

Exercise walk-through

Watersheds ■ 4.6

eXercise

You must be able to

- define a **watershed** 流域 (drainage basin)
- explain how land use affects water quality in a watershed
- describe runoff collecting into rivers

Method — What a watershed is

A **watershed** (drainage basin) is all the land that drains into a **common body of water** (a river, lake, or ocean). Rain that falls anywhere in it flows toward that water.

Method — Runoff collects

Water runs downhill, collecting into streams that join into rivers. Everything on the land — soil, fertilizer, pollutants — can be carried along with it.

Method — Land use affects water quality

Because runoff carries whatever is on the land, **agriculture** (fertilizer, pesticides), **cities** (oil, sewage), and **construction** (sediment) all affect the quality of the water downstream.

Method — A worked link

Fertilizer applied anywhere in a river's watershed can wash into the river, raising nutrient levels and causing eutrophication downstream.

Practice 2.1 ■ 1 mark

Define a watershed.

Solution 2.1

Worked steps

All the land that drains into a common body of water **B1**.

Practice 2.2 ■ 1 mark

How does water move within a watershed?

Solution 2.2

Method: What a watershed is

Worked steps

It runs downhill, collecting into streams and rivers **B1**.

Practice 2.3 ■ 1 mark

Name one land use that can pollute a watershed.

Solution 2.3

Method: What a watershed is

Worked steps

Any one: agriculture, urban/city runoff, construction **B1**.

Exam-style 3.1 ■ 1 mark

A watershed is best described as the land that

- A** contains no water
- B** drains into a common body of water
- C** is always a desert
- D** cannot be polluted

Solution 3.1

Method: What a watershed is

- A contains no water
- B drains into a common body of water 
- C is always a desert
- D cannot be polluted

Worked steps

B — drains into a common body of water.

Exam-style 3.2 ■ 2 marks

A farm sits within a river's watershed.

- (a) Explain how fertilizer from the farm can reach the river.
- (b) State one effect on the river.

Solution 3.2

Method: A worked link

Worked steps

(a) Rain washes fertilizer off the fields as runoff, which flows downhill through the watershed into the river **M1 A1**. (b) Eutrophication / algal blooms (or nutrient pollution) **B1**.

Exam-style 3.3 ■ 2 marks

Explain why protecting an entire watershed, not just the river itself, is important for water quality.

Solution 3.3

Method: What a watershed is

Worked steps

All land in the watershed drains to the same water, so pollution anywhere in it can reach the water; protecting the whole basin prevents that **M1** **A1**.