

Student assessment sheet | Classifying organisms

Answer all of the questions in the spaces provided.

Question 1

Dogs and dingoes are species found in the Canidae family of mammals. Below is an image of a dog (Dalmatian) and dingo.



Dalmatian dog



Dingo

Look carefully at the pictures of the dog and dingo and list one observable similarity, and two differences.

Similarity

1. _____

Differences

1. _____

2. _____





(3 marks)

Question 2

Below is a classification key for some familiar and unfamiliar animals.

1	Does it have legs?	Yes – go to Q2
		No – fish
2	Does it have fur or hair?	Yes – go to Q3
		No – Crocodile
3	Does it have a segmented body?	Yes – tarantula
		No – wombat

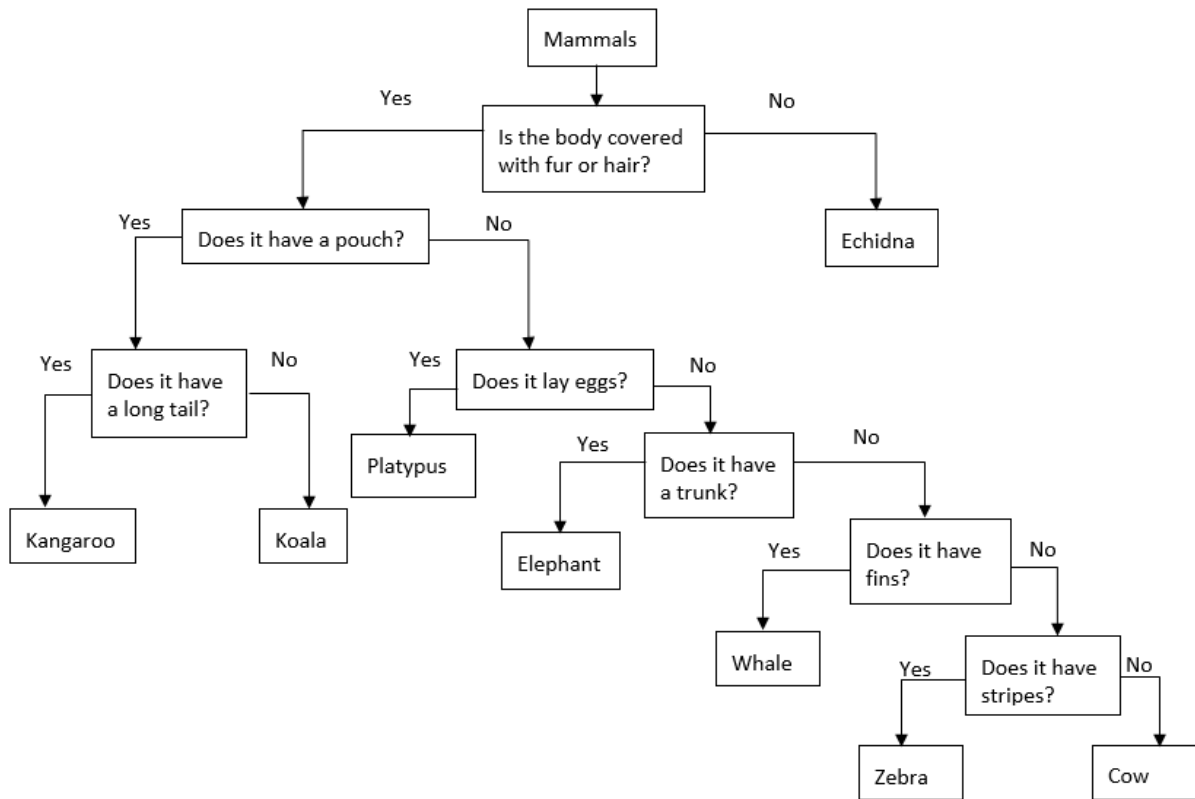
Use the classification key above to identify the following organisms based on their observable characteristics from the pictures provided.

Animal	Picture of animal	Name
W		
X		
Y		
Z		

(4 marks)

Question 3

Use the key below to answer the questions that follow.



1. Identify the mammal from the following characteristics.

(a) covered with fur or hair; has a pouch; has a long tail

(b) covered with fur or hair; does not have a pouch; does not lay eggs; has a trunk

(2 marks)

2. Use the above key to list one characteristic of the following mammals:

(a) koala

(b) whale

(2 marks)

Question 4

Construct a dichotomous key (tabular or graphical) for the sea creatures below to allow someone to identify each one based on their observable characteristics.

			
crab	lobster	shark	clown fish

(4 marks)



Student assessment sheet | Part A: Create a food web

The passage below shows feeding relationships between organisms in the Great Barrier Reef.

Phytoplankton is a microscopic plant that is eaten by angelfish, shrimp and coral. Crabs eat shrimp and coral, and squid like to eat crabs and shrimp. Coral is eaten by parrotfish, and reefs sharks like to eat angelfish, squid and parrotfish.

Using your knowledge, construct a food web in the space below.

Student assessment sheet | Part B: Data analysis

Australia's national science agency, CSIRO, estimates there are 14 million tonnes of microplastics on the seafloor due to humans' overuse of plastics.

Microplastics are tiny pieces of plastic that are less than 5mm in length, that have been broken down from larger pieces of plastic, that may harm marine ecosystems. Microplastics are also present in many health and beauty products used by humans, and pass through the waterways and end up in areas such as the Great Barrier Reef.

