

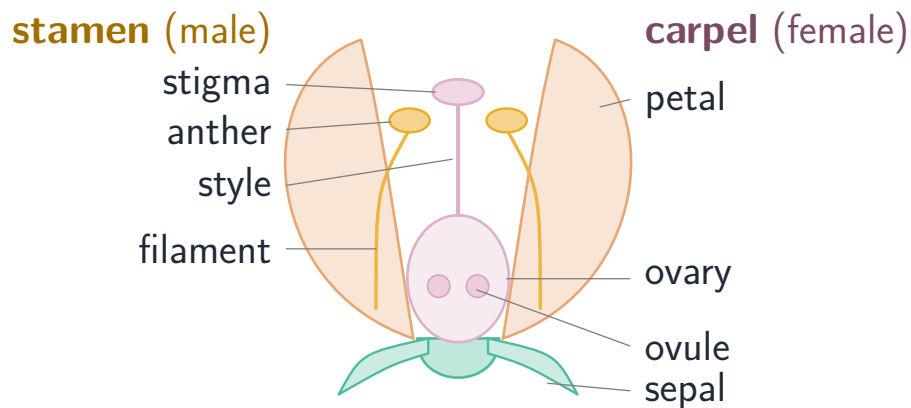
Exercise walk-through

16.3

Sexual reproduction in plants

IGCSE Biology

Parts of a flower



- **insect-pollinated** flowers have bright petals, scent and nectar, and sticky or spiky pollen, to attract insects and stick to them.
- **wind-pollinated** flowers have small dull petals, anthers and stigmas that hang outside, and light, smooth pollen that blows in the wind.

The parts, and which sex they belong to

Stamens

The male parts. Each of the **stamens** is a **filament** holding up an **anther**, where pollen is made.

Carpel

The female part: **stigma**, **style** and **ovary** holding the ovules.

Petals and sepals

Petals attract **pollinators**; sepals protect the bud before it opens.

Wind or insect

An insect-pollinated flower has large bright petals, nectar and sticky stigmas; a wind-pollinated one has small dull parts, anthers hanging outside and feathery stigmas.

Every difference between the two kinds of flower follows from one question: what is carrying the pollen?

The parts of a flower, and what each does

Part	What it does
sepals	protect the flower bud before it opens
petals	attract insects (bright) or are small and dull (wind)
anther	makes and releases the pollen
stigma	catches the pollen
ovary	holds the ovules , which become the seeds

Anther and stigma are the pair to keep straight: pollen leaves the **anther** and lands on the **stigma**. Everything else is packaging or protection.

The male reproductive system, part by part

Part	What it does
testes	make the sperm, and testosterone
scrotum	holds the testes outside the body, kept slightly cool
sperm ducts	carry sperm away from the testes
prostate gland	adds fluid to the sperm to make semen
urethra	carries semen – and, at other times, urine – out through the penis

The scrotum's job is temperature: sperm production needs a few degrees below body heat, which is why the testes hang outside.

The female reproductive system, part by part

Part	What it does
ovaries	make the egg cells, and oestrogen
oviducts	carry the egg towards the uterus – fertilisation happens here
uterus	where the baby develops
cervix	the neck of the uterus
vagina	receives the penis; also the birth canal

Fertilisation in the **oviduct**, development in the **uterus** – a very common one-mark question, and easy to swap by accident.

Exercises 2.1·2.2

2.1 Name the male part of a flower.

[1]

2.2 Define pollination.

[1]

Exercises 2.1·2.2

2.1 Name the male part of a flower.

[1]

2.1

- the male part of a flower is the **stamen** (anther and filament)

2.2 Define pollination.

[1]

2.2

- pollination is the **transfer of pollen from an anther to a stigma**

Exercise 3.1

3.1 A wind-pollinated flower is likely to have:

[1]

☐

A large bright petals and nectar

B small dull petals and anthers hanging out

C sticky pollen

D strong scent

Exercise 3.1

3.1 A wind-pollinated flower is likely to have:

[1]

☐

A large bright petals and nectar

B small dull petals and anthers hanging out

C sticky pollen

D strong scent

3.1 B

- a wind-pollinated flower has **small dull petals and anthers hanging out**
- A, C and D are insect-pollinated features

Exercise 3.2 (a)

3.2 A flower is pollinated by insects.

(a) State two features that help attract insects.

[2]

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3.2 A flower is pollinated by insects.

(a) State two features that help attract insects.

[2]

(a)

- any **two** of: **bright**/large petals / **scent** / **nectar**

Exercise 3.2 (b)

3.2 A flower is pollinated by insects.

(b) State the three conditions a seed needs to germinate.

[3]

Exercise 3.2 (b)

3.2 A flower is pollinated by insects.

(b) State the three conditions a seed needs to germinate.

[3]

(b)

- **water, oxygen, a suitable temperature**