

Ecosystems and food webs

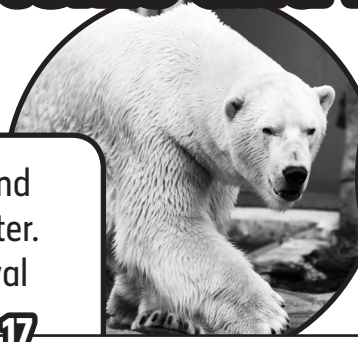
KS3 trail

An ecosystem is made up of all the living animals and plants and the non-living parts such as soil and water. Animals and plants depend on each other for survival creating a complex system.

Gallery 1, Case 17

Are polar bears predators or prey animals? _____

Draw and label the features that supports your theory.



Food chains

In a food chain the arrow shows the direction of energy transfer, the energy from the prey organism is passed to the predatory organism.

Roles in a food chain:	What each role does:
Producer	Plants that use the Sun's energy
Primary consumer	Animals that eat producers
Secondary consumer	Animals that eat primary consumers
Tertiary consumer	Animals that eat secondary consumers
Decomposer	Organisms that feed on dead material

Gallery 1, Case 6

These birds feed on insects and are eaten by birds of prey. Complete the food chain with the animal and their role:



Gallery3

What is pollination?

Insects which cross-pollinate plants are primary consumers. They include honeybees, bumblebees, hoverflies, beetles and butterflies.

Find pollinators in the gallery.

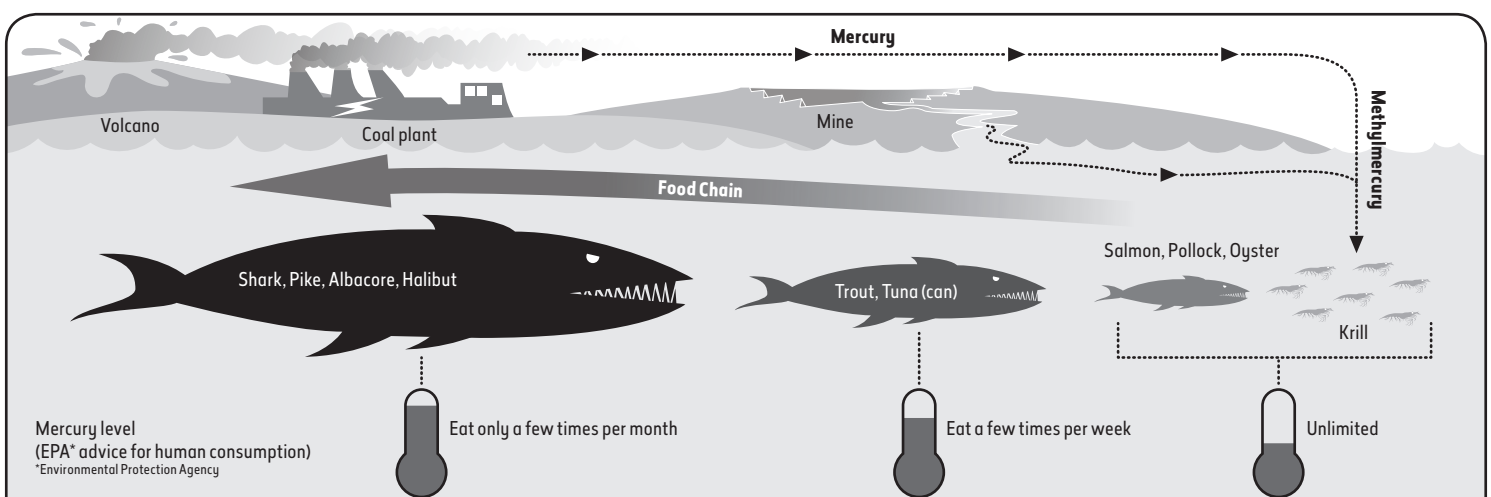
What features do these insects have in common? Write or draw your answer below.

Bumblebees are important pollinators of crops like tomatoes and strawberries.
What would happen if there was a huge decline in pollinating insects?

Gallery3, near entrance to Gallery4

Look up high for the **blue-fin tuna**, one of the fastest predators in the ocean.

