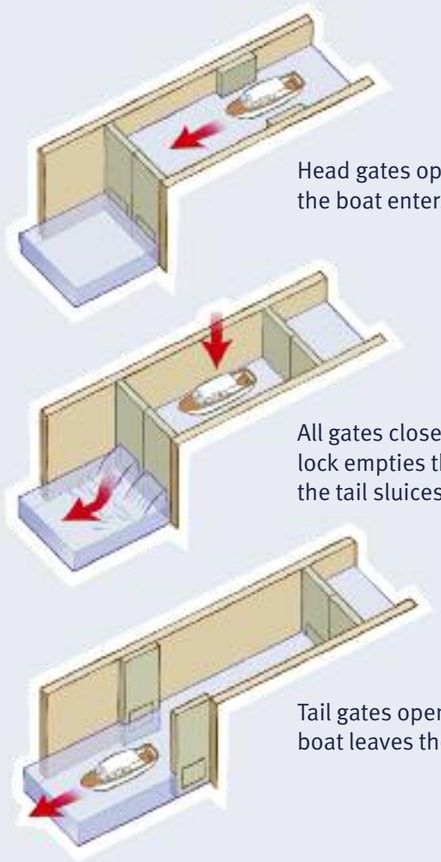
How a boat moves downstream through a lock (reverse for upstream)



Head gates open and the boat enters the lock

All gates close and the lock empties through the tail sluices

Tail gates open and the boat leaves the lock

Did you know?

There are **45 locks** on the non-tidal River Thames. The biggest at Teddington holds almost **8 million litres** of water – the same as **24 million** cans of cola. The smallest at St John's holds almost 330 thousand litres of water – the same as **1 million** cans of cola.

Information for parents

- Keep a close eye on your child when near the waters edge.
- Ensure your child is wearing a life jacket when on a boat.
- Do not allow your child to swim in the river, especially near moving craft. Boats cannot stop suddenly; they need room to manoeuvre and propellers are very dangerous.
- Do not allow your child to jump into the water, particularly from bridges.
- For more information on boating and lock operation see the Boater's Handbook available free from most locks.

Information for teachers

Wild Over Waterways Lessons and learning materials for teachers, parent and group leaders are available for free from the Wild Over Waterways website **www.wow4water.net**. The government has accepted the WOW website as an approved content provider for schools.

RoSPA A water safety pack for 12-16 year olds called 'R U a Dummy', which includes a CD-Rom, aimed at teachers and youth workers, is available from RoSPA on **0121 248 2000** or visit **www.rospa.com**.

To find out more about boat clubs, our work and ideas on what to do when visiting the River Thames go to **www.visitthames.co.uk**.

There is no body or organisation with overall responsibility for safety on rivers or watercourses. However, the Environment Agency occasionally issues safety advice as part of its role to encourage safe and enjoyable use of our rivers.

Would you like to find out more about us, or about your environment?

Then call us on
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email
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www.environment-agency.gov.uk

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Environment Agency

Locks and weirs on the River Thames

How they work

be safe near water

What are locks and weirs?

For many hundreds of years, people have used rivers like the Thames to move around the country. Before proper roads, rivers were often the easiest way to get around.

The river hasn't always looked like it does today. Before locks and weirs were built it meandered along many channels and through marshlands. In summer it would have been too shallow to use. In winter or after heavy rains there were raging floods. The early dug out canoes or frail rafts were no match for these fast flowing streams and people were often thrown into the water.

The river flows very quickly. During higher flows the speed can be **5 miles** an hour. Even the strongest swimmer would find this difficult to swim in!

But it was even more dangerous travelling by land, where there were no roads and often the risk of attack. So people stuck to the water and started to try and tame it.

