

Solutions

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

2.1

- An atmospheric (gas) stage

2.2

- By weathering of rock

2.3

- It is scarce and released slowly, so it runs out first and limits growth

3.1 B

- an atmospheric (gas) stage

3.2

(a)

- Phosphorus is normally limiting; adding it lets algae grow rapidly (a bloom), which then decomposes and depletes oxygen

(b)

- It is the nutrient in shortest supply, so growth stops when it runs out

3.3

- It has no fast atmospheric stage and relies on the slow weathering of rock, so phosphorus moves through the environment much more slowly than carbon