Complete the food chain with the animal, their role and the direction of energy transfer:



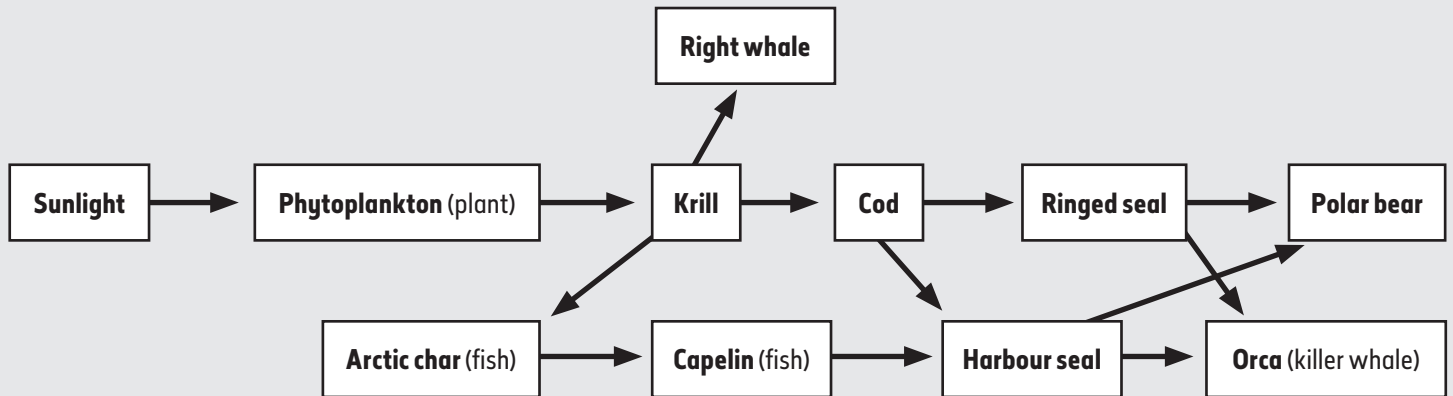
Burning coal releases mercury which is absorbed into the ocean by phytoplankton which is eaten by the primary consumer and so on. The pollutant is very toxic and builds up as it moves up the food chain. This is bioaccumulation.

In your chain above, which animal would have the highest mercury levels? _____

What impact do you think this might have on people? _____

Food webs

A food web shows all of the food chains in a habitat joined up together. Here's an example.



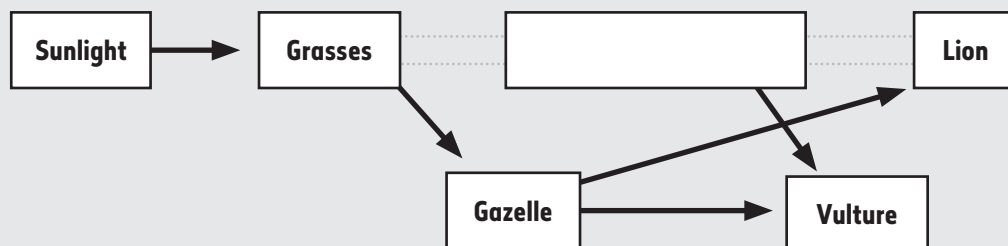
Is a food chain or a food web more useful to represent real life? Why?

What type of consumer is missing from this food web? _____

Gallery 4

These animals are all herbivores.

In the food web below add a species you see in the gallery and the arrows showing the direction of energy transfer.



Find the Thompson's gazelle in **Gallery 5**.

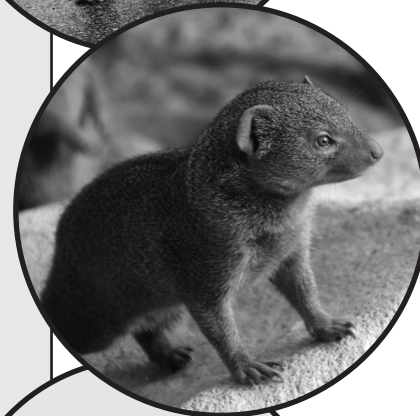
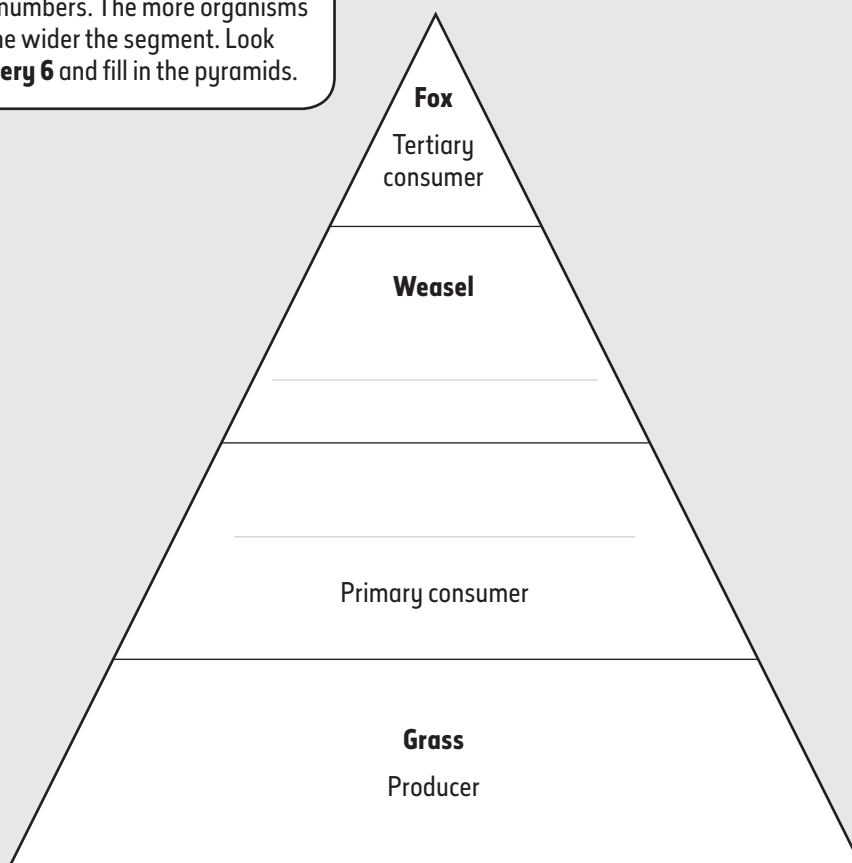
From your food web above, predict what might happen to the herbivore you chose if the Thompson's gazelle was over-hunted and went extinct.

