

## 2.4 Thematic maps

**Aim** – to highlight a valuable planning map

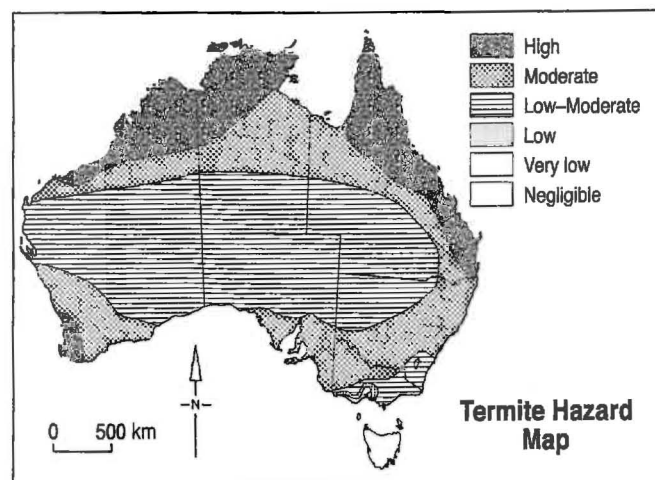
A **thematic map** is designed for a special purpose. This means many features that you would often find on a map (e.g. roads, rivers, towns, mountains) may not be included. These maps focus on one theme or feature. They are very important because:

- They allow you to look at the **distribution pattern** of one aspect.
- If you take the same area and produce one map of one feature and one map of another feature you can overlay the maps and look for any relationship between the two patterns. If the two patterns are similar, it is worth investigating the reasons for the similarity.

Many investigations will include a thematic map. For example studies about plant types, the incidence of a particular disease, animal sightings, population characteristics, origin of customers and criminal activity would all benefit from an analysis of the distribution pattern on a thematic map.

### Termite hazard

Termites are ant-like creatures that live in soil or wood. Some of the species cause damage to wooden structures (e.g. the timber in houses).



**Figure 2.5** The theme of this map is termite hazard. It shows only a few features from a political map (cities, State/Territory borders). Notice that it does include a border, orientation, a legend, a title and a scale.

### Activities

1 Refer to Figure 2.5.

- Which State/Territory has the least worry from termites? \_\_\_\_\_
- Describe the distribution of the high-risk areas. Refer to States/Territories and to directions.

c Suggest at least two other thematic maps you might look at to help explain the distribution of high-risk areas.

- \_\_\_\_\_
- \_\_\_\_\_

2 Look through your *Heinemann Atlas 5th Edition* and find at least three examples of thematic maps.

Region	Theme	Page in atlas
The world		
Australia		
Another continent*		

\*The continents are Australia, Asia, Europe, Africa, South America, North America and Antarctica.

### handy hint!

Thematic maps are useful in many school projects.

## 2.5 >> Land use maps

### Aim – to highlight valuable planning maps

A **land use map** is a map that shows how the land is used in an area. The detail provided varies according to scale. At a local scale, such as your immediate neighbourhood or a farm, it is possible to produce very detailed maps.

Land use maps have great value for geographers and

others interested in planning and understanding patterns.

A land use map will raise questions such as:

- Why is one type of land use common in a particular area?
- Why do some regions have many land uses while others have few or none?

A land use map will often be viewed in combination with other maps such as soil, relief, climate, transport and population centres.

## Activities

- 1 How would a land use map help in planning the path of a new road?

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- 2 What other maps would be helpful when planning for this new transport route?

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- 3 Refer to the land use map of Australia on page 38 of the *Heinemann Atlas 5th Edition*.

- a Would a land use map of a farm have more or less detail than this map? \_\_\_\_\_
- b How many categories are listed in the legend? \_\_\_\_\_ How many of these are agricultural (farming) land uses? \_\_\_\_\_
- c Use the map to help you decide if each of these statements is true or false.
- i More land is used for sheep and cattle than for anything else. \_\_\_\_\_
  - ii Northern Australia has the greatest variety of land uses. \_\_\_\_\_
  - iii Central Western Australia is not used very much. \_\_\_\_\_
  - iv Sugar cane is grown in coastal Queensland. \_\_\_\_\_
- d i Which State or Territory appears to have the greatest variety of land uses? \_\_\_\_\_
- ii How many land use types can you count? \_\_\_\_\_

### handy hint !

A land use map can show land use in the past, in the present, or planned (anticipated) land use.

