

MAP SKILLS IN GEOGRAPHY AT KEY STAGE 3

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INTRODUCTION

The pack *Map Skills in Geography at Key Stage 3* introduces students to the full range of skills required to work with maps at KS3. It is very much a process-based pack, with the emphasis being on the map skills themselves, rather than merely on text-based activities.

Student suitability You can use these sheets with KS3 students. The pack is designed to be used by mixed-ability students in Geography classes. Because the pack is photocopiable, you can use it flexibly, with individual students, small or large groups, or across a whole year set.

Using the pack The sheets in the pack are divided up into topic-based sections which should each be worked through as a unit. The sections are: How Maps Are Made (8 lessons), How Maps Are Used (8 lessons), and Maps of the World (12 lessons using actual maps). The pack is designed flexibly, to meet the needs of each class being taught. The Teachers' Notes provided opposite each worksheet give the page's aims, preparation needed, classroom management advice, differentiation possibilities, answers, and extension activities. We presume that you have access to pen, paper and chalkboard, and that students are used to working both individually and in small and large discussion groups. If you have a query about how to use the pack, we are happy to help; please write to us at the address below.

Other linked Chalkface packs You may also be interested in the following packs: *Fieldwork Skills in Geography at Key Stage 3*; *Decision Making in Geography at Key Stage 3* and *Applying IT to Geography*.

The people involved Graham Nicholson was the consultant author for this pack. Tim Bax, the writer of this pack, is a freelance writer. The pack was illustrated by Steve Tatler and the cover and series design was by Michael Lopategui. Kevin Goulden was the editorial co-ordinator. Scott Bradbury and Rebecca Mazonowicz were the editors and layout artists. Thanks particularly to Marion Ellard for invaluable support. The Chalkface format was created by Susan Quilliam.

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- 7 WHO NEEDS MAPS?
Introduces maps and their uses by looking at different types of people who rely on maps – and seeing how they use them.
- 9 THE MAKING OF MAPS
Explores the idea that a map is a miniaturised, stylised representation of reality, as students examine a number of examples and see how they were conceived and created.
- 11 MENTAL MAPS
Accurate maps rely on a clear conception of what is to be shown – as students demonstrate by creating practical maps themselves, and testing their effectiveness.
- 13 SKETCH MAPS
Map creation at its simplest is explored in this lesson where students create a series of progressively more complex sketch maps and see whether or not they work.
- 15 THE KEY TO COLOUR
Looks at the use of colour and keys in maps, with students demonstrating their understanding of the concept by creating a number of keys using colour and shading.
- 17 KEEPING TO SCALE
Students explore the idea of scale – how actual situations may be represented on paper, with the correct proportions preserved. A number of enjoyable practical exercises underline the fundamental importance of this concept.
- 19 DIRECTIONS TO WORK
The idea of a map as a series of directions is explored, with students looking at various examples, and then creating more and more complicated direction lists themselves.
- 21 CLASH OF SYMBOLS
How maps use symbols and what different symbols can mean. The importance of continuity in the use of symbols is also shown as students create practical examples.

SECTION TWO: HOW MAPS ARE USED

- 23 TREASURE MAPS
An introduction to the practical use of maps as students follow directions to unearth the treasure – and then have a go at creating a treasure map of their own.
- 25 MAPS ON HOLIDAY
A practical lesson in using maps to plan a holiday – from the overall itinerary, to finding your way from the airport to the hotel.
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The concept of co-ordinates is introduced in this lesson. Students examine several examples – and then have a go at using co-ordinates themselves to specify particular map locations.
- 29 GRID REFERENCES – FOUR FIGURES
This basic tool of map reference is explored through a series of practical exercises and location-spotting activities which students try out on one another.
- 31 GRID REFERENCES – SIX FIGURES
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- 33 ORIENTEERING
The skills learned in previous lessons are tested by this practical exercise in the use of maps, grid references and compass.

CONTENTS

- 35 CAVE MAPS
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- 37 STAR MAPS
Students explore the practicalities and benefits of mapping the sky – not only to plot the position of the stars, but also our own position on Earth.