Once introduced to the ecosystem, microplastics may be ingested by various organisms which mistake them for food.

The average amount of microplastics present in the Great Barrier Reef over the years is shown below in Table 1.

Table 1 – Average amount of microplastics present in the Great Barrier Reef per year from 2013 – 2020.

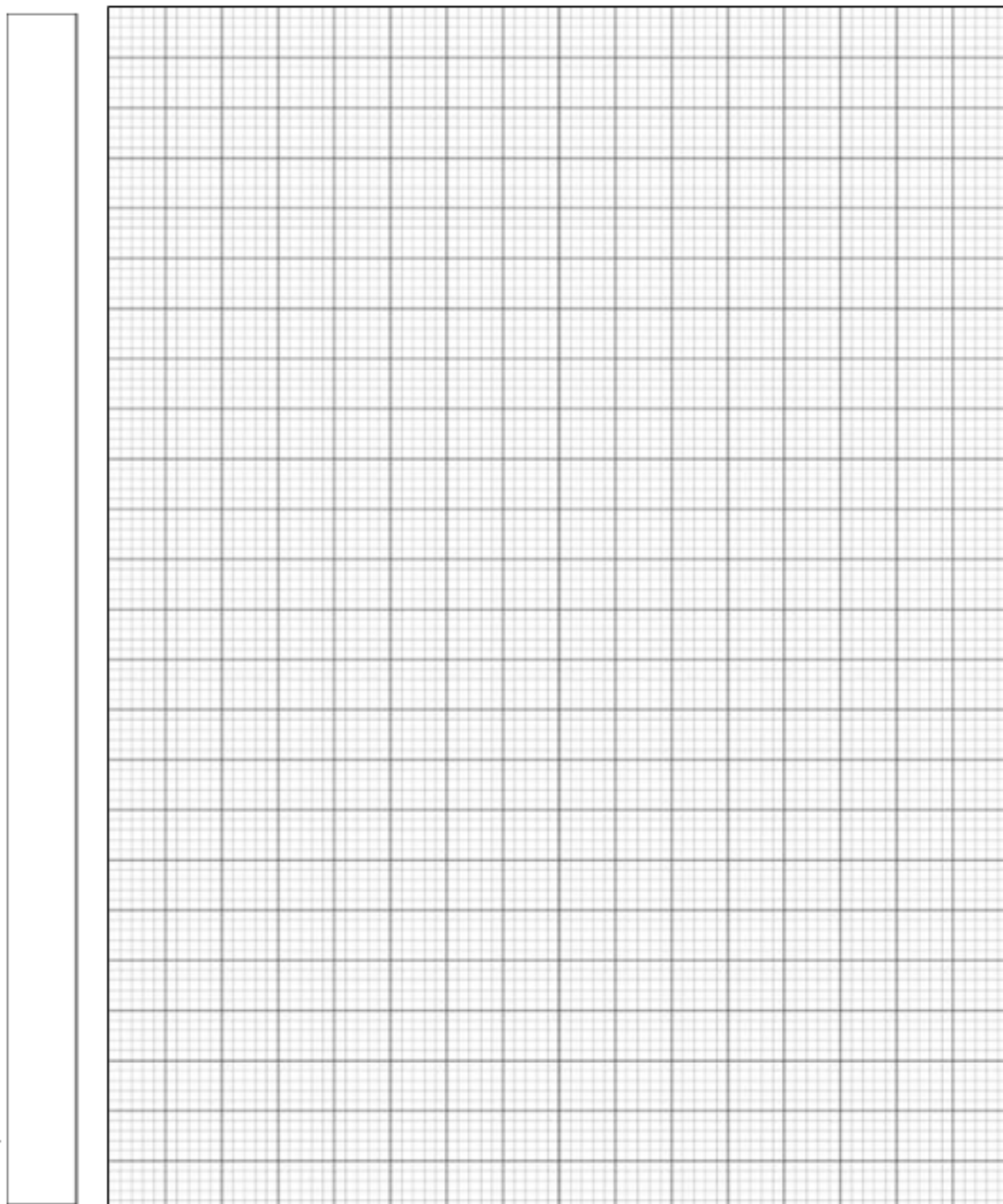
Year	Average number of micro plastics per cubic meter (m ³)
2013	40
2014	45
2015	55
2016	75
2017	-
2018	110
2019	120
2020	135


Question 1.

- a) Graph the results of the investigation. Label each of the axes and include appropriate units.

(5 marks)

Graph title: _____



- 
- b) Using data from the graph, describe the relationships or patterns in the results. (2 marks)

- c) There was no average available for 2017, as the equipment used to record data did not work properly.

Using the graph, predict the average number of microplastics in 2017. (1 mark)

- d) Scientists studying the Great Barrier Reef ecosystem noticed that the population of crabs had significantly decreased due to the consumption of micro plastics.


i. Draw a food chain that includes crabs. (2 marks)

- ii. As a result of the decreased numbers of crabs, populations of other organisms within the food web would have been affected.

State the possible effects on the populations of the following organisms as a result of a decrease in the population of crabs, and explain your reasoning.

Reef sharks (2 marks)

Phytoplankton (2 marks)

- 
- e) The population of shrimp has been significantly affected by the increased amount of microplastics in the Great Barrier Reef.

If shrimp was removed from the food web, explain the effect this would have on the rest of the food web. (3 marks)

- f) Using your knowledge, propose two (2) ways humans could reduce the amount of microplastics in the marine environment. (2 marks)
