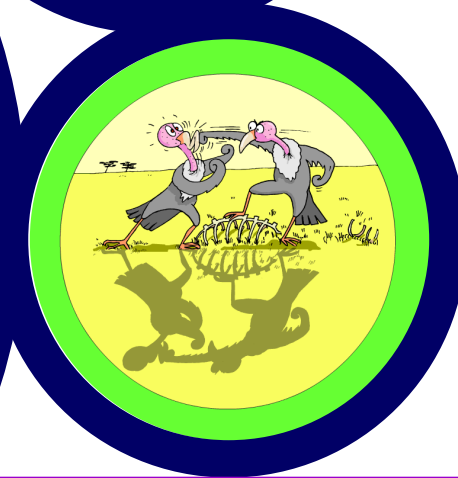
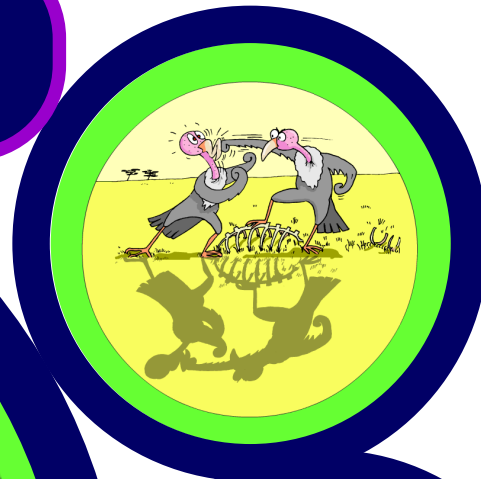
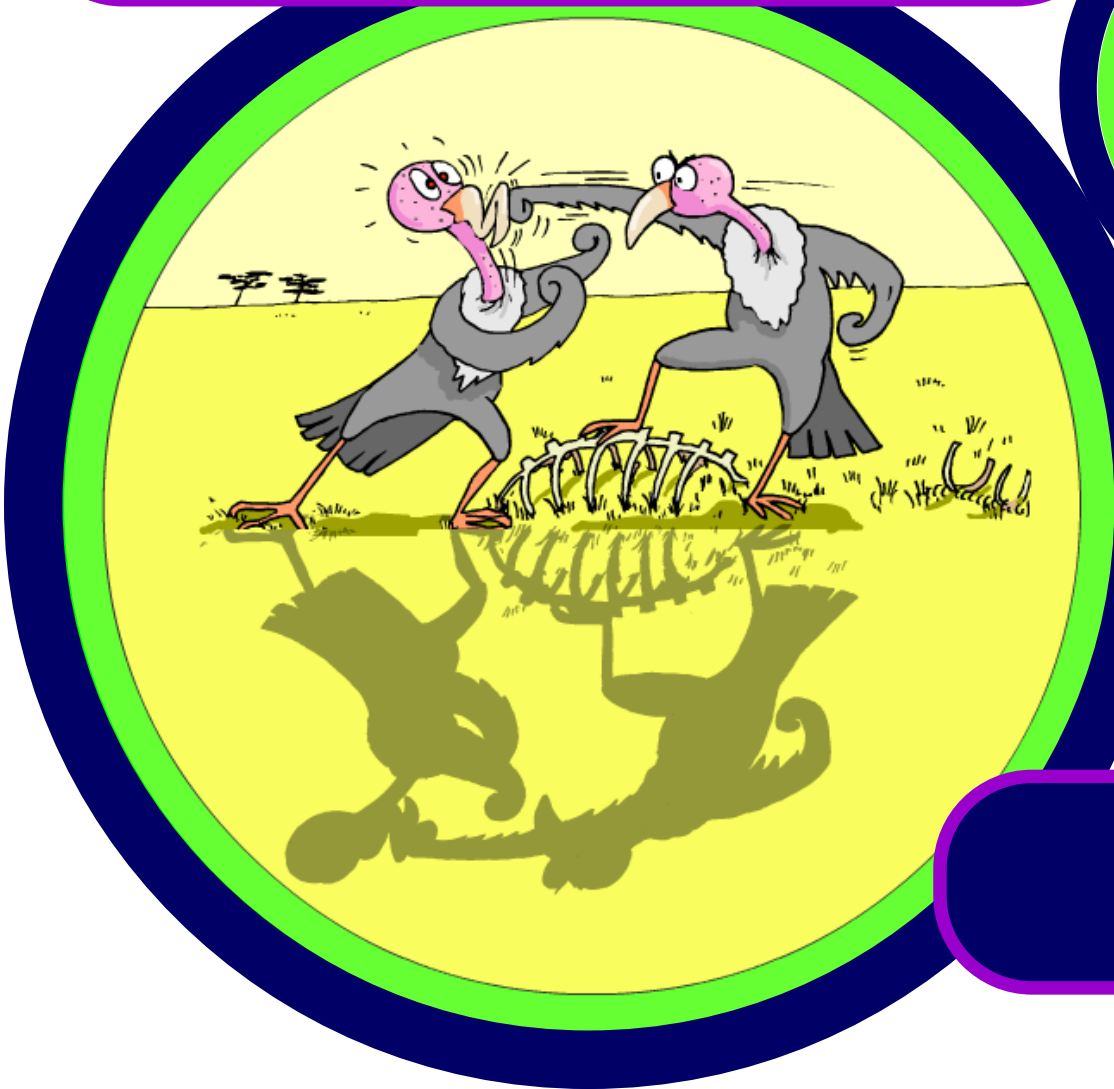


KS4 Biology



Competition





Competition

- **What is competition?**
- **Competition between animals**
- **Competition in plants**
- **Predator–prey relationships**
- **Multiple-choice quiz**





What is a population?

- What is the difference between a **population** and a **community**?

A **population** is the number of individuals of the **same species** living in a certain habitat.

A **community** includes **all the different species** living in a certain area.

- The size of the population within a community can change over time. What factors will affect population size?

competition

disease

predators

migration





What is competition?

