

# History



## Find out about Danescombe Mine's past...

Hello! Welcome to Danescombe Mine. My name is Tom and I'm 10. I was born in 1880, around 60 years after the mine was first opened.

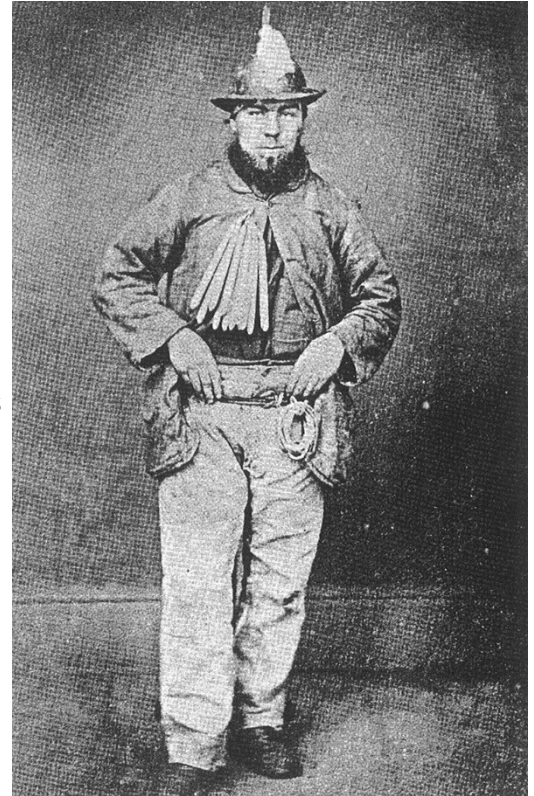
My dad, Captain Philip, is the mine manager. When he took on the job, we moved into the cottage just up the lane from Danescombe Mine. I have a brother, William who is 15, he works at the mine with dad and someday it's expected that I will too. I also have a little sister; she's only two and won't end up in the mine because she's a girl and people think it's bad luck to have girls in a mine! I think dad is hoping that she'll marry a wealthy gentleman because he says there's no future in copper mining as because people can get it cheaper in foreign countries!



The Mine Manager's Cottage, just down the lane from the mine itself. The building next to it was the miners changing room.

### Fact:

**Arsenic** is a chemical element. It was used a lot in the 19<sup>th</sup> century in lead bullets and fireworks, as well as for colouring fabrics. Arsenic is poisonous to livestock, plants and humans, but if you were exposed to it enough, your body got used to it and it actually improved the skin of many miners!



A Cornish miner (c1900). Can you see the candle stuck to his helmet with wax and all the other candles hanging around his neck?

I'm really not looking forward to the day I have to go down the mine – I'm afraid of the dark and my brother says it's pitch black in the tunnels! What's your biggest fear?

It's also really dangerous down there; as well as mining for copper, the men also mine something called **arsenic** (say *ah-sen-ik*) which can kill you if you breathe in too much. Dad says I'm not to worry though, I can always stick cotton wool up my nose, rub clay over my skin and breathe through a handkerchief like the other miners - I'm not sure that will help!



## Fact:

A **Cornish beam engine** is a type of steam engine developed mainly for pumping water from a mine. It is a form of beam engine that uses steam at high pressure to power the machines. **(have a look in the Design section!)**

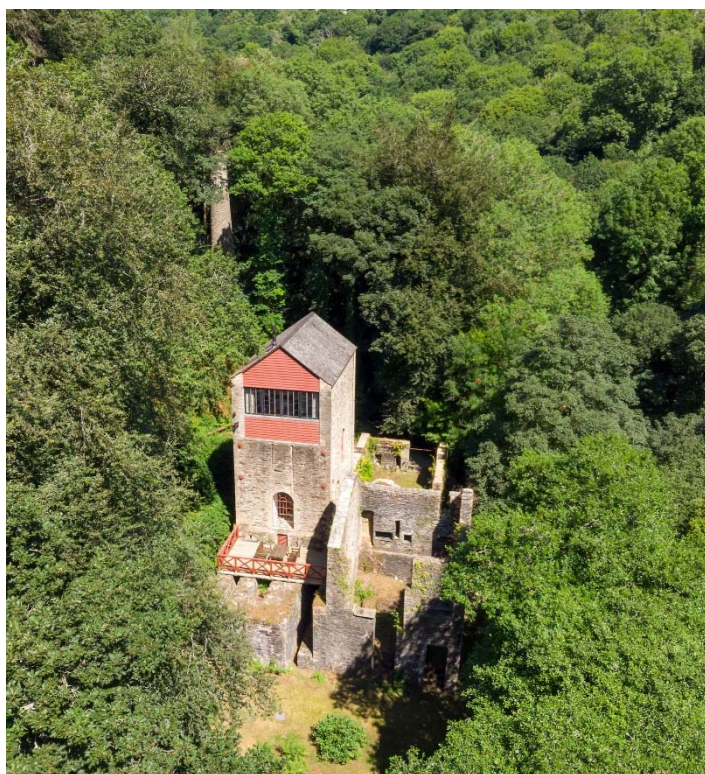
The engines were also used for powering man engines to assist the underground miners' journeys to and from their working levels, for winching materials into and out of the mine, and for powering other on-site machinery, like grinders.

Dad says that mining in this part of the country is difficult because of the amount of water that fills the mineshafts. At Danescombe, a pump called a **Cornish Beam Engine** was put in to force the water out of the mine. The pump is in the Engine House – that's the part of the mine you're now staying in, although the **machinery** (say *mash-ee-nary*) is obviously not there anymore as there would be no room for your beds!

Before these steam powered beam engines were invented, the miners had to use buckets on pulleys to get the water out – what hard work!

When I'm not spending time at the mine with dad, mum and I take my little sister, Elizabeth up to the Cotehele estate to buy flour to make bread. There's a waterwheel which powers the flour mill. Elizabeth is fascinated with the big wheel and I love counting the paddles as they whoosh round!

Even though I don't want to go down, I really do love living in this valley. I hope you enjoy staying here too – I suspect it'll be a whole lot quieter during your stay now that there's no noisy mining machinery!



This picture shows Danescombe Mine after it was restored by The Landmark Trust. Can you see the chimney peeking out from behind the trees? That's the furnace house, where the water was heated to make steam to drive the beam engine.

Have you been to look at the disused mine shaft? It's dangerous down there so a gate has been put in for your safety. Can you see the old mine cart tracks?

Do you think bats live in the tunnels now?

# Unruly Rulers



## Who were the Georgians?

The **Georgians** were nobles from Germany. George I was King James I's great grandson. So when Queen Anne died with no heirs George became king. They are called **Georgians** because they are all called George (apart from William – but he wasn't meant to be king anyway!) Their surname was **Hanover** so this time is also called the **Hanoverian** (say 'han-o-ver-ee-an') period.



1714 **King George I**

A king from Germany who couldn't speak much English. He kept his wife in prison for 32 years - how mean!



**King George II** 1727

A boring king who only liked to fight battles. He died on the toilet of constipation, pooh!

1760 **King George III**

A popular king who went mad. He started talking to an oak tree in Windsor thinking it was Frederick the Great! Poor Georgie, he had to stop ruling as he was so mad.



George III's son George IV had to step in and rule as Prince Regent. This was called the **Regency Period**.



**King George IV** 1820

A bad king who ruined all his dad's hard work. He loved to drink, eat and party!

1830 **King William IV**

A simple king who wanted to be a sailor but was too stupid to command a ship. He would sometimes offer people a lift in his carriage!





## **Meet King George IV** **– who ruled when Danescombe Mine** **was built.**



### **Hi Georgie!**

#### **So when did you become king?**

I became King on 29 January 1820 when I was 57.

#### **What is your favourite thing to do?**

I love to gamble, especially cards. Sometimes it does get me into trouble, especially when I lose.

#### **What is the naughtiest thing you've ever done?**

I only married my wife Caroline so that I could pay off my debts. I didn't even let her come to my coronation!

#### **What are you most famous for?**

I ruled Britain as Prince Regent while my dad was too mad to rule. I named Regent Street in London after myself.

# Design



## What does Danescombe Mine look like?

Can you walk all the way around it?

Can you use any of these words to describe the building?  
Draw a circle around the ones that do.

