Habitats and Adaptations

Habitats and Adaptations

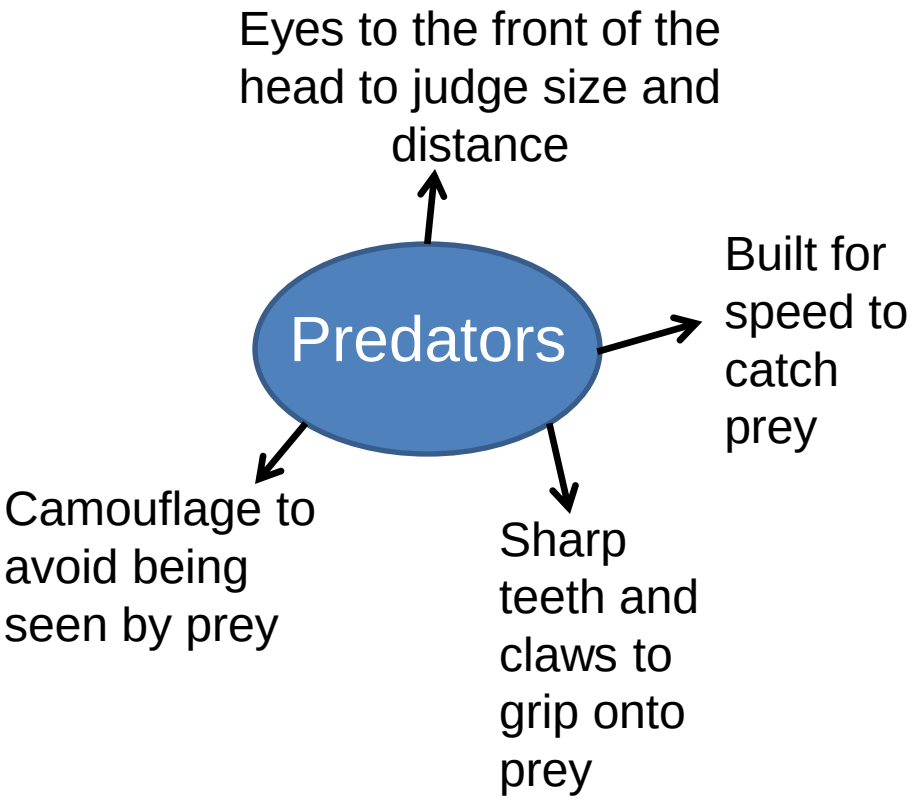
WALT: describe a habitat and how organisms are adapted to their habitat

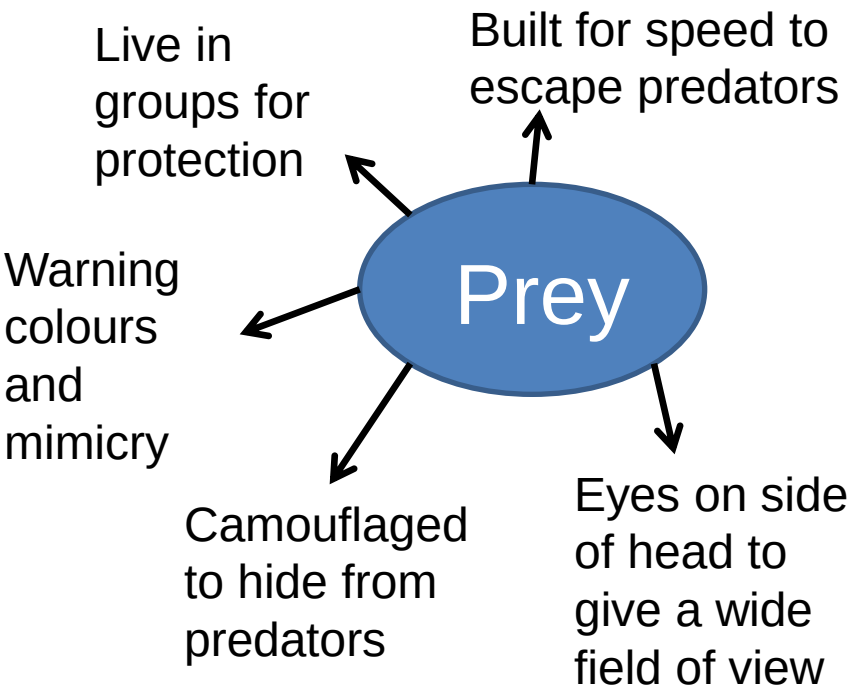
Starter

- Watch the video and write down:
  - 3 ways the predator is well designed to be a predator
  - Suggest possible attributes of the prey that help it to protect itself from predators

