Y5 Geography — We are Water Supply Engineers

Key Knowledge

What I Should Already Know

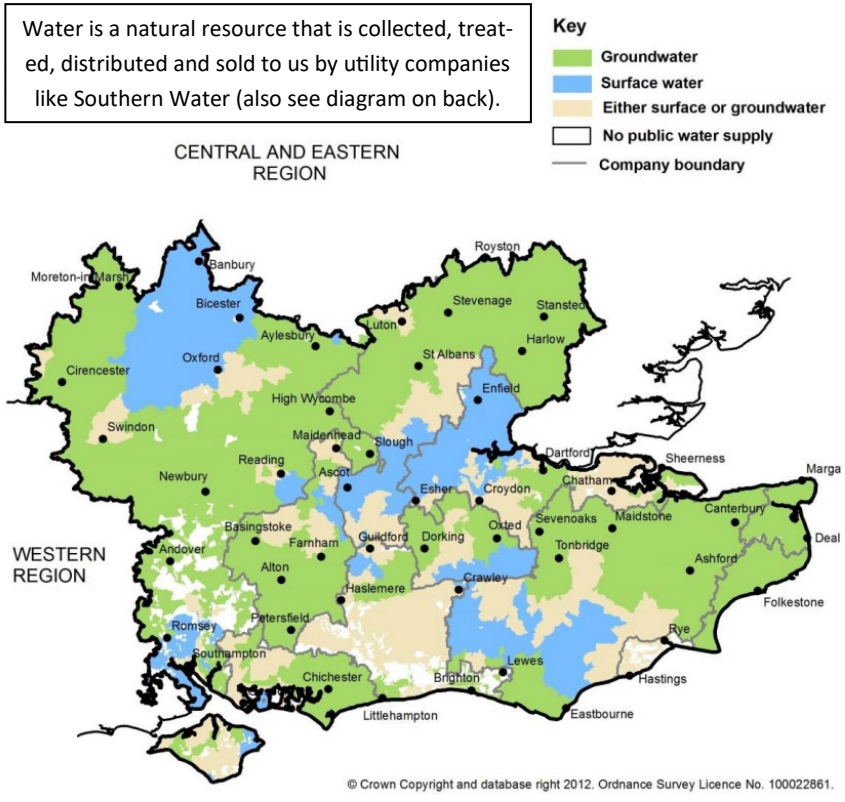
- The physical features of the water cycle (Year 4 Science)
- The difference between human and physical features (Year 3 and 4)
- What economy activity is (Year 4)
- What trade links are (Year 4)
- What natural resources are (Year 4)
- What climate change is (Year 4)

What do Water Supply Engineers do?

Water Supply Engineers design, manage and maintain water and sewage services. They need to understand the physical and human features of the water cycle, including how water is treated and distributed in the area they work in.

Water Distribution in the South East of England

Water is a natural resource that is collected, treated, distributed and sold to us by utility companies like Southern Water (also see diagram on back).



Groundwater

Most tap water in the South East (including in Worthing) comes from groundwater. Groundwater in this region comes from the chalk aquifer in the South Downs. The chalk acts like a giant sponge; it soaks up and stores water.

Surface water

The rest of the water in the South East comes from surface water, taken mostly from rivers and sometimes from reservoirs. Surface water usually needs treatment to make it safe to drink.

Key Vocabulary

Word	Definition
evaporation	The process of turning from liquid into vapour.
condensation	The process of turning from vapour into liquid.
aquifer	A body of rock which can contain groundwater.
groundwater	Water that is held underground.
surface water	Water that is located on top of the Earth's surface such as rivers.
reservoir	A large natural or man-made lake that is used as a source of water supply.
wastewater	Water that has been used in your home, school or work.
sewage	Water containing waste from a toilet.
utility company	A company that supplies utilities such as water, gas or electricity.
distribution	The action of sharing something out among a number of people.
water treatment	The process of improving the quality of water (so that it is safe to drink, for example).
borehole	A deep, narrow hole made in the ground (to gain access to groundwater, for example).
drought	A long period of abnormally low rainfall, leading to a shortage of water.

Sustainability

Climate Change

Climate change can cause the climate to get drier (meaning there is less rainfall). This can cause drought, which means there is a shortage of water. It is therefore important to save water where you can.

Saving Water

You can to help save water by:

- Taking showers instead of baths.
- Turning the tap off when you brush your teeth.
- Leaving a jug of water in the fridge to avoid running the tap until it turns cold.
- Washing vegetables in a bowl instead of under a tap.

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Key Knowledge

The Water Cycle

(Physical features are in red, human features are in blue.)

