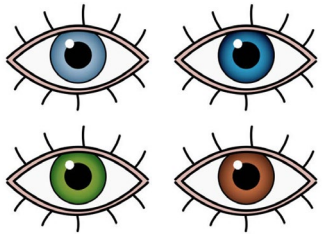
KNOWLEDGE ORGANISER
BIG IDEA: Genes
TOPIC: Variation

Key Word	Definition
Species	A group of living things that are able to reproduce and produce fertile offspring.
Variation	Variation is all the differences that exist in a population of the same species.
Continuous variation	Where all the differences between living things can have any numerical value
Categorical variation	Where differences between living things can only be grouped into categories.
Genetic variation	Variation caused by the genetic information (DNA) received from parents
Environmental variation	Difference that are caused by an individuals environment such as scars or favourite football team
Adaptation	Special features to help a living thing survive in its habitat.

There is variation between individuals of the same species. Some variation is inherited, some is caused by the environment, and some is a combination.

Genetic Variation

Eye colour

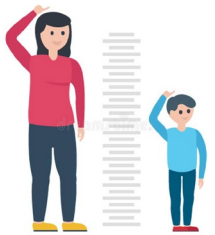


Environmental Variation

Scars

Variation caused by both (genes and the environment)

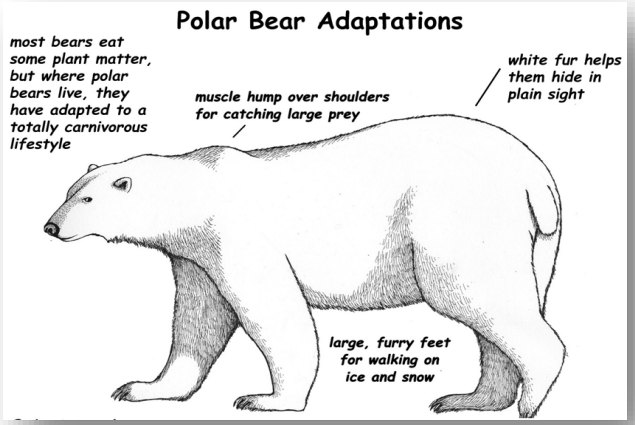
Height



Variation between individuals is important for the survival of a species, helping it to avoid extinction in an always changing environment.

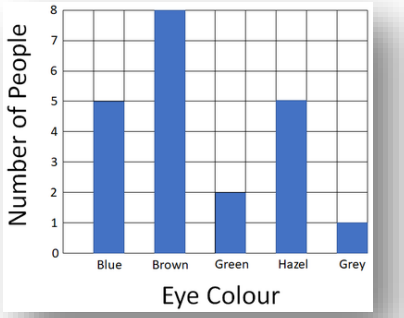
This means that living things will naturally show variation (they will be different to each other).

Some of these differences will help the living thing survive better, for example, an animal growing a thicker coat in winter will help it stay alive.



Continuous variation and discontinuous variation data can be shown using different types of graph.

We usually us a bar chart for categorical variation data:



We usually us a line graph for continuous variation data: