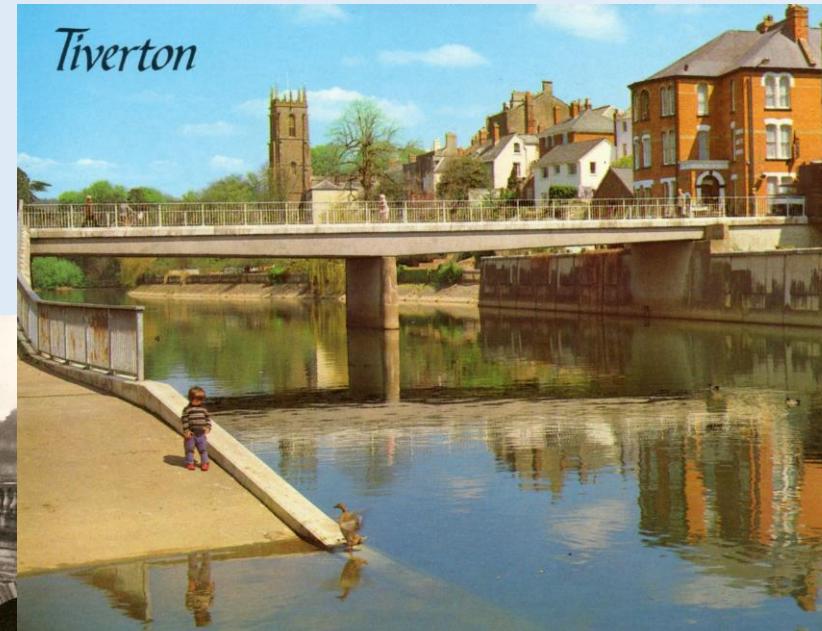


A Frozen River – Spot the Difference

Take a look at these pictures of Tiverton about 100 years ago. During this time, the river used to freeze and people could skate on it. Now look at the river and the bridge we have today.

What do you notice about the bridge? How is it different to the bridge we have in Tiverton today?



A Frozen River – Why So Cold?

Here are some facts that might help us to understand why the River Exe used to freeze. You'll need to use your knowledge of states of matter (how water becomes frozen when it has less energy).

Facts

- During this time the climate was colder. Climate change means that we get warmer winters and more storms. Steam trains are just one of the many reasons that we have climate change. Unfortunately burning coal produced lots of carbon dioxide and other bad gases that made the planet warmer.
- Climate change has changed the temperature of winters by only a few degrees and we still get very cold weather. Yet the river never freezes!
- The bridge over the River Exe has changed from having lots of small arches (that made the flow of the water slower) to a modern concrete bridge that allows the water to flow more freely. This change was made because of another weather phenomenon – flooding.



What happens when water can flow more quickly?

What happens when you slow it down?

A Frozen River

Now you have all the facts!

Can you think of why the River used to freeze 100 years ago but doesn't today? The bridge is an important part of this story. Write your ideas in the space below:



SKETCH THE
Frozen River

A Frozen River – All the Answers

We know that climate change is making our weather warmer. We do still have cold spells though. The river is far less likely to freeze now because the water moves very quickly through the town. The bridge was taken down and rebuilt because of terrible floods in 1960 and then again in 1965.

The arches looked very pretty but people were tired of the floods! A consequence of the new bridge has been that the river doesn't freeze (or at least not every year, or enough for skating). Water that moves quickly has more energy and is warmer and doesn't freeze.



Can you think why the sea very rarely freezes. (Clue: it's something to do with the salt).

A Frozen River – Build a Bridge

You now know that a more open bridge with fewer supports allows water to travel more quickly and therefore reduces flooding and freezing.

Use the paper straws and tape to build your own bridge. It must be able to support itself. How wide can you make it? How many supports do you need?