http://www.youtube.com/watch?v=QettcCSq1FY&feature=relmfu

Predator and Prey Adaptations





What is a habitat?

- The place where organisms live

- Most organisms are adapted in some way for their habitat

Think back to your field trip

- What was the habitat you studied?

- Let’s brainstorm facts you learnt about the habitat of your field trip

1. From our habitat, write down the name of:

- A herbivore
- A producer
- A carnivore
- An arthropod
- A decay organism

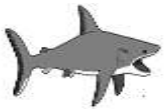
2. Draw a food chain from the habitat
3. Write a description of what would happen if a disease killed most of the plants in the habitat
4. Do you think there are more herbivores or more carnivores in the habitat? Explain why?
5. Pick 2 organisms from your habitat and explain how they are well adapted to their environment

Adaptation:

Write down a definition.

A biological **adaptation** is an anatomical structure, physiological process or behavioural trait of an organism that has evolved over a period of time by the process of **natural selection**. The adaptation increases the expected long-term reproductive success of the organism.

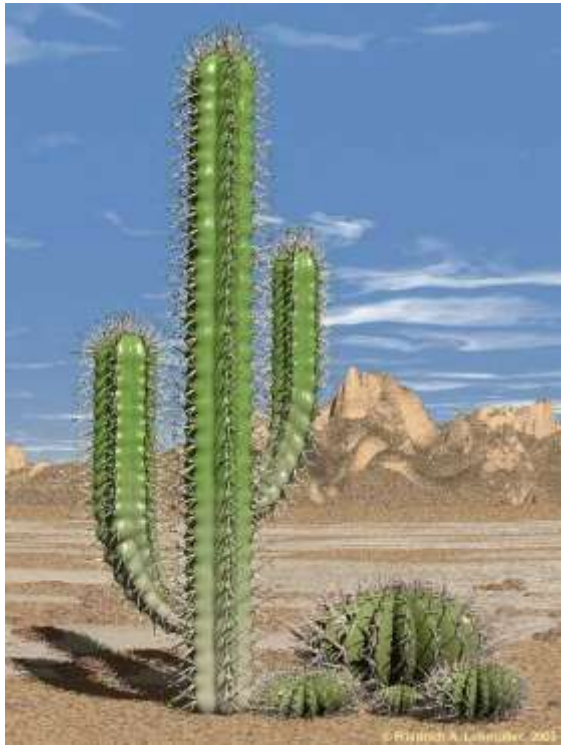
Task – Match the animal with the correct number and letter – 3 mins

Plants / Animal	Adaptation	why adaptation is important
	1. Has gills and is streamlined	A. So it can breathe under water and swim fast
	2. Strong back legs	B. So it can pull worms out of the soil
	3. Sharp beak	C. So it can swim instead of fly
	4. Wings that can be used as flippers	D. So it can hop in and out of the water

ADAPTATIONS HELP ANIMALS AND PLANTS COMPETE FOR FOOD ....

- Koalas eat eucalyptus leaves which are poisonous to most animals
- Therefore koalas are less likely to be short of food as other animals will not eat the leaves
- Therefore they survive and reproduce their genes...meaning the offspring also have the specific beneficial adaptation...helping the population survive.....called **natural selection.**

Adaptations to hot and dry environments



Cacti and the Desert

- How are cacti well adapted to hot, dry conditions?
  - Very long roots
  - Thick waxy cuticle to reduce water loss
  - Store water in fleshy stem
  - Leaves are spines to reduce water loss – small surface area

Adapting to the Cold

- How is a polar bear adapted to live in the arctic?

