



High School Science Virtual Learning

Earth Science

Clouds and Precipitation

April 22, 2020



High School Earth Science

Lesson: April 22, 2020

Objective/Learning Target:

Students will be able to explain how clouds form and the different types of clouds and precipitation.



Let's Get Started:

Watch this video: Cloud in a bottle

[Link to Video](#)

Thought Questions:

1. What causes a cloud to form in the bottle?
2. What makes the cloud go away?



Let's Get Started: **Answer Key**

1. Question 1- **The rapid decrease in pressure when he removes the stopper causes the temperature to drop and the vapor condenses.**
2. Question 2 - **The increase in pressure causes the temperature to rise and the condensed liquid vaporizes.**



Lesson Activity: **How Clouds Form**

Directions: Read page 2 - *“How Clouds Form”* from the National Weather Service JetStream website.

[Link to page 2](#)

Complete the guided reading questions on the following slides.



1. What types of particles make up condensation nuclei?
2. To what temperature does the air have to be cooled for clouds to form?
3. As a bubble (parcel) of warm air rises, what happens to its pressure and temperature?



Lesson Activity: **The Four Core Cloud Types**

Directions: Read page 3 - *“The Four Core Cloud Types”* from the National Weather Service JetStream website.

[Link to page 3](#)

Complete the guided reading questions on the following slides.



1. Describe four basic cloud types.
2. In which latitude region can clouds grow to the greatest height?



Lesson Activity: **Precipitation Types**

Directions: Read page 7 - *“Precipitation Types”* from the National Weather Service JetStream website.

[Link to page 7](#)

Complete the guided reading questions on the following slides.



1. List eight basic forms of precipitation.



Answers

1. What types of particles make up condensation nuclei? **They consist of such things as smoke particles from fires or volcanoes, ocean spray or tiny specks of wind-blown soil.**
2. To what temperature does the air have to be cooled for clouds to form? **The air temperature needs to be below the saturation point called the dew point temperature.**
3. As a bubble (parcel) of warm air rises, what happens to its pressure and temperature? **Both the temperature and pressure decrease.**



1. Describe four basic cloud types.

Cirro-form - Composed of ice crystals, cirro-form clouds are whitish and hair-like. There are the high, wispy clouds.

Cumulo-form - Generally detached clouds, they look like white fluffy cotton balls. They are usually dense in appearance with sharp outlines.

Strato-form - From the Latin word for 'layer' these clouds are usually broad and fairly widespread appearing like a blanket.

Nimbo-form - 'Nimbus', the Latin word for rain. The vast majority of precipitation occurs from nimbo-form clouds.

2. In which latitude region can clouds grow to the greatest height? **Tropical** regions, upto 60,000 feet.



1. List eight basic forms of precipitation.

Rain, drizzle, sleet, hail, snow pellets, snow, snow grains, ice crystals

Extensions:

1. **Video - Cloud Formation** [Link to Video](#)

Video Question - What do we call the tiny particles around which water vapor condenses to form clouds?

2. **Ten Basic Clouds** [Link to Page](#)

Cloud Question - What type of cloud is in the sky today?

3. **Cloudspotter Wheel** [Link to Activity](#)



Extension Answers

Video Question - What do we call the tiny particles around which water vapor condenses to form clouds? Condensation nuclei

Cloud Question - What type of cloud is in the sky today? Answers will vary depending on the weather.