## 2 TYPES of maps

- e Refer to the Australia section of the *Heinemann Atlas 5th Edition*. For each State and Territory identify one photo that displays a different land use. Document this in the table below.

State or Territory	Land use	Page in Atlas

## 2.6 >> Climate maps

**Aim – to understand a common thematic map**

Climate refers to average conditions and is calculated from data gathered over many years. It gives you an idea of what to expect. The weather, on the other hand, is what you actually experience each day. **Climate maps** can cover items such as annual rainfall, summer rainfall,

winter rainfall, summer temperature, winter temperature, number of thunderstorms, ocean currents and prevailing winds. It is possible to describe different types of climates and record them on a map.

### Activities

- 1 List at least three climate maps that would be helpful to a farmer.

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- 2 Use the climate maps of Australia on pages 16–17 of the *Heinemann Atlas 5th Edition* and the land use map on page 38 and describe the association between:

a climate and where sugar cane is grown \_\_\_\_\_

b climate and where land is largely unused \_\_\_\_\_

- 3 Refer to the climate maps of Asia on page 124 of the *Heinemann Atlas 5th Edition*.

- a State the average annual rainfall of:

i Tehran \_\_\_\_\_ ii Ulan Bator \_\_\_\_\_

- b In which country will you find each of these cities?

i Tehran \_\_\_\_\_ ii Ulan Bator \_\_\_\_\_

- c Which is the driest city shown on the map? \_\_\_\_\_

- d Which is the wettest city shown on the map? \_\_\_\_\_

- e Use information on the map to describe the location of each of these cities. Refer to at least two features.

i driest city \_\_\_\_\_

ii wettest city \_\_\_\_\_

- f State the mean daily temperature of Ulan Bator in:

i January \_\_\_\_\_ ii July \_\_\_\_\_

- g State the mean daily temperature of Jakarta in:

i January \_\_\_\_\_ ii July \_\_\_\_\_

### handy hint !

Northern Hemisphere seasons are the reverse of the seasons in the Southern Hemisphere. When we have summer the Northern Hemisphere has winter.

# 2 TYPES of maps

- h** Look carefully at the location of each of these places and suggest at least one reason for the differences in temperature between Jakarta and Ulan Bator.

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- 4** Refer to the world climate map on page 212 of the *Heinemann Atlas 5th Edition*. Complete the following.

- a** What is the type of climate for the area of Australia in which you live?

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- b** Name one other part of the world that has similar climatic characteristics.

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- c** Follow the Tropic of Capricorn from east to west and list the climate types in order as you pass through each of these continents.

- i** South America 

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- ii** Australia 

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- iii** Africa 

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- d** Describe any pattern you observe. 

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- e** Decide if each of these is true or false.

- i** The coldest areas are furthest from the Equator. 

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- ii** Cold ocean currents tend to be beside dry regions. 

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- iii** The hot and dry regions are along the Equator. 

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- f** Unjumble the following table to match the location with its correct climate type.

Location	Climate
Belo Horizonte	Hot and wet all year
Christchurch	Hot and dry all year, unreliable rain
Churchill	Cold all year
Gronfjorden	Hot all year, rainy most months with definite dry season
Harbin	Warm to mild months, wet all year
In Salah	Hot dry summer, mild wet winter
Palermo	Cold most months with a short summer
Singapore	Warm to mild summer, cool to cold and dry winter

## 2.7 >> Topographic maps

**Aim** – to understand that maps can provide great detail about landform

A **topographic map** provides even more detail than the physical, political and gazetteer maps. Human features and physical features are provided and all mapping conventions are satisfied. While on gazetteer maps and physical maps the height of the land is shown using colour shading, on a topographic map the landform is shown with **contour lines**. This means we can read the height of the land and the shape of the land.