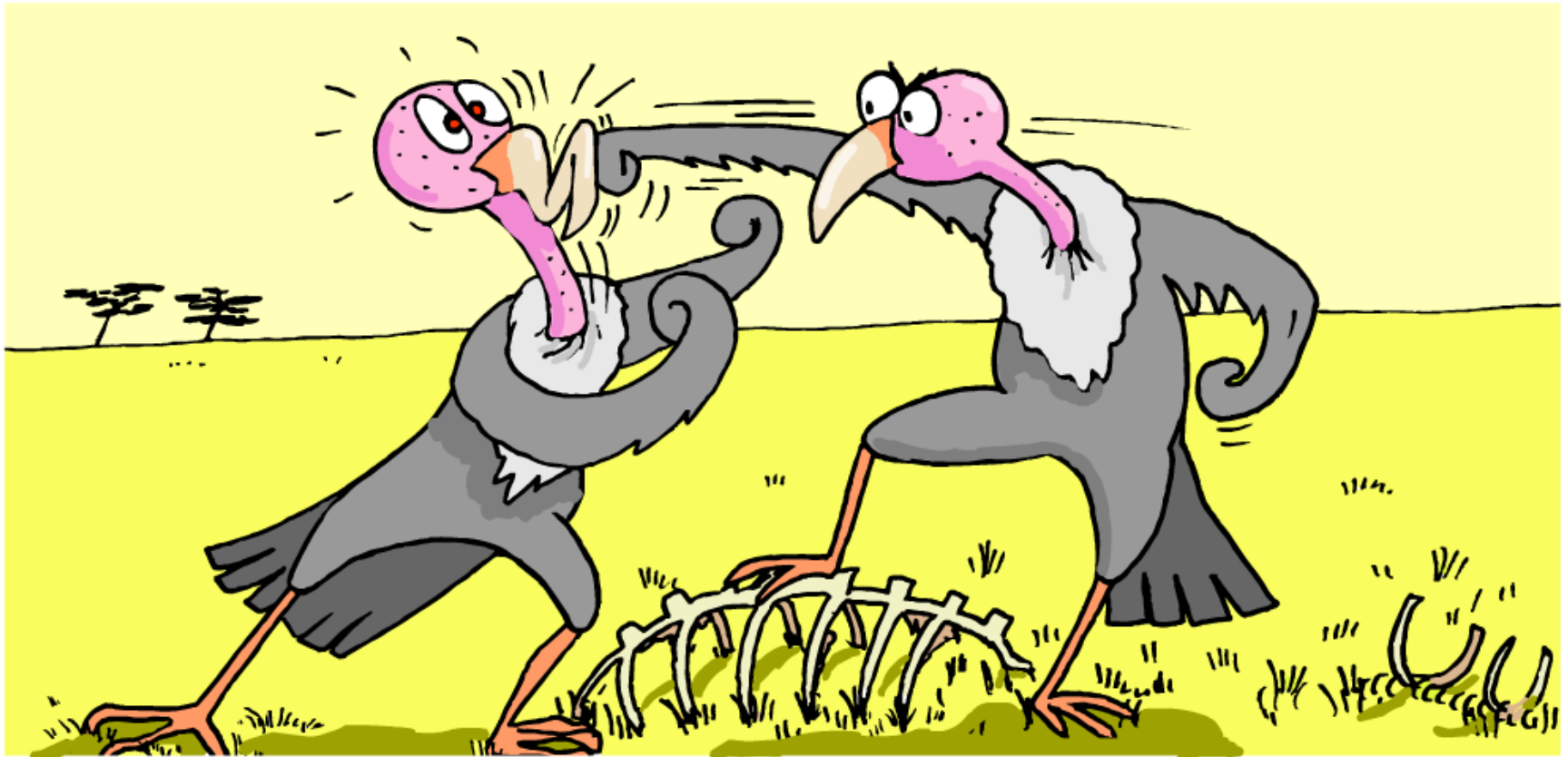
- Competition is one of the factors that affects population sizes. What type of organisms compete for resources?
Competition occurs between **different species...**





What is competition?

- Members of the **same species** also compete for resources. Why do living things need to compete and what do they compete for?





Competition

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What do animals compete for?

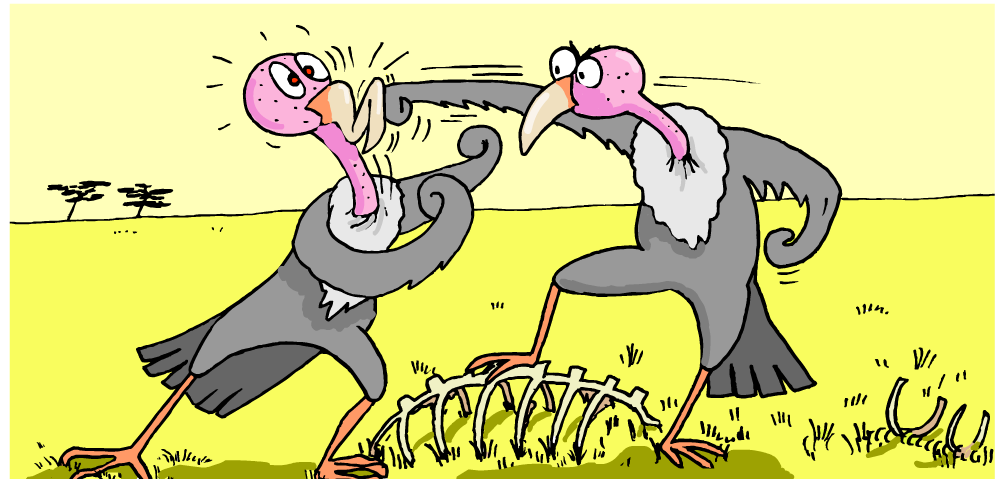
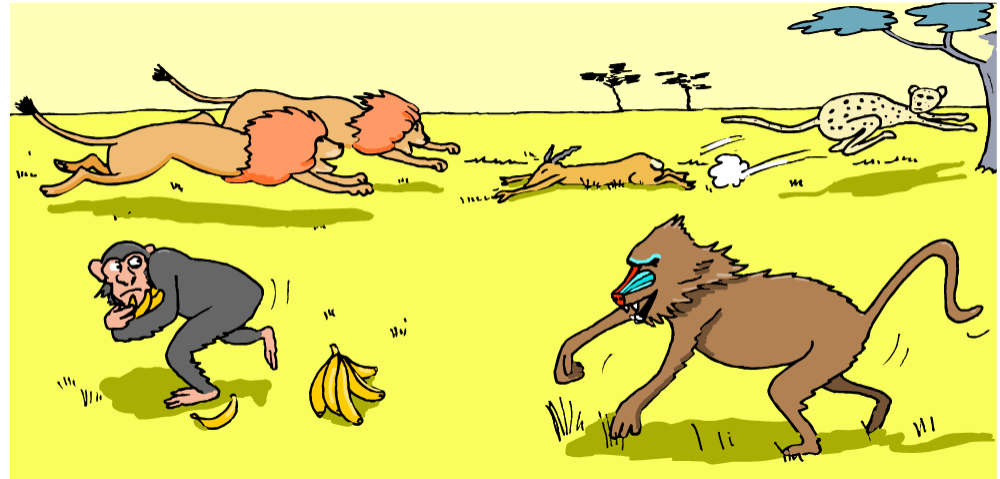
- What **four things** do animals in the same species or animals of different species have to compete for?

