



Scout Association of Hong Kong Cub Scout Weatherman Badge Resource Pack



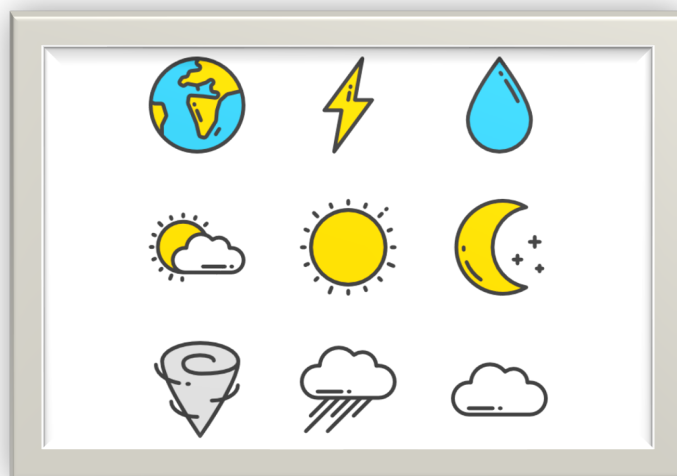
Name of Cub Scout: _____

Group and Pack: _____

(2023 Dec v.1.0)

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Cub Scout Training Scheme

Content of Weatherman

Aim:

To recognize the impact of weather changes on daily life and matters concerned.

Requirement:

1. Know how to use mass media or electronic tools to obtain weather information.
2. Understand different weather factors, including temperature, wind, rainfall and UV index, etc., and be able to tell how to prepare for changes of the above four factors when having outdoor activities.
3. Understand the relevant precautions after the weather warning signal is issued (including thunderstorm warning, rainstorm warning, tropical cyclone warning, etc.).
4. Know the basic concept of cloud formation; and recognize Stratus, Cumulus, Cumulonimbus and Cirrus.
5. Know basic principle of "the 24 solar terms", and describe the characteristics of at least 6 out of "the 24 solar terms"
6. Conduct a weather observation for a period of at least 5 days, record personal feelings about weather conditions, and make comparisons with current weather information.
7. Complete at least two of the following tasks:
 - a. Make a poster or devise an experiment to describe "water cycle".
 - b. Make a model of wind gauge (wind direction or speed).
 - c. Learn meteorological knowledge through online resources and simply report on a meteorological phenomenon.



1. Obtaining Weather Information

What is the weather today? Circle the weather condition based on your feeling today.

Today's Weather

Weather: Sunny☀️ / Cloudy☁️ / Rainy🌧️

Temperature: Hot🔥 / Warm😊 / Cool😌 / Cold❄️

Wind: Calm / Light / Windy

Rain: No rain☁️ / Light rain🌧️ / Heavy rain🌧️

Humidity: Very dry🍂 / Dry / Humid💧

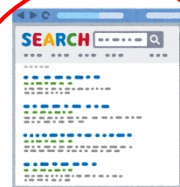
Other special weather condition:

Does your answer the same with other cub scouts or your leader? Why?

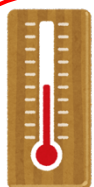
In fact, each individual has different subjective feeling. For accurate weather information, we can obtain weather information from different channels. To obtain real-time weather information, what are the channels we can use? **Circle** them.



Television



Internet



Thermometer



Radio



Smart
Phone Apps



Dial-a-Weather



Newspaper

To obtain the most accurate and real-time weather information, the best method is to obtain through Hong Kong Observatory (HKO). How well do you know about the HKO? Do you know how to obtain weather information through HKO?

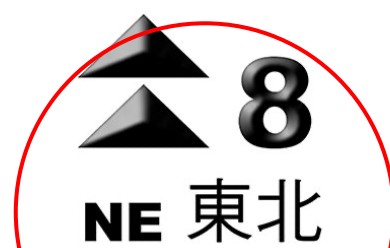
1. In which year was HKO established? **1883**
2. Who is the HKO Director now? **Dr. Chan Pak-Wai (Director 2023-)**
3. In which district is HKO located in? **Yau Tsim Mong District**
4. What is the phone number for "Dial-a-Weather" Inquiry? **1878200**
5. What is the website address of HKO? **<https://www.hko.gov.hk/en/index.html>**
6. What is the name of the smart phone application that HKO provide weather information? **MyObservatory**
7. What are the duties of HKO? **Circle** them.