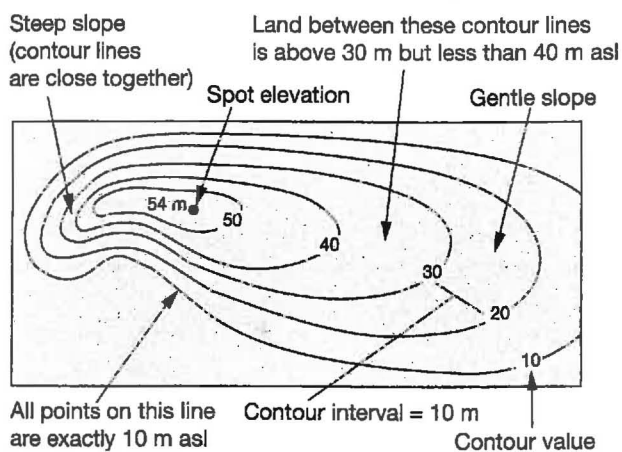


Figure 2.6 Contour line features

A contour line joins places of equal height. The pattern formed by the contour lines will show the shape of the land.

It isn't possible to provide a contour line for every height on a map. Cartographers (map-makers) decide on a **contour interval**. They may decide, for instance, to draw a contour line for every 10 metres or every 20 metres or every 50 metres. On a large-scale map (local map) they may be able to draw a contour line for every one or two metres.

Topographic maps will show a smaller area than gazetteer maps and can therefore show more detail.

### Key information

- Every point along one contour line is the same height.
- Contour lines do not cross.
- Contour lines close together indicate a rapid change in height and therefore a steep slope.
- Widely spaced contour lines mean that the height is changing only gradually and indicate gentle slopes.
- The 0 metres contour line is at sea level.
- All other heights are measured above sea level (asl).

### handy hint !

Sea level is the starting point for measuring the height of the land or the depth of the ocean.

