

SCIENCE • CLASS 9

## CHAPTER 11

# Reproduction

## How Life Continues

NCERT SOLUTIONS



# POLLEN TRANSFER AND FERTILISATION

## Pause and Ponder — Question 1

Q1. In china-rose (hibiscus or gudhal), a pollen tube grows through the style after pollen lands on the stigma. Which process is about to happen next?

**Answer:** Fertilisation.

- The pollen tube carries the male gametes towards an ovule in the ovary.
- A male gamete fuses with the egg cell in the ovule, forming a zygote.

Male gamete + egg cell  $\rightarrow$  zygote.

## Pause and Ponder — Question 3

Q3. Two maize varieties grow side by side. Seeds form when pollen from one variety reaches the stigma of the other. Name the type of pollination.

**Answer:** Cross-pollination.

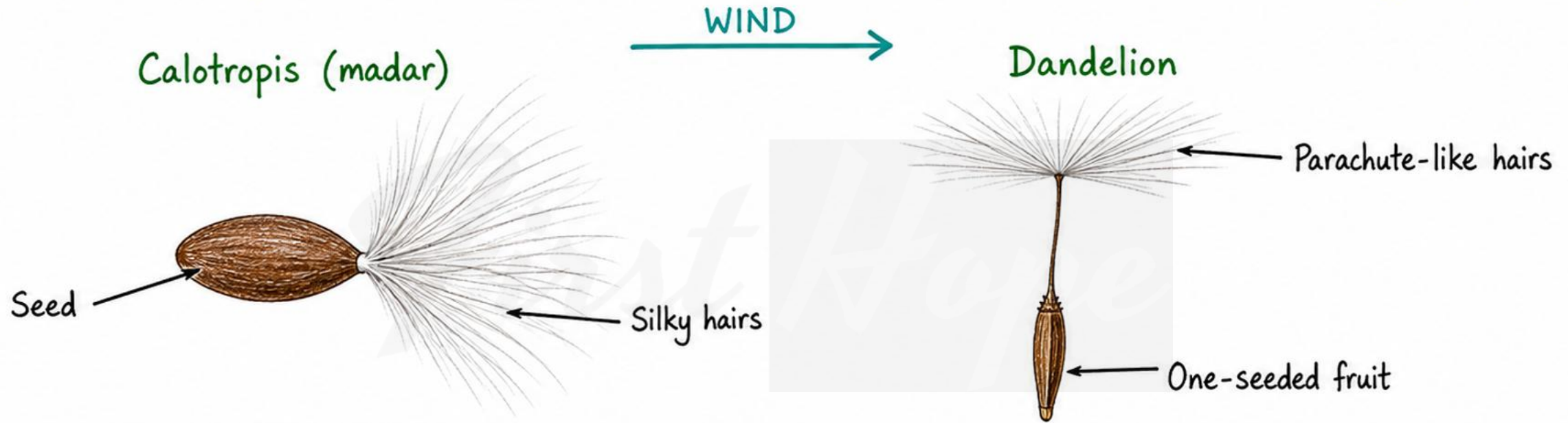
- Pollen moves from the anther of a flower on one plant to the stigma of a flower on another plant of the same species.
- The two varieties are different plants of maize.

**Pollination** = pollen transfer;      **fertilisation** = fusion of gametes.

# SEEDS DISPERSED BY WIND

## Pause and Ponder — Question 2

Q. Look at calotropis (madar) seeds and dandelion seeds. What kind of seed dispersal are they adapted for?



**Answer:** Dispersal by wind.

Calotropis (madar): A small seed has a tuft of fine, silky hairs.

Dandelion: A light, one-seeded fruit has a parachute-like tuft of hairs.

These hairs provide a large surface area. Moving air carries the light structures away from the parent plant.

This helps them reach new places and reduces crowding near the parent.

# FERTILISATION AND EGG SURVIVAL

## Pause and Ponder — Questions 4 and 5

**Q4.** Why do animals with external fertilisation generally produce more eggs than animals with internal fertilisation?

**Answer:**

- Eggs and sperm are released outside the body, usually into water.
- Many gametes do not meet. Eggs or young ones may be swept away, eaten or damaged.
- Producing many eggs increases the chance that some are fertilised and some young survive.
- In internal fertilisation, gametes meet inside the female body, where they are better protected.

**Q5.** In animals, which fertilisation method protects the gametes more?

**Answer:**

Internal fertilisation.

Gametes meet inside the female reproductive tract. They are less exposed to drying, water currents and predators than gametes released into the environment.

**Conclusion:**

External fertilisation often relies on large numbers; internal fertilisation gives greater protection during gamete fusion.

# HUMAN REPRODUCTION: THREE SOLUTIONS

Pause and Ponder – Questions 6, 7 and 8

**Q6.** Ravi grows taller rapidly, his shoulders broaden and his voice cracks. What stage is he entering?

**Answer:** Puberty, during adolescence. Hormonal changes cause rapid growth and maturation of the reproductive system.

**Q7.** Rina has a 28-day menstrual cycle. Her last period began on 5 March. When is her next period most likely?

5 March + 28 days = 2 April.

**Answer:** Around 2 April, if the cycle remains 28 days long. Count from the first day of one period to the first day of the next.

**Q8.** A human zygote has just formed. How many chromosomes does it have?

$23 \text{ (sperm)} + 23 \text{ (egg)} = 46.$

**Answer:** 46 chromosomes, arranged in 23 pairs. Fertilisation restores the diploid chromosome number.



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