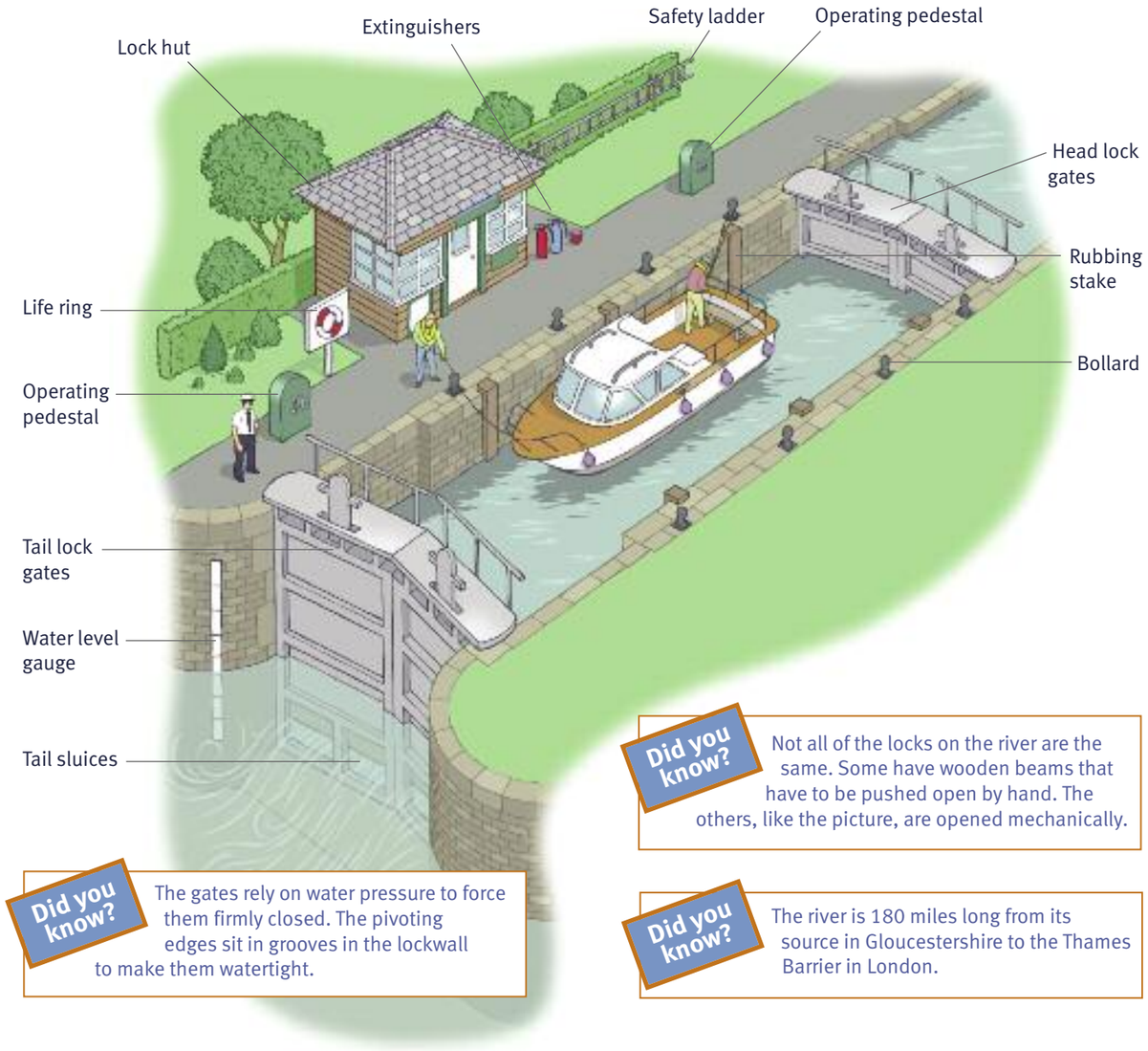
We do not know when the first simple weirs were built – or by whom. We know that millers built weirs to hold back water to power their mill wheels, and that fish traps were built out into the river. But that raised another problem – how to get boats past the dam-like obstructions?

A miller, for example, would not have been happy to open up sections of his weir to allow boats

The river is surprisingly cold. Sometimes as low as **6 degrees Celsius** – almost as cold as your fridge!

An electro-hydraulic lock on the River Thames

Always remember to stay **SAFE** near the water – **S**tay **A**way **F**rom the **E**dge!



Did you know? The gates rely on water pressure to force them firmly closed. The pivoting edges sit in grooves in the lockwall to make them watertight.

Did you know? Not all of the locks on the river are the same. Some have wooden beams that have to be pushed open by hand. The others, like the picture, are opened mechanically.

Did you know? The river is 180 miles long from its source in Gloucestershire to the Thames Barrier in London.

through. Water was lost and his mill wheel would have stopped turning! On the other hand, the man in the boat had the right to travel along rivers and streams unhindered. This right was set out by the Magna Carta as far back as 1215. No doubt there were many fierce local arguments!

The water is very deep in some places. The deepest areas can reach **30ft** – higher than a double decker bus.

People then had the idea of putting a section in the weirs that could be removed to allow boats through. These were known as 'flash locks'. They were difficult and dangerous to use although the last of these was not removed from the Thames, at Easton Hastings, until 1937.

The first proper locks appeared in the 1630s. Known originally as pound locks, a lock is a large chamber, built right across the stream, with large gates at either end that hold back the water. It works on the principle that water always finds its own level, so that boats could enter the lock at one level, the gates would shut behind them and then the lock would be filled or emptied of water and the boat would reach the next level on the river.

Today there are 45 locks along the non-tidal Thames, each one manned by a lock keeper. Alongside the locks, the weirs continue to control the water levels, calming raging torrents and, in the summer, raising the water levels to keep boats moving.

Some nasty objects are hidden at the bottom of the river. Bicycles, shopping trolleys or broken glass may have been thrown in by thoughtless people.