

River fieldwork data record

Stay safe: never enter the water without staff permission.

FIELD BRIEF Test how a river changes downstream.

- ☐ I can measure and record with units.
- ☐ I can calculate area and discharge.
- ☐ I can explain changes using my data.



SITE



NAME _____ LOCATION OR GRID REF _____ DATE _____ FROM SOURCE (KM) _____

WEATHER NOW

☐

Dry

☐

Showers

☐

Heavy rain

RAIN IN THE LAST TWO DAYS?

☐

Yes

☐

No

TIME

metres, seconds

1 Measure the channel

Tape the water surface, bank to bank. Measure depth at equal steps, not at the banks. Use metres: 23 cm = 0.23 m.

Channel width

 m

Step between depths

 m

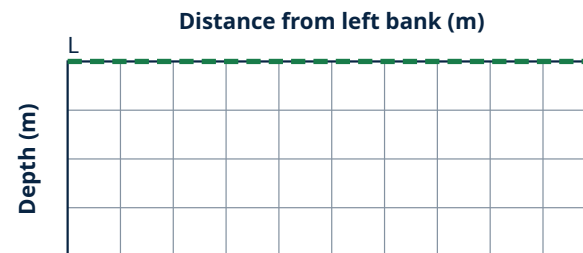
READING	1	2	3	4	5	6	MEAN
From left bank							not needed
Depth							

Time a float over 10 m, three times. If it snags, repeat that trial.

FLOAT TRIAL	1	2	3	MEAN TIME
Time over 10 m				

2 Sketch the cross-section

Plot each depth to scale, then join the points.



Banks

EROSION OR DEPOSITION

Undercut bank? Gravel bar? Sketch it too.

3 Observe

BED LOAD: FIVE STONES AT RANDOM

Long axis of each, then tick the usual shape.

 cm cm cm cm cm

☐ Angular ☐ Sub-angular

☐ Sub-rounded ☐ Rounded

VEGETATION AND LAND USE

What grows on the banks? Does any overhang? How is the land next to the river used: farms, woods, houses, roads?

From readings to discharge



4 Worked example: Site 2

ALDER BROOK READINGS (FICTIONAL)

Width **3.60 m**. Depths **0.18, 0.31, 0.42, 0.36, 0.23 m**.
Times over 10 m **24.8, 25.6, 24.6 s**.

① **Mean depth = total ÷ number**
 $1.50 \div 5 = \mathbf{0.30\ m}$

② **Area = width × mean depth**
 $3.60 \times 0.30 = \mathbf{1.080\ m^2}$

③ **Mean time = total ÷ 3** $75.0 \div 3 = \mathbf{25.0\ s}$

④ **Velocity = distance ÷ time**
 $10 \div 25.0 = \mathbf{0.40\ m/s}$

⑤ **Discharge = area × velocity**
 $1.080 \times 0.40 = \mathbf{0.432\ m^3/s}$

Units: $m \times m = m^2$, then $m^2 \times m/s = m^3/s$.



GO FURTHER

Width rises about 3 times from Site 1 to Site 3, but discharge about 21 times. Why? Think: width × depth × velocity.

5 Your turn

10 marks

Work out Sites 1 and 3 with the same five steps.
Give area and discharge to 3 decimal places.

SITE	WIDTH	DEPTHS (M)	TIMES (S)
1	1.80 m	0.08, 0.14, 0.17, 0.12, 0.09	40.2, 38.6, 41.2
3	5.20 m	0.28, 0.46, 0.58, 0.50, 0.38	20.4, 19.6, 20.0

UPSTREAM TO DOWNSTREAM	SITE 1	SITE 2	SITE 3
Width (m)	1.80	3.60	5.20
Mean depth (m)		0.30	
Area (m ²)		1.080	
Mean time (s)		25.0	
Velocity (m/s)		0.40	
Discharge (m ³ /s)		0.432	

6 Analyse

10 marks

Q1
4 marks

Describe how width, depth and velocity change downstream, using figures. Then explain why.

Q2
3 marks

How reliable are the velocity results? Give a reason from the method.

Q3
3 marks

Suggest two ways to improve the method.