food

water

space

mates

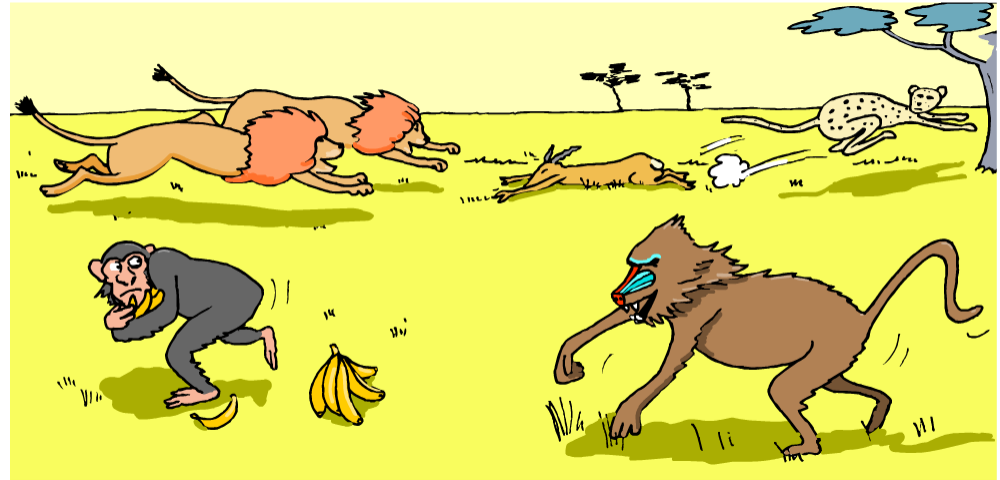




Niche competition

- A **niche** is the position that a living thing occupies in a community.

It is a specialized type lifestyle.



What happens if animals have **overlapping niches**?

- Animals with overlapping niches **compete**.

The more the niches overlap, the greater the amount of competition between the species.

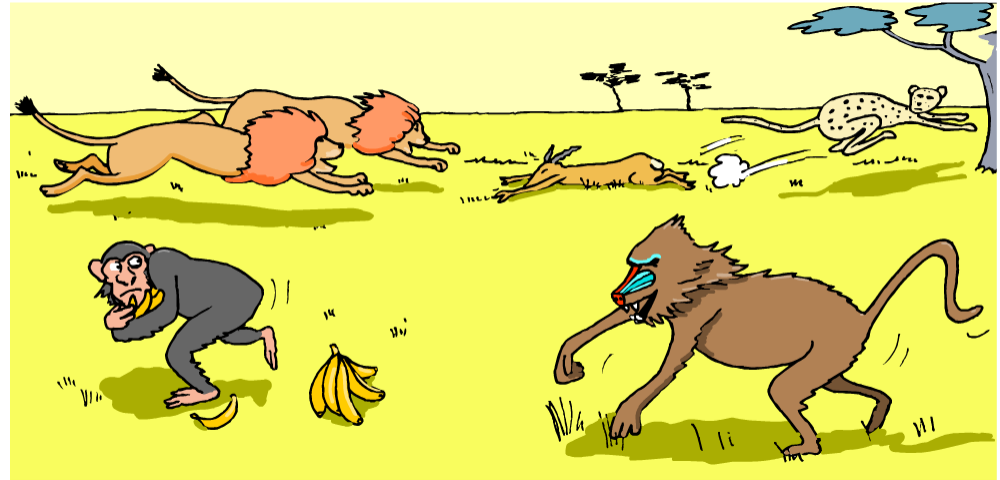
What will happen if species compete for all aspects of their niches?





- If species compete for all aspects of their niches, eventually, one species will better the other.

Competition results in **winners** and **losers**.



What three things might happen to the **less competitive** species?

- move to another area
- adopt new survival strategies
- become extinct in that area.





Competition

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- **Competition in plants**
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- **Multiple-choice quiz**



What do plants compete for?

- Plants also have to compete for resources. What **four things** do plants in the same species or plants of different species compete for?

light

minerals

water

space





Growth of grass in a meadow is affected by light, water, shade and sheep.



Click on the sheep to investigate how competition between these four factors affects the meadow.





