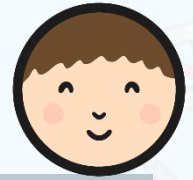




Inheritance

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Key Vocabulary



Use worksheet A

Write one or two concise sentences to explain the meaning of the words.

If you are unsure, use a dictionary to help you or ask an adult in your family home.

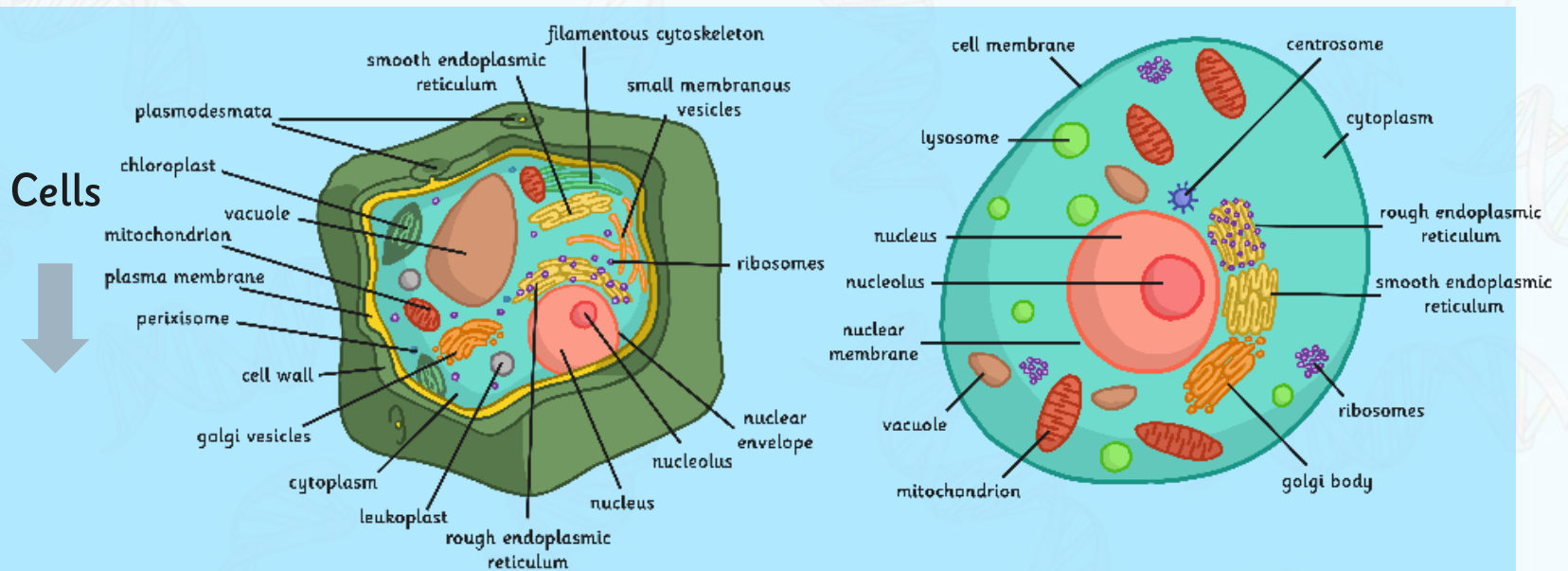
Evolution and Inheritance Key Vocabulary

Read the words and then write one or two sentences explaining what the word means.

Key Vocabulary	Meaning (Start of Unit)	Meaning (End of Unit)
Variation		
Parent		
Fossils		
Identical		
Evolution		
Offspring		
Adaptation		
Non-identical		
Environment		
Inheritance		

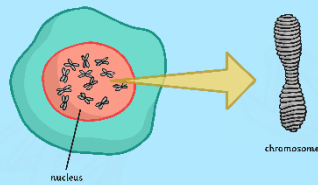
Cells, Chromosomes, DNA and Genes

While you will not be examining these in detail, it is helpful to know about the building blocks of life for this unit.

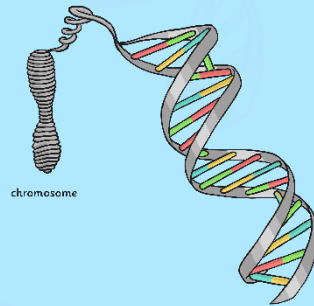


Cells are the building blocks of all living things. All living things are made up of cells. Amoebas have one cell. Humans have trillions of cells!

Chromosomes



DNA



Genes

The nucleus of a cell contains chromosomes, which are made up of DNA.

DNA carries the characteristics that we inherit. It is located in two places in the cell: the nucleus and the mitochondria. DNA can replicate and make copies of itself. When cells divide, each cell needs to have an exact copy of the DNA in the old cell.

