



Birmingham Holiday on the Water

Planning a holiday on a narrowboat

Keys Terms:

Berth, formulae, mph, k/ph, itinerary

canalrivertrust.org.uk/stem

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Objectives

- To consider the mathematical elements involved with planning a narrowboat journey.
- Use formulae to solve calculation problems i.e.
 $\text{Time} = \text{distance} \div \text{speed}$.
- See how rounding can be used to simplify calculations.



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Travelling by boat

- Travelling by narrowboat is a great way to spend time by the water.
- Some people hire narrowboats for their holidays but, it can be very expensive and there's lots of planning involved.

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Do you know anybody who has been on a narrowboat?





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Boat sizes

- Narrowboats come in different sizes. People usually hire boats according to the number of people that will be staying on board.
- The number of people a boat can accommodate is called 'berth'.
- So, a four-berth boat allows four people to sleep comfortably on board.



What size boat would you need for your family?



Facts and figures

- Most holiday boaters travel for around five to six hours each day.
- Narrowboats travel at a speed of about 5km/h (3mph).
- Obstacles like locks can slow the journey down even more. It takes about 20 minutes to get a boat through a standard lock.

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How fast
do cars
usually
travel?





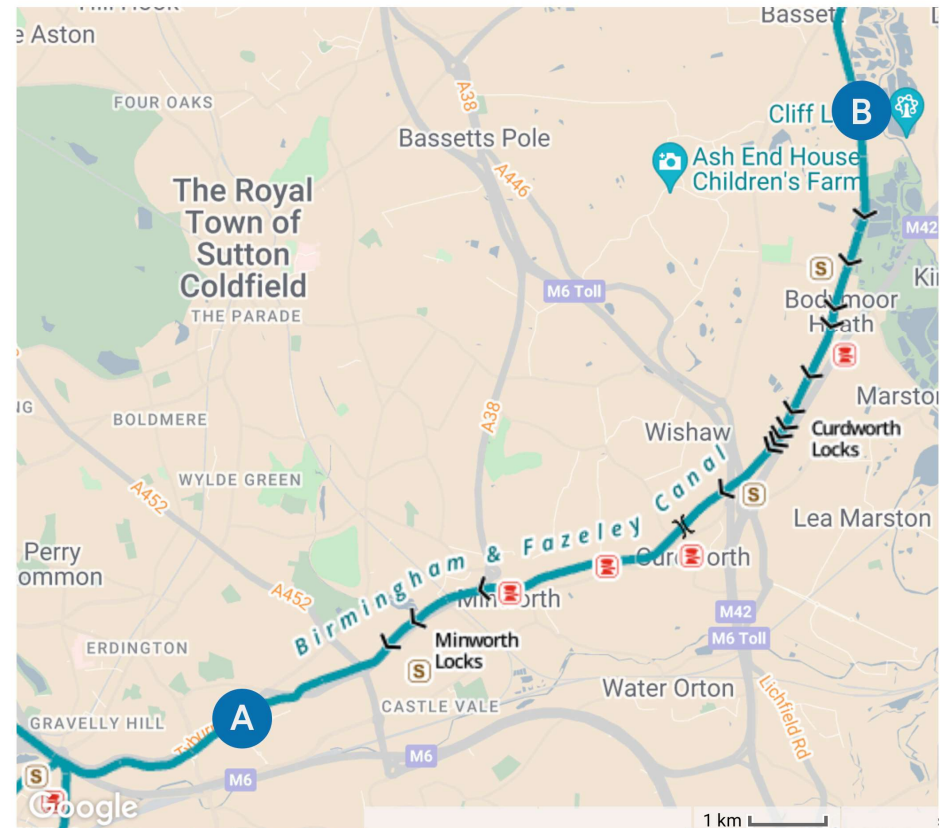
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A journey example

- Estimate how long it will take to get from A to B along this section of the Birmingham & Fazeley Canal
- Use the scale on the map to estimate the distance.
- How many locks are there?



This is the symbol for a lock.



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1

Work out the basic journey time (without locks).

Distance	÷	Speed	=	Time
10 km	÷	5 km/h	=	2 hrs

2

Work out the extra time for the locks.

