

## Pipes and Cables (a)

There are many different pipes and cables that go into and out of our houses:

**Water and drainage**   **Electricity and gas**   **Television, telephone and internet wiring**

### What is a pipe?

A pipe is a hollow tube used to carry materials from one place to another.

### Pipe materials

A pipe coming into a house would normally be used to carry water and gas for us to use. Waste pipes take waste water out of the house.

Pipes can be made from lots of different materials, such as metal, concrete, plastic, lead or copper. Water pipes used to be made of lead and the actual word 'plumbing' comes from the Latin word for 'lead.' Today, water pipes are usually made of copper, not lead. Gas pipes are mostly made from steel.

### Gas

Gas comes into our homes through underground pipes that come directly from the gas supplier. The main gas pipe is connected to the gas meter and then smaller pipes take gas to all the appliances that need gas to work, such as a boiler, oven or fire.

Natural gas has no smell. A smell is added, so we know if there is a leak as it is very harmful to humans if too much of it is breathed in. Make sure you turn off all gas appliances carefully.

### Water

Water pipes carry cold water from the mains supply into houses and buildings. These pipes run to all the things that need water, such as taps, toilets, the washing machine and the bath/shower.

Most of these appliances need hot and cold water. The water pipe that comes into your home splits into two so that some water goes to the cold pipe and some goes to a boiler or heater. The hot water is stored in a hot water tank inside your home. It is a good idea to insulate this tank to help keep the heat in.

Waste water that is not needed, or has already been used, is drained away from your sink, bath or the toilet when you flush. It is then taken out of the house by another drainage or waste pipe that travels underground away from the house.

## Pipes and Cables (b)

### What is a cable?

A cable is one or more wires or optical fibres wrapped in a plastic cover. Cables are used to carry electricity into homes, as well as information - the phone and internet.

### Cable materials

Electrical wire is usually made from copper because it conducts electricity very well. Today, fibre optic wire made of glass is being used more to provide internet and telephone services, as it can carry much more information in a shorter space of time.

### Electricity

Electricity is carried to homes through electricity cables. These cables are spread across the country. They are held up and connected by pylons.

Every home has its own electricity cable and these cables go into homes from the roof or from underground, depending on the area you live in.

When the cable enters the home it first goes into a circuit breaker box, which holds lots of fuses. These stop the appliances in your home from getting too much electricity at one time and becoming dangerous. The cable then splits into smaller cables, which go to different parts of the house, taking the electricity to all of the electrical power points and plug sockets that you see in your home.

### Television, telephone and internet cables

These cables are different from electrical ones and are normally made from copper or fibre optic wire. Each one enters your home and then branches off to the different items (television, computer, etc).

They also need power or energy to work so need to be plugged in.

### Did you know?

**Meters** measure the amount of water, gas and electricity used so that you only pay for what you use. If we switch off appliances we can save water, gas and electricity. This is good for the environment **and** saves us money.