

Solutions

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

2.1

- greenhouse gases: **carbon dioxide** and **methane**

2.2

- non-biodegradable plastics **build up and harm wildlife** (eaten or trapped)

3.1 B

- decomposers **use up the dissolved oxygen**, so the fish die
- A, C and D are not how eutrophication kills fish

3.2

(a)

- fertiliser adds **nitrate**
- algae grow very fast then **die**
- decomposers use up **oxygen** in respiration
- dissolved oxygen falls, so **fish die**

3.3

(a)

- **eutrophication**
- nitrate/phosphate → **algal bloom**
- bloom **blocks light**, plants underneath die
- decomposers **multiply** on the dead material
- they respire and use up oxygen, so **fish suffocate**

(b)

- most photosynthesis is in the **surface bloom**, not throughout the water
- bacteria use oxygen **faster than it is replaced**
- at night the algae **respire too**, so oxygen falls too low

(c)

- animals **swallow** plastic or become **entangled**
- plastic does not decompose and breaks into **microplastics** in food chains

(d)

- short-wave radiation warms the Earth's surface
- the surface re-radiates **longer-wave heat**
- greenhouse gases **absorb** it and send some back down
- gases: **carbon dioxide** and **methane**