

## Weather Activities

There are many different types of clouds. The highest clouds are 6-9km up in the sky. It's so cold up there that all the water in those clouds freezes and become tiny crystals of ice. The cloud's name tells you how high up it is in the atmosphere *and* what shape it is.

Clouds have a large effect on the heating and cooling of the earth. Clouds can block sunlight or trap heat from escaping. Clouds are studied all the time as they tell us a lot about global warming. The lowest type of cloud is fog.

Split into three groups / patrols and rotate through each activity (5-10 minutes each)

- **ACTIVITY 1 – Make a Cloud**

*As warm air meets the coldness, water droplets form a cloud*

Have a parent help the girls initially fill a jam jar with boiling water.

Then pour most of the water out, leaving just about 1 cm in the bottom of the jar.

Place a bag of ice on top and watch the “cloud” form as the steam from the hot water meets the coldness of the ice

- **ACTIVITY 2 – How clouds make rain**

*When the vapour hits cold air, it turns back into droplets of water which “stick” together to form clouds. When clouds get so full of water that they can't hold any more, the water falls back to the ground as rain.*

Fill a jam jar with water (room temperature)

Spray a “cloud” on top using shaving foam

Add small drops of food colouring to the “cloud”.

As the “cloud” becomes saturated with the food colouring the rain will fall

- **ACTIVITY 3 – Tornado in a jar**

A tornado forms when cold and hot air combine and spin very quickly. To get an idea of what a tornado looks like try this activity

Fill a jam jar with water

Add some dish washing liquid.

And a *little* glitter

Put the lid on the jam jar and start to rotate the jar so that the fluid starts to spin. The fluid on the outside however, starts spinning before the fluid at the centre. When you set the jar down, you see the fluid on the outside slowing down as the fluid on the inside continues to spin. What you are seeing is the formation of a vortex: the water spins rapidly around the vortex due to centripetal force.



- **GROUP ACTIVITY – Matching pairs**  
*(Refer to Resource – Cloud formations, matching pairs)*

Cloud activity – match the girls to their matching pair.

You can learn a lot by looking at clouds – whether they are dark or bright, how high they are in the sky and what type of weather they will bring.

Remember:

*Cirro* – high altitude

*Alto* – medium high clouds

*Nimbo* – rain clouds

*Cumulus* – lots of / heaps

*Stratus* – layers / flat and wide