

Inheritance

National curriculum objectives:

- recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents

Science in the news today

The rats that live in New York live all over the city. They are found in train stations, in sand boxes, on the street, underground and on rooftops. They can live everywhere! They eat 'human food' too, and behave differently to the rats that live out in the countryside.

Some scientists in North America are studying these rats that live in New York City and comparing them to rats that live in other places.

Maybe you have the same hair and eye color as one of your parents, or a similar nose? These are characteristics you may have *inherited* from them. And it's not just humans that inherit characteristics from their biological parents, in fact all animals do!

Scientists have noticed these changes in the behaviour of the rats - the different food they eat and places they sleep - and are trying to figure out if these behaviours are learnt while the rat is alive, or are inherited from their parents.

What do you think?



Here is a picture of a New York rat

The rats of New York City are very adaptable. They eat pizza, hot dogs — even salads.



Living things produce offspring

When a new creature is born, we call it the **offspring** of its parents. Living things always produce offspring of the same type of living thing. Produce means to make or create. For example:



Cats produce more cats.



Dogs produce more dogs.



Lizards produce more lizards.



Oak trees produce more oak trees.

What does identical mean?

Identical means similar in every way or exactly alike. While offspring may be the same type as their parents, they are, most of the time, not identical to them.



This cat's offspring does not look identical.



This is a horse and her foal. They are not identical.



This is a father and son. They do not look identical.

What is inheritance?

When living things reproduce and have offspring, they pass on characteristics to their offspring. This is known as inheritance.

If you live with any family members - a parent or sibling - look at your faces, do you have a similar nose or mouth? Is your hair or eye colour the same? Do you both have freckles?

If you do have similar features, this is because you have inherited them from your parents. You will probably notice that although you may share certain features with your biological parents, you do not look *identical* to them. This is the same for most living things.

Have I inherited that?

What do you need?

- Paper
- Pencil
- A mirror (optional)



Instructions:

1. First, print or draw the table on the following slide
 2. Next, look carefully at your own face in a mirror and answer the characteristics questions about yourself in the table e.g. your hair colour, if your earlobes are attached or detached, can you roll your tongue? (if you don't have a mirror, ask someone else to look at you and help answer)
 3. Then, look at the members of your family and begin to answer the same questions, making notes in the table.
Top tip - you could look at photos or video call them if they are not with you
1. Fill in as much of the table as you can.
 2. Finally, analyse the data. This means, make some conclusions and gather your thoughts about the answers. Did you inherit your hair colour from your Dad? Did your sister inherit her freckles from your Mum? Can you see any characteristics inherited from your grandparents to your parents or even down to you?

Characteristic	Me	Mum	Dad	Brother/sister	Grandmother	Grandfather
Colour of eyes						
Colour of hair						
Shape of nose						
Tongue rolling						
Colourblindness						
Hairline shape						
Left or right handed						
Freckles						
Curly hair						
Dimples						
Earlobe attachment						