SECTION THREE: MAPS OF THE WORLD

- 39 MAP STORIES
The first real-world map that students encounter is put to the test in a series of exploratory exercises.
- 41 GOT THE A to Z?
The conventions, advantages, and limitations of city maps are examined as students undertake a number of practical exercises using an A to Z.
- 43 TOPOLOGICAL MAPS
An example of a topological map is examined in this lesson, after which students create their own examples of accurate topological maps.
- 45 MILES OF HOURS
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- 47 LET'S GET PHYSICAL
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- 49 GOING UNDERGROUND
Examines how geologists use maps to show sub-surface strata, with practical examples. Students then test their understanding of geological maps through a series of interactive exercises.
- 51 MAPPING THE WORLD
Students discover how maps in atlases are created, using various different projections. The limitations of projection are explored as students attempt to create atlas-style maps of their own.
- 53 MONEY MAPS
Students see how economic maps work as they examine a number of examples, and then have a try at creating an economic map of their own local area.
- 55 BY AIR AND SEA
Students learn to consider the Earth as three dimensional through examining air and sea routes and the factors which affect such journeys.
- 57 ALL CHANGE
Students examine the London Underground map, and test their understanding of it by planning a series of increasingly complex routes.
- 59 WEATHER REPORT
The weather exists independently of maps – but they are vital to track its progress, as students discover in this practical lesson.
- 61 COUNTRY MAPS
Students consider the nature of political maps and plot recent changes to the map of Europe.

Lesson-specific Teachers' Notes are to be found on the page facing each worksheet.

— GENERAL GUIDELINES —

The Teachers' Notes opposite each page support the use of each specific page as required. These more general guidelines give advice on using the whole pack. They offer suggestions on preparation, running the lesson and follow-up work, and could form the basis of in-service training prior to using the pack.

Please remember to photocopy both the relevant Teachers' Notes and these General Guidelines if you are copying worksheets for a supply teacher to use.

Preparing for the lesson

- Specific preparation requirements are indicated in the *Preparation* section of the Teachers' Notes. You should always have available copies of the worksheet, pens, pencils and a chalkboard or equivalent.
- Allow approximately an hour's lesson for each page. If there may be too much or too little work for an hour, this is indicated in the *Timing* section of the Teachers' Notes.
- You can link pages to make a double lesson; linkable pages are indicated under the heading *Links*.
- Possible classroom management challenges which may be created by the page and any issues of a sensitive nature are brought to your attention in the Teachers' Notes under the heading *Points To Be Aware Of*. You will probably want to check whether these are relevant to your class.

The lesson

Pages are worded so that you can choose how to manage each in the classroom. However, as a general guideline, we suggest that you move from 'introductory chat' to individual work, through to paired or small group discussion, then to pooling ideas as a class. Where a specific approach is required which differs from this, it is indicated in the Teachers' Notes under the heading *Classroom Management*.

Each sheet contains a number of activities. These fall into several basic formats:

- **Thought starters**
- **Reading**
- **Oral work**
- **Brainstorming**
- **Research**
- **Working in role or 'imagine' exercises**
- **Written work**

Where relevant, you may choose to allow students with poor writing skills to work on the sheet and mark, underline or colour to show understanding.

Where extended writing or copying is required, you could modify the task and set a precise target for students who work very slowly, inaccurately or untidily. You may find it useful to mark sections which you expect students to complete with a fluorescent pen. Where a different approach might be more appropriate for less able (or more able) students, this is highlighted under *Differentiation*.

Following up on the lesson

The Teachers' Notes may include, where relevant, suggestions for *Extension Activities*. These are usually designed to carry the topic into a double lesson, or to provide an opportunity for out-of-classroom work.

Teachers' Notes

WHO NEEDS MAPS?

Aims Students discover that there are many different kinds of map, used by many different kinds of people in many different ways.

Preparation None required – but you might like to bring in some examples of maps used by different people, for example Ordnance Survey maps, A to Zs, train maps.

Classroom Management The first two activities should take place in pairs, with the final activity on an individual basis.