Competition

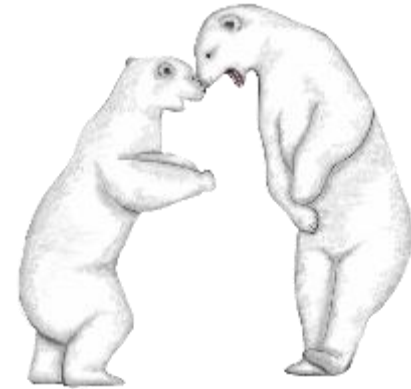
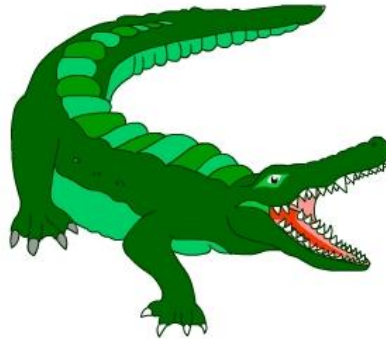
- What is competition?
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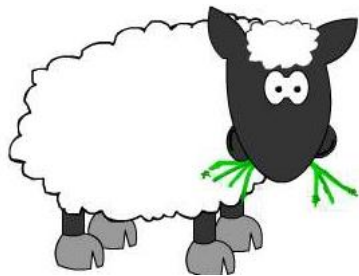
- Populations of animals are often limited by the amount of food.
What are animals that eat other animals called?



predators



What are the animals that predators eat called?



prey

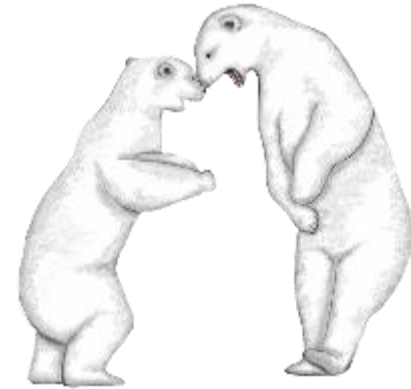
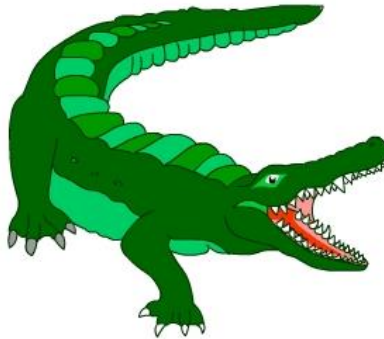


How are predators and prey adapted to survive?

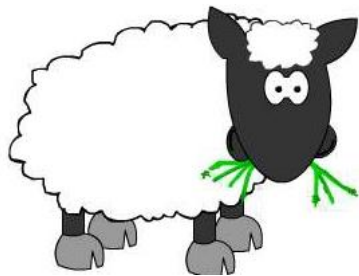
Predators are adapted to **catching** and **consuming** their prey.



predators



Prey have adaptations to **detect** and **flee** from predators.



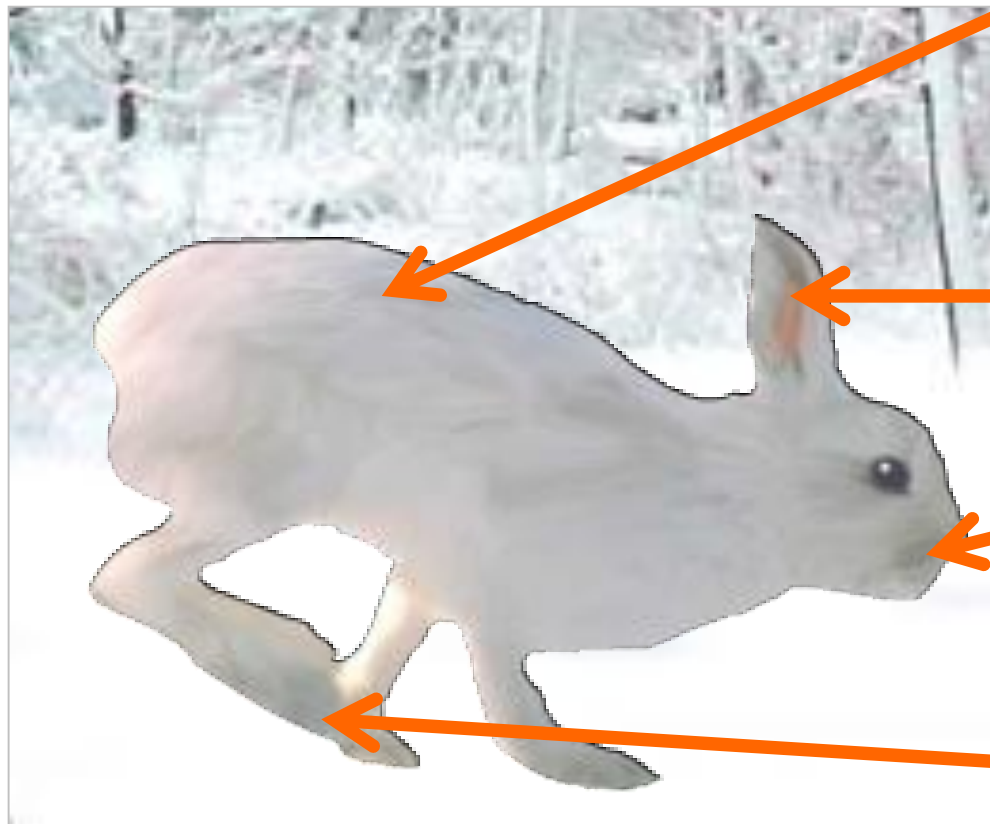
prey





Prey adaptations – the snowshoe hare

- The **snowshoe hare** lives in northern parts of North America. How is it adapted to the cold and to avoid being eaten by predators, such as **lynxes**?



Coat changes colour with the seasons from greyish-brown in summer to white in midwinter.

Large ears help to detect predators.

Strong teeth are able to chew bark and twigs.

Large back feet spread out to act as snow shoes. Fur on the soles also protects from the cold.



Predator adaptations – the lynx

- **Lynxes** are adapted to life in a cold climate. How are these predators adapted for catching the **snowshoe hares** that are their main prey?



● Excellent **eyesight** and **hearing** for detecting prey.

● Very sharp teeth – prey watch out!

● Thick furry coat protects from the cold.

