

Reproduction and Inheritance

Human and plant reproduction, variation, DNA and inheritance.

Name _____ Date _____ Class _____

Learning objective: I can describe reproduction in humans and plants and explain how characteristics are inherited.

✓ I can describe fertilisation ✓ I can name parts of a flower ✓ I can classify variation

1 Human reproduction Use the word bank.

Word bank: uterus gestation ovary gametes placenta Fertilisation

- 1 Sex cells are called _____. In humans these are the sperm and the egg (ovum).
- 2 _____ happens when the nucleus of a sperm joins with the nucleus of an egg, usually in the oviduct.
- 3 The fertilised egg divides to form an embryo, which implants in the lining of the _____.
- 4 The baby develops for about 40 weeks; this is called _____.
- 5 The _____ lets oxygen and nutrients pass from the mother's blood to the fetus.

2 Healthy pregnancy

- 1 Explain why a pregnant woman is advised not to smoke or drink alcohol. [2 marks]

3 Parts of a flower Match each part to its job.

1 stamen (anther and filament)	☐	A sticky top of the carpel that catches pollen
2 carpel (stigma, style and ovary)	☐	B protects the flower when it is a bud
3 stigma	☐	C often brightly coloured to attract insects
4 petal	☐	D male part: the anther makes pollen
5 sepal	☐	E female part: the ovary contains ovules

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4 From flower to new plant Number the stages in order (1-5).

☐

A the seed is dispersed and germinates

☐

B pollen is transferred to the stigma (pollination)

☐

C the ovule becomes a seed and the ovary becomes a fruit

☐

D a pollen tube grows down to the ovary

☐

E fertilisation takes place in the ovule

5 Types of variation Write continuous or discontinuous for each characteristic.

Characteristic	Type of variation
eye colour	
height	
blood group	
hand span	
whether you can roll your tongue	

6 Inheritance quiz Circle the correct answer.

- Where are chromosomes found?
 (A) in the nucleus (B) in the cell wall (C) in the cytoplasm only
- How many chromosomes are in a human egg cell?
 (A) 46 (B) 23 (C) 92
- Which scientists' work helped show the double-helix structure of DNA?
 (A) Darwin and Wallace (B) Watson, Crick, Franklin and Wilkins (C) Newton and Hooke
- Seeds dispersed by animals are often...
 (A) inside tasty fruits or covered in hooks (B) very light with wings (C) inside pods that explode

7 Explain it

- Identical twins can still have different body masses. Explain why. [2 marks]

- Why do plants need to disperse their seeds away from the parent plant? [2 marks]

Answer Key

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Question	Answers
1 Human reproduction	1 gametes; 2 Fertilisation; 3 uterus; 4 gestation; 5 placenta
2 Healthy pregnancy	1. Harmful substances (nicotine, carbon monoxide, alcohol) can cross the placenta and harm the developing fetus, e.g. low birth weight or damage to development.
3 Parts of a flower	1 D; 2 E; 3 A; 4 C; 5 B
4 From flower to new plant	Correct order: B, D, E, C, A pollen is transferred to the stigma (pollination) → a pollen tube grows down to the ovary → fertilisation takes place in the ovule → the ovule becomes a seed and the ovary becomes a fruit → the seed is dispersed and germinates
5 Types of variation	eye colour – Type of variation: discontinuous height – Type of variation: continuous blood group – Type of variation: discontinuous hand span – Type of variation: continuous whether you can roll your tongue – Type of variation: discontinuous
6 Inheritance quiz	1 A (in the nucleus); 2 B (23); 3 B (Watson, Crick, Franklin and Wilkins); 4 A (inside tasty fruits or covered in hooks)
7 Explain it	2. They have the same genes, so differences must be caused by the environment, e.g. diet and exercise. 3. To reduce competition for light, water, space and minerals, and to colonise new areas.

Teaching note: the human reproduction content follows the KS3 programme of study (gametes, fertilisation, gestation and the effect of maternal lifestyle on the fetus). Teachers may wish to follow their school's RSE policy.