

PRACTICE WORKSHEET + FULL ANSWER KEY

Geography: maps, rivers and geographical evidence

Secondary geography: introductory skills. Work through the sections in order, or choose the one that matches this week's topic.

QUESTIONS	SECTIONS	ANSWER KEY	WORKING SPACE
52	5	At the back	Ruled

Name _____ Class _____ Date _____

Before you start

Connect a geographical description to a process or a piece of evidence. For numerical work, identify the units and scale; for explanations, show the sequence that links a cause to an observed pattern.

WORKED EXAMPLE

A map scale is 1:50,000. Two places are 4 cm apart on the map. What is the straight-line distance?

- Each centimetre on the map represents 50,000 cm on the ground.
- $4 \times 50,000 = 200,000$ cm.
- Convert to metres and kilometres: $200,000 \text{ cm} = 2,000 \text{ m} = 2 \text{ km}$. A road route may be longer.

Use this method as your model. Set out your own working the same way.

Common mistakes to avoid

- Confusing straight-line distance with route distance
- Describing a pattern without explaining a process

There are 52 questions across 5 sections. Write in the ruled space, then mark your work against the answer key at the back. Topics covered: Map scale, Physical processes, Fieldwork evidence.

SECTION A Map skills

Convert the scale before you state a distance, and always give the unit.

1

At a scale of 1:25,000, what ground distance does 6 cm represent?

2

A map scale is 1:50,000 and two places are 4 cm apart. Find the straight-line distance.

3 Explain the difference between straight-line distance and route distance.

4 Explain what a four-figure grid reference identifies.

5 Explain what a six-figure grid reference adds.

6 What do closely spaced contour lines show?

7 What do widely spaced contour lines show?

8 Name two features you would expect in a map key.

9 State the compass bearing of due west in degrees.

10 Explain why a map needs a north arrow.

11 Explain what a cross-section of a hill shows.

SECTION B Rivers and physical processes

Explain the sequence that links a cause to the landform you can see.

12 Water falls from clouds, enters a river and evaporates. Name the three processes described.

13 Explain one way impermeable urban surfaces affect runoff after rainfall.

14 A river cross-section has area 3 m^2 and mean velocity 2 m/s . Calculate the discharge.

15 A cross-section has area 4.5 m^2 and velocity 1.2 m/s . Calculate the discharge.

16 Name the three main river processes that shape a channel.

17 Name two types of river erosion.

18 Explain how a waterfall retreats upstream.

19 Explain why a river deposits material on the inside of a meander bend.

20 Explain how a flood plain forms.

21 Name two ways human activity can increase a river's discharge.

22 Name one hard and one soft engineering flood defence.

SECTION C Weather, climate and ecosystems

Separate a short-term observation from a long-term pattern.

23 Name two instruments used at a weather station and what each measures.

24 Explain the difference between weather and climate.

25 Explain how relief rainfall forms.

26 Name one greenhouse gas and one human source of it.

27 State one predicted consequence of a warming climate.

28 Name the two main components of an ecosystem.

29 Explain why tropical rainforests have high biodiversity.

30 Name one cause and one effect of deforestation.

31 Explain what the nutrient cycle does in a rainforest.

32 Name one way a desert plant is adapted to low rainfall.

SECTION D Population, settlement and development

Define the measure before you use it to compare places.

- 33 Define population density and state its units.

- 34 A town of 48,000 people covers 60 km². Find its population density.

- 35 Name one push and one pull factor for rural to urban migration.

- 36 Explain what urbanisation means.

- 37 Name two indicators used to compare development.

- 38 Explain why GDP per person alone is a limited measure of development.

- 39 State one advantage and one problem of rapid urban growth.

- 40 Explain what a megacity is.

- 41 Name one strategy to make a city more sustainable.

- 42 Explain the difference between birth rate and natural increase.

SECTION E Fieldwork and geographical evidence

A method is only as good as what it would miss.

- 43 A student measures traffic for five minutes on one street. Give one limitation.

- 44 Propose an improvement to that traffic investigation and explain its value.

- 45 Write a geographical enquiry question about your local area.

- 46 Name one primary and one secondary source of fieldwork data.

- 47 Explain why systematic sampling might be chosen for a transect.

- 48 Name a suitable graph for showing land use proportions.

- 49 Name a suitable graph for showing how a value changes with distance.

- 50 State one risk in river fieldwork and one control.

- 51 Explain why results should be recorded on a prepared table in the field.

- 52 Write a conclusion for a study that found land use changing with distance from a centre.

