

Competition

Energy In Ecosystems

Learning Outcomes

- To investigate the effects of competition between organisms of different species and of the same species

Competition

Competition occurs when resources, like **food**, are limited.

There are 2 types of competition:-

Interspecific - between different species

Intraspecific - between members of the same species

Interspecific Competition

- **Examples:**

1. Grey squirrel ousts red squirrel. Grey squirrel is larger, uses wider variety of foods and is more aggressive.



2. Rainbow trout ousts brown trout. Rainbow trout are more aggressive and greedy for food.

Find the Competition - Activity

- Carry out the instruction from page 12 in your pupil booklet.

Reducing Interspecific Competition

- Different species may reduce competition by :-

1. Selecting different prey
2. Feeding at different times
3. Nesting in different habitats

Intraspecific Competition

Intraspecific competition occurs when members of the same species compete for **exactly** the same resource



Think/Pair/Share

- Discuss, in your groups, what resources you think:

1. Animals compete for?

2. Plants compete for?

Intraspecific Competition

- More intense competition as members of the same species compete for exactly the same resource, e.g. food, territory, choice of mate.
- Regulates size of a population as weaker individuals will be weeded out by natural selection.

Territoriality

- Competition between members of same species for territory
- Most territory holders are solitary having complete dominance within the boundaries of their own territory.
- Use social signals to defend the territory fiercely

Example of Territoriality

- **Robin** - High pitched song and puffs out chest in response to an intruder (stimulus). Defence is more active near the centre of territory.

Advantages of Territoriality

- Spaces out population in relation to the available food supply.
- Aggression between neighbours is reduced and energy spent foraging is saved

Dominance Hierarchy

- Higher animals live in social groups.
- Within the group there is an order of rank
- Determined by aggressive behaviour between members of the group.

Examples of Dominance Hierarchy

1. Birds (Pecking order)

- dominant bird emerges and pecks others without being attacked in return. Gets first choice of any available food.
- Second bird in the order will be allowed to peck all other birds except the first and so on and so on...

2. Mammals - Baboons and Wolves

- Dominant mammal uses **ritualised threat gestures**. The other members will make **subordinate responses**



Advantages of Dominance Hierarchy

- Fighting is kept to a minimum;
- Injuries are avoided;
- Energy is conserved;
- Competitive individuals pass on genes;
- Experienced leadership is guaranteed.

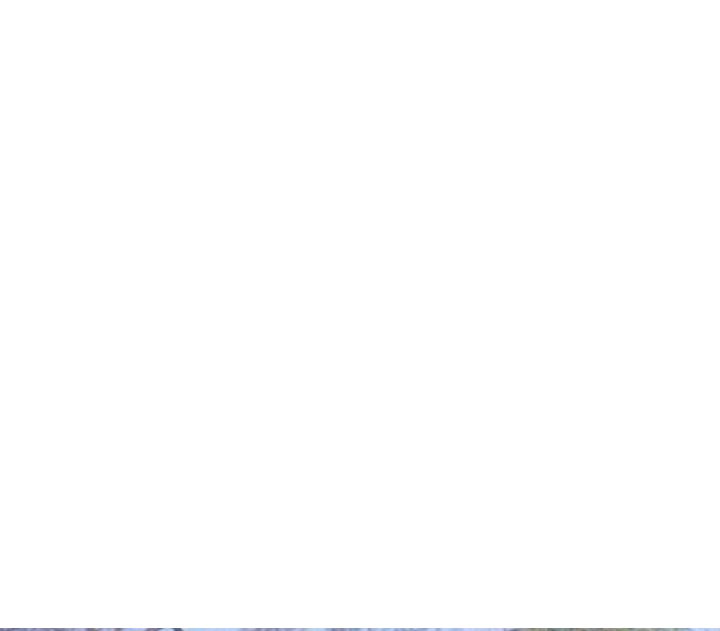
Co-operative Hunting Within Social Groups

Examples of Co-operative Hunting

- Orca (Killer) Whales
- Humpback Whales
- Dolphins
- Lions
- Wolves
- Wild Dogs
- Hyenas



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Advantages of Co-operative Hunting

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- Energy conserved.
- Prey tends to be larger and more nutritious
- All members of group receives food.
- The subordinate animal will gain more food than by foraging alone.