



TEACHER'S NOTES

USING YOUR
BRAIN CELLS

OVERVIEW

Aimed at **key stage 3** pupils.

This activity is a quick quiz containing some fun facts about cells.

CURRICULUM LINKS

- KS3: Life processes are supported by the organisation of cells into tissues, organs and body systems

LEARNING OBJECTIVES

- There are many different types of cells performing different roles in the body

PREPARATION

- Print worksheets

Activity

- Discuss with the class some examples of different types of cells
- Class complete worksheets
- This could be run in conjunction with **The biggest cell you've ever seen** activity.

ANSWERS

New cell types they could add to the picture include:

skin, muscle, blood, nerves, kidney, lung, sperm, egg.

- d Nerve cells can be about 1m long
- e 180 million (that's 3 million per second!)
- c Approximately 2 million skin cells fall or rub off every hour
- a Brain cells live the longest and can live your whole life.
- d Unravelled DNA from a single cell would be 2m (9ft) long
- b Your DNA is 99.9% identical to any other human being.
- e An estimated 50 trillion
- b The egg is the largest cell in the human body.
- e 1000 Trillion. There are 100 billion nerve cells in the brain, each of which is connected to 10,000 others.
- a True – the majority of these are found in the digestive tract.

FURTHER information

More activities and animations about cells are available from the Centre of the Cell (www.centreofthecell.org). Our favourite activity is 'Cell Trumps' which is like 'Top Trumps' and class sets can be bought from the Centre. If you are based near London, you can also visit their Centre to see their exhibits exploring cells.

FOR MORE RESOURCES LIKE THESE, AND TO SIGN UP FOR
JEANS FOR GENES DAY, VISIT US AT WWW.JEANSFORGENES.COM

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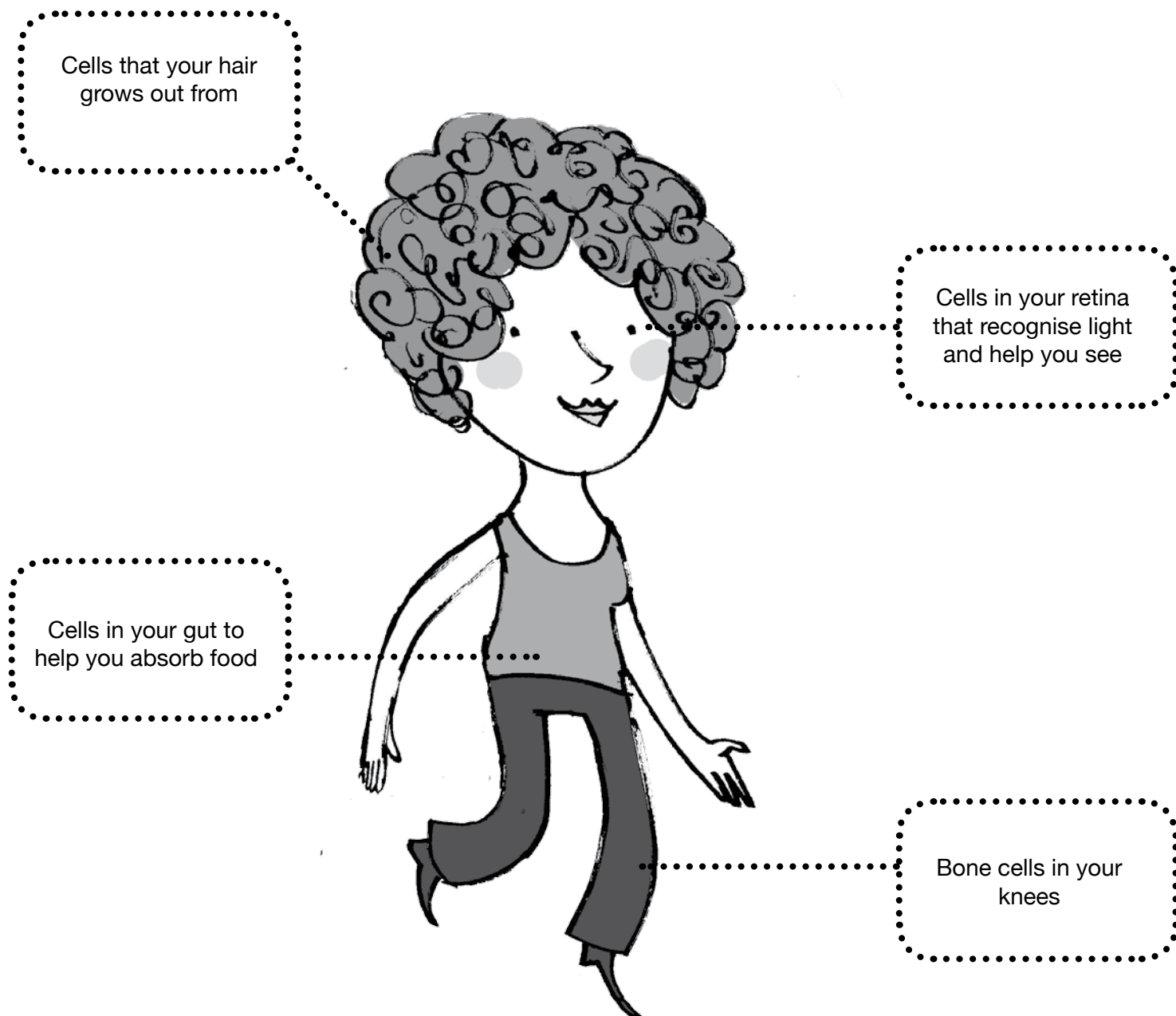




