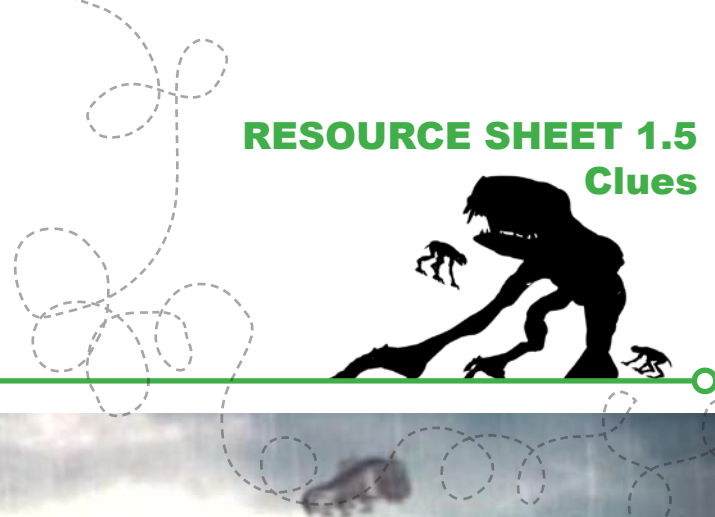


**Clues**



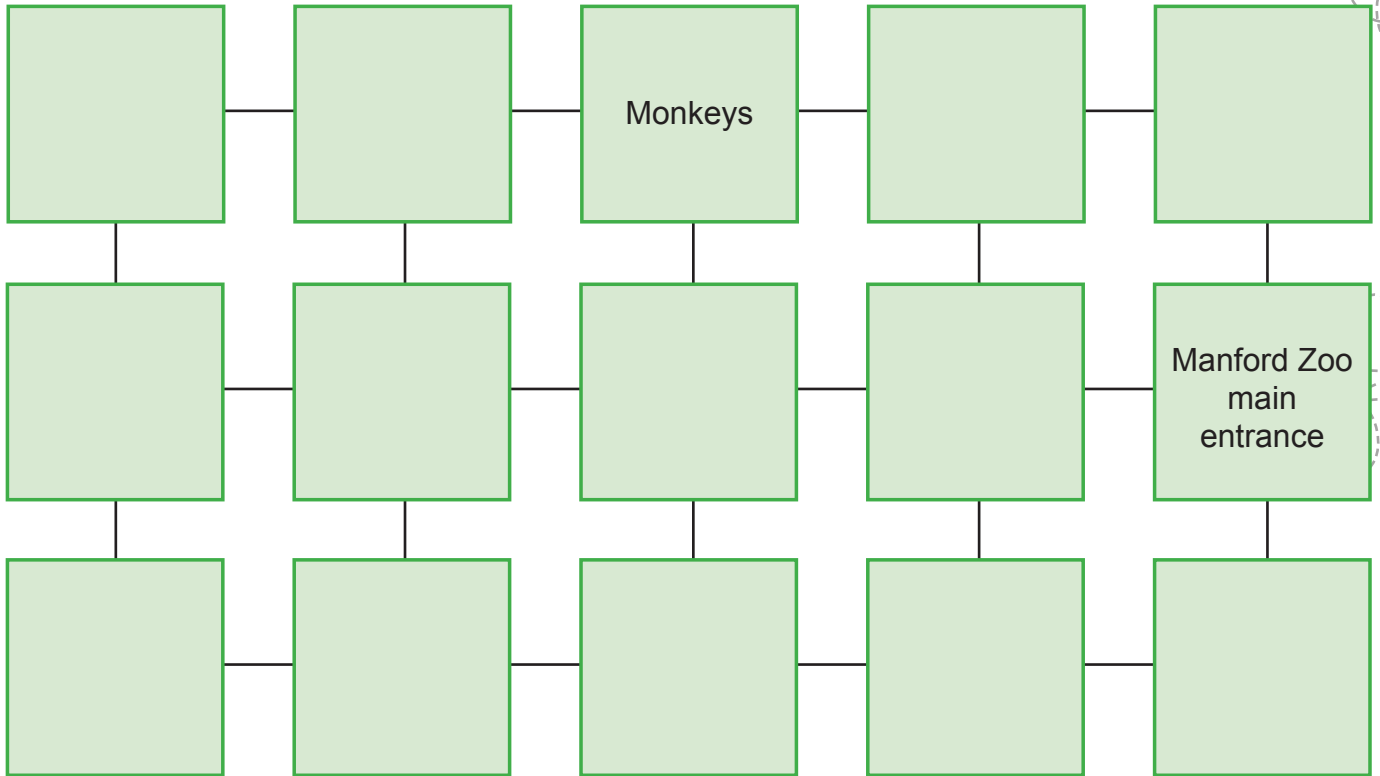
Listen to the radio broadcast and complete the clues.  
Use them to work out the scale of the map and where the spaceships have landed.

