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| **Mr McCloud's Cloud Quiz** |

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| ***"Hi ! I'm Mr McCloud.***  ***Read through the information about clouds on the right and then have a go at my***[***Cloud Quiz***](http://www.bom.gov.au/lam/Students_Teachers/animations/quiz.shtml)*."*  MrMcCloud  **More about Mr McCloud**  Mr McCloud shows the four primary cloud groups - **cirrus** (wispy, hair-like), **strata** (layers, sheet-like), **cumulus** (puffy, heaped) and **nimbus** (rain cloud).  He has a cumulonimbus body with a thunderhead (he's a bit of a dunderhead and going a bit troppo - his bald patch is pushing through the tropopause).  He has cirrus cloud for hair and ice crystal dandruff. His feet are made from strata cloud. One leg is a tornado and the other is a heavy down pour of rain (microburst).  He carries a lightning walking stick that he uses to herd and scare people with and lives in a cloud environment, with a cloud house and cloud car etc. He has a cloud farm with a herd of fluffy cloud sheep. | **Cloud Classification** Clouds have names that come from Latin (an ancient Roman language). An English naturalist Luke Howard, in 1803, developed a classification system based on the following four main cloud types:   * Cumulus - Latin for 'heap', to describe a puffy cloud * Cirrus - Latin for 'curl of hair', to describe a wispy cloud * Stratus - Latin for 'layer', to describe a sheet-like cloud * Nimbus - Latin for 'violent rain', to describe a rain cloud.   Other clouds could be described by combining the basic types. For example, nimbostratus is a rain cloud that occurs in layers, whereas cumulonimbus is a rain cloud with pronounced vertical development.  Cirrostratus is cirrus occurring as a sheet-like cloud, and stratocumulus is a layer cloud with some cumulus features.    There are ten principal cloud forms which are divided into four primary cloud groups:   1. **High clouds** - cirrus, cirrostratus, cirrocumulus 2. **Middle clouds** - altostratus, altocumulus 3. **Low clouds** - nimbostratus, stratocumulus, stratus 4. **Clouds with vertical development** - cumulus, cumulonimbus. |

<http://www.bom.gov.au/lam/Students_Teachers/animations/cloudzstart.shtml>

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| **FORECASTING BY LOOKING AT CLOUDS!**  It's important to know that not all clouds are the same. Clouds can come in different shapes, sizes, and colors. Even fog is considered a cloud. Different clouds can help meteorologists, or anyone, tell what kind of weather is around them. | |
| Cirrus clouds | The first kind of cloud is a **cirrus cloud**. Cirrus clouds are thin and wispy, and are found very high in the sky. Cirrus clouds point in the direction the wind is blowing. No precipitation falls from cirrus clouds. They are a sign of fair weather for now and the very near future. |
| Next are the **altocumulus clouds**. These clouds are like fuzzy bubbles in long rows or strings. If you see altocumulus clouds, it usually means that a cold front is coming. If it's summertime and warm and humid, altocumulus clouds may turn into thunderstorms when the cold front approaches. | Altocumulus clouds |
| Nimbostratus clouds | After that are the **nimbostratus clouds**. These clouds are dark and low-hanging clouds that cover the whole sky. They bring with them light to moderate precipitation. |
| Then there are fair weather **cumulus clouds**. These clouds look like big cotton balls in the sky. They have very large spaces of clear sky in between them. Normally they don't carry any rain, but during the spring and summer they can change into cumulonimbus clouds. | Fair weather cumulus clouds |
| Cumulonimbus clouds | **Cumulonimbus clouds** are thunderstorm clouds. They are tall and wide clouds that have heavy rain, thunder and lightning. If you see these clouds on the horizon, it is likely it will rain very soon. |

Why is the Sky Blue?

If you were to travel 20 miles or so above the Earth's surface, the sky would appear black. What happens during light's descent to Earth that makes the sky take on a wonderful azure hue?