● Very strong **hind leg muscles** are capable of a pounce 6.5 metres long!

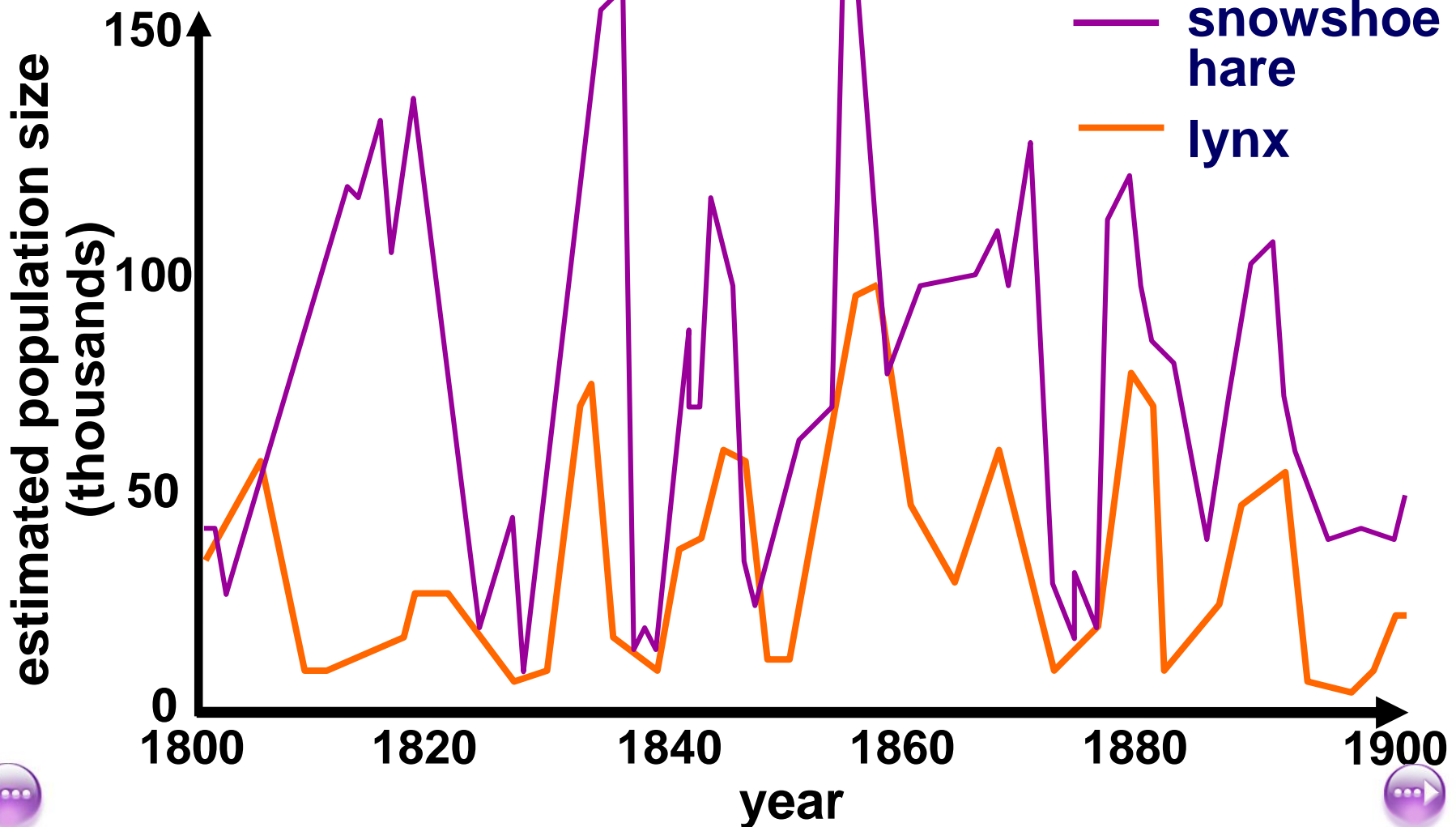
● Extra large paws act as snow shoes on soft, deep snow.