Large body compared to its surface area, to reduce heat loss

White colour to camouflage in the snow when hunting seals

Thick fur and blubber for insulation

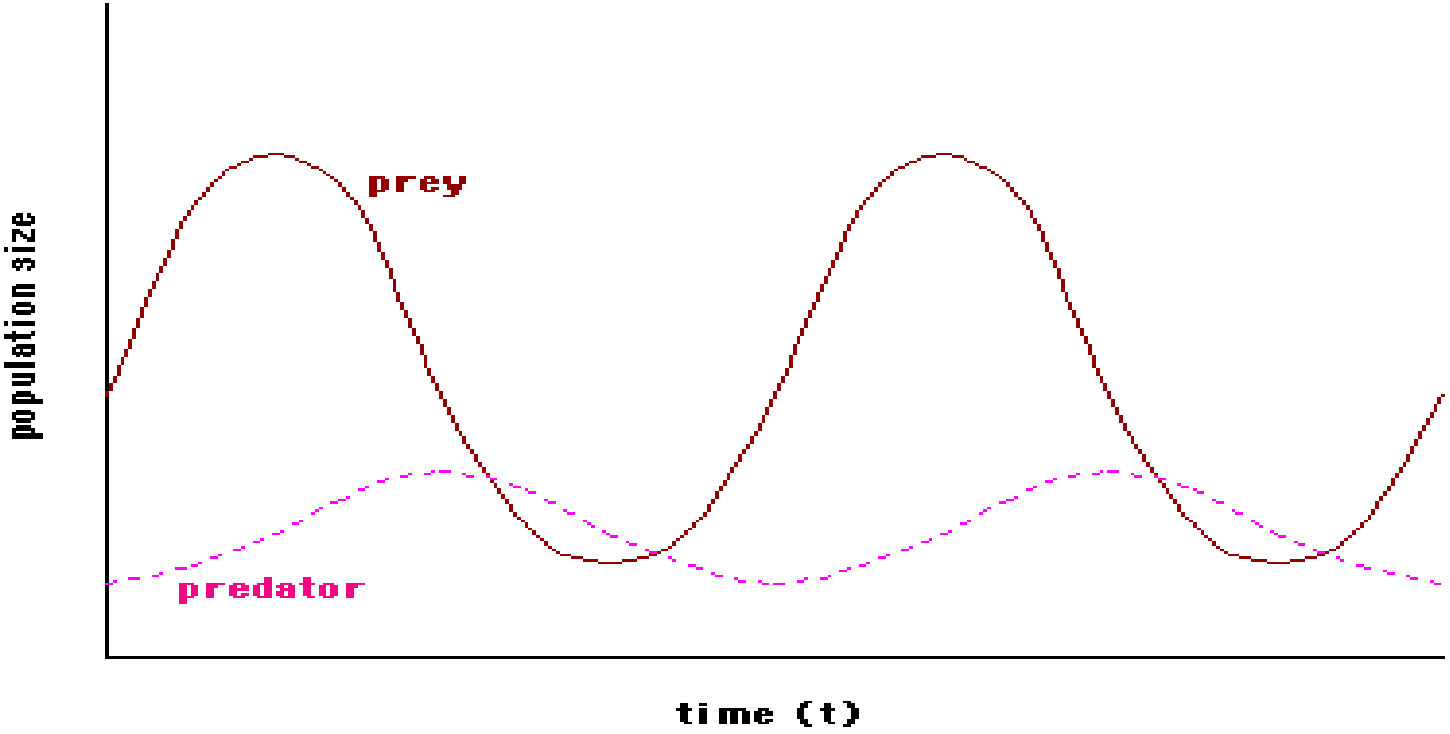
Small ears to reduce surface area and heat loss

Some animals also hibernate or migrate during the cold months when food is scarce

Adaptations within species

- Adaptations can also happen within species.
- Example – Humans – why do you think dark skin is useful in hot climates and white skin useful in cold climates?
- Example – Brahman cattle
  - Big ears for flapping and large surface area
  - Flap under neck – large surface area
  - Grazers and browsers
  - Resistance to parasites