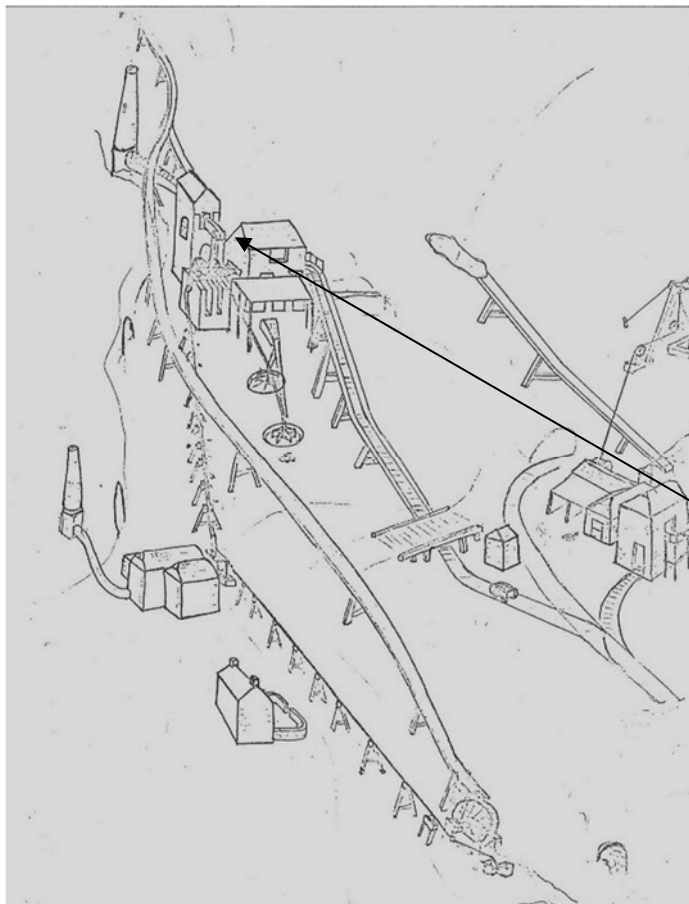
What do you like most about Danescombe Mine?

.....

- |             |         |
|-------------|---------|
| Castle      | Tall    |
| Pretty      | Folly   |
| Stone       | Brick   |
| Symmetrical | Home    |
| Square      | Elegant |
| Friendly    | Tower   |

Danescombe mine is an 'Industrial building' and it was never intended to be lived in. It was built in 1822 – that's almost 200 years ago – to house the pump machinery for a copper and arsenic mine.

The walls of the Engine House are made from a local stone called 'killas' which was **quarried** (say *kwar-eed*) from a site just up the hill from



### Fact:

**Killas stone** is a **metamorphic** rock although it started out as **sedimentary** and it contains many fossils as well as large amounts of tin and copper ore.

It is because of this rock that the mines in this party of the country were so wet.

\*

**Metamorphic** rocks are formed underneath the earth's surface under intense heat and pressure.

**Sedimentary** rocks made up of particles of sand, shells and very small pebbles

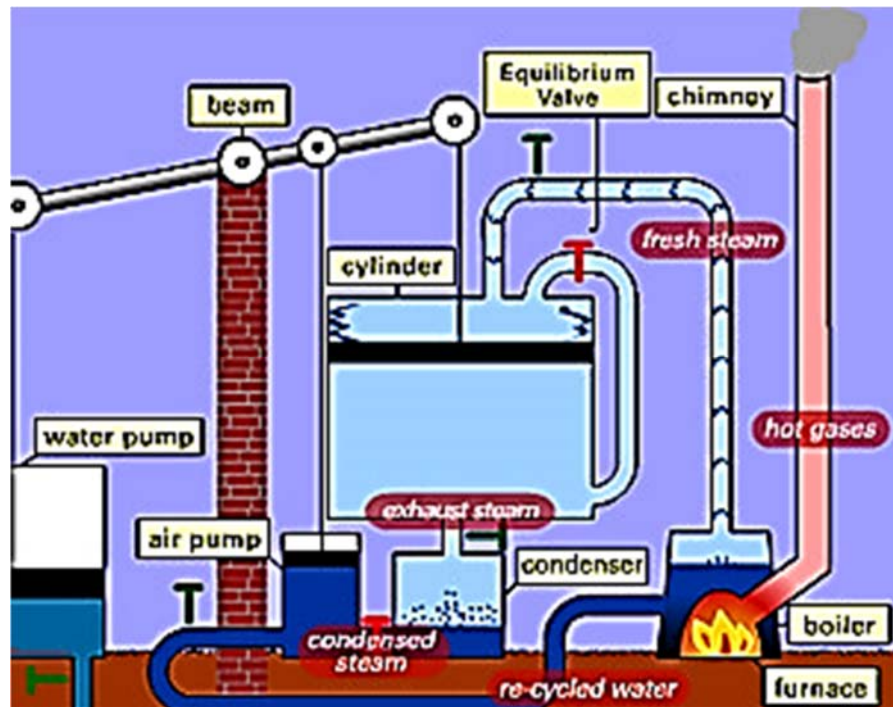
This drawing shows what the mine would have looked like when it was working. Can you see the beam coming out of the space where the double bedroom window is now?