Quantity	×	Time	=	Extra time
14 locks	×	20 mins	=	280 mins

3

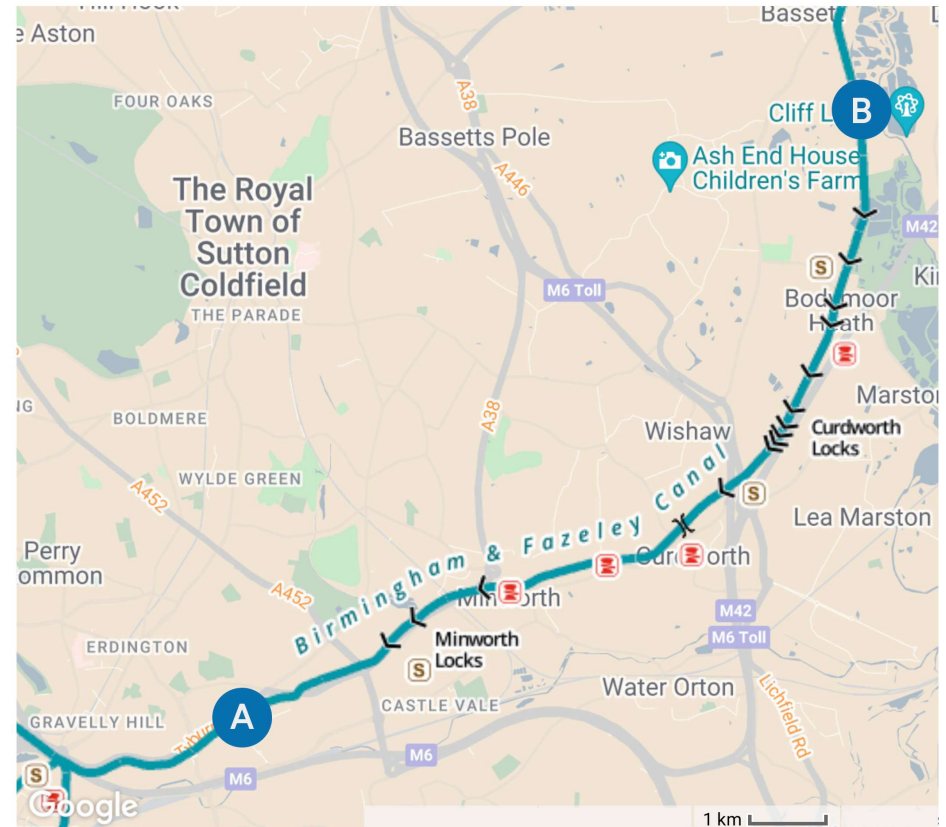
Convert minutes to hours.

280 mins	÷	60 mins	=	4.7 hrs
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4