To start: Describe the relationship between predator and prey in 3 sentences



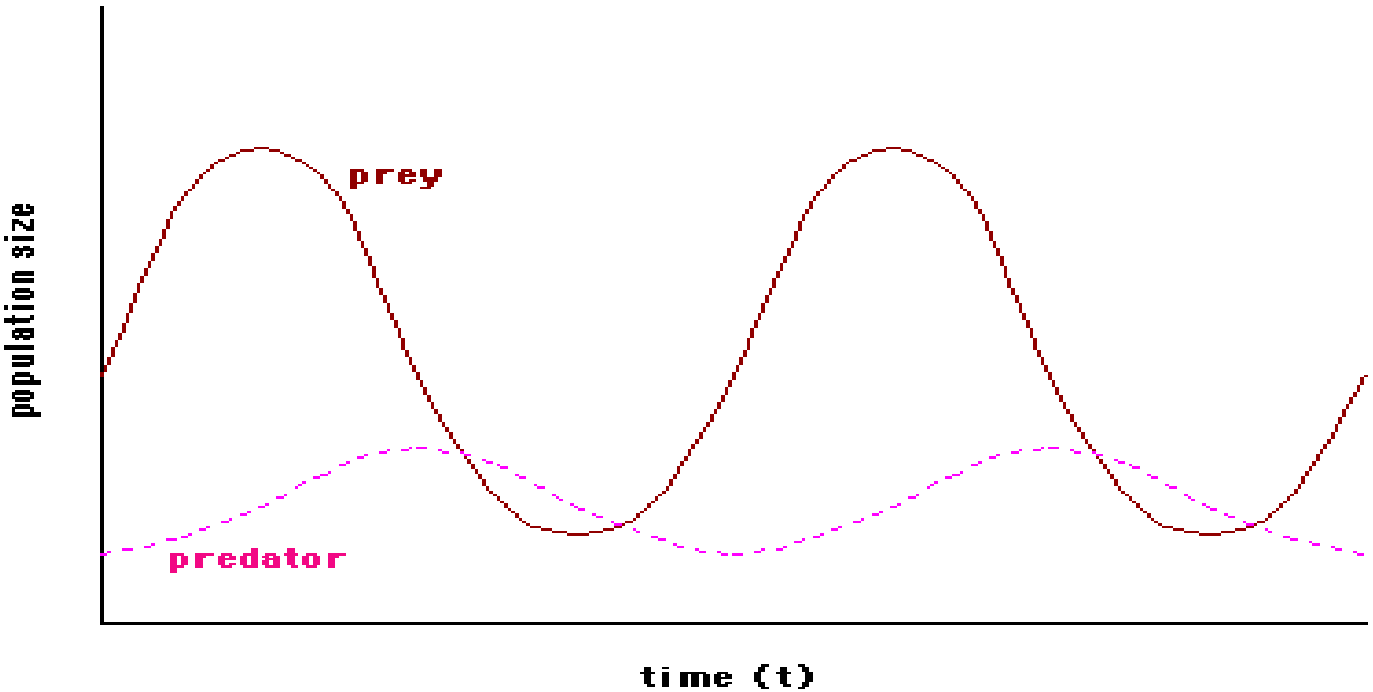
CLUE– use these sentences to help you and identify any that are false

- Overall the population size of both predator and prey are cyclical
- The predator population generally tracks the peaks in prey population
- The prey population generally tracks the peaks in predator population
- Most of the time the size prey population is greater than the predator population

Consider this example

- Badgers eat shrews – the badger is the predator and the shrew is the prey
- When there are more shrews, the badgers have more food therefore can raise more young
- The badger population therefore increases
- The next year there are now more badgers which eat more shrews therefore the shrew population decreases

Copy the predator-prey cycle graph into your books and answer the



Lettuce >> slugs >> hedgehogs

1) Why might the slug population increase in the winter?
2) From the previous example, explain what might happen to the shrew population if there was an increase in badgers?
3) Explain the pattern of the above graph (Higher level)

Key point for the fluctuation pattern

- The predator population can only rise if there is enough prey to feed their young
- This is why the predator population graph lags behind the prey population graph

Plenary

- Think, pair and share – 5 facts each