Can you see the chimneys shown in the drawing? These survive today, why not see if you can find them during your stay, but remember to let an adult know where you are going!



## How do beam engines work?

Look at the diagram below and follow the numbers to see how a beam engine works to pump water out of the mine.



1. Fuel is burnt in the furnace, this heats up the water in the tank and creates steam, which is under a lot of pressure.
2. The steam pressure then powers the cylinder which lifts the rods in the air pump move up and down – just like the pistons in a steam train.
3. The rods then push the beam arm up and down.
4. The beam arm is connected a weight which goes in to the water pump – when the beam pushes the weight down into the water pump, it displaces the water and pushes it up and out of the mine.

Clever eh?

### Facts:

The first beam engine was developed by Thomas Newcomen in 1705. This version needed a lot of fuel to power it and so an engineer called James Watt improved the design.

As copper and tin mining took off in Devon and Cornwall, the engine was improved again to make it more efficient (that means that it can do more work for less amounts of money!) This improved engine was named the Cornish beam engine and became world famous – Cornish beam engines are the biggest beam engines ever built!



## What is Danescombe Mine built from?

### Fact:

Some buildings were built from stone that was dug out of the ground when farmers ploughed the fields, other buildings were made from stone that was quarried and cut into neat shapes and sizes. There are still many stone quarries around the country today, where people get stone out of the ground.

Stone buildings were once cheaper to build than brick ones. Once we could transport bricks up and down the country on the canals and railways, brick buildings become cheaper and more popular – but stone still looked smart!

Stone is the solid foundation of the earth. It exists as huge mountains, rocks, stones or small pebbles washed smooth by water. There are lots of different types of stone, with different colours and textures. Some are better to build with than others.



In medieval and Tudor times, stone was taken out of the ground by hand. By the time Danescombe Mine was built in the 1800s, stone was blasted out of the ground with explosives - like it is today. The one in the picture shows what quarries look like now.



People who work with stone are called stonemasons. They build walls, carve the stone into shapes or add patterns to its surface. They use a mallet and special tools called chisels to shape the stone. The picture on the left shows a stonemason hard at work.

Mallet

Chisels







# Quest



## Discover more about Danescombe Mine

Danescombe Mine has been here for almost 200 years. Much has changed inside and out since then. Follow this Quest to discover more about it.

### Can you see the round discs on the outside walls?

These are called **anchor** (say *ank-or*) **plate** and they are attached to rods called a **tie**. They help strengthen the building. The rod connects two opposite walls and helps to stop the walls from spreading apart. Can you find the matching ones on the other side of the building too?

You often see anchor plates on old buildings in the shape of an X or S. Sometimes they are the initials of the owner.



How many steps can you count from the parking space, all the way up to the very top bedroom? You might want to wear shoes on the metal staircase so that your feet don't end up with a waffle print!



Have you seen the big 'scars' on the walls in the bedrooms? This is where the machinery would have been fixed to the walls.



Take a look at the big window in the double bedroom. The beam arm of the engine used to come out of this space.

