



Cloud Type Protocol



Purpose

To observe cloud type at the school's Atmosphere Study Site

Overview

Cloud type is useful in climate studies and is related to precipitation and air temperature.

Time

5 minutes

Level

All

Frequency

Daily within one hour of local solar noon

Key Concepts

Cloud formation
Composition of the atmosphere
Cooling/warming effect of clouds

Skills

Identifying cloud type
Recording data
Observing carefully

Materials and Tools

Atmosphere Investigation Data Work Sheet
GLOBE Cloud Chart
Observing Cloud Type (in the Appendix)

Prerequisites

None



How to Observe Cloud Type

From your cloud-type observation site, examine the clouds in the sky. Refer to the GLOBE cloud chart and the definitions found on the *Observing Cloud Type* sheet in the *Appendix* to determine the cloud type(s) present. Check a box on the Atmosphere Data collection sheet for each cloud type that you observe. Do *not* estimate the amount of each cloud type.

Note: In some instances, it may be difficult to distinguish between cloud types (e.g. altocumulus versus cirrocumulus). In these cases, students



should use their best judgement and note their uncertainty in the comment section and in their GLOBE Science Notebooks.

Data Submission

Report the following to the GLOBE Student Data Server:

Date and time of the cloud-type observation in Universal Time (UT).

Cloud type(s) observed (you can report more than one cloud type).

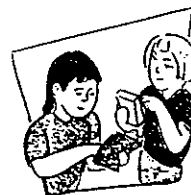


Universal Time

A simple way of thinking about Universal Time (UT) is to ask "What time (on a 24 hour clock) is it now in Greenwich, England?" Since Greenwich is on the line of zero longitude, this is a starting point for the global day. At midnight in Greenwich, the UT is 0:00. In recent history, UT was called GMT for Greenwich Mean Time.



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How to Observe Cloud Cover

Take the cloud cover measurements at the same site and time as the cloud-type measurement. Cloud cover should be reported according to the following cloud-cover classification definitions:

Clear

The sky is cloudless or clouds cover less than one-tenth of the sky. (Since a clear sky can include some clouds, it is possible to report cloud type even when you report a clear sky.)

Scattered Clouds

Clouds cover one-tenth through five-tenths of the sky.

Broken clouds

Clouds cover greater than five-tenths through nine-tenths of the sky.

Overcast

Clouds cover more than nine-tenths of the sky.

Note: Even experienced observers can have difficulty accurately differentiating between scattered clouds and broken clouds. If you see

more blue sky than clouds, then the cloud cover is considered to be scattered. If you see more clouds than you do blue sky, then the cloud cover is broken.

Data Submission

Record on the Atmosphere Investigation Data Work Sheet one of the four categories of cloud cover each day, and report your findings to the GLOBE Student Data Server.