Class 9 Science Chapter 11: Reproduction: How Life Continues - Notes, Important Questions and MCQs (2026-27)

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These Class 9 Science Chapter 11 notes cover “Reproduction: How Life Continues” from the new NCERT textbook Exploration (2026-27): asexual reproduction and vegetative propagation, sexual reproduction in flowering plants (pollination, fertilisation, seed formation), reproduction in animals, and the human reproductive system, puberty and reproductive health – with tables, Q&A, 10 MCQs and a free PDF.

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Chapter Overview

Every organism has a definite life span; reproduction allows a species to continue. In asexual reproduction a single parent produces genetically identical offspring. In sexual reproduction two parents contribute gametes formed by meiosis, creating variation.

The chapter explains how flowering plants reproduce through pollination and fertilisation, how animals show many strategies (external and internal fertilisation, egg-laying and live birth), and how the human reproductive system works, including puberty, pregnancy and keeping reproductive health safe.

Important Topics and Concepts

Asexual Reproduction

- Involves only one parent; offspring are genetically identical (clones).
- Seen in bacteria, amoeba, yeast and simple multicellular organisms like hydra and sponge, and in many plants.
- Modes include fission (amoeba, bacteria), budding (yeast, hydra), fragmentation and spore formation.
- Vegetative propagation: new plants from vegetative parts – potato and ginger (underground stems), money plant and sugarcane cuttings, Bryophyllum leaf plantlets.

Vegetative Propagation in Agriculture

- Artificial methods: cutting, grafting, layering and tissue culture.
- Advantages: plants identical to the parent keep desirable traits; faster than growing from seed; used for plants that produce few viable seeds (banana, sugarcane).
- Tissue culture produces many plants from a few cells under sterile conditions.

Sexual Reproduction in Flowering Plants

- Meiosis forms gametes with half the chromosomes; their fusion creates variation.
- Flower parts: sepals, petals, stamens (anther + filament, make pollen) and pistil/carpel (stigma, style, ovary with ovules).
- Pollination: transfer of pollen from anther to stigma – self-pollination (same flower or plant) or cross-pollination (different plant) by wind, water, insects, birds and animals.
- Fertilisation: pollen tube grows through the style to the ovule; male gamete fuses with the egg to form a zygote.
- After fertilisation the zygote becomes the embryo, the ovule becomes the seed and the ovary develops into the fruit.

Reproduction in Animals

- Sexual reproduction involves male and female gametes (sperm and egg).
- External fertilisation: outside the body, in water (frogs, many fish) – many eggs are released.
- Internal fertilisation: inside the female body (humans, birds, mammals).
- Oviparous animals lay eggs (birds, reptiles); viviparous animals give birth to young ones (most mammals).
- Some animals reproduce asexually too (hydra by budding).

Human Reproduction and Health

- Male reproductive system: testes produce sperm and hormones; sperm ducts carry sperm; glands add fluids; the penis transfers sperm.
- Female reproductive system: ovaries produce eggs and hormones; oviducts (fallopian tubes) carry the egg and are the site of fertilisation; the uterus holds the developing baby.
- Fertilisation forms a zygote that divides and implants in the uterus; the placenta supplies nutrients and oxygen from the mother.
- If the egg is not fertilised, the thickened uterine lining breaks down – menstruation, roughly once a month.

- Pregnancy lasts about nine months, in three trimesters; good nutrition and medical care keep mother and baby healthy.
- Puberty brings physical and emotional changes; correct information, hygiene and medical advice help prevent unwanted pregnancies and infections.

Asexual vs Sexual Reproduction

Most-asked comparison.

Asexual	Sexual
One parent	Two parents (usually)
No gametes	Gametes formed by meiosis
Offspring identical	Offspring show variation
Fast, many offspring	Slower, fewer offspring
Bacteria, yeast, hydra, potato	Flowering plants, humans, birds

Flower Parts and Functions

Part	Function
Sepals	Protect the bud
Petals	Attract pollinators
Stamen (anther, filament)	Produces pollen
Stigma	Receives pollen
Style	Path for the pollen tube
Ovary (ovules)	Contains eggs; becomes fruit (ovules → seeds)

From Pollination to Seed

Step	What happens
Pollination	Pollen reaches the stigma
Pollen tube growth	Tube grows down the style to the ovule
Fertilisation	Male gamete fuses with the egg → zygote
Embryo formation	Zygote develops into an embryo
Seed formation	Ovule becomes the seed
Fruit formation	Ovary becomes the fruit

Important Definitions and Terms

Term	Meaning
Reproduction	Production of new individuals of the same kind
Asexual reproduction	Reproduction from a single parent without gametes

Term	Meaning
Vegetative propagation	New plants from roots, stems or leaves
Gamete	Reproductive cell (sperm or egg) with half the chromosomes
Pollination	Transfer of pollen from anther to stigma
Fertilisation	Fusion of male and female gametes
Zygote	Cell formed after fertilisation
Oviparous	Animals that lay eggs
Viviparous	Animals that give birth to young ones
Placenta	Tissue linking the embryo to the mother for nutrition

Short Answer Questions

Q1. Why do offspring formed by asexual reproduction look exactly like the parent?

Only one parent is involved and no gametes fuse, so the offspring receive identical genetic material.

Q2. Give two examples of vegetative propagation.

Potato tubers sprouting new plants; Bryophyllum leaves producing plantlets.

Q3. How does meiosis help create variation?

It produces gametes with half the chromosomes and new combinations; fusion of gametes from two parents gives offspring with mixed features.

