Your notes

KS3 Science: revision notes

B1.2 Reproduction

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Sexual and asexual reproduction

- Sexual reproduction needs two parents. Sex cells (**gametes**) join at **fertilisation**: a sperm and an egg in animals; pollen and an ovule in plants. The offspring vary.
- **Asexual reproduction** needs only one parent, and the offspring are identical copies (clones). Examples: bacteria splitting, strawberry runners, potato tubers and spider plant plantlets.

Human reproductive systems

- Male: the **testes** make sperm and the hormone testosterone; sperm travel along the sperm duct, glands add fluid to make semen, and it leaves through the urethra in the penis.
- Female: the ovaries contain eggs; an oviduct (fallopian tube) carries an egg to the **uterus** (womb), where a baby develops; the cervix is a ring of muscle at the entrance to the **uterus**, which leads to the vagina.
- Puberty is when hormones cause the body to change. Both sexes: growth spurt, body hair, spots. Boys: voice deepens, **testes** start making sperm, shoulders widen. Girls: breasts develop, hips widen, periods start.

The menstrual cycle and pregnancy

- The menstrual cycle lasts about 28 days. Days 1 to 5: the **uterus** lining breaks down and leaves the body (a period). The lining then builds up again, and around day 14 an egg is released from an **ovary** (**ovulation**).
- **Fertilisation** happens in the oviduct when a sperm nucleus joins with an egg nucleus. The fertilised egg divides to form an embryo, which settles into the **uterus** lining.

- After about 8 weeks, the embryo is called a fetus. The **placenta** passes oxygen and nutrients from the mother's blood to the fetus and removes waste such as carbon dioxide. The umbilical cord joins the fetus to the **placenta**, and the fluid in the amniotic sac cushions it.
- Pregnancy lasts about 9 months (40 weeks). Smoking, alcohol and drugs can harm the developing fetus.

Plant reproduction

- The stamen is the male part: the **anther** makes pollen and the filament holds it up. The carpel is the female part: the **stigma** is sticky to catch pollen, the style joins it to the **ovary**, and the ovary contains ovules.
- **Pollination** is the transfer of pollen from an **anther** to a **stigma**. Insect-pollinated flowers have bright petals, scent, nectar and sticky pollen. Wind-pollinated flowers have small dull petals, lots of light pollen, and anthers and feathery stigmas that hang outside the flower.
- **Fertilisation**: a pollen tube grows down the style to an ovule, and the nuclei join. The ovule becomes a seed and the **ovary** becomes the fruit.
- **Seed dispersal** spreads seeds away from the parent to reduce competition for light, water and nutrients: by wind (sycamore, dandelion), animals (berries that are eaten, burrs with hooks), explosion (pea pods) or water (coconut).

Key terms

Gamete	A sex cell, such as a sperm, an egg or a pollen grain.
Fertilisation	The joining of the nuclei of a male and a female sex cell.
Asexual reproduction	Reproduction with one parent, making identical offspring.
Ovary	Where eggs are stored in humans (or ovules are made in plants).
Testes	Where sperm are made.
Uterus	The womb, where a baby develops.
Ovulation	The release of an egg from an ovary.
Menstruation	The breakdown of the uterus lining, known as a period.
Placenta	Passes oxygen and nutrients to a fetus and removes its waste.
Pollination	The transfer of pollen from an anther to a stigma.
Anther	The part of a flower that makes pollen.
Stigma	The sticky part of a flower that catches pollen.
Seed dispersal	Spreading seeds away from the parent plant.

Quick questions

Cover the answers and test yourself: remembering is what makes it stick.

Your notes

1. How many parents are needed for asexual reproduction?
2. What is fertilisation?
3. Where does fertilisation happen in humans?
4. Where does a fetus develop?
5. What happens at ovulation?
6. About how long does the menstrual cycle last?
7. What does the placenta do?
8. Which part of a flower makes pollen?

Answers

1. One
2. When the nuclei of a male and a female sex cell join
3. In the oviduct
4. In the uterus
5. An egg is released from an ovary
6. 28 days
7. Passes oxygen and nutrients from the mother to the fetus
8. The anther

What to do next

Practise 14 questions on this topic

Try 4 exam questions, with mark schemes

Read the lesson, one step at a time

Free revision for GCSE and KS3 at lycolearn.co.uk. Some notes are for one exam board only, and say so in brackets.

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