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Student worksheet

2.3 Population size depends on abiotic and biotic factors

Pages 22–23 and 182

Population dynamics

1 What is a population?

2 What is migration?

3 What is immigration?

4 What is emigration?

5 Explain what dynamic balance is. When is a population in dynamic balance?

6 Summarise the above information into the following table. In each box you must write that immigration/emigration is more or less or equal.

	POPULATION INCREASE	POPULATION DECREASE	DYNAMIC BALANCE
Immigration			
Emigration			

7 Explain how the following population numbers are calculated:

- humans



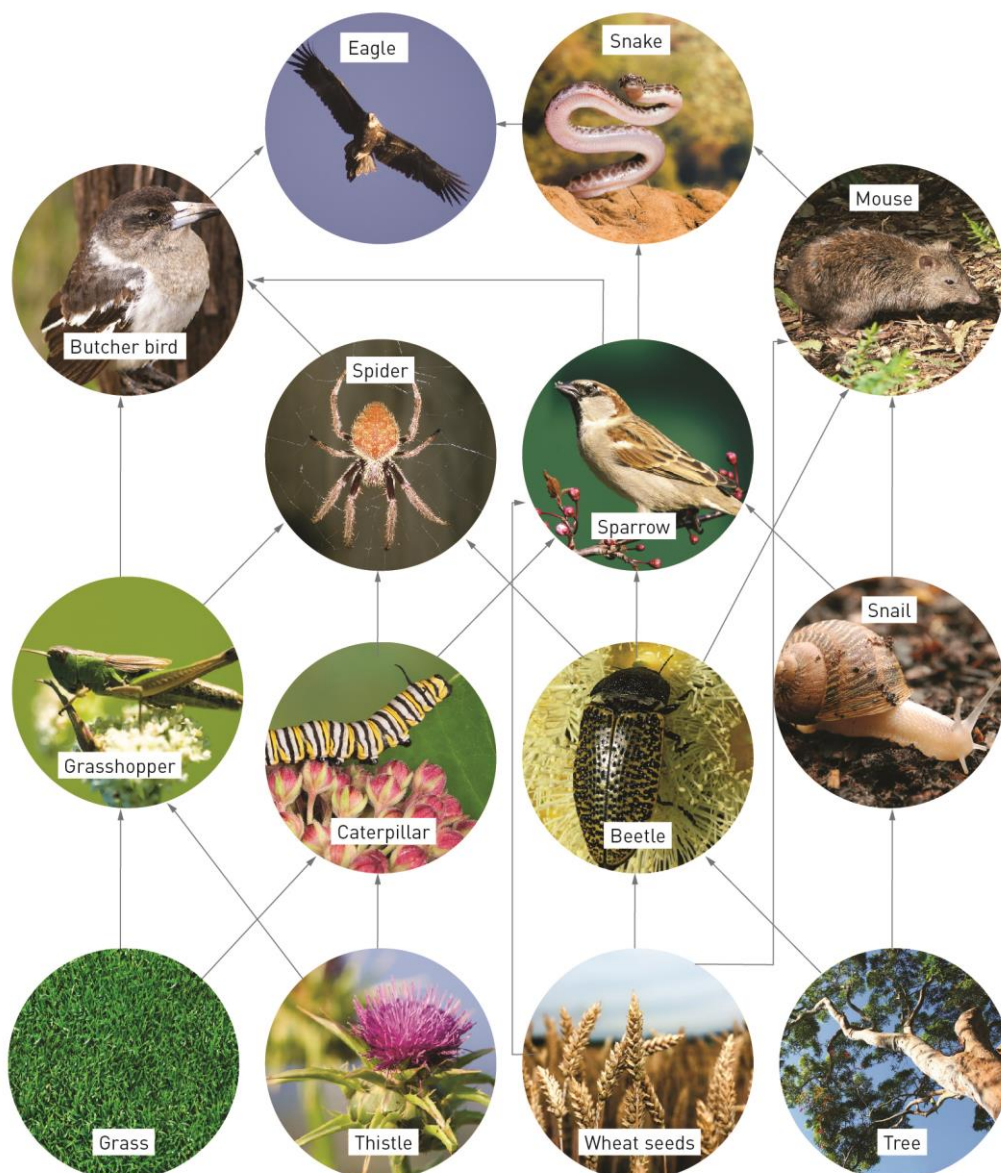
Name: _____

Class: _____

- plants

- animals

8 Examine the following food web and answer the questions below in terms of increasing or decreasing numbers.



- a What would happen to the snails if the trees decreased in number?



Name:

Class:

b What would happen to the producers if the caterpillars died out?

c As a consequence of b. what would happen to the grasshoppers?

d As a consequence of c. what would happen to the number of spiders?

e What would happen to the snakes if the mice became extinct?

f What would happen to the wheat seeds if the beetles increased in number?

g As a consequence of f. what would happen to the sparrows?

Extend your understanding

9 Because Tasmanian devils are fighting TDFTD (Tasmanian Devil Facial Tumour Disease), it is very important to monitor their population closely in order to prevent extinction. A zoologist sets traps and captures 20 Tasmanian devils in bushland on the west coast of Tasmania. One year later he sets the same traps in the exact same area and captures 15 Tasmanian devils, 6 of which have tags.

a Estimate the total population of Tasmanian devils.

5 years later, he performs the same test again, but captures 10 Tasmanian devils, 8 of which have tags.

b Estimate the new total population of Tasmanian devils between the first measurement and this one.

c What has happened to the number of Tasmanian devils? Is this immigration or emigration?

d What is Tasmania doing to ensure that Tasmanian devils do not become extinct?