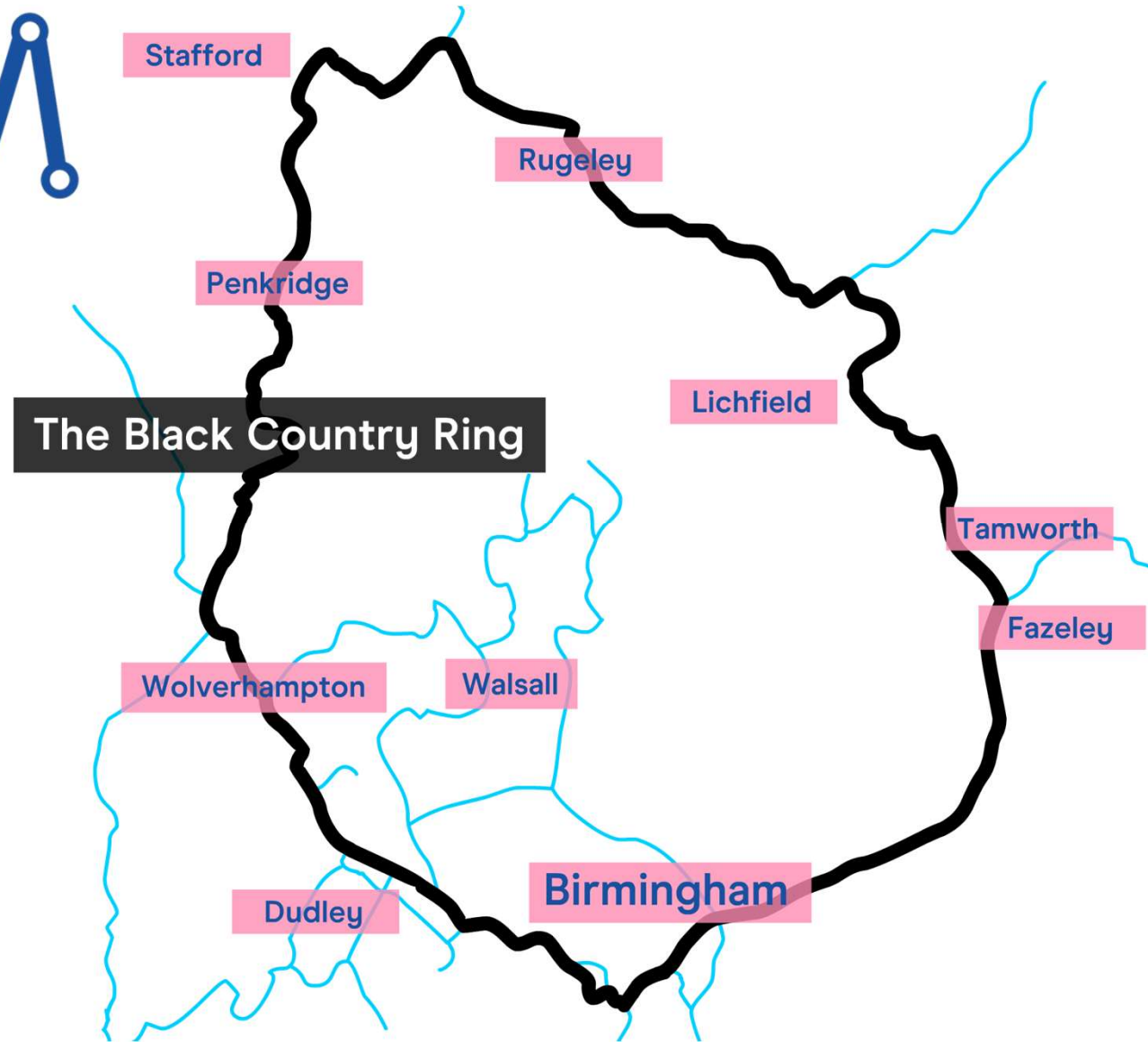
Add the duration and the extra lock time together.

Basic time	+	Extra time	=	Total Estimate
2 hours	+	4.7 hours	=	6.7 hours



Planning a journey

- Narrowboats can't turn around very easily.
- Journeys usually consist of a loop or a ring of canals.
- The **Black Country ring** is a good example of a cruising route. It goes through the heart Birmingham.