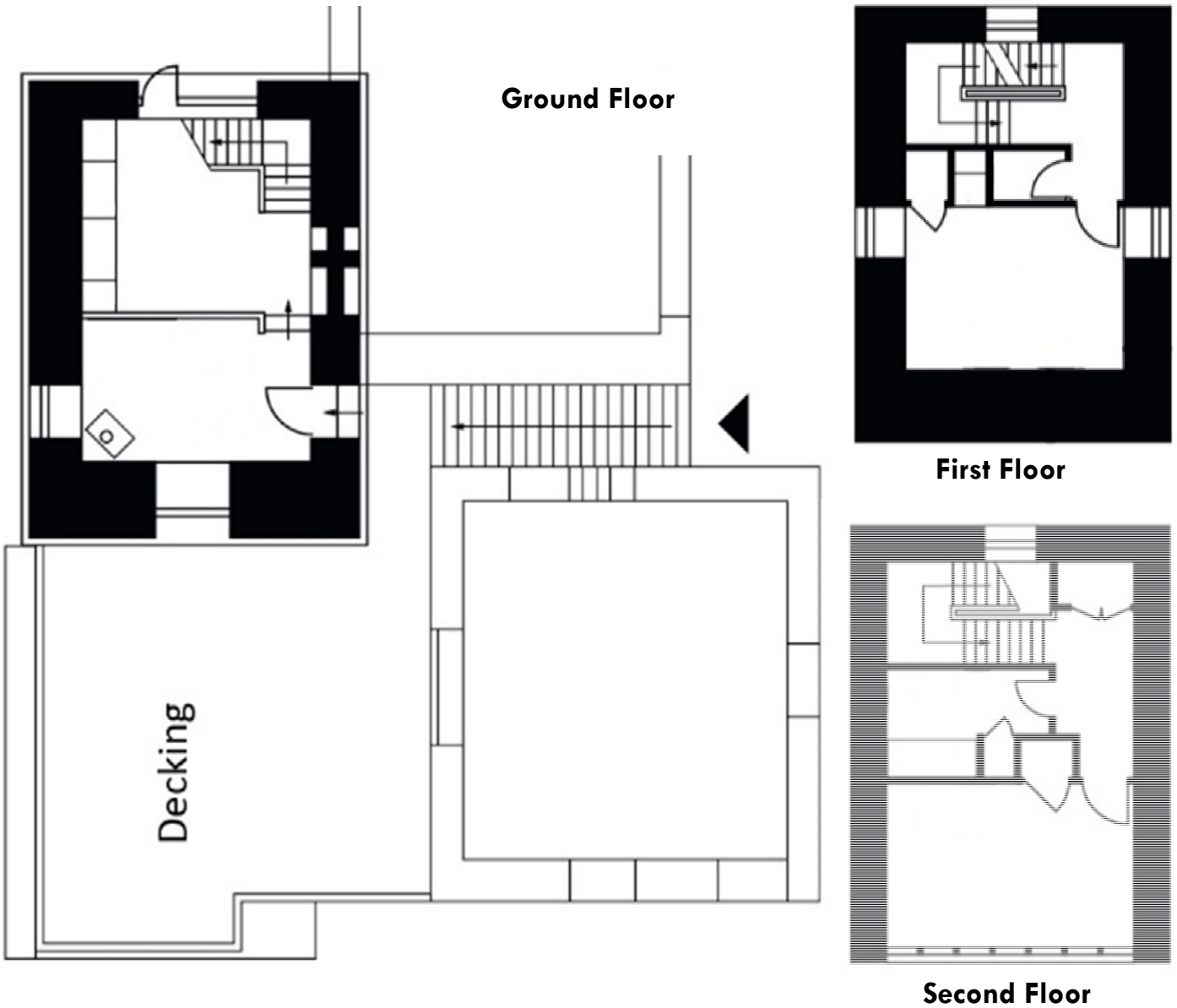
Can you see that the windows are made of small pieces of glass that overlap? This was common in industrial buildings, small panes being easier to replace in case they broke..





# Living in Danescombe Mine

The floorplan of a building is a map of the rooms. Danescombe Mine has three floors. The plan below shows you the shape of them. Take a walk around and write on the plan what each room is used for.



We use these symbols to show where beds, tables and bathrooms are. Draw the symbols on to the floorplans to show where the furniture is.