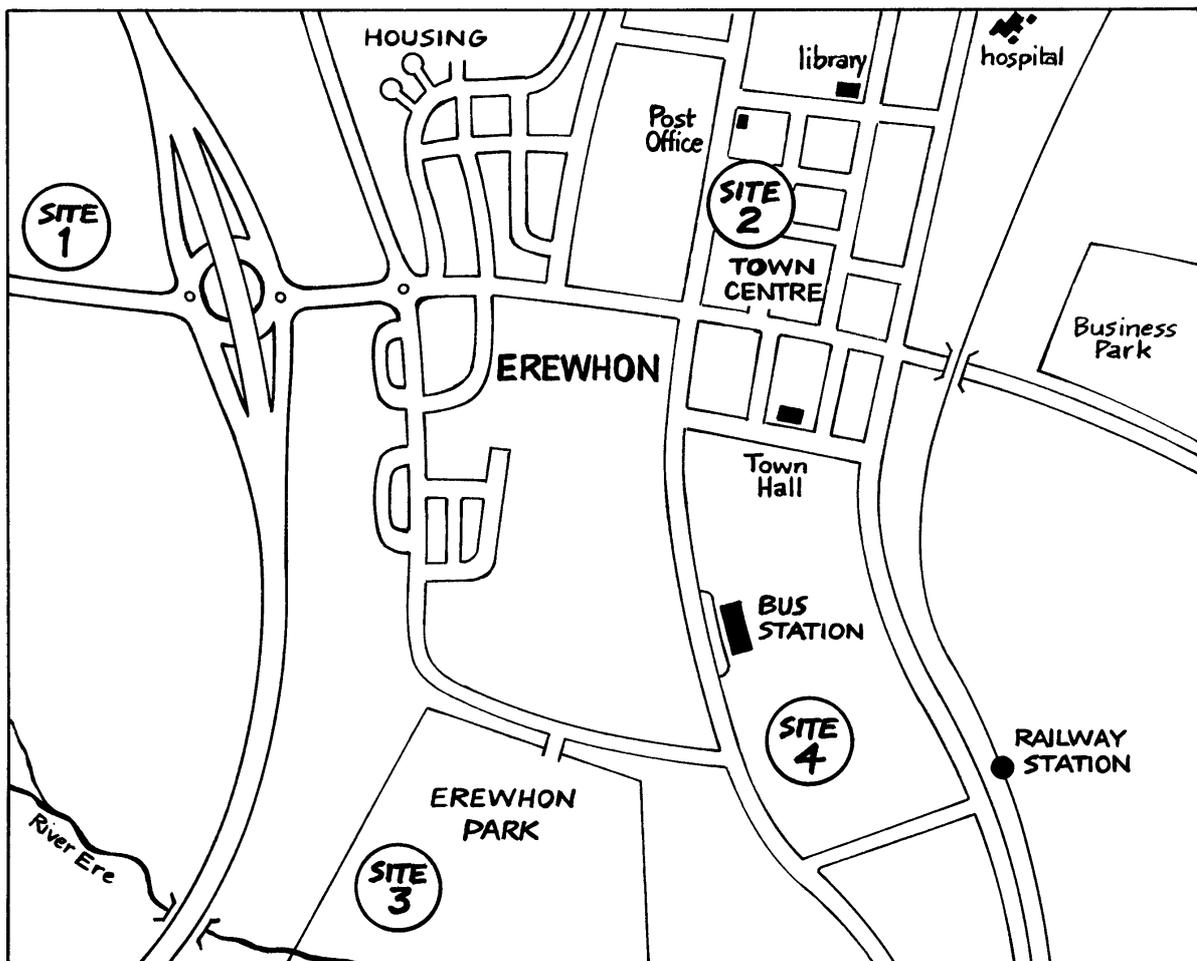
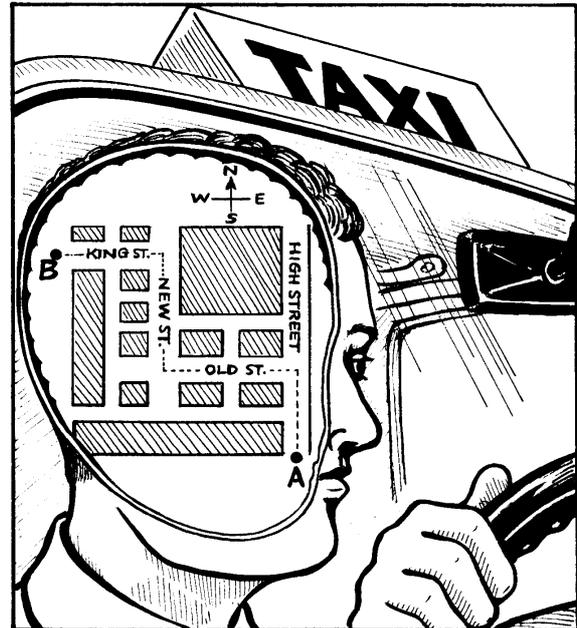
Answers

- 1 People who use maps include lorry drivers, taxi drivers, military personnel, airline pilots, sailors of all kinds, walkers, underground train users, regular train passengers, town planners, architects, the police, utility companies, weather forecasters, geographers, statisticians.
- 2 The map route to remember is north up the High Street, 2nd left at Old Street, 2nd right at New Street, 3rd left at King Street.

