Forth Bridges Family Quest Level 2

Name:

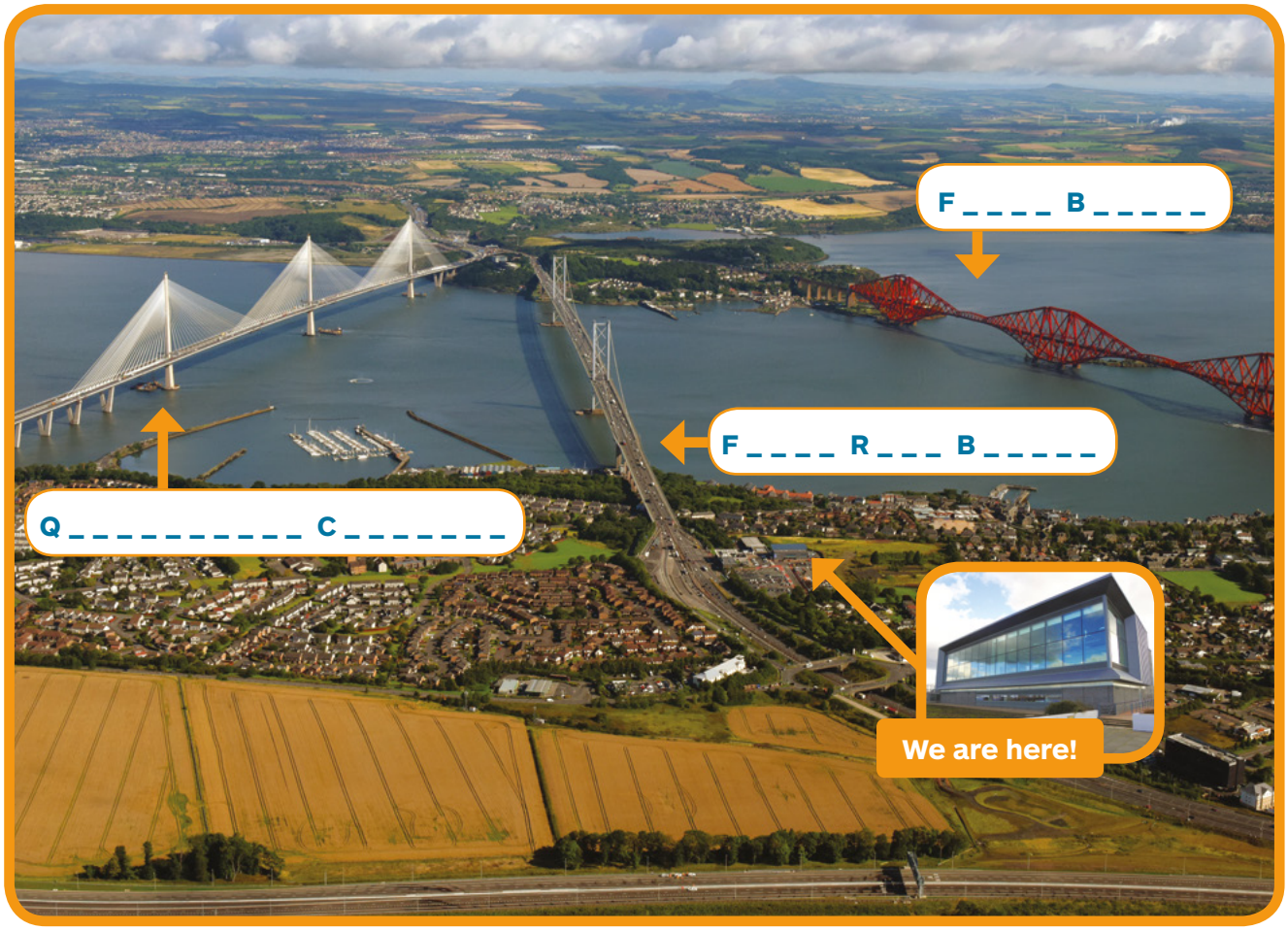
Date:

Welcome to your Forth Bridges Family Quest!

Complete as many challenges as you can using the information in the CEC exhibition area, the bridges viewing platform and the booklets found in the centre. Good Luck!

Look at the three bridges crossing the Firth of Forth. Don't you think they look huge!

Can you name each bridge?



Please turn over

Can you name all of the water and land animals pictured below and identify which can be found around the Forth?