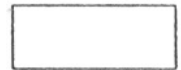
Bathroom



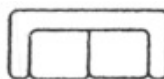
Cooker



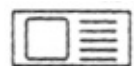
Bed



Rectangular (or a round) table



Sofa



Kitchen sink



Can you find an example of each of these things inside Danescombe Mine. Describe, or draw the object when you find it.

Your favourite piece of furniture

Your favourite window

Draw the pattern of a rug on the floor

In the box below, draw the view from the sitting room window. Can you see any birds and animals outside? Include them too.

A large, empty rectangular box with a black border, intended for drawing a view from a window, including any birds and animals seen outside.





## Can you answer these questions correctly?

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1. What is Danescombe Mine made of?

Straw

Wood

Stone

Brick

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2. In which county is Danescombe Mine?

Cornwall

Surrey

Suffolk

Yorkshire

---

3. Which two minerals were mined at Danescombe?

Silver

Copper

Slate

Arsenic

---

4. When was Danescombe Mine built?

1645

1737

1822

1905

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5. Who was on the throne when Danescombe was built?

(Psst... have a look at Unruly Rulers!)

George IV

Victoria

Edward I

Edward VII

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6. Who developed the first beam engine?

Thomas Newcomen

Tim Oldgoing

James Watt

Paul Golding

---

7. Which of the following is arsenic not used in?

Fabric Dye

Food seasoning

Fireworks

Lead bullets

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8. Which of the following would you not find in the woods surrounding Danescombe?

Mouse

Fox

Tiger

Squirrel

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To find the answers skip two pages...



## Danescombe Mine Word Search

Now have a go at the word search. The words are all things related to Danescombe Mine. The words to find are at the bottom of the page.

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

ARSENIC

SHAFT

WINDOWS

COPPER

MINECART

MACHINERY

COTEHELE

BRICKS

VALLEY

MINING

KILLAS

ANCHOR PLATE

BEAM ARM

STAIRS

INDUSTRIAL

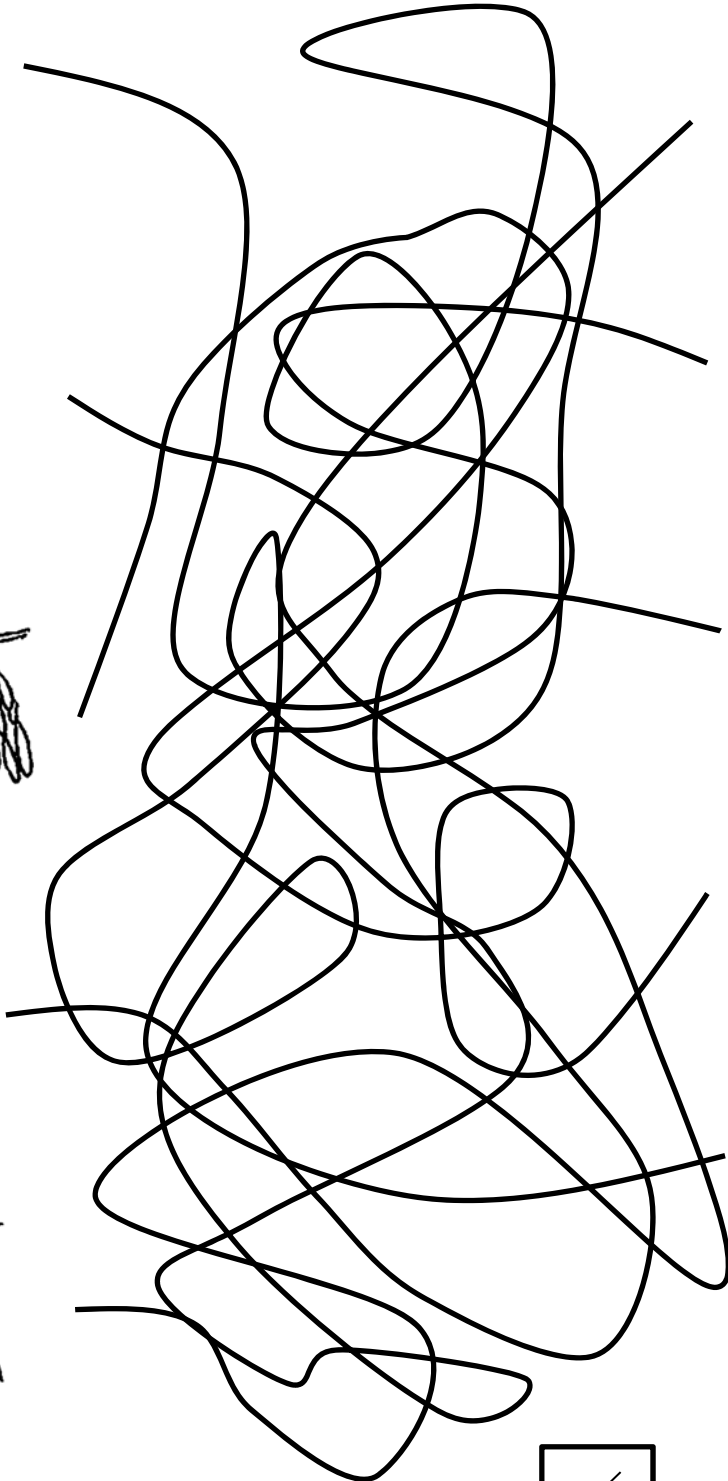
How many of these words did you find? Put your score in the box.

