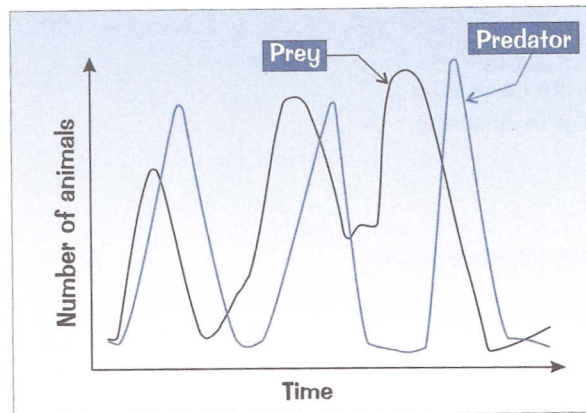


## Relationships Between Organisms

**Q1** The graph below shows the change in the numbers of a species of predator and its prey over time.

- What do the words **predator** and **prey** mean? Give **two examples** of a predator and its prey.
- What do you notice about the changes in the numbers of predator and prey with time? **Explain** why these changes happen.

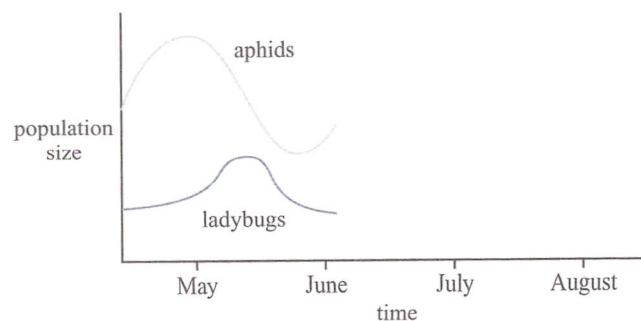


**Q2** What is meant by **mutualism**?

**Q3** Define a **parasite**.

**Q4** Parasites often have adaptations to help them survive in or on their hosts. **Explain** how the tapeworm is suited to living in a human gut.

**Q5** The graph below shows how the populations of **aphids** and **ladybugs** on a rose bush change over time. **Copy** the graph, and **continue** the lines for the aphids and ladybugs to **predict** how their populations might change over the next two months.



*Relationships between organisms can be positive, negative, or neutral...*

Predator/prey relationships go in cycles — you need to understand why, and be able to draw the graphs. Learn what's meant by win-win and win-lose relationships and make sure you can give examples of each.

## Ecological Succession

Q1 **Explain** what is meant by **ecological succession**.

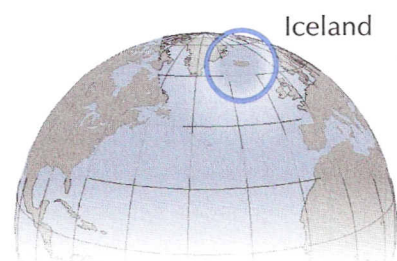
Q2 In the 1960's a **volcanic eruption** under the sea close to Iceland created a new island, named **Surtsey**. To begin with, the island was **barren** and **rocky**.

a) What would you expect to be the **first** organisms to colonize the island?

b) **Describe** how you would expect these organisms to **modify** the environment of the island.

c) The first **animals** to colonize the island were **seabirds**. Suggest how these seabirds reached the island.

d) How would you expect the **seabirds** to **alter** the island's environment?



Q3 The diagrams below represent three stages in an **ecological succession**. They are **not** in the correct order.

Stage A



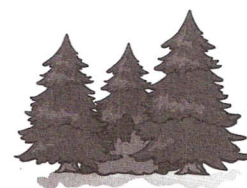
Grassland

Stage B



Mosses, grasses, and ferns

Stage C



Coniferous woodland

a) Write down the **order** in which you would expect the stages to occur.

b) There is a stage **missing** between two of the stages above. What **plant life** you would expect to see in the missing stage?

c) What stage is most likely to **follow** the stages given above?

d) **Explain** why the **coniferous trees** cause the plants that came before them to **die out**.