## Activities

1 Figure 2.7 shows **spot heights**.

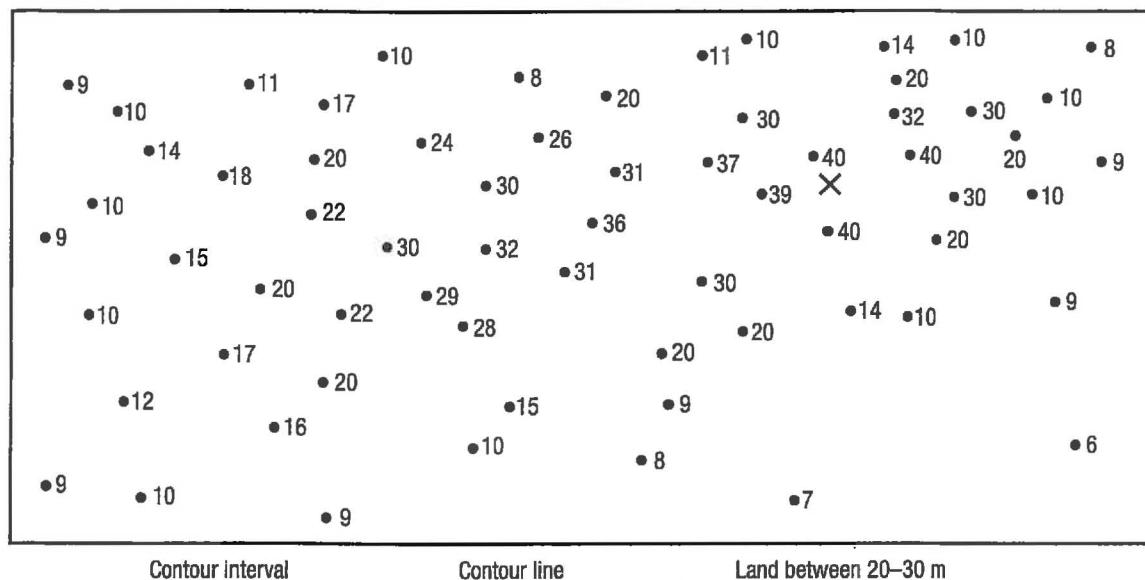


Figure 2.7 Spot heights



# 12 TYPES of maps

- Add the 10-metre contour line, the 20-metre contour line, the 30-metre contour line and the 40-metre contour line to Figure 2.7. Add the symbol for the contour line to the legend.
  - Shade in the region on the map that is between 20 metres and 30 metres above sea level. Add the symbol for this region to the legend.
  - State the contour interval and add it to the legend.
  - Estimate the height of point X. \_\_\_\_\_
  - On your map, clearly label a steep slope and a gentle slope.
- 2 Look carefully at the picture of each landform feature in Figure 2.8 and note whether the land is getting higher or lower and thus whether the slope is gentle or steep. Match each picture with its contour pattern.

