

Clouds and temperature

1. Use the “data sheet clouds” (P17b) and the fact sheets “Types of clouds” (P17c) to find out which clouds are in the sky. Write your observations into the table.
2. Use the thermometer to measure the warmth of the air and the warmth of the ground (tar or paving) on the schoolyard. Enter your measurements into the table below.

Date and time: _____

		observation / measurement
clouds	cloud cover	
	sky color	
	cloud type	
	conditions at ground level	
temperature	ground temperature	
	air temperature	



Data sheet clouds

Check your observations. In some boxes, you will see a white arrow. Only when you have placed a cross there, you go to the box the arrow points to. If you have not placed a cross there, you can skip this box.

1. What do you see in the sky?			
Degree of coverage (clouds, vapor trails)		<input type="radio"/> fog	
<input type="radio"/> darkened		<input type="radio"/> spray	
<input type="radio"/> nothing		<input type="radio"/> smoke	
<input type="radio"/> clear (<10%)		<input type="radio"/> dust	
<input type="radio"/> isolated (10-25 %)		<input type="radio"/> mist	
<input type="radio"/> scattered clouds (25-50 %)		<input type="radio"/> volcanic ashes	
<input type="radio"/> broken cloud cover (50-90 %)			
<input type="radio"/> overcast sky (90-100%)			
Move on to box 6.			

2. Color and visibility of the sky						
Color	<input type="radio"/> sky invisible					
		<input type="radio"/> deep blue	<input type="radio"/> blue	<input type="radio"/> light blue	<input type="radio"/> pale blue	<input type="radio"/> milky
Visibility	<input type="radio"/> sky invisible					
		<input type="radio"/> very clear	<input type="radio"/> clear	<input type="radio"/> slightly hazy	<input type="radio"/> very hazy	<input type="radio"/> extremely hazy

3. High clouds and condensation trails			
<input type="radio"/> No high clouds to be seen Go to box 4.			
Type of clouds:		Number of condensation trails that are ...	Degree of coverage
<input type="radio"/> condensation trails (number)		<input type="radio"/> short-lived	<input type="radio"/> opaque
<input type="radio"/> cirrus		<input type="radio"/> lasting, not scattered	<input type="radio"/> slightly translucent
<input type="radio"/> cirrocumulus		<input type="radio"/> lasting scattered	<input type="radio"/> highly translucent
<input type="radio"/> cirrostratus			
			<input type="radio"/> clear (<10%) <input type="radio"/> isolated (10-25 %) <input type="radio"/> scattered clouds (25-50 %) <input type="radio"/> broken cloud cover (50-90 %) <input type="radio"/> overcast sky (90-100%)

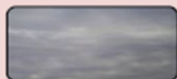


4. Middle clouds

- ☐ No middle clouds to be seen
Go to box 5.

Type of clouds:

☐ altostratus



☐ altocumulus



Degree of coverage

- ☐ clear (<10%)
☐ isolated (10-25%)
☐ scattered clouds (25-50%)
☐ broken cloud cover (50-90%)
☐ overcast sky (90-100%)

Opacity of the clouds

☐ opaque



☐ slightly translucent



☐ highly translucent



5. Low clouds

- ☐ No low to be seen
Go to box 6.

Type of clouds:

☐ fog



☐ nimbostratus



☐ cumulonimbus



☐ stratus



☐ cumulus



☐ stratocumulus



Degree of coverage

- ☐ clear (<10%)
☐ isolated (10-25%)
☐ scattered clouds (25-50%)
☐ broken cloud cover (50-90%)
☐ overcast sky (90-100%)

Opacity of the clouds

☐ opaque



☐ slightly translucent



☐ highly translucent



6. Conditions close to the ground

Mandatory

snow / ice ☐ yes ☐ no



stagnant water ☐ ☐



boggy ☐ ☐



dry ☐ yes ☐ no



trees with leaves ☐ ☐



it rains / snows ☐ ☐



Voluntary

temperature: _____ °C

air pressure: _____ mb

relative humidity: _____ %



Cloud types

Five word elements are used to designate the different cloud types:

CIRRO for clouds at a very high altitude (high clouds), **ALTO** for clouds in medium altitude (middle clouds),

CUMULUS for fleecy or heap clouds, **STRATUS** for sheet clouds, **NIMBUS** for rain clouds

High clouds 5-13 km



Cirrus

Feather clouds

Shape: fibrous or thread-like, formed by wind currents; stripes, bands, spots, sometimes bizarre structures

Thickness: very thin, sun shines through

Color: white, with a silky glimmer

Info: always consists of ice crystals



Cirrocumulus

Fleecy clouds

Shape: fine white balls or flakes, thin, sometimes patchy, sheet-like

Thickness: very thin, sun shines through

Color: white

Info: consists of ice crystals, rarely also of supercooled water drops; diameter always < 0.5° (pinkish on the outstretched hand)



Cirrostratus

High sheet clouds

Shape: Thin, milky, translucent cloud veil of hairy or fibrous appearance; covers large parts of the sky

Thickness: very thin, sun always shines through and is sharply defined

Color: light grey or whitish

Info: can cause halo appearances around moon and sun

Middle clouds 2-7 km



Altostratus

Rough fleecy clouds

Shape: stripes, spots, patchy layers; often arranged in banks

Thickness: moderately thick

Color: white or grey shades, partly pearlized

Info: consists of water drops, sometimes supercooled; diameter of cloud elements 1-5° (1-3 fingers on the outstretched hand)



Nimbostratus

Middle sheet clouds

Shape: Dense layer cloud, often even and opaque, usually covering the entire sky

Thickness: moderately thick to thick

Color: grey or blue-grey

Info: no halos; if thick enough continuous rain / snow; consists of supercooled water; if sun visible then as through a frosted glass



Altostratus

Middle sheet clouds

Shape: Dense layer cloud, often even and opaque, usually covering the entire sky

Thickness: moderately thick to thick

Color: grey or blue-grey

Info: no halos; if thick enough continuous rain / snow; consists of supercooled water; if sun visible then as through a frosted glass

Types of clouds



Cloud types

Five word elements are used to designate the different cloud types:

CIRRO for clouds at a very high altitude (high clouds), **ALTO** for clouds in medium altitude (middle clouds), **CUMULUS** for fleecy or heap clouds, **STRATUS** for sheet clouds, **NIMBUS** for rain clouds



Low clouds 0-2 km



Stratocumulus

Fleecy sheet clouds

Shape: mosaic-like plaices, rollers, or banks, sharply bounded or frazzled

Thickness: moderately thick

Color: grey or whitish

Info: consists of water or ice crystals; mostly no rain or snow; partly remainders of Stratus or Cumulus clouds



Cumulonimbus

Shower- or thundercloud

Shape: bulky and dense clouds shaped like a high mountain or tower, often with an anvil

Thickness: thick, looming

Color: lower side dark grey

Info: often brings thunderstorms (lightning, thunder, hail)

Low clouds 0-2 km



Stratus

Low sheet clouds / high fog

Shape: grey even layer cloud (often high fog); lower edge usually low and rather difficult to detect

Thickness: thin to moderately thick

Color: light grey to dark grey

Info: seldom rain or snow; if sun visible then sharply outlined



Fog

Stratus

Info: Fog is a cloud that touches the ground. You don't usually see what kind of cloud that is.



Cumulus

Heap clouds

Shape: separate, sharply bounded clouds shaped like hills, knolls, or towers; lower edge flat

Thickness: moderately thick to thick

Color: shining white in sunlight

Info: seldom rain or snow, can be precursor of Cumulonimbus

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