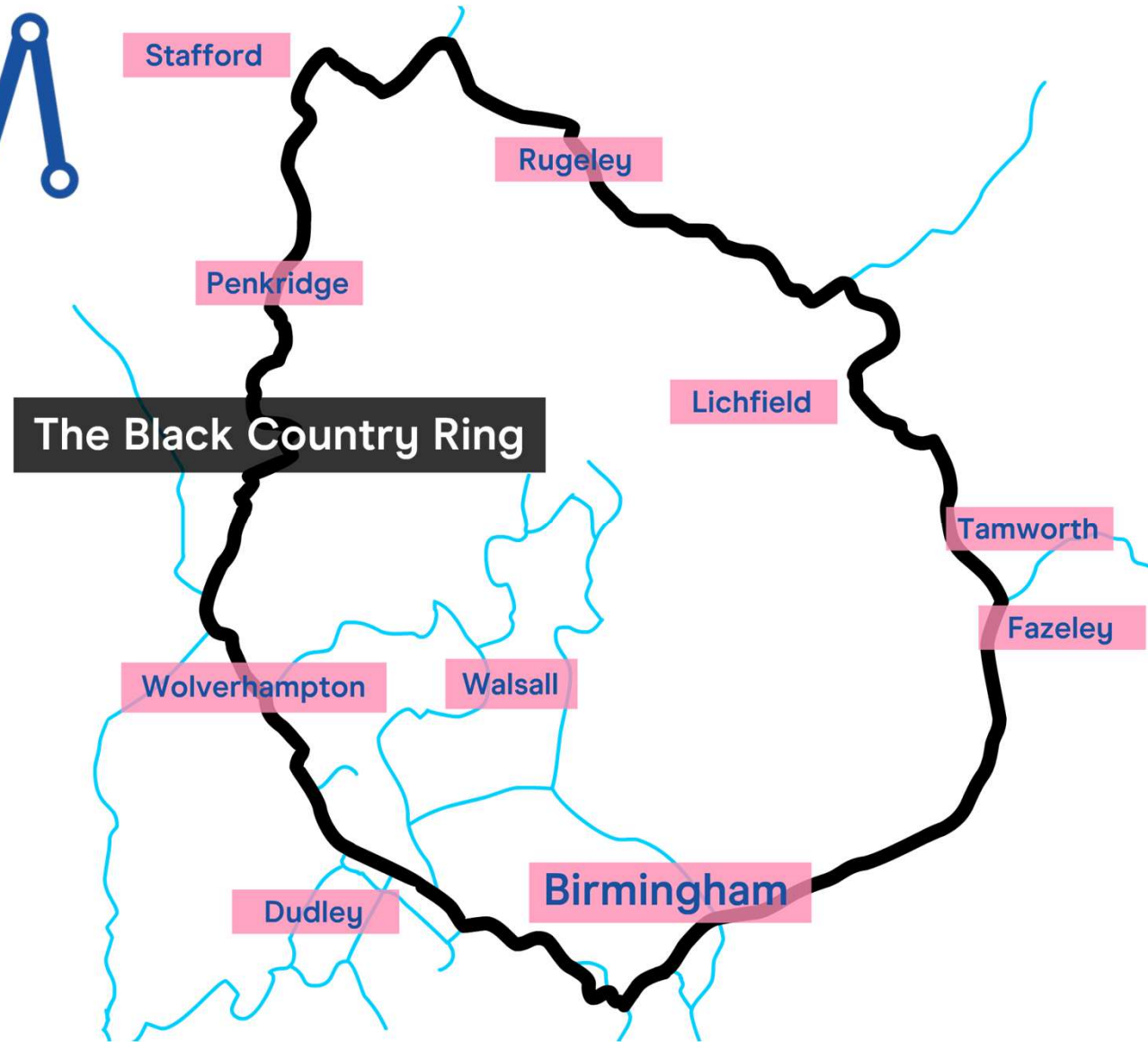


About the route

The Black Country Ring is made up of 5 different canals:

- Birmingham & Fazeley Canal
- Birmingham Canal Main Line
- Coventry Canal
- Staffordshire & Worcestershire Canal
- Trent & Mersey Canal

It's **68 miles (or 109 km)** long and has **71 locks**.



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1

Work out the basic time (without locks).

Distance	÷	Speed	=	Time
68 miles	÷	3 mph	=	22.7 hrs

2

Work out the extra time for the locks.

Quantity	×	Time	=	Extra time
71 locks	×	20 mins	=	1420 mins

3

Convert minutes to hours.

1420 mins	÷	60 mins	=	23.7 hrs
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4

Add the basic time and the extra lock time together.

Basic time	+	Extra time	=	Total Estimate
22.7 hours	+	23.7 hours	=	46.4 hours

How long would it take to travel around the Black Country Ring?

68 miles and 71 locks, travelling at 3 mph.





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Other things to think about...

- Urban areas are often busier than rural areas.



Do you know what the words
urban and **rural** mean?

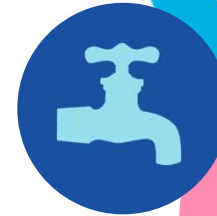
- You may have to add about **25% more time** for travelling through an urban area.



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Other things to think about...

- The boat will need to be topped up with water for washing, cooking and drinking.
- This needs to be done at least once or twice a week depending on how many people are on board.
- Narrowboats also need to be emptied. Dirty water tanks and toilets can fill up fast.
- This will need to be done about once a week, twice if there are a lot of people on board.



It takes about 20 minutes to fill up the boat with water.



It takes about 30 minutes to pump-out a boat.



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Your Task

Can you plan an itinerary and budget for an imaginary journey along the **Black Country ring**?

Use the [online mapping tool](#) to help you to plan your trip.

How many hours will you travel for?

How many locks will you pass through?

Will you stop off for a visit to a museum or attraction?