Q4. Differentiate between self-pollination and cross-pollination.

Self-pollination is transfer of pollen within the same flower or plant; cross-pollination is transfer to a flower of a different plant.

Q5. What do the ovule and ovary become after fertilisation?

The ovule becomes the seed and the ovary becomes the fruit.

Q6. What is the difference between oviparous and viviparous animals?

Oviparous animals lay eggs (hen); viviparous animals give birth to young ones (cow, humans).

Q7. Where does fertilisation occur in humans?

In the oviduct (fallopian tube).

Q8. Why do frogs lay a large number of eggs?

Fertilisation is external in water and many eggs and young are lost, so producing many eggs increases the chance of survival.

Long Answer Questions

Q1. Describe the process of sexual reproduction in flowering plants.

Stamens produce pollen; the pistil has stigma, style and ovary with ovules.

Pollination transfers pollen to the stigma by wind, water, insects or animals.

A pollen tube grows through the style and carries the male gamete to the ovule.

The ovule becomes the seed and the ovary becomes the fruit.

Q2. How is vegetative propagation useful in agriculture and horticulture?

Plants produced are genetically identical, so useful traits are kept.

Plants grow and bear flowers or fruits faster than those raised from seed.

Plants with few or no viable seeds (banana, sugarcane) can be grown.

Methods include cutting, grafting, layering and tissue culture.

Tissue culture produces many disease-free plants quickly.

Q3. Describe the main parts of the human female reproductive system and their functions.

Ovaries produce eggs and female hormones.

Oviducts (fallopian tubes) carry the egg; fertilisation takes place here.

Uterus: the zygote implants here and develops into a baby, nourished through the placenta.

If no fertilisation occurs, the uterine lining breaks down – menstruation.

Pregnancy lasts about nine months; care and nutrition protect mother and baby.

MCQs with Answers

1. Budding is seen in(a) amoeba (b) yeast (c) frog (d) humanAnswer: (b) yeast

2. Bryophyllum reproduces vegetatively by(a) roots (b) stems (c) leaves (d) seedsAnswer: (c) leaves

3. Pollen is produced in the(a) stigma (b) anther (c) ovary (d) styleAnswer: (b) anther

4. After fertilisation the ovary becomes the(a) seed (b) fruit (c) flower (d) embryoAnswer: (b) fruit

5. Gametes are formed by(a) mitosis (b) meiosis (c) budding (d) fissionAnswer: (b) meiosis

6. External fertilisation occurs in(a) humans (b) frogs (c) hens (d) cowsAnswer: (b) frogs

7. Animals that lay eggs are called(a) viviparous (b) oviparous (c) herbivorous (d) omnivorousAnswer: (b) oviparous

8. In humans, fertilisation occurs in the(a) uterus (b) ovary (c) oviduct (d) vaginaAnswer: (c) oviduct

9. Human pregnancy lasts about(a) 3 months (b) 6 months (c) 9 months (d) 12 monthsAnswer: (c) 9 months

10. Grafting is a method of(a) sexual reproduction (b) vegetative propagation (c) pollination (d) fertilisationAnswer: (b) vegetative propagation

Quick Revision Points

- Asexual: one parent, identical offspring (fission, budding, fragmentation, spores, vegetative).
- Cutting, grafting, layering, tissue culture.

- Flower: sepals, petals, stamens, pistil.
- Pollination → pollen tube → fertilisation → zygote → embryo.
- Ovule → seed; ovary → fruit.
- External vs internal fertilisation; oviparous vs viviparous.
- Human: testes, ovaries, oviduct (fertilisation), uterus, placenta.

Chapter Summary

Reproduction continues life. Asexual reproduction from one parent gives identical offspring and is used in agriculture as vegetative propagation. Sexual reproduction involves gametes formed by meiosis and creates variation.

In flowering plants, pollination and fertilisation lead to seeds and fruits. Animals show external or internal fertilisation and may lay eggs or give birth to young. In humans, the male and female reproductive systems produce gametes, fertilisation occurs in the oviduct and the baby develops in the uterus for about nine months; awareness and health care support safe reproductive health.

Exam Tips and PYQ Pattern

- Asexual vs sexual differences and flower parts are common questions.
- Learn the sequence from pollination to fruit formation.
- Give examples for each method of asexual reproduction.
- Use correct scientific terms for human reproductive organs.
- Case-based questions may ask about grafting or tissue culture benefits.

Frequently Asked Questions

Is this chapter in the 2026-27 CBSE syllabus?

Yes. It is part of the new NCERT Class 9 Science textbook “Exploration” (first edition 2026), prescribed for the 2026-27 session.

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What is vegetative propagation?

Growing new plants from vegetative parts such as roots, stems or leaves, e.g. potato, Bryophyllum.

What happens after fertilisation in flowering plants?

The zygote forms an embryo, the ovule becomes the seed and the ovary becomes the fruit.

Conclusion

Reproduction: How Life Continues connects cells, variation and the survival of species. Learn the comparison tables and sequences, practise the Q&A here and save the free PDF for revision.

More Notes: Class 9 Science Chapter 10: Sound Waves: Characteristics and Applications notes

Author Bio: Written and reviewed by the Nextoper Editorial Team, a group of CBSE science educators who build chapter notes directly from the NCERT textbook and past board paper patterns.

Freshness Note: These notes follow the NCERT Class 9 Science textbook, Exploration (First Edition 2026, NCF-SE 2023), and the CBSE syllabus for the 2026-27 session. Last checked on 17 November 2026.