Why does it rain?

Being in the UK we know a lot about rain. Whether it's drizzle or large downpours, rain is vital for life. But did you know that rain can be classified in different depending on the temperature of the air and whether it's over land or sea? Before we look at the different types of rain, lets first understand how it forms in the first place.

There has always been the same amount of water on the earth, but the amount floating around in the air as water vapour or clouds depends on how warm it is. Warmer air holds more water while colder air holds less. This is an important factor when it comes to how heavy a rainfall is. As we all probably remember from school, when water on the Earth is heated by the Sun, it evaporates and turns into water vapour which rises into the air. When the air cools it condenses around some dust or other particles in the air, these are called condensation nuclei. These small droplets then become visible as clouds. Some droplets fall through the cloud and coalesce into raindrops on their way down. As more and more droplets join together they become too heavy and fall from the cloud as rain.

Different types of rain have different types of names depending on the temperature of the air and where the cloud has formed. Frontal rain is one type of rain that is affected by the temperature of the air. It comes from clouds that form when warm, moist air glides up and over fronts. At a cold front, cold air advances beneath the warm air, lifting it up and producing heavy cloud and intense rain. In the summer these can create severe thunderstorms. At a warm front the rain is lighter because the warm air advances and rises over the cold air. Frontal rain occurs mainly in mid-latitude regions where warm tropical air meets cold polar air. Another type of rain is Orographic rain which is produced in response to the topography of the land. As an air mass blows from the sea over hilly land the damp air rises and condenses. Above the orographic cloud is a rain cloud that forms over the sea and is called a seeder cloud. Rain from this cloud falls through the cloud below it and washes many of the tiny cloud droplets out. This means that hilly coastal land is wetter then lower coastal areas.

These are just some of the different types of rain you can find. You can read more about types of rain and how they form on the Met Office website.