

Solutions

Each answer shows the steps, then the **result**.

2.1

- phototropism is a plant's **growth response towards (or away from) light**

2.2

- a root grows **downwards** (towards gravity)

3.1 B

- auxin gathers on the **shaded side** and makes those cells **grow longer**
- A, C and D would not bend the shoot towards the light

3.2

(a)

- auxin is made in the **shoot tip**

(b)

- light makes auxin spread to the **shaded side**
- auxin makes those cells **elongate**
- the shaded side grows faster, so the shoot **bends towards the light**

3.3

(a)

- shoot: **positive phototropism** — towards light
- root: **positive gravitropism** — towards gravity

(b)

- auxin is made in the **shoot tip**
- it moves to the **shaded side**
- auxin makes cells **elongate**, so the shaded side grows longer
- uneven growth makes the shoot **bend towards the light**

(c)

- towards light: more light for **photosynthesis**
- downwards: **anchors** the plant and reaches water and minerals

(d)

- it grew **straight up** without bending
- the tip makes auxin, so with it removed there is **no uneven growth**