USING YOUR BRAIN CELLS

There are more than 200 different types of cell within your body. Some examples are shown in the picture below. Your cells come in different shapes and sizes to suit their function.

Add at least 3 new labels onto the picture below to describe other types of cell.





USING YOUR BRAIN CELLS

Answer the questions below about the incredible cells in your body. You might need to do some research to find the right answers (and there might be some variation in the answers you find on the internet, as these values are approximate).

Some of the numbers you will be thinking about are massive, so the following list might help you to think about them more clearly.

1,000 = one thousand

1,000,000 = one million

1,000,000,000 = one billion

1,000,000,000,000 = one trillion

- 1** *Approximately, how long is the longest nerve cell in a human?*
a) 1mm b) 1cm c) 10cm
d) 1m e) 5m
- 2** *How many red blood cells do you think your body makes in one minute?*
a) 4000 b) 250,000 c) 700,000
d) 3 million e) 180 million
- 3** *How many skin cells do you think fall off your body in an hour?*
a) 2,000 b) 200,000 c) 2 million
d) 20 million e) 2 billion
- 4** *Which cells in your body live the longest?*
a) Brain cells b) Muscle cells c) Liver cells
d) Skin cells e) Red blood cells
- 5** *If you unravelled the DNA inside a single human cell, how long do you think it would be?*
a) 2mm b) 2cm c) 20cm
d) 2m e) 20m
- 6** *How similar is your DNA to that of the person sitting next to you?*
a) 100% b) 99.9% c) 95%
d) 80% e) 55%
- 7** *Approximately how many cells do you think there are in your whole body?*
a) 50 million b) 1 billion c) 15 billion
d) 1 trillion e) 50 trillion
- 8** *Which do you think is the largest cell in the human body?*
a) Skin cell b) Egg cell c) Muscle cell
d) Sperm cell e) Red blood cell
- 9** *How many connections do you think there are between the cells in your brain?*
a) 1 million b) 10 million c) 100 million
d) 1 trillion e) 1000 trillion.
- 10** *True or false: there are more bacterial cells in your body than human cells.*
a) True b) False

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