/
15



## Which leaf belongs to which tree?

Match the leaf to the correct tree.



Horse Chestnut

Willow

Pine

Ash

Oak

Did you match them correctly? Put your score in the box.

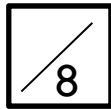


## Answer sheet:

### Quiz answers:

1. Stone
2. Cornwall
3. Copper and Arsenic
4. 1822
5. George IV
6. Thomas Newcomen
7. Food seasoning
8. Tiger

How many did you get right?



**Have a go at writing an acrostic poem about life working in the mine. Each line begins with a letter that spells out Danescombe.**

D \_\_\_\_\_

A \_\_\_\_\_

N \_\_\_\_\_

E \_\_\_\_\_

S \_\_\_\_\_

C \_\_\_\_\_

O \_\_\_\_\_

M \_\_\_\_\_

B \_\_\_\_\_

E \_\_\_\_\_







## Bake some scones

If you haven't ever had a scone you are missing out! They are plain cakes that you cut in half and spread clotted cream and jam on each side. This is called a cream tea – it's making me hungry just thinking about it!

Here's a simple recipe for you to try. You might need the help of an adult.

75g of butter

1 large egg

225g of self-raising flour

2 tbsp milk

Pinch of salt

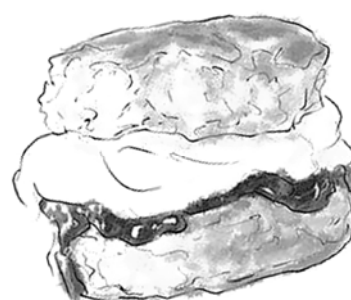
Clotted cream

40g caster sugar

Jam

Pre-heat the oven: fan 220 °C : 425 °F : Gas 7

- Grease a baking tray.
- Sift flour and salt into bowl. Rub butter into the mixture until it looks like breadcrumbs. Add the sugar.
- Beat the egg and buttermilk together in a separate bowl.
- Add the egg and milk mixture to the flour mixture. Mix it all together with a spoon and then with your hands. This is called dough (say 'doh').
- Put some flour on the work top and then put the ball of dough onto it.
- Roll the dough into a circle (about 2.5cm thick). Then cut out the scones (if you don't have a cutter use a glass, making sure it too gets flour on the rim).
- Put them onto the baking tray and brush them with milk. Bake on the top shelf for 10-12 minutes.
- Let them cool and then serve with lots of clotted cream and jam! Yum!





## Make a woodland origami fox

Urban locations attract foxes as much as the countryside. Have a go at making your own origami fox with the paper on the next sheet.

