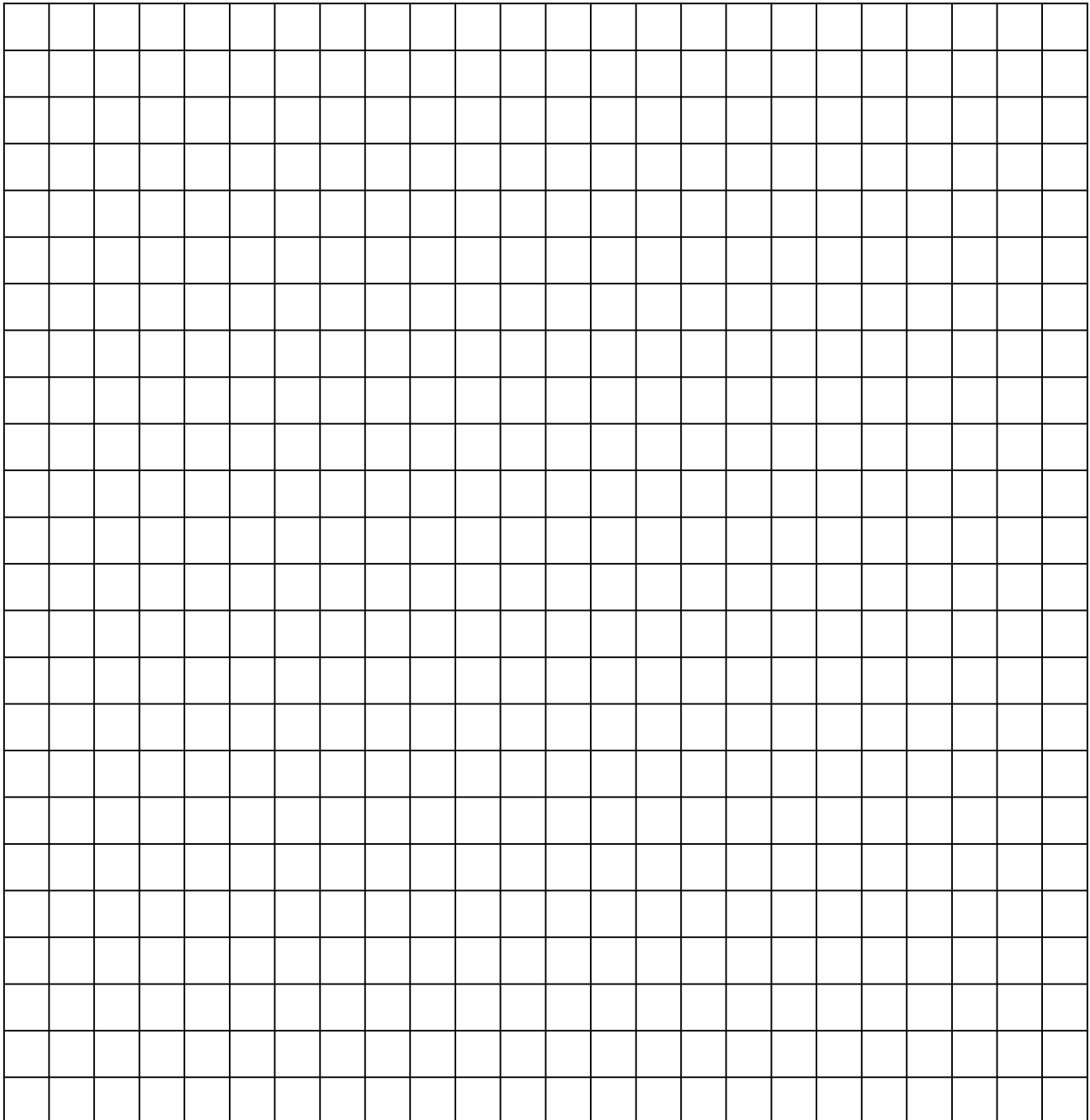
Graph (5 marks): Use the graph paper provided by your teacher to complete your graph.