Extension Activities Students could be asked to research plans for local developments that have recently taken place or been proposed.

WHO NEEDS MAPS?

- 1 Lots of different people use maps in different ways. With a partner, list all the people you can think of who use maps.
- 2 Spend one minute looking at the map on the right, and studying the route from A to B. Then see if you can repeat the route from memory without looking at the map. Your partner can check if you remembered correctly.
- 3 Many people, like taxi and lorry drivers, use maps in order to get somewhere. But town planners and architects are less interested in the roads on maps than what lies between them. The town of Erewhon is to have a new sports and leisure centre. Four possible sites have been suggested. Write a brief report outlining the advantages and disadvantages of each site.



Teachers' Notes

THE MAKING OF MAPS

Aims Students examine some of the conventions of map-making and how they work in practice.

Preparation You might need a long tape measure to measure the dimensions of the classroom – although this can be done by pacing. You might like to bring in some Ordnance Survey maps to stimulate student imaginations. Before the students draw a map of the classroom you could provide measurements – either with a measuring tape or by having one or two students pace out the length and width of the room.

Classroom Management This lesson should take place in pairs.

Answers

1 All of the objects have been drawn from above. The objects are:

- a cup and saucer
- a tea pot
- a pan with a handle
- an alarm clock.

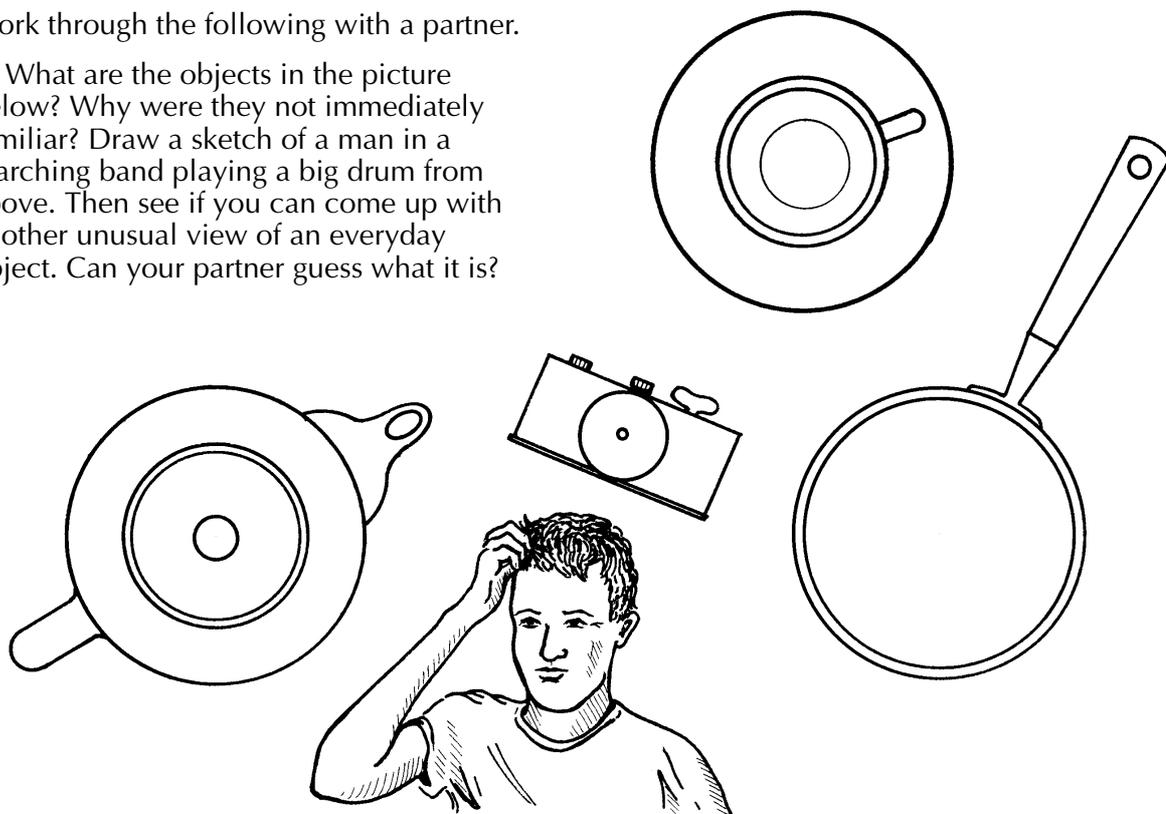
3 The symbols from the Ordnance Survey signify a church with a spire, a church with a tower, a line of pylons, a marsh, a railway cutting, a triangulation pillar, a disused lighthouse, and a chimney.

