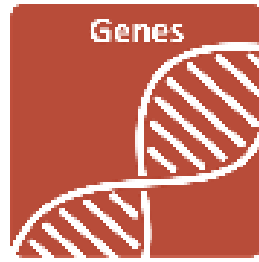# Knowledge organiser **B**ig idea:

Y8 topic: INHERITANCE

Genes

I have already learned:
KS2: Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents.
Y7 cells: cell parts - nucleus
Y7 Variation: That variation exists between individuals of different species. The variation between individuals within a species being continuous or discontinuous, to include measurements and graphical representation of variation.
Y7 reproduction: how genetic material is passed on from parent to child

It is important to study about Inheritance because…
Inheritance helps explain a lot of things, like what makes you unique, why you look like other members of your family, and why some diseases run in your family. Taking time to learn about genetics can help you understand your own health and make healthy choices. Genes that do not work correctly can cause problems.
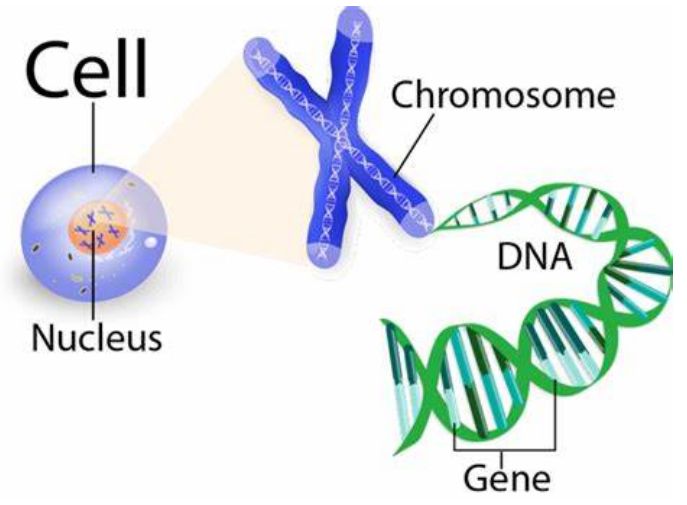
Possible careers involving inheritance are…
Genetic counsellor
Nurse
doctor
Geneticist
psychologist

Key Word	Definition
inherited characteristics	Features that are passed from parents to their offspring (children).
nucleus	Cell component that stores genetic material
DNA	A chemical that contains all of the information needed to make an organism
chromosomes	Long strands of DNA
gene	A section of DNA that codes for a characteristic
allele	different versions of the same gene
mutation	When DNA is damaged it can change,
hypothesis	Proposed explanation for an observation

Chromosomes are long pieces of DNA, found in the nucleus of cells, which contain many genes.

Gametes (egg or sperm in animals) carrying half the total number of chromosomes (23) of each parent, combine during fertilisation to make a fertilised egg cell containing 46 chromosomes (23 pairs).

Inherited characteristics are the result of genetic information, in the form of sections of DNA called genes, being transferred from parents to offspring during reproduction.

You have two copies of a gene coding for each characteristic, it is the inheritance of these different versions that lead to different characteristics.