Predator-prey graph

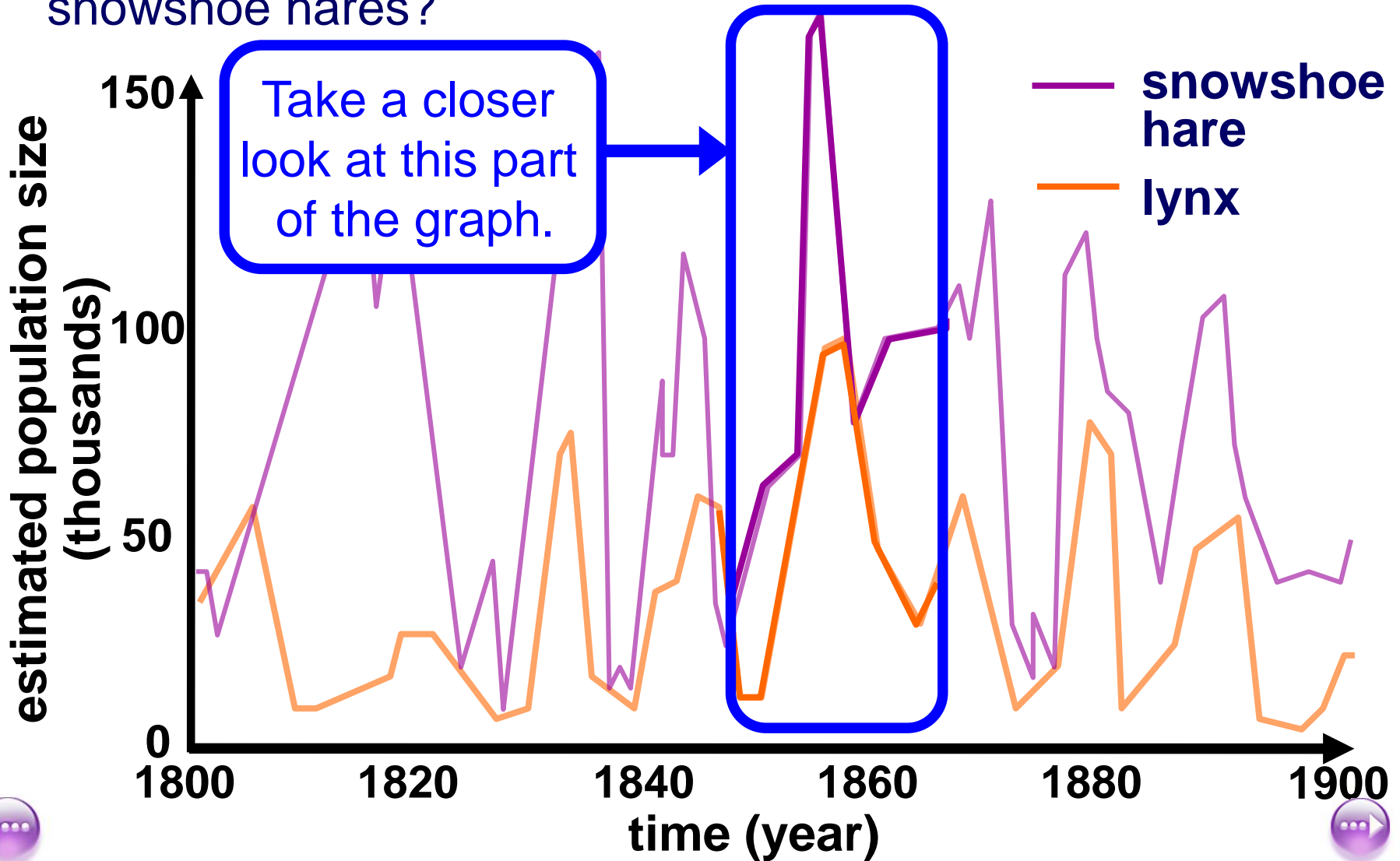
- This population data comes from fur trapping records. How are the populations linked?





Predator-prey graph

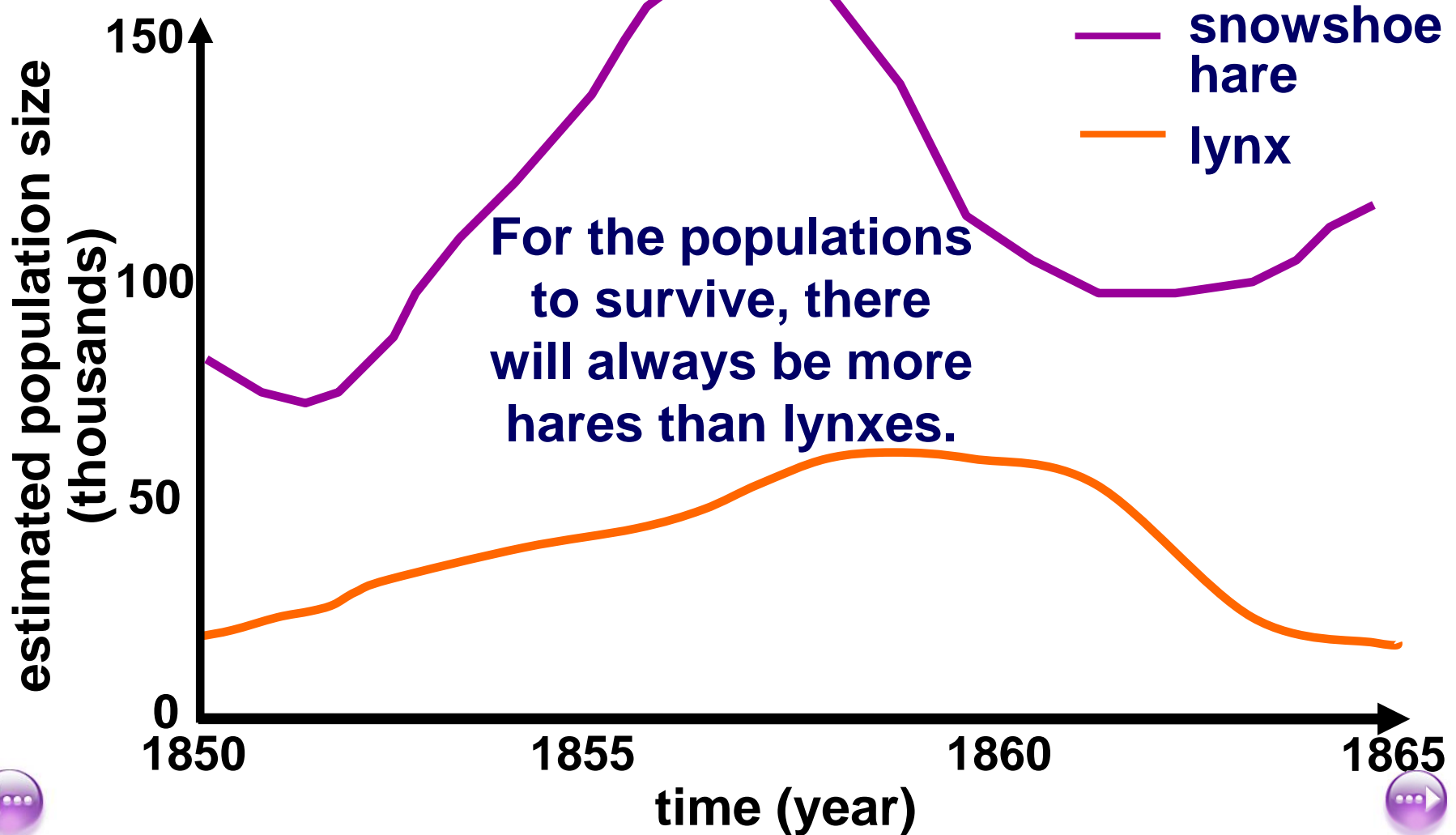
- How does the lynx population depend on the number of snowshoe hares?





Predator-prey graph section

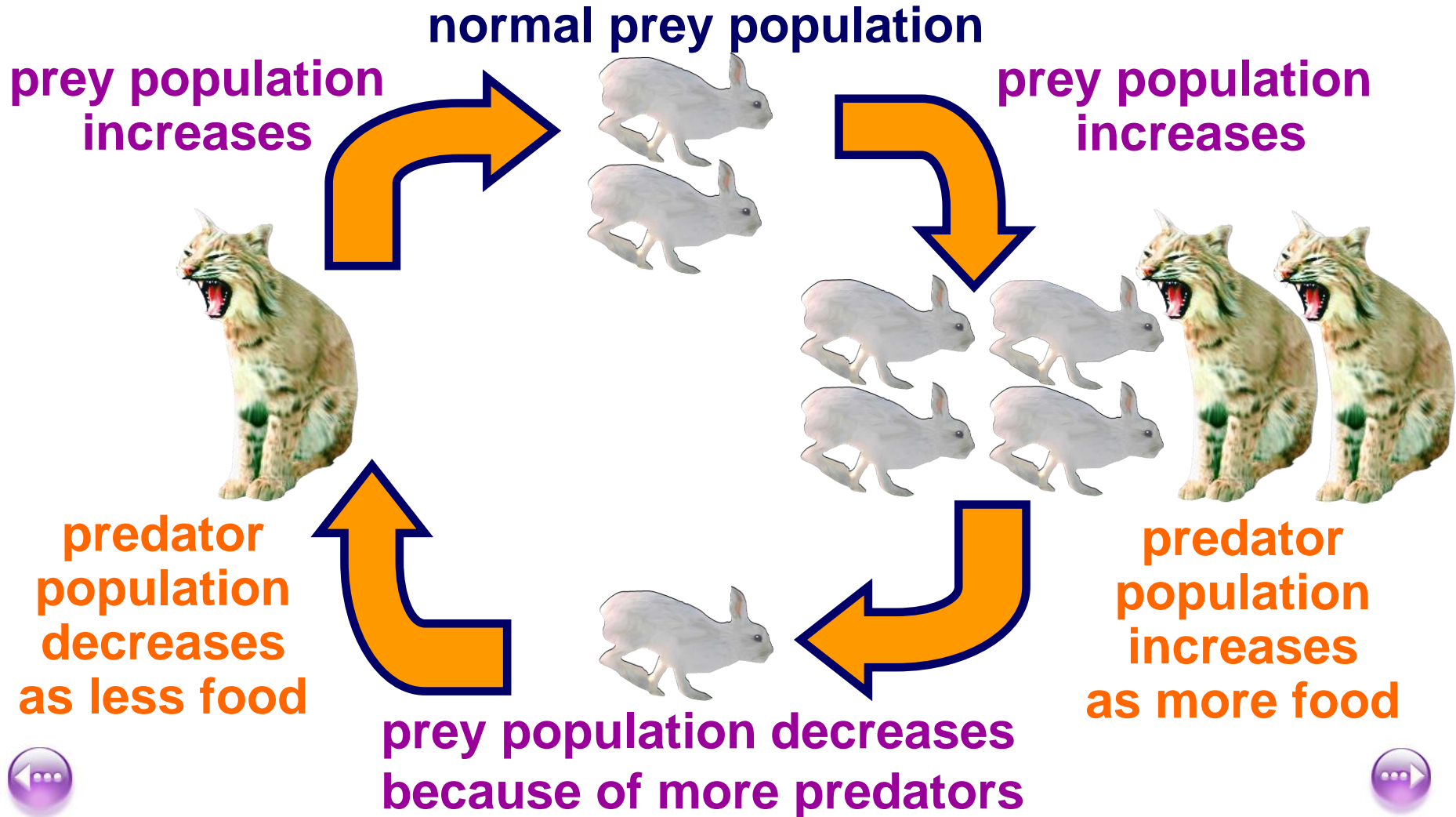
- Why does the peak for the lynx population always come after the peak for the number of snowshoe hares?





