

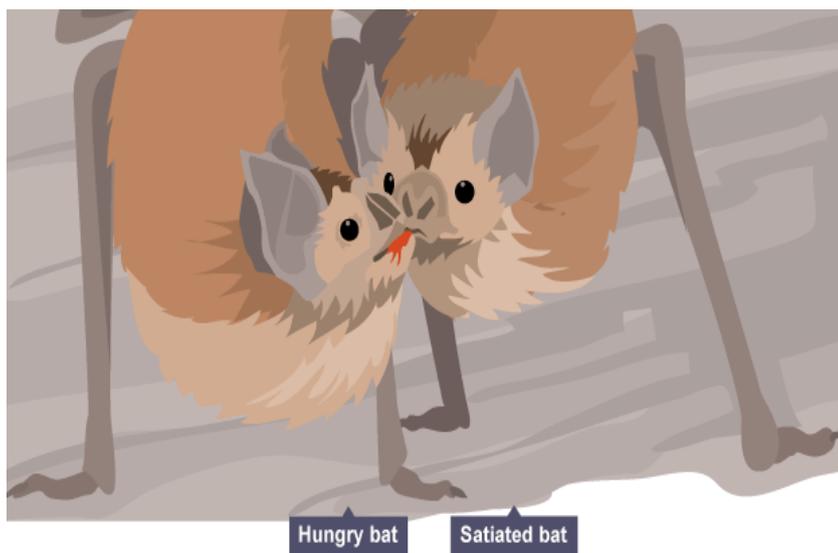
Key area 6—Social Behaviour

- (a) Many animals live in social groups and have behaviours that are adapted to group living such as **social hierarchy**, **cooperative hunting** and **social defence**. These behaviours have evolved through the process of natural selection.

Behavioural adaptation	Species as an example	Survival value
Social hierarchy	Grey wolf	Lowers aggression and saves energy Experienced leadership guaranteed Most favourable genes passed on
Cooperative hunting	African wild dogs	Larger prey can be killed Subordinate animals benefit Energy usage per individual reduced
Cooperative defence	Baboons	Early warning can be given Younger individuals defended Predators intimidated or confused

- (b) **Altruism** and **Kin Selection** and its influence on survival.

An altruistic behaviour **harms** the donor but **benefits** the recipient.



For example vampire bats may regurgitate blood to feed other bats who have been unable to feed themselves.

This behaviour only benefits the recipient as the donor loses out on nutrients. However the donor may benefit from this behaviour in the future which will increase species survival.

Kin Selection

Behaviour that appears to be altruistic may be common between a **recipient** and a **donor** if they are related (kin).

Donor long tailed tits with no offspring might feed other parents offspring in terms of food shortage.

Long tailed tits live in loose colonies with related individuals and so the chances of the donor sharing genes with the recipient is high therefore contributing to genetic success.



Social Insects

Some insects live in social **colonies**, for example bees, wasps, ants and termites.

Only a **few** individuals carry out **reproduction** while other, **sterile** individuals called **workers** carry out most of the food collection. This is known as a division of labour and is an adaptation that increases the survival of the species.

The feeding of offspring of the fertile by the sterile is an example of kin selection since the breeding system ensures that the offspring are close relatives of all of the colony members.

Primate Behaviour

Primates have a **long period of parental care** to allow learning of complex social behaviour.

Complex social behaviours support the **social hierarchy**. This **reduces conflict** through ritualistic display and appeasement behaviour. Alliances form between individuals, which are often used to increase social status within the group. Some examples are shown in the table below.

Chimpanzee social group behaviour	Description	Function
Grooming	Includes the preening of one animal's coat by another	Reduction of tension and strengthening of alliances to increase social status in the group; strengthening of bonds between individuals
Facial expressions	Include eye-closing, teeth baring, mouth opening	Act as signals to indicate position in dominance hierarchy and avoid conflict
Body postures	Include lowering of body position and bowing actions	Act as signals to emphasise position in dominance hierarchy and avoid conflict
Sexual presentation	Includes the presentation of genitalia by females to males	Acts as a signal by females to appease dominant males and avoid aggression