Answer key

Work each section before you check it. These are model answers: an equivalent method, or a different well-supported interpretation, can be just as correct.

SECTION A - MAP SKILLS

1. 150,000 cm = 1,500 m = 1.5 km.
2. 200,000 cm, which is 2 km.
3. A road bends, so the route is longer than the straight line between the same two points.
4. A one-kilometre square, read eastings first and then northings.
5. It divides the square into tenths, locating a point to about 100 m.
6. A steep slope.
7. A gentle slope.
8. Symbols for roads, buildings, water, woodland or land use.
9. 270 degrees.
10. So directions and bearings can be read correctly.
11. The shape of the land surface along a chosen line, drawn from contour heights.

SECTION B - RIVERS AND PHYSICAL PROCESSES

12. Precipitation, river flow and evaporation.
13. Less water infiltrates, so more flows rapidly overland into drains or rivers.
14. 6 m³/s.
15. 5.4 m³/s.
16. Erosion, transport and deposition.
17. Hydraulic action, abrasion, attrition and solution.
18. Softer rock beneath is undercut, the overhang collapses and the fall moves back, leaving a gorge.
19. Velocity is lower there, so the river can no longer carry its load.
20. Repeated flooding deposits fine sediment across the valley floor, building a flat surface.
21. Urban surfacing and deforestation both reduce infiltration.
22. Hard: a flood wall or embankment. Soft: floodplain zoning or afforestation.

SECTION C - WEATHER, CLIMATE AND ECOSYSTEMS

23. A thermometer for temperature and a rain gauge for rainfall.
24. Weather is the state of the atmosphere over hours or days; climate is the average pattern over decades.
25. Air is forced to rise over high ground, cools, condenses and produces rain on the windward side.
26. Carbon dioxide, from burning fossil fuels.
27. For example rising sea levels, or more frequent extreme weather.

28. Biotic, the living parts, and abiotic, the non-living parts.
29. Warm temperatures, high rainfall and year-round growth support many niches.
30. Cause: clearance for agriculture. Effect: soil erosion and loss of habitat.
31. Nutrients move quickly from dead matter to soil to plants, so most are stored in the vegetation rather than the soil.
32. Deep or wide roots, waxy surfaces, or water storage in stems.

SECTION D - POPULATION, SETTLEMENT AND DEVELOPMENT

33. The number of people per unit area, usually people per square kilometre.
34. 800 people per square kilometre.
35. Push: few jobs in farming. Pull: employment and services in the city.
36. An increasing proportion of a population living in towns and cities.
37. GDP per person, life expectancy, literacy rate or infant mortality.
38. It is an average that hides inequality and ignores health, education and environment.
39. Advantage: concentrated services and jobs. Problem: pressure on housing, transport and sanitation.
40. A city with a population of more than 10 million people.
41. For example investment in public transport, protected green space, or recycling schemes.
42. Birth rate is births per 1,000 people per year; natural increase is birth rate minus death rate.

SECTION E - FIELDWORK AND GEOGRAPHICAL EVIDENCE

43. A single location and short time may not represent different routes, times or days.
44. Repeat counts at several representative sites and times using the same method; this reveals spatial and temporal variation.
45. A question answerable with local data, for example: how does land use change with distance from the town centre?
46. Primary: your own counts or measurements. Secondary: census data or published maps.
47. Sites at fixed intervals give even coverage along the line and are easy to justify.
48. A pie chart, or a divided bar chart.
49. A line graph, with distance on the horizontal axis.
50. Deep or fast water; work in pairs, wear suitable footwear and never enter fast-flowing water.

- 51.** It keeps the method consistent and prevents data being lost or misremembered.
- 52.** A conclusion stating the pattern, the evidence for it and one limitation such as the number of sites.

Review and next steps

Mark your work against the answer key, record your score for each section, then answer the three questions below. Bring this page to your next lesson so your tutor can start from what actually blocked you.

Which question did you find hardest, and what exactly stopped you?

Rewrite the corrected working for that question here.

Which section do you want to practise again before your next lesson?

Score record

SECTION	QUESTIONS	NUMBER CORRECT	PRACTISE AGAIN?
A. Map skills	11		
B. Rivers and physical processes	11		
C. Weather, climate and ecosystems	10		
D. Population, settlement and development	10		
E. Fieldwork and geographical evidence	10		
Total	52		

Keep going with one-to-one support.

This is an original Noble Educators topic sample, not a complete syllabus and not an official exam paper. Check the topic, level and any required methods with your school or tutor.

Book a free demo lesson at nobleeducators.com/contact