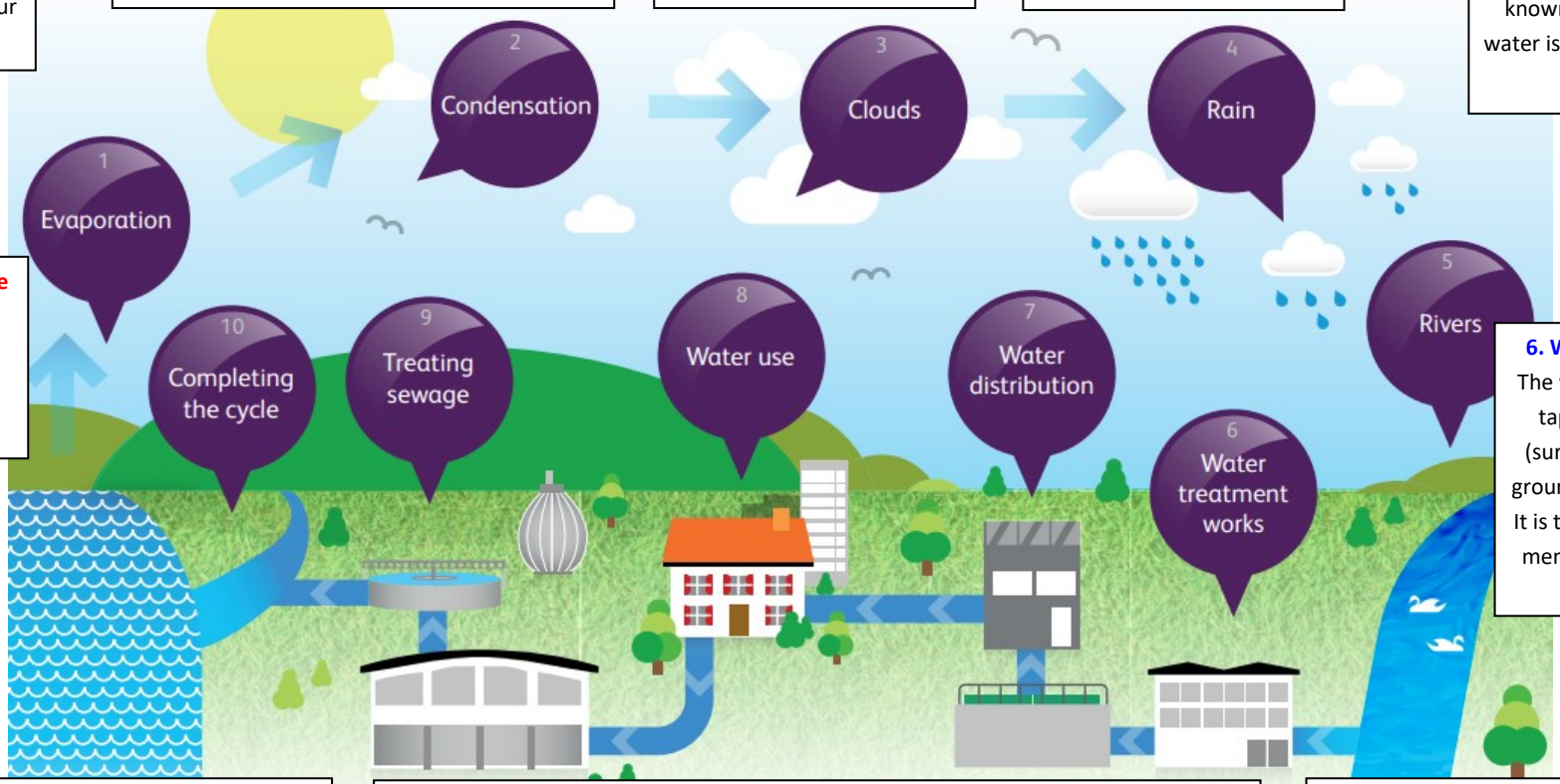
1. Evaporation
The sun heats up water on land, rivers, lakes and seas and turns it into water vapour. The water vapour rises into the air.

2. Condensation
As the water vapour rises into the air, it gradually cools and collects together to form tiny droplets of water through a process called condensation.

3. Clouds
Billions of these tiny water droplets crowd together, which creates clouds.

4. Precipitation
When the billions of tiny droplets become too heavy, they fall onto the ground as rain.

5. Rivers
When rain hits the ground, it flows into rivers, streams and underground stores, also known as 'aquifers'. River water isn't safe for humans to drink.



6. Water treatment works
The water that is sent to our taps is taken from rivers (surface water) and underground stores (groundwater). It is then put through a treatment process to turn it into drinking water.

7. Water distribution
A utility company then pumps the clean water into a network of pipes and storage reservoirs. This pumps the fresh and clean water to our taps.

8. Water use
Baths, showers, washing up, cleaning clothes and flushing the toilet all use large amounts of water. Once you have used the water, it turns into 'wastewater', which the utility company then collects, transports, treats and returns safely back to the environment.

9. Treating sewage
The sewage goes into a network of sewer pipes, which take it to a sewage treatment works where it is treated so that it can be put safely back into rivers.

10. Completing the cycle
The river continues its journey back to the sea where the cycle starts again.