Weather Forecast
and Weather Report



Earthquake
Monitoring



Issuing Weather
Warning and Signals



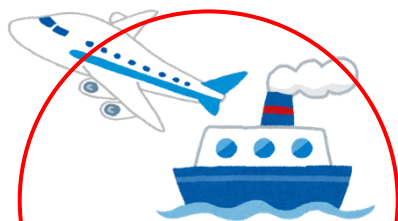
Time Services



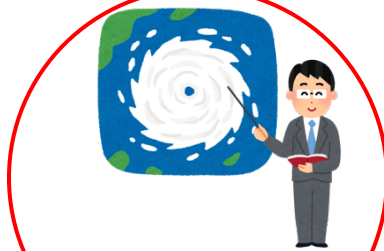
Issuing Meteorite
Warnings



Radiation Monitoring



Weather Information
for Aviation and Marine



Meteorological
Education



Issuing Air Quality
Health Index

2. Weather Elements

Weather Elements is the basic information we describe the weather. In Cub Scout Weatherman Badge, we will learn about temperature, relative humidity, precipitation or rainfall, wind and UV index.

Temperature

Temperature is how we describe hotness or coldness. The term Air Temperature is describing the temperature of air.

Scientists or meteorologists express temperature in numerical values. The hotter the weather, the air temperature is ***higher** / ~~lower~~; the colder the weather, the air temperature is *~~higher~~ / **lower**.

With reference to the video from the Met Office (<https://youtu.be/rARnTlPax8E?si=S-jPWt5tp9Zzrc6K>), answer the following questions:

Currently, Celsius and Fahrenheit are the two major temperature scales scientists and meteorologists use to measure temperatures.

In Celsius temperature scale:

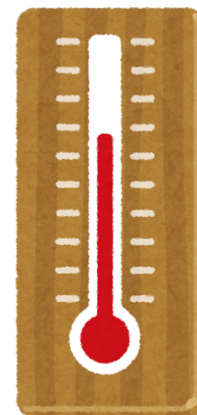
Freezing point of water is 0°C.

Boiling point of water is 100°C.

In Fahrenheit temperature scale:

Freezing point of water is 32°F.

Boiling point of water is 212°F.



Unit Conversion between Celsius and Fahrenheit

$$^{\circ}\text{F} = ^{\circ}\text{C} \times \frac{9}{5} + 32 \quad \text{or} \quad ^{\circ}\text{C} = \frac{5}{9} \times (^{\circ}\text{F} - 32)$$

Try to convert:

98°F to °C, which is typical body temperature:

$$^{\circ}\text{C} = \frac{5}{9} \times (98 - 32) = 36.7^{\circ}\text{C} \approx 37^{\circ}\text{C}$$

15°C to °F, which is average atmospheric temperature:

$$^{\circ}\text{F} = 15 \times \frac{9}{5} + 32 = 59^{\circ}\text{F}$$

Method of Measuring Air Temperature

Scientists and meteorologists use thermometer to measure air temperature.

Liquid-in-glass thermometers measure air temperature through the thermal expansion nature of liquid.

The higher the air temperature, the liquid column in the thermometer is *longer / shorter.

The lower the air temperature, the liquid column in the thermometer is *longer / shorter.

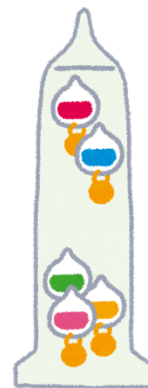
There can be two types of liquids filling the thermometer:



Alcohol is colourless and tasteless, manufacturers add red colour additives so that the liquid is visible.



Mercury is a silvery, toxic liquid. Therefore, we need to be very careful when using them. (Try to seek help from an adult when using them)

