

ANIMALS

Genetic variations result in animals developing features specific to the habitat in which they exist

ADAPTATION

white fur to blend into snow and creep up on prey

long eyelashes protect eyes from blowing sand

humps store fat to regulate temperature and go a long time without food

blubber to keep warm and to float in arctic seas

black skin absorbs heat to keep warm and reflects UV rays to prevent burning

long legs keep body away from hot sand

PLANTS

Genetic variations result in plants developing features specific to the habitat in which they exist

ADAPTATION

winged structured seeds to be dispersed by wind causing them to spin away from the parent

thick waxy leaves to store water in dry climates

fleshy stems to store water

long shallow roots to collect rainfall

spines to reduce water loss and protect against being eaten

EXTREMOPHILES

Organisms with variations that make them adapted for extreme environments which kill other species

TOXIC WASTE

survive in nuclear radiation zones

RADIORESISTANT

DEEP SEA

optimal growth at high pressures

PIEZOPHILES

VOLCANIC VENTS

optimal growth above 80°C

HYPERTHERMOPHILES

ICE CAPS

optimal growth below 15°C

CRYOPHILES

NATURAL SELECTION

Variations that help an organism survive pass on the most desirable characteristics by reproduction

ADAPTATION

moths with black markings are more difficult to see on this tree, so are less likely to get eaten

moths with pale markings are easier to see on this tree so more will get eaten

this means they are more likely to reproduce with offspring similar to them

fewer will be left to reproduce similar pale markings and they may go extinct!

EVOLUTION

Over time, the most successful variations may result in species splitting into entirely new ones

EVOLUTION OF THE EYE

cornea forms

lens forms

cavity fills with fluid

eye cup forms

light-sensitive cells

characteristics split resulting in new species

COMPLEX CAMERA

PRIMITIVE LENS

SIMPLE PINHOLE CAMERA

EYE CUP

PATCH OF CELLS

all characteristics continue to coexist together unless the variation is no longer favourable

EXTINCTION

When the environment changes too quickly for an organism to adapt, the whole species dies out

HUMAN CAUSES

habitat destruction

hunting

burning fossil fuels

OTHER CAUSES

atmospheric changes

meteor impact

volcanic activity

flooding