Remember to include:

Line graph (**This may need to be completed as a hard copy - speak to your teacher about this**)

- Title
- Axis headings and units
- Plot average data
- Crosses to plot dot points (for a line graph)
- Line of best fit (for a line graph)

Title: _____



Discussion (15 marks):

Using your scientific knowledge of the circulatory system, explain your results.

Describe the trend in your graphs.

How did you make sure that your measurements were accurate? Did you make a mistake or could you have done it better?

How did you ensure that your experiment was reliable? And how could you improve the reliability?

How could these results be useful to a real-life industry (e.g. Medical professionals, athletes, personal trainers)?

Conclusion (2 marks):

How did the results relate to your hypothesis and aim?

Year 8 Assessment Marking Rubric

Name:

	Extensive A	Thorough B	Sound C	Basic D	Elementary E	No attempt	Outcome /Total
Title			Indicates information about the investigation	Some relevance to the investigation	A title was attempted		WS4
Abstract	Abstract uses the information gathered to make a summary of their investigation	Abstract has summarised some of the investigation	Restated what they found out	Attempts to write about their experiment	Write a simple statement about the investigation but not related to their results	0	
Literature review	Literature review completed and extensively examined the investigation using at least 5 key pieces of information from different sources including websites, articles etc.	Literature review has a thorough understanding of the investigation using at least 4 key pieces of information from different sources	Written in general terms and related to the topic using at least 3 key pieces of information from different sources	A brief description of something related to the topic from an outside source	An attempt at summarising the information is made	0	
Aim			2 variables of the investigation included in scientific terms	2 variables included but in general terms	Have written an aim	0	
Hypothesis		is an IF... then statement, links the changed variable and measured variable using scientific language	links changed variable (independent) and measured variable (dependent) using some scientific language	is an IF... then statement, links changed variable (independent) and measured variable (dependent) using general terms	Some errors may be present, changed variable (independent) or measured variable (dependent) is mentioned	0	
Variables	Correct variable changed and correct variable measured At least 3 controlled variables are identified correctly	Correct variable changed and correct variable measured At least 2 controlled variables are identified	At least one correct variable identified (changed or measured) At least 2 controlled variables are identified	At least one correct variable identified (changed or measured) AND at least one controlled variable identified OR At least two controlled variables are identified	Any one variable (changed, measured or controlled) is correctly identified	0	
	5	4	3	2	1	0	/25

Method	Extensive method that contains all the aspects below: Third person Past tense Includes repetition measurements/equipment Logically sequenced steps changed variable (independent) measured variable (dependent) included Controlled variables Scientific language Detailed	Thorough method that contains most of the aspects below: Third person Past tense Includes repetition Logically sequenced steps changed variable (independent) & measured variable (dependent) included Controlled variable(s)	Sound method that contains some of the aspects below: Third person (we be present) Past tense (may be one or two errors present) Includes repetition Steps (mostly logical) changed variable (independent) and/or measured variable (dependent) Controlled variable(s)	Attempt at method that contains a few of the aspects below: Steps attempted changed variable (independent) or measured variable (dependent) or a controlled variable mentioned	Method is attempted, many errors, at least one of the 9 aspects is present.	WS5
	5	4	3	2	1	0
						/5

Results - Table	Extensive and correct table. Includes the following: - Column headings - Column units - Units in headings only - Data correctly input - Experimental control row - Lines neat and straight - Averages included - Averages correct - changed variable (independent) and measured variable (dependent) correctly recorded in table	Thorough and correct table. Includes most of the following: - Column headings - Column units - Units in headings only - Data correctly input - Experimental control row - Lines neat and straight - Averages included - Averages correct	Mostly correct table. Includes some of the following: - Column headings - Column units (may be present in table) - Experimental control row - Lines neat and straight - Data is included - Averages included (may not be correct)	Somewhat correct table. Includes a few of the following: - Column headings and/or units - Lines neat and straight - Some data present	Table is attempted with at least 2 of the original aspects present.	WS6
	5	4	3	2	1	0

Results - Graph	Extensive graph is included. It includes the following: - Title - Axis headings - Axis units - changed variable (independent) and measured variable (dependent) on correct axis - Scales on both axis are correct - Graph type is appropriate	Thorough graph is included. It includes some of the following: - Title - Axis headings - Axis units - Scales on both axis are correct - Graph type is appropriate Line graph: - Points plotted with an 'x'	Sound graph is included. It includes some of the following: - Axis headings and/or units - Numbers are included on both axis' Line graph: - Points plotted - Average data is plotted (may be other data present)	Graph is included. It includes a few of the following: - Axis headings and/or units Line graph: - Some data is plotted	Graph is attempted with at least 2 of the original aspects present.	
	5	4	3	2	1	0

	Line graph: - Points plotted with an 'x' - Average data is plotted - Line of best fit is included	- Average data is plotted - Line of best fit is attempted	- Line of best fit is attempted	3	2	1	0	/10
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Discussion - Knowledge and trend	Discussion is extensive and addresses these areas in detail using scientific knowledge: - Explains how heart rate and exercise are connected - Describes the trend of their graph - Explains in detail how their results could benefit a named industry	Discussion is thorough and addresses the following areas with some detail mostly scientifically: - States that heart rate and exercise are connected - Describes the trend of their graph - Explains how their results could benefit a named industry	Discussion is sound and addresses the following areas with some scientific knowledge: - States that heart rate and exercise are connected - Describes the shape of their graph - Names an industry that could benefit from the results found in the investigation	Discussion is attempted and includes the following: - Describes any part of their graph	Basic discussion given, attempts to answer the questions.			WS7
Discussion - Accuracy	Discussion is extensive and addresses these areas in detail using scientific knowledge: - Describes the accuracy of the investigation - Provides an example of equipment that could improve accuracy	Discussion is thorough and addresses the following areas with some detail mostly scientifically: - Describes the accuracy of the investigation - Provides an example of equipment that could improve accuracy	Discussion is sound and addresses the following areas with some scientific knowledge: - Describes the accuracy of the investigation - Suggests a way to improve the investigation in general (not specific to data collection)	Discussion is attempted and includes the following: - Says the investigation was/was not accurate with no included evidence - Suggests an improvement to the investigation	Basic discussion given, attempts to answer the questions.		0	WS7
Discussion - Reliability	Discussion is extensive and addresses these areas in detail using scientific knowledge: - Explains why the investigation was or was not reliable - Describes any errors in data - Suggests two improvements to the investigation to improve data collection	Discussion is thorough and addresses the following areas with some detail mostly scientifically: - Explains why the investigation was or was not reliable - Describes an error in the data - Suggests an improvement(s) to the investigation to improve data collection	Discussion is sound and addresses the following areas with some scientific knowledge: - States whether the investigation was or was not reliable - Identifies an error in the data - Suggests a way to improve the investigation in general (not specific to data collection)	Discussion is attempted and includes the following: - Describes any part of their graph - Says the investigation was/was not reliable with no included evidence - Suggests an improvement to the investigation	Basic discussion given, attempts to answer the questions.		0	WS7

Conclusion			Conclusion clearly shows whether or not the hypothesis was supported or disproved with evidence as to why they have made this judgement	An attempt to summarise the investigation is made in general terms		
			2	1	0	/17

Report Presentation			The report is neatly presented An extensive use of scientific terminology No grammatical errors present	The report is neatly presented A detailed use of scientific terminology throughout Few grammatical errors present (5 or less)	The report is neatly presented Scientific terminology is attempted throughout Many grammatical errors present (5-15)	WS9
			3	2	1	/3

Total mark /50

Feedback from teacher

WS	Marks	Section
4	/25	Title, Abstract, Literature review, Aim, Hypothesis, Variables
5	/5	Method
6	/10	Results: Graph and table
7	/17	Discussion and conclusion
9	/3	Presentation
Total	/60	