

## Grade 7 Natural Science Worksheet

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### Assessment Task: Biology: parasitism

#### Symbiosis

Read the following information and then answer the question that follows.

Symbiosis means “living together in close association”. Although organisms in an ecosystem are dependent on each other, some organisms enter an even closer relationship with another organism. We call this kind of relationship a symbiotic relationship.

One kind of symbiotic relationship that exists is called mutualism. Mutualism occurs when two organisms are in a close relationship and both benefit from the relationship. An example of mutualism is the relationship between certain species of algae and fungi of lichens. The algae photosynthesise and provide the fungus with food and the fungus provides attachment and water for the algae. Oxpeckers are birds that eat ticks and other insects that have attached themselves to the hides of buffalo, zebra, giraffe and other antelope. The oxpecker derives food from the symbiotic relationship, while the mammal has pests removed from its body.

Parasitism is another form of symbiotic relationship. This is an antagonistic symbiosis, where one organism is injured in satisfying the needs of the other. A tick that feeds on a dog is a parasite. The tick gains the benefit of food, but the dog is harmed. A tapeworm living in your intestine is also a parasite. You, the host, is harmed by this relationship.

Another type of symbiosis is known as commensalism. In commensalism, one organism benefits, but the other is not affected at all, neither negatively nor positively. When rats and mice feed on rubbish dumps, the rats and mice are benefiting, but the humans are not affected at all.

Another example is a sea anemone that attaches itself to the shell of a hermit crab. The crab provides continuous protection and a food supply for the anemone, but it is not affected by the anemone.

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Use the symbols: + to indicate a positive relationship or benefit, – to indicate a negative relationship or harm and 0 to indicate no effect at all. Complete the table:

Relationship	Organism 1	Organism 2	Relationship
<b>Shark and remora fish.</b>			
<b>Malaria parasite and human.</b>			
<b>Nitrogen fixing bacteria on roots of orchids.</b>			
<b>Barnacle on whale.</b>			
<b>Ringworm fungus on human skin.</b>			

[15 marks]

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### Suggested Solutions

Possible marks	Solution			
15	<b>Relationship</b>	<b>Organism 1</b>	<b>Organism 2</b>	<b>Relationship</b>
	<b>Shark and remora fish.</b>	Shark 0 ✓	Remora fish + ✓	Commensalism ✓
	<b>Malaria parasite and human.</b>	Malaria parasite + ✓	Human – ✓	Parasitism ✓
	<b>Nitrogen fixing bacteria on roots of orchids.</b>	Nitrogen fixing bacteria + ✓	Orchid + ✓	Mutualism ✓
	<b>Barnacle on whale.</b>	Barnacle + ✓	Whale 0 ✓	Commensalism ✓
	<b>Ringworm fungus on human skin.</b>	Ringworm + ✓	Human – ✓	Parasitism ✓