Water animals


1


2


3


4


5


6


7


8


9

Land animals


10


11


12


13


14


15


16


17


18

Water animals What animal is this?	Can this animal be found living near the Queensferry Crossing?
1. s_ _ _ _ _	
2. or_ _ w _ _ _ _	
3. _ _ _ _	
4. herring _ _ _ _	
5. _ _ _ _ _	
6. cl _ _ _ _ _ _ _	
7. _ _ _ _ _ _	
8. grey _ _ _ _	
9. po_ p _ _ s _	

Land animals What animal is this?	Can this animal be found living near the Queensferry Crossing?
10. _ _ _	
11. _ _ _ g _ _	
12. b_ _ _ o _ _	
13. p _ _ _ _ _	
14. long eared _ _ _	
15. r _ _ _ _ _	
16. sk _ _ k	
17. _ _ _ _	
18. o _ _ _ _	

Health and safety word search

Find the words in the table. You can move up, down, back, forward or diagonally joining letters to make each word relating to health and safety. **Circle** the word below that is missing from the grid.

a	s	t	a	h	d	r	a	m
k	g	s	r	e	c	t	h	k
s	l	u	s	t	o	r	i	s
t	r	o	v	i	e	p	o	e
u	o	o	f	e	s	l	i	f
s	b	h	e	n	d	e	o	t
a	f	i	v	d	e	r	s	l
t	e	s	i	r	n	e	s	e
y	t	v	h	a	e	s	t	e

boots	✔
ear defenders	
gloves	
hard hat	
jacket	

life	
protect	
risk	
safety	
vest	

harness	
steel toe	
hi vis	
trousers	

The Queensferry Crossing

1. How many towers does the Queensferry Crossing have?

2. What structural design is the Queensferry Crossing? (circle your answer)

   Cable-stayed Suspension Cantilever.

3. How long did it take to build the Queensferry Crossing? (circle your answer)

   3 years 6 years 9 years.

4. Where will you find a caisson?

5. What shape is a caisson?

6. Guess how many steps there are inside one of the Queensferry Crossing towers.

7. What else is inside the towers?

8. How tall is the central tower? (circle your answer)

   50 metres 150 metres 211 metres.

9. What cannot travel on the Queensferry Crossing?

   ped _ _ _ _ _ _ _ _ cy _ _ _ _ _ _ sco _ _ _ _ _ trac _ _ _ _

10. The Queensferry Crossing's cables are made of strands of steel wire. Can you draw a strand and show how many wires make up one strand? (hint: you can investigate the model in the Project Exhibition area)

How many strands will you find in Queensferry Crossing's thickest cables?

strands

The Forth Road Bridge

1. How many towers can you count on the Forth Road Bridge?

2. How high are the Forth Road Bridge towers? (circle your answer)

   50 metres 150 metres 211 metres.

3. Draw one of the Forth Road Bridge towers and four ways to travel across the bridge (e.g. walk)

The large suspension cables are anchored into the ground at each side of the Forth.

4. What structural design is the Forth Road Bridge? (circle your answer)

   Cable-stayed Suspension Cantilever.

5. What year did the Forth Road Bridge open?

6. How old is it now?

7. How long did it take to build the Forth Road Bridge? (circle your answer)

   2 years 6 years 9 years.

8. What materials is the Forth Road Bridge made from?

c _ _ _ _ _ _ _ and s _ _ _ _

The Forth Bridge

1. What colour is the Forth Bridge painted?
2. What year did it open?
3. How old is it now?
4. What structural design is the Forth Bridge? (circle your answer)

   Cable-stayed Suspension Cantilever.

5. Sketch the Forth Bridge

6. Draw and name at least three shapes you can see in its structure.

7. How many cantilevers does the Forth Bridge have?
8. How long did it take to build the Forth Bridge? (circle your answer)

   3 years 6 years 9 years.

Complete the Queensferry Crossing information using the words listed below.

The _____ Crossing opened on 4th _____ 2017. This cable-stayed _____ connects E_____ on the s_____ shore with F_____ on the north shore of the Firth of F_____ .

The bridge spans 2.63 kilometres, making it the longest 3-t_____ cable-stayed bridge in the world.

The Queensferry Crossing is made of c_____ and s_____ and has the tallest towers in _____ . The towers are 50 metres taller than its neighbour, the Forth Road Bridge. The tallest tower is Central Tower which is 211 metres in height above water. That is equal to stacking 48 double-decker buses on top of each other!

The bridge deck (the road) is made of 122 sections, each weighing up to 750 tonnes (equivalent to 180 male elephants). To make the bridge deck, you would need all the steel used in 200 Boeing 747 airplanes!

The Queensferry Crossing has 23,000 miles of cable to support the bridge _____ . If you laid this on the ground, it would stretch almost the whole way around the equator! The cabling is split into 288 cables, connecting the bridge deck to the towers to support the structure. The longest cables are 400 metres long.

Queensferry **Edinburgh** **concrete** **Forth** **tower** **deck**

September **bridge** **the UK** **steel** **south** **Fife**

The three Forth bridges

1. **Which bridge carries non-motorway road traffic?**
2. **Which bridge has the tallest tower?**
3. **Which bridge is the oldest?**
4. **Which bridge is the longest in length?**
5. **Sketch all three Forth bridges together (take a maximum of 3 minutes)**

Engineers

Unscramble the letters to work out what engineers do.

n l p a	
d i b u l	
g e d i n s	
n o u t s c r t c	
v i e n n t	
i x f	

Engineering is problem solving!

Well done!