Predator-prey cycle

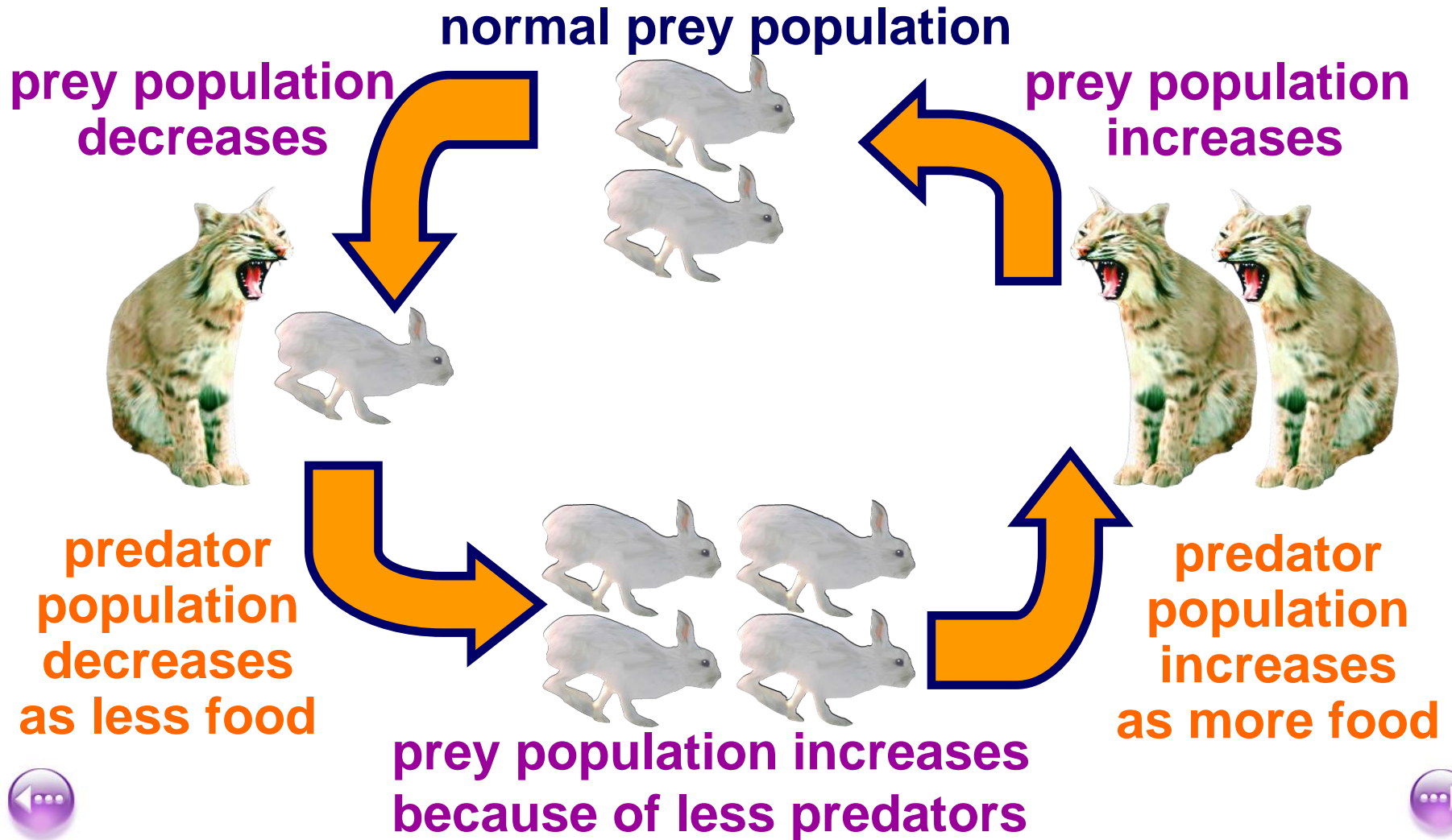
- Predator and prey population sizes follow a cycle. What happens if the prey population **increases**?





Predator-prey cycle

- Predator and prey population sizes follow a cycle. What happens if the prey population **decreases**?





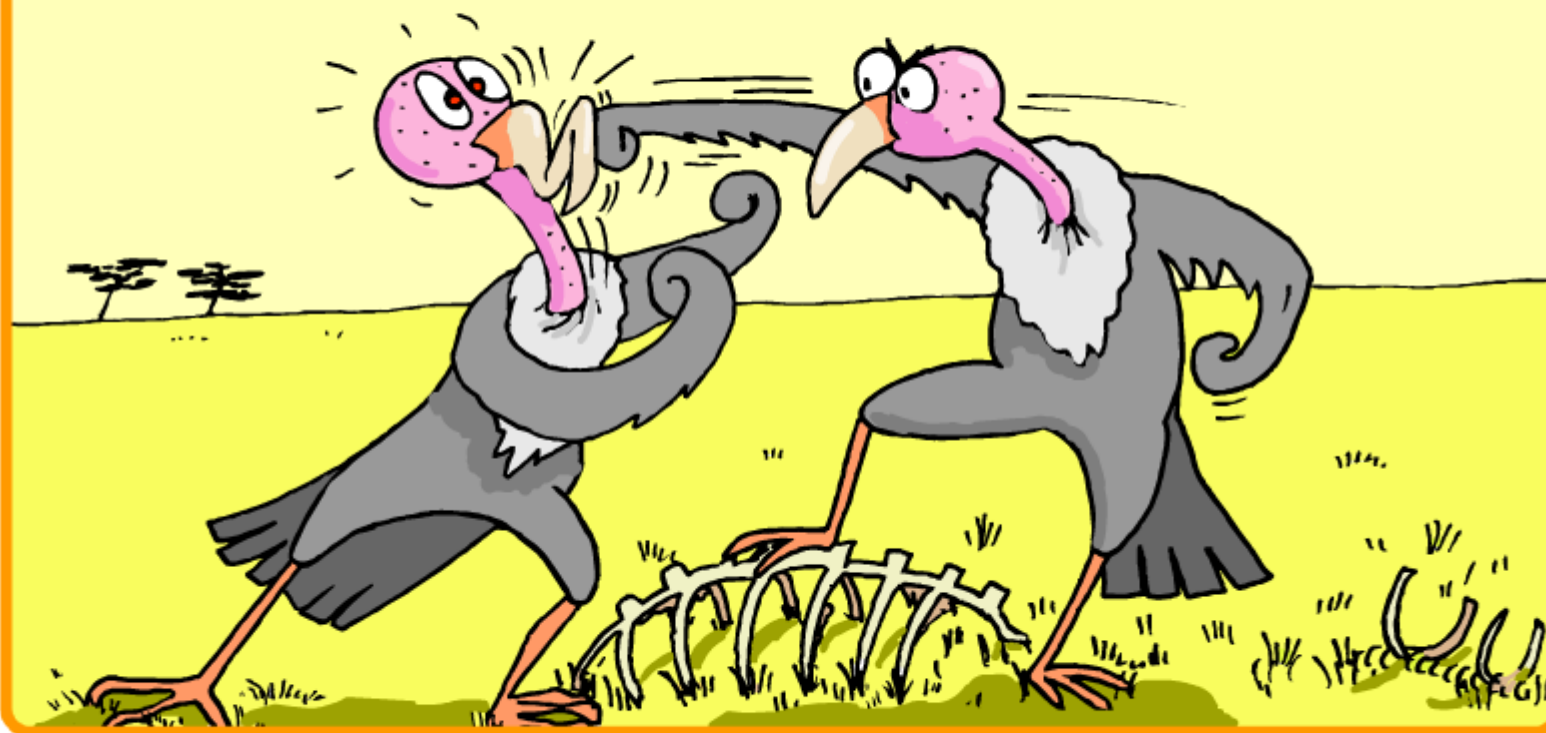
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Are you ready to compete in this quiz
about competition?



start

