



# READING CLOUDS

From giant, billowing thunderclouds to thin, candyfloss wisps, clouds come in a multitude of shapes and sizes, offering up a treat for the imagination. Most of us at some point have lain down on the ground and looked skyward to watch them floating by, shapeshifting into fiery dinosaurs, giant bunnies and a myriad of other imaginative things. But have you ever wondered how clouds are made? And did you know that by being able to read clouds, you could actually predict the weather?

We often get distracted by our phones or lost in thought. Cloud reading gets us to stop, look up, to feel the space this action creates and notice our connection to the world. Cloud reading is also a beneficial survival skill, arming us with knowledge that helps us to prepare for whatever the weather throws at us, be that building a shelter from the rain or layering up for snow. No gadgets needed! This activity creates a sense of independence and confidence, as well as endless fun watching those shapeshifting characters in the sky.

**LOCATION** Any open space, ideally where you can set up a temporary camp

**AGE GROUP** 3 years +

**LEARNING ABOUT ...** 🌿 Science 🌿 imagination 🌿 focus 🌿 independence  
 🌿 nature connections 🌿 confidence 🌿 survival skills



### *Get set*

So what are clouds? Adults can explain that, all around us in the air, there is floating water in the form of water gas or vapour. However, we can't see it because the particles are too small and see-through. When the ground is heated by the sun, the water vapour floats high into the sky where it cools down and joins with other tiny objects such as dust to form water droplets. When many of these droplets collect together they form fluffy white clouds. With even more droplets, they turn into grey clouds that become so heavy that the water eventually falls back down to Earth as rain or, when it's cold, as snow, sleet or hail. The shape of a cloud depends on things like the wind blowing it across the sky, air pressure and temperature.



### *Get ready*

Point out that clouds are named for how they look and by where they are found in the sky, or their altitude. Have you seen those low white clouds that look like heaped pillows? They are called cumulus, which is the Latin word for "heap" or "pile".

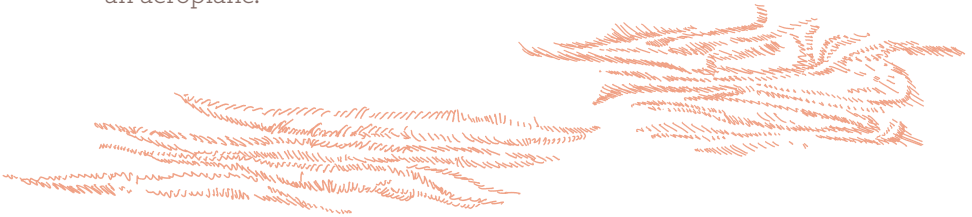




Low layers of solid clouds that look like flat blankets are called stratus, which is the Latin word for “layer”.



White, wispy, hair-like clouds that stretch across the sky are called cirrus, which is the Latin word for “hair” or “curling lock of hair”. These are the thin clouds that can be found very high up over mountain tops made of mostly ice crystals and can be seen from an aeroplane.



Alto or mid-level clouds usually look a bit flat and layered as the air at this high altitude doesn't move much vertically. The word “nimbus” also comes from Latin and means raincloud. Other cloud names are made up of two names put together. So a cumulonimbus is a heaped-up raincloud, while a nimbostratus is a stretched-out raincloud. Cirrostratus are high-up, sheet-like clouds that can cover the entire sky. They are so thin that the sun and moon can be seen through them.

**TRY THIS!**  
These are just a few types of cloud. Research more to add to your weather detective knowledge.



Go!

Now you know how clouds are made and what some are called, you can use your nature detective skills to predict the weather.

If it's dry, children can lie on the ground in a clearing and watch the clouds roll by, or they could take a woodland walk to assess the sky glimpsed overhead. First, determine whether you can see the sun through the cloud. If you can, it's a high cloud; if not, it will be a mid-level or low cloud. Then look at their shape: are they stretched out like stratus clouds or heaped like cumulus?

Next, look at how the wind is blowing the clouds across the sky. If they appear to be standing still, a change in weather may not happen for over a day. If they are moving, the weather will change more quickly. Look at their colour: are they white or grey? Scattered, white cumulus clouds tell us it will be sunny, whereas big, dark, cumulonimbus clouds can bring rain, snow, hail and lightning. White cirrus clouds usually mean fair weather but can also let us know a change in the weather is on its way. This change could be from a sunny day to a rainy day. Cirrostratus clouds usually appear 12–24 hours before rain or snowstorms. Stratus clouds let us know it will be a dry, overcast day but if this cloud is thick enough, there will be drizzle, or they can also produce fog. (In fact, fog is actually a cloud you can touch.) With all this knowledge, if wet weather is on the way you'll be well prepared!

For younger children, simply watching the clouds may be wonderful fodder for their imagination. What shapes can they see?



**TRY THIS!**

Get to know your cloud heights  
(temperate regions):

**HIGH CLOUD:** cirrus at heights above 6km (4 miles)

**MID-LEVEL CLOUD:** alto at heights of 2–6km (1–4 miles)

**LOW CLOUD:** stratus at heights less than 2km  
(1 mile). A cumulus base can start here, too.



### Endings

You might like to get everyone talking about all the animals and shapes that can be seen in the clouds. Does anyone have a favourite type of cloud and why? You could mention that the high cirrus clouds travel at 160kmph (100mph) and discuss how clouds are essential for life on Earth. For instance, at night they reflect heat back down to the earth, keeping it warm, while in the daytime they help to shield us from the sun. Studying clouds helps space agencies like NASA to understand Earth's climate. As we've seen, clouds are linked to the water cycle, bringing both snow and rain. Did you know that the water in a cumulus cloud can weigh the same as 100 elephants? Astonishing!

