

Grade 7 Natural Science Worksheet

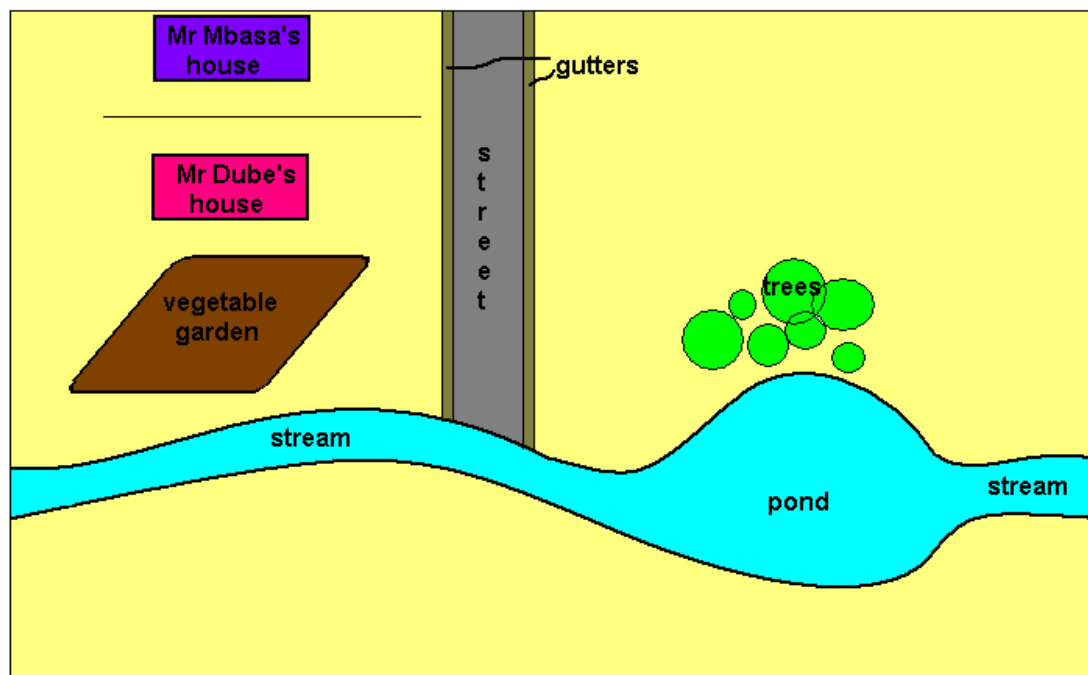
Assessment Task: Impact of pollution on the environment

Humans changing the environment

Sometimes, we can affect the environment with our normal day-to-day actions.

Sometimes, the environment is affected by natural causes.

Look at the map and then answer the questions.



Part One: Humans affecting the environment

What changes do you think will take place in the pond if ...

1. Mr Mbasas washes his car in the street with a very strong detergent?
2. Mr Dube's car is parked in the street every day and it leaks oil?
3. Mr Dube sprays his vegetable garden with a pesticide that kills all insects?
4. The trees shading the one side of the pond are chopped down?
5. There is a drought for two years?
6. There is a flood and the stream floods the vegetable garden?

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7. Mr Dube builds a dam in the stream to store water for his vegetable garden?
8. Sewage was thrown into the gutters?

Part Two: Causes of situations in the environment

9. Which of the above situations are caused by human intervention in the environment and which result from natural causes?

Human intervention	Natural causes

[32 marks]

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Suggested Solutions

Question number	Possible marks	Solution			
1	Award 3 marks for a sensible full explanation of consequences; 2 marks for a good attempt to explain consequences; 1 mark for a limited and superficial understanding of the consequences.	Detergents usually have high pH, will affect the pH of the pond, kill organisms that cannot tolerate higher pH.			
2		Oil less dense than water, therefore will float on surface of pond, may kill other floating plants by blocking pores for gaseous exchange in the leaves, may block sunlight for photosynthesis, may poison animals (e.g. fish and insects) living in the pond.			
3		Pesticide will run-off into stream and be carried to pond where it will kill insects in the pond and further downstream, may poison animals higher up food chain which eat the poisoned insects.			
4		Pond will no longer be shaded and therefore temperature in pond will increase, this may favour bacteria in the pond, may also increase algal growth, speed up evaporation.			
5		Pond will dry up and plant and animal life in the pond and further downstream will die.			
6		Stream will wash topsoil from vegetable garden away into the pond, pond will become muddier and murky, preventing sunlight from penetrating, pond plants will not be able to photosynthesise and will die, animals relying on the plants for oxygen and food will die.			
7		Pond will decrease in size, and may become stagnant, organisms living in the pond will die.			
8		Sewage will flow into pond, water will become contaminated and dangerous to use for drinking, bacteria will thrive.			
9		Award 1 mark for every correct answer: <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Human intervention</th> <th>Natural causes</th> </tr> </thead> <tbody> <tr> <td>1, 2, 3, 4, 7, 8</td> <td>5, 6</td> </tr> </tbody> </table>	Human intervention	Natural causes	1, 2, 3, 4, 7, 8
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Level indicator for this task

Level 4	Level 3	Level 2	Level 1
<p>Learner displays a keen and intelligent understanding of the consequences of human intervention in the environment.</p> <p>Learner works independently.</p>	<p>Learner understands the consequences and is able to provide a number of consequences of human intervention in the environment.</p> <p>Learner requires little assistance and prompting in solving this assessment.</p>	<p>Learner grasps the basic consequences and can provide a limited number of consequences of human intervention in the environment.</p> <p>Learner requires some assistance and prompting in solving this assessment.</p>	<p>Learner is not able to identify basic consequences and cannot provide a number of consequences of human intervention in the environment.</p> <p>Learner requires much assistance and prompting in solving this assessment.</p>

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Appendix of Assessment Tools

Level indicator for this task

Level 4	Level 3	Level 2	Level 1
Learner displays a keen and intelligent understanding of the consequences of human intervention in the environment.	Learner understands the consequences and is able to provide a number of consequences of human intervention in the environment.	Learner grasps the basic consequences and can provide a limited number of consequences of human intervention in the environment.	Learner is not able to identify basic consequences and cannot provide a number of consequences of human intervention in the environment.
Learner works independently.	Learner requires little assistance and prompting in solving this assessment.	Learner requires some assistance and prompting in solving this assessment.	Learner requires much assistance and prompting in solving this assessment.