You will need:

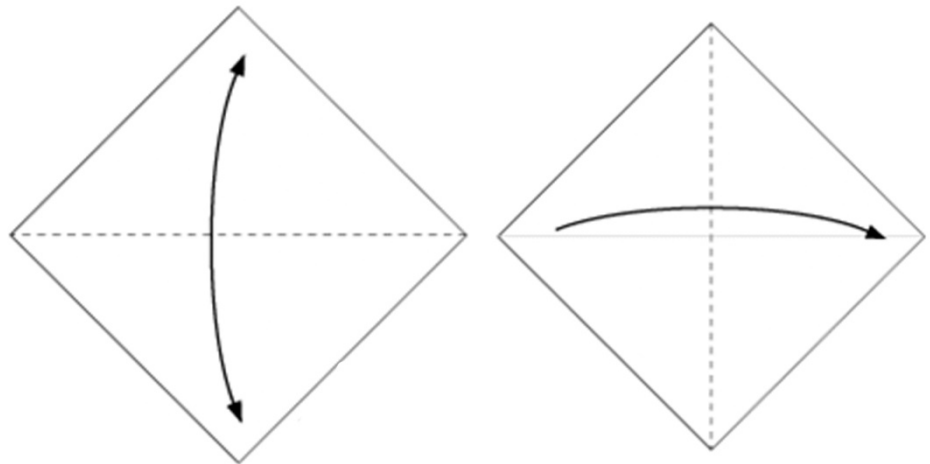
- Paper
- Scissors
- Colouring pencils

**Fact: Origami** (say orr-ee-garmi) is the Japanese art of paper folding.



### Step One:

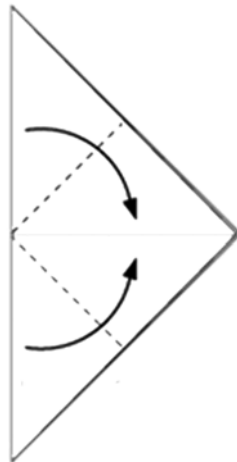
Cut the A4 piece of paper into a square. Follow the dotted lines on the sheet on the next page.



Then fold in half one way to make a crease, then open it up and fold it in half the other way.

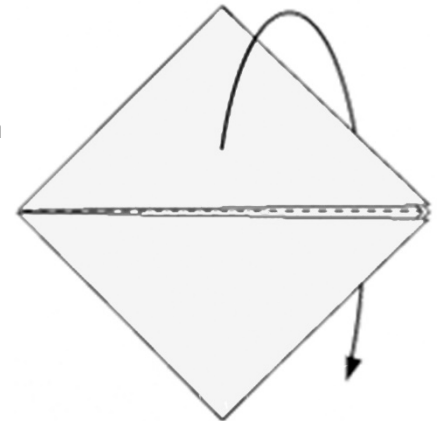
### Step two:

Fold both sides in to make a diamond shape.



### Step three:

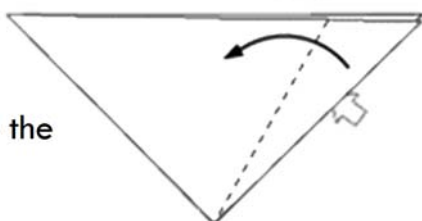
Once you have the diamond shape, fold the paper in on itself in half again so that all the flaps are on the outside edge.



### Step four:

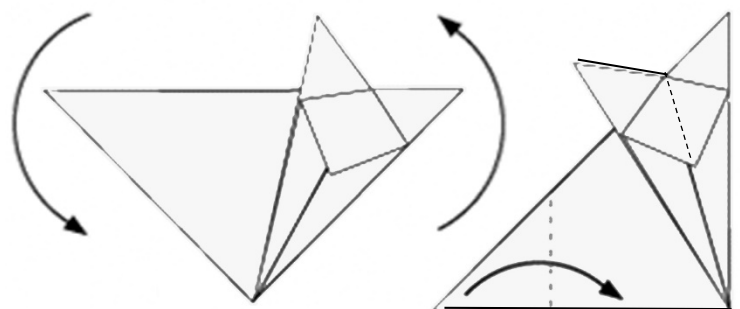
Fold the first flap back a little bit like in the diagram to make a fox ear.

Then with the middle flap push it inwards to make a Diamond shape that will be the fox's face.



### Step five:

Turn the paper round so that it is at a right angle. Then fold the other corner inwards to create the fox's tail. Then colour and draw in the fox's face!





**Why not have a go at drawing Danescombe Mine how you think it would have looked when it was a working mine?**

You can use the plan in the 'Design' section to help you.

A large, empty rectangular box with a black border, intended for the student to draw their own representation of Danescombe Mine as a working mine.

**CUT OUT TO MAKE YOUR ORIGAMI FOX**