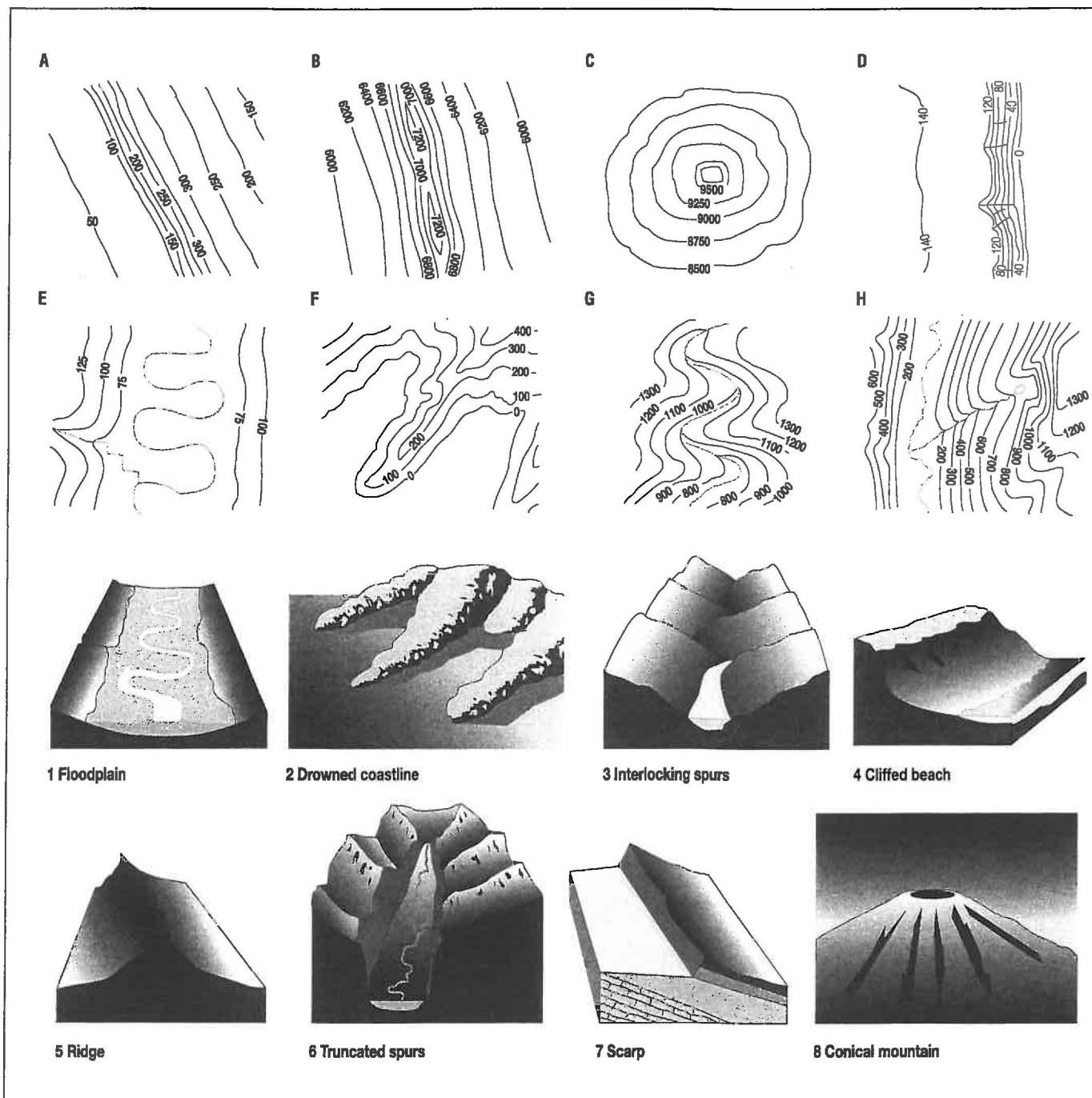


Figure 2.8 Landform features

3 Refer to the map of the Blue Mountains National Park on pages 82–3 of the *Heinemann Atlas 5th Edition*.

a You will notice there are many contour lines. What does this tell you about the shape of the land?

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b What is the contour interval? \_\_\_\_\_

c Compare the slope of the land in the two locations 528632 and 495653.

i Which location is steeper? \_\_\_\_\_

d Find Leura Falls Creek at 525643 where it meets Gordon Creek.

i Follow the 500 m contour line and on Figure 2.9 sketch the shape this contour line makes as it crosses each creek.

ii Add the 510 m contour line and the 490 m contour line.

iii Describe the pattern in terms of the shape and in terms of the slope (e.g. uphill or downhill).

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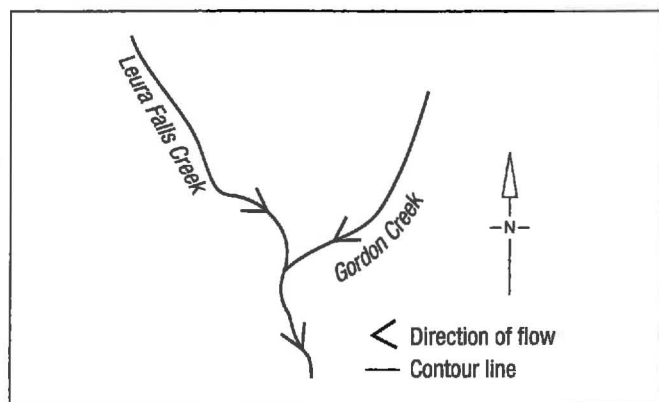


Figure 2.9 Applying contour lines



## 2.8

## Test yourself

- 1 List all the letters of the alphabet except w, y and x. Note a country that begins with each letter.

Go to pages 202–3 of your *Heinemann Atlas 5th Edition* and list the capital city for each of your chosen countries.

Country	Capital
A	
B	
C	
D	
E	
F	
G	
H	
I	
J	
K	
L	
M	
N	
O	
P	
Q	
R	
S	
T	
U	
V	
Z	

2 What physical feature lies between each of the following pairs?

- a India and China \_\_\_\_\_
- b Victoria and Tasmania \_\_\_\_\_
- c Argentina and Chile \_\_\_\_\_
- d Colombia and Jamaica \_\_\_\_\_
- e Saudi Arabia and Egypt \_\_\_\_\_
- f Spain and France \_\_\_\_\_

3 Turn to page 221 of your *Heinemann Atlas 5th Edition* and study the map showing the distribution of tigers.

- a Describe the historic range of tigers in terms of countries and latitude. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- b Which countries have the highest probability of tigers persisting in the long term?  
\_\_\_\_\_

4 Identify the landform feature at each of the following grid references on maps in your *Heinemann Atlas 5th Edition*.

- a Blue Mountains National Park (pages 82–3): 534637  
\_\_\_\_\_
- b McLaren Vale (page 63): 773177  
\_\_\_\_\_
- c Wilsons Promontory (pages 100–101): 419780  
\_\_\_\_\_
- d Wilsons Promontory (pages 100–101): 420860  
\_\_\_\_\_
- e Daintree River National Park (pages 76–7): 275812.  
\_\_\_\_\_