I predict that the population of the _____ might increase/decrease/remain stable because

I predict that the vulture population might increase/decrease/remain stable because

Gallery 6

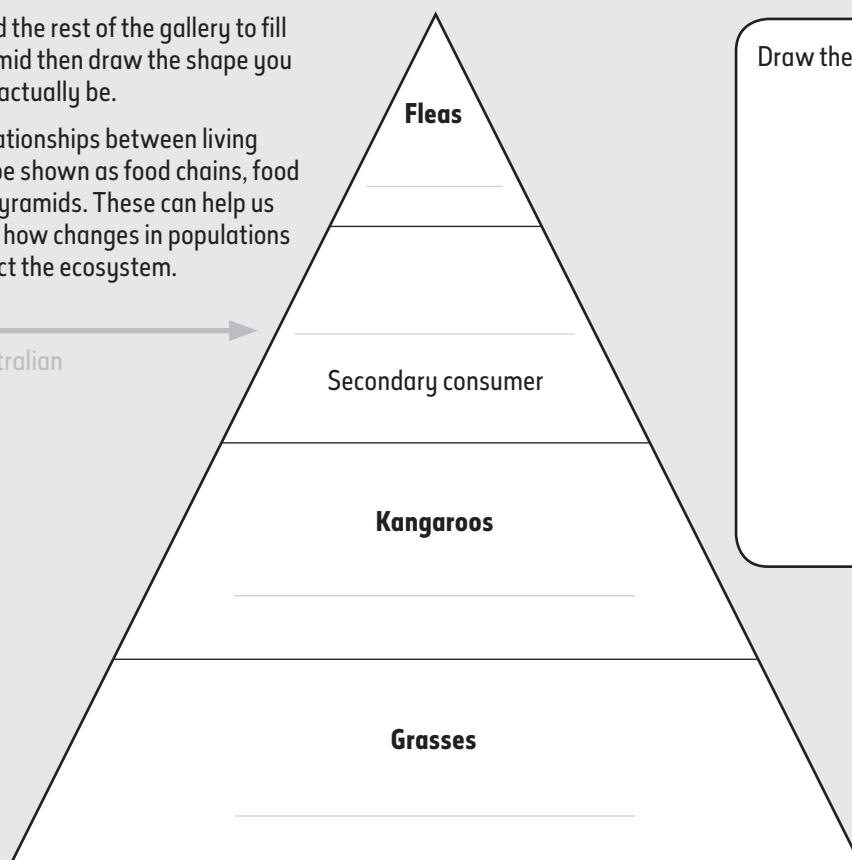
Food chains can also be shown as a pyramid of numbers. The more organisms there are, the wider the segment. Look around **Gallery 6** and fill in the pyramids.



Look around the rest of the gallery to fill in this pyramid then draw the shape you think it will actually be.

Feeding relationships between living things can be shown as food chains, food webs and pyramids. These can help us understand how changes in populations might impact the ecosystem.

Hint It's an extinct Australian wild dog.



Draw the correct shape here.



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Well done you have completed the trail!

Images: All from Unsplash:

Polar bear – Kaiwen Sun, leaves – Lawrence Kayku, lion – Eric Combeau, gazelle – Noam Jordan, fox – Erik Mclean, weasel – Ilyas Aliev, grass – Chang Qing, kangaroo – John Torcasio