Genes are short sections of DNA that contain specific information. This is often called the genetic code. All the genes in the whole cell are called the genome.

Variation



What does variation mean?

What causes variation?

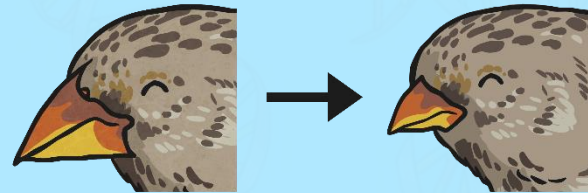
Inheritance

These are characteristics that are passed on to offspring from their parents.



Adaptation

Over many generations, a species will adapt to its environment because the animals with the most successful characteristics are more likely to survive and pass on these characteristics to their offspring.



Inheritance

In science, inheritance refers to the genes that are passed on from parents to offspring. When we refer to inherited characteristics we tend to focus on physical characteristics as these are easy to spot but inherited characteristics include abilities such as taste and smell.

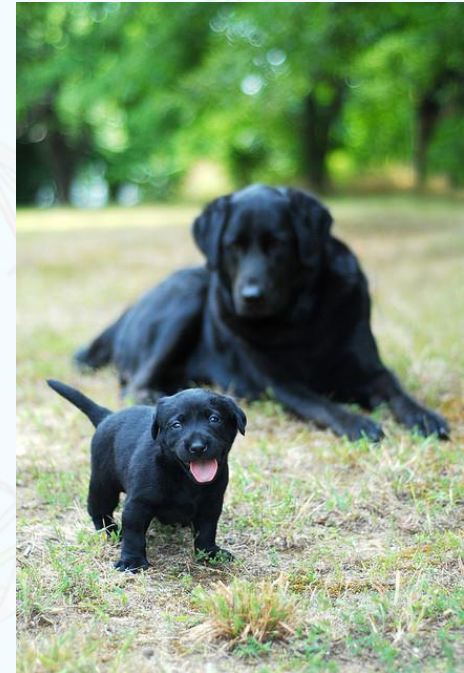


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Parents and Offspring



Match the parent with its offspring.



How did you match the parents and offspring?
What are the inherited characteristics that you could see?

Photo courtesy of Courtney McCutchen, Steve Skater, Airwolfhound, Dan (catching up) and Tony Fischer (@flickr.com) - granted under creative commons licence - attribution

Parents and Offspring



MISCONCEPTION ALERT!

While offspring does mean child, it does not mean that you are only offspring when you are children! The inherited characteristics you gain from your parents are part of your DNA for life.

Even when you are an adult you are your parents' child!



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Inheritance and Variation

How can inherited characteristics (similarities between parent and offspring) result in variation (differences)?

Well the majority of living things are the result of sexual reproduction so they have two parents. You inherit the characteristics from both parents but the way they combine makes the offspring unique.



The inherited characteristics can combine in different ways, which is the reason why siblings inherit the same characteristics but are not identical to each other.

Even identical twins that share the exact same combination of DNA are not 100% the same! This is due to the fact that genes develop separately when the twins are embryos or during later development.

Inherited Characteristics



We often talk about inheriting characteristics from our parents. However, it is not always the case that these are passed on through DNA. Some are learnt as we grow up.

Inherited Characteristics

Acquired Characteristics

Which characteristics do you think are passed on through DNA and which are learned as you grow?

Inherited Characteristics



Inherited Characteristics



Skin colour



Hair colour



Eye Colour



Dimples



Cleft chin



Freckles

Acquired Characteristics



Playing a musical instrument



Swimming



Drawing



Singing

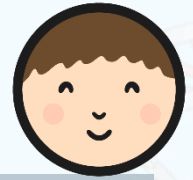


Reading



Riding a bike

Inheritance Task



Use worksheet B

Collect a photograph of yourself and a parent. If you can use both parents, that's great!

Investigate the characteristics you have inherited from your parents by looking their photographs and your own.

For example: eye colour, hair colour, dimples, ear size/ lobe attached/not, tongue roll/not.

Investigating Inheritance and Variation

Investigate the characteristics you have inherited from your parents by closely examining their photographs and your own. Write down what you think you have inherited from that parent.

The worksheet features a flowchart with two empty boxes at the top, connected by a horizontal line. A vertical line descends from the center of this line, ending in an arrowhead pointing to a larger empty box below. To the left of the top-left box is the label 'Inherited:' followed by five horizontal lines. To the right of the top-right box is the label 'Inherited:' followed by five horizontal lines. To the left of the bottom box is the label 'Inherited:' followed by five horizontal lines. To the right of the bottom box is the label 'Inherited:' followed by five horizontal lines.

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Science | Year 6 | Evolution and Inheritance | Inheritance | Lesson 1

