

Grade 7 Natural Science Worksheet

Assessment Task: Earth Sciences: water cycle

Water use

Question 1: The water cycle

There is only a certain amount of water on the planet. This water moves around the planet in a water cycle.

In this task, you must use the following apparatus to design and then make your own model of the water cycle.

You must write a description of your plan and how you built the water cycle.

You must also write a report of what you observed when your model water cycle was working.

Apparatus:

A large basin or bowl

A cup or beaker

Plastic wrap

A large elastic band

[30 marks]

Grade 7 Natural Science Worksheet

Rubric to assess design, construction and report on model

Criteria	Level 4	Level 3	Level 2	Level 1
Design, model and report have been submitted. All neat and well presented.	All 3: [6 – 5 marks]	Only 2: [4 – 3 marks]	Only 1: [2 – 1 marks]	0 for no submission.
Design	Design is well thought out with diagrams and innovation. [8 – 7 marks]	Design is sound with diagrams. [6 – 5 marks]	Design is limited; some diagrams. [4 – 3 marks]	Design is poor with no diagrams. [2 – 1 marks]
Model construction	Apparatus is cleverly constructed out of innovative materials; accurately demonstrates water cycle. [8 – 7 marks]	Apparatus is well constructed out of good materials; generally demonstrates water cycle. [6 – 5 marks]	Apparatus has limitations in construction; does not always accurately demonstrate water cycle. [4 – 3 marks]	Apparatus is poorly constructed; does not demonstrate water cycle. [2 – 1 marks]
Report	Report on observations is complete with insightful comments. [8 – 7 marks]	Report on observations is mostly complete with good comments. [6 – 5 marks]	Report on observations is incomplete with fair comments. [4 – 3 marks]	Report on observations is incomplete with poor comments. [2 – 1 marks]

Grade 7 Natural Science Worksheet

Question 2: Compare the uses of water in the home

Who uses the most water in your home?

A 2 minute shower uses 90 litres of water.

A 10 minute shower uses 380 litres of water.

A bath uses 190 litres of water (and is therefore roughly equal to a 4 minute shower).

1. Plan and conduct an investigation at home which works out who is using the most water for washing themselves. Write up your report in a logical and easy to follow manner.
2. Total up how much water is used for other activities. Who is responsible for this water usage?

[40 marks]

Grade 7 Natural Science Worksheet

Rubric to assess investigation planning, investigation and report

Criteria	Level 4 [8 – 7]	Level 3 [6 – 5]	Level 2 [4 – 3]	Level 1 [2 – 1]
Planning includes a thorough understanding of the investigation and careful thought as to how best to do the investigation.	Outstanding.	Good.	Satisfactory.	Does not meet requirements.
Method is well explained, in point form. Variables are controlled.	Outstanding.	Good.	Satisfactory.	Does not meet requirements.
A tool such as a table has been designed and well used to record observations and results.	Outstanding.	Good.	Satisfactory.	Does not meet requirements.
Conclusions have been drawn and sensible comments have been made on water usage in the home.	Outstanding.	Good.	Satisfactory.	Does not meet requirements.
Entire presentation is neat, carefully presented and there is evidence of pride in work.	Outstanding.	Good.	Satisfactory.	Does not meet requirements.

Grade 7 Natural Science Worksheet

Suggested Solutions

Question number	Possible marks	Solution
1	30	See rubric in Appendix of Assessment Tools. Learners will probably partly fill the big bowl with water and place the empty beaker in the centre; cover with plastic wrap and secure with elastic, place in sun; then observe the evaporation and condensation which will “rain” down and can be collected in beaker.
2	40	See rubric in Appendix of Assessment Tools.

Grade 7 Natural Science Worksheet

Appendix of Assessment Tools

Rubric to assess design, construction and report on model

Criteria	Level 4	Level 3	Level 2	Level 1
Design, model and report have been submitted. All neat and well presented.	All 3: [6 – 5 marks]	Only 2: [4 – 3 marks]	Only 1: [2 – 1 marks]	0 for no submission.
Design	Design is well thought out with diagrams and innovation. [8 – 7 marks]	Design is sound with diagrams. [6 – 5 marks]	Design is limited; some diagrams. [4 – 3 marks]	Design is poor with no diagrams. [2 – 1 marks]
Model construction	Apparatus is cleverly constructed out of innovative materials; accurately demonstrates water cycle. [8 – 7 marks]	Apparatus is well constructed out of good materials; generally demonstrates water cycle. [6 – 5 marks]	Apparatus has limitations in construction; does not always accurately demonstrate water cycle. [4 – 3 marks]	Apparatus is poorly constructed; does not demonstrate water cycle. [2 – 1 marks]
Report	Report on observations is complete with insightful comments. [8 – 7 marks]	Report on observations is mostly complete with good comments. [6 – 5 marks]	Report on observations is incomplete with fair comments. [4 – 3 marks]	Report on observations is incomplete with poor comments. [2 – 1 marks]

Grade 7 Natural Science Worksheet

Rubric to assess investigation planning, investigation and report

Criteria	Level 4 [8 – 7]	Level 3 [6 – 5]	Level 2 [4 – 3]	Level 1 [2 – 1]
Planning includes a thorough understanding of the investigation and careful thought as to how best to do the investigation.	Outstanding.	Good.	Satisfactory.	Does not meet requirements.
Method is well explained, in point form. Variables are controlled.	Outstanding.	Good.	Satisfactory.	Does not meet requirements.
A tool such as a table has been designed and well used to record observations and results.	Outstanding.	Good.	Satisfactory.	Does not meet requirements.
Conclusions have been drawn and sensible comments have been made on water usage in the home.	Outstanding.	Good.	Satisfactory.	Does not meet requirements.
Entire presentation is neat, carefully presented and there is evidence of pride in work.	Outstanding.	Good.	Satisfactory.	Does not meet requirements.