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| "White" sunlight passes through our atmosphere, and molecules in the air, primarily nitrogen, are just the right size to scatter light from the blue end of the visible spectrum. The other colors travel to the ground with little interference.The blue light is scattered from molecule to molecule in the sky, until the light seems to be coming from every direction. | [http://www.carlwozniak.com/clouds/Graphics/Thumbnails/1BluSkyT.jpg](http://www.carlwozniak.com/clouds/Graphics/New%20Pix/clouds44.jpg) |

And Clouds are White Because...?

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| ...the water droplets that make up clouds are much larger than the molecules that scatter blue light. The clouds scatter and reflect all the visible colors of light that strike them. Hence, we have white clouds. | [http://www.carlwozniak.com/clouds/Graphics/Thumbnails/2T.jpg](http://www.carlwozniak.com/clouds/Graphics/New%20Pix/clouds39.jpg) |

But if the cloud is thick enough, light does not penetrate completely through the cloud, resulting in dark, heavy-looking cloud bottoms.

Why do clouds form?

Clouds are nothing more than water vapor that [**condenses**](http://www.carlwozniak.com/clouds/glossary.html#c) and [**accretes**](http://www.carlwozniak.com/clouds/glossary.html#a) into a visible form. The usual mechanism is for moisture-laden air near the Earth's surface to be raised higher into the atmosphere either by an encroaching air mass or the heat of the sun. As the air is lifted, the pressure drops and the air is subsequently cooled. The combination of the two causes water vapor to condense.

Cloud types

Clouds are defined by their general appearance and level in the atmosphere.

* **Cirrus** clouds are curly or fibrous
* **Stratus** clouds are flat and/or layered
* **Cumulus** clouds are puffy and piled up.

Additionally, a prefix is frequently given to the cloud name to indicate what level of the atmosphere it is in.

* **Cirro** is the prefix given to high clouds, those with bases above 20,000 feet.
* **Alto** is the prefix given to mid-level clouds, those between 6,000 and 20,000 feet.
* **Nimbo** added to the beginning, or nimbus added to the end of a cloud name means the cloud is producing precipiation.

The system is by no means uniform. There is no term for low clouds, and there are some odd joinings, such as stratocumulus, which is a cloud with two different shapes.

So here's how some cloud types stack up...

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| **Cloud Type** | **Appearance** | **Altitude** |
| Cumulonimbus | Thunderheads | Near ground to above 50,000 feet |
| Cirrostratus | Thin, wispy, above thunderheads | Above 18,000 feet |
| Cirrus | Thin, often with "mare's tail" | Above 18,000 feet |
| Cirrocumulus | Small puffy clouds | Above 18,000 feet |
| Altostratus | Thin, uniform, sometimes with "wide wale corduroy" appearance | 6,000 - 20,000 feet |
| Altocumulus | Medium-sized puffy clouds | 6,000 - 20,000 feet |
| Stratocumulus | Broad and flat on the bottom, puffy on top | Below 6,000 feet |
| Cumulus | Puffy clouds | Below 6,000 feet |
| Stratus | Uniform, thick to thin layered clouds | Below 6,000 feet |

**Read the Cloud Information and Answer the following questions:**

1. There are 3 prefixes to cloud names to indicate the level of the atmosphere the cloud is in. What are the three prefixes and what does each prefix indicate?

2. What is the name for a layered, flat bottom cloud below 6000 feet?

3. What type of cloud can be shaped like an anvil, and usually means rain?

4. You see dark, low hanging clouds that cover the whole sky. What is the name for these clouds? What kind of weather can you expect?

5. What is the name for a think wispy cloud that is at 20,000 feet?

6. What is the latin word for ‘violent rain’?

7. What are the 4 primary cloud groups?

**McCloud’s Quiz:What’s that Cloud?**

Looking at the pictures on the walls… Which pictures match the following names:

CLOUD NAME PICTURE #

1. Stratus
2. Cumulus
3. Cirrus
4. Cumulonimbus
5. Nimbostratus
6. Stratocumulus