- ▶ 'I'm standing on the roof of the Fire Station. I can see the statue in Manford Square \_\_\_\_\_ away as the crow flies on the other side of the river.'
- ▶ 'We were both watching the first spaceship. Jen thought it landed \_\_\_\_\_ from the Mosque but Leela thought it landed \_\_\_\_\_ from Manford Museum.'
- ▶ 'As far as I could tell, the second ship came down \_\_\_\_\_ north of the Police Station.'
- ▶ 'I'm speaking to you from ZFM House. The third ship landed to the \_\_\_\_\_ of me at the same distance from King's School as it is from Queen's College.'
- ▶ 'Whoever is behind these spaceships must have a plan. The ships have landed at the four corners of a \_\_\_\_\_.'
- ▶ 'I was watching from the Observatory as the spaceships landed. As far as I could judge, only the first spaceship landed anywhere to the \_\_\_\_\_ of the Observatory.'
- ▶ 'From the top of the tower of St Andrew's Cathedral, we couldn't see any ships to the \_\_\_\_\_ of the tower but we watched one spaceship land due \_\_\_\_\_ of us.'
- ▶ 'I think the \_\_\_\_\_ spaceship has come down very close to us at \_\_\_\_\_.'



**Supplementary problem 1**

The main entrance to Manford Zoo lies at F10 on the tourist map of the city. To see the monkeys, visitors must walk 800 metres south from the entrance and then 400 metres west.



The diagram shows the layout of the features of the Zoo.

Use the clues to work out where the various features are. Write them in the boxes.

**Clues**

- ▶ The llamas are to the south-west of the main entrance.
- ▶ The main entrance is to the north-west of the goods entrance.
- ▶ The monkeys and the penguins are to the south-west of the polar bears.
- ▶ The zebras are to the south-east of the monkeys and to the north of the reptiles.
- ▶ The monkeys are to the north-west of the pandas and south of the camels.
- ▶ The aviary is next to the giraffes and south-west of the tea rooms.
- ▶ The dolphins are between the goods entrance and the side gate.

On the tourist map of Manford, what are the grid references for these?

a The side gate \_\_\_\_\_

b The giraffes \_\_\_\_\_



## Homework 1

You will need a stopwatch or a clock or watch that has a second hand.

The Aliens have started to come out from the spaceships. To escape, your class is going to have to get back together as quickly as possible. To work out how long this will take, you will need to know your average walking speed.

### Task A

There is a useful formula to estimate your average walking speed ( $s$ ) in miles per hour:

$$s = \frac{n}{30}, \text{ where } n \text{ is the number of steps you take in 1 minute}$$

**STEP 1** Time 1 minute. Count how many steps you take in 1 minute at the pace that you normally walk.

**STEP 2** Divide the number of steps you take in 1 minute by 30.

*For example, if you take 96 steps in 1 minute, you'll divide 96 by 30.*

**STEP 3** Write down the result. Round it to 1 decimal place if necessary. This is the estimate of your average walking speed in **miles per hour**.

 mph

*For example,  $96 \div 30 = 3.2$ , which means that you walk an average of 3.2 mph.*

It would be helpful to know what this is in **kilometres per hour**.

Remember that 5 miles is about the same as 8 kilometres, so 1 mile is  $8 \div 5 = 1.6$  kilometres. So to change miles per hour to kilometres per hour, multiply the miles per hour by 1.6.

**STEP 4** To estimate your average walking speed in kilometres per hour, multiply your speed in mph by 1.6. Round the result to 1 decimal place if necessary.

 km/h

*For example, a speed of 3.2 mph is roughly  $3.2 \times 1.6 = 5.12$  km/h. This is 5.1 km/h to 1 d.p.*

### Task B

- 1 How many **miles** do you think you could walk in 30 minutes?
- 2 How many **miles** do you think you could walk in 6 minutes?
- 3 How many **kilometres** do you think you could walk in 15 minutes?
- 4 How many **kilometres** do you think you could walk in 1 hour 20 minutes?

### Task C

- 5 Write down three factors that could affect how fast you can walk. If possible, look first at this website:

<http://www.go4awalk.com/navigationskills/timing.php>