Extension Activities Students could be asked to learn the rest of the Ordnance Survey symbols for homework.

— THE MAKING OF MAPS —

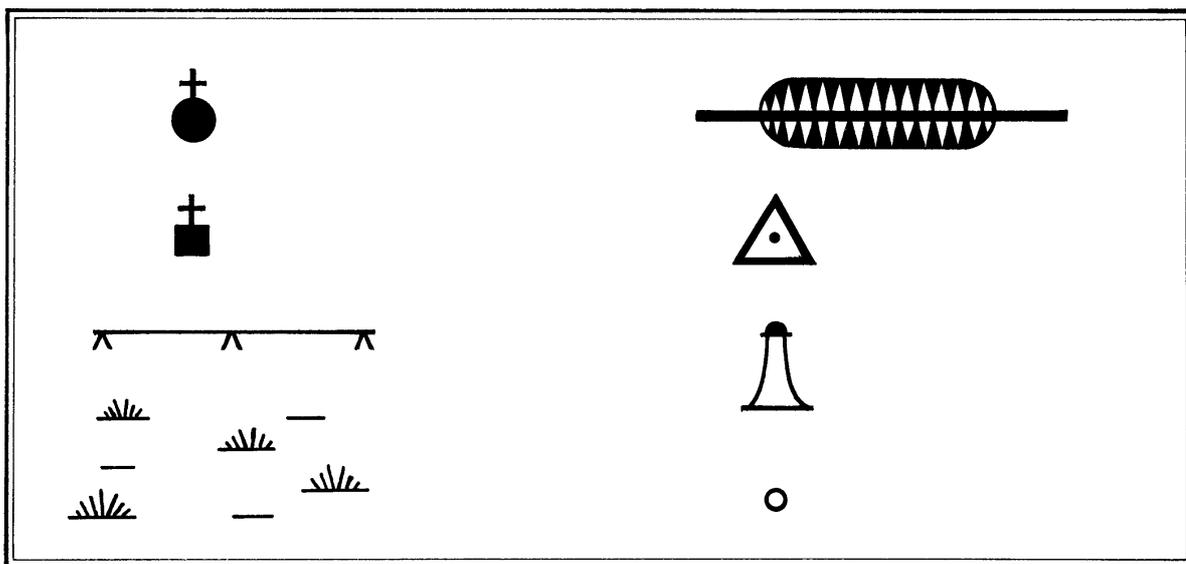
Work through the following with a partner.

1 What are the objects in the picture below? Why were they not immediately familiar? Draw a sketch of a man in a marching band playing a big drum from above. Then see if you can come up with another unusual view of an everyday object. Can your partner guess what it is?



2 Most maps are drawn from above. Draw a map of your classroom or another room in your school. Invent a key to show different features. Then compare your map with that of your partner. Is there anything you would change?

3 Look at the key in the picture below. It comes from an Ordnance Survey map. How does it compare with the key you created for your map? Can you identify the symbols from the Ordnance Survey map?



Teachers' Notes

MENTAL MAPS

Aims Students will learn to appreciate the qualities a map must have in order for a stranger to be able to follow it.

Classroom Management The opening activity should take place individually, moving into pairs. You should choose the pairs, rather than allowing friends to self-select. Put boys with girls or otherwise create pairings who do not know each other particularly well – i.e. do not know one another's route to school.

The second activity should take the form of a class discussion. List on the board all the problems suggested by the illustration; for example map out of date, compass points in the wrong places, not enough information or detail.

The final activity should take the form of a class discussion with you at the board capturing ideas. Encourage general comments, rather than the critique of individual maps. The final activity should take place individually.

Answers 4 Information that could be added might include distances and times, bus route numbers and bus times, if available. Hazards might also be noted, for example a busy road may take extra time to cross.

Extension Activities Students could be asked to note details of their home-to-school journey and compare these with the maps they made.