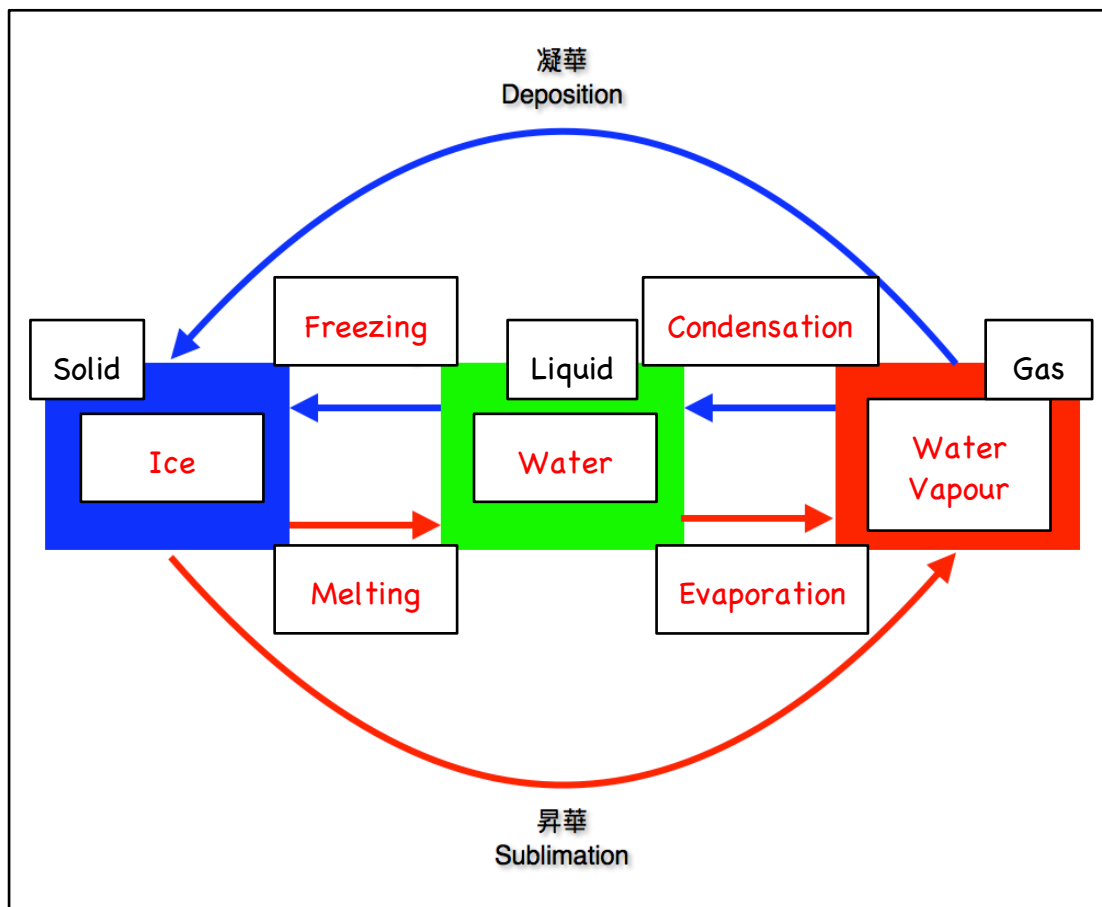


Do you have a thermometer at home? How does it look like? Draw it here!

Relative Humidity

To understand relative humidity, we need to first learn about the different phases of water. Fill in the blanks with the provided words:

Water	Ice	Water Vapour	
Evaporation	Freezing	Melting	Condensation



From the above diagram, we know that after evaporation, water will become water vapour. Water vapour is mixed in the atmosphere. We use relative humidity (RH) to express how much water vapour is mixed in the air, in percentages (%), ranged from 0% to 100%. When RH is near 100%, the air is more humid, lower RH means dryer air.

In the following RH values, which is the most humid? Which is the driest?

60% 35% 90% 75% 40% 80%

The most humid: **90%** The driest: **35%**

Precipitation

Precipitation is the water, in liquid or solid states, descends from clouds to the ground.

Liquid water descend from clouds to the ground is rain.

Solid water descend from clouds to the ground is snow or hail.

Measurement of Rainfall

Let's try to make a tool to measure rainfall!

Rain Gauge in a Can

1. Prepare an empty can from a canned soup.
2. Make measurement marks on a paper strip with a ruler.
3. Stick the paper strip inside the can. (Be careful! The opening of the can may be sharp! Please get assistance from an adult.)
4. In raining days, the water level in the can is the rainfall, measured in mm.



This kind of rain gauge is simple to make, and the materials are easy to obtain, however, there are some disadvantages:

1. High evaporation rate.
2. The can is opaque, there are observational errors.
3. Rain drops in the can may bounce away from the can.

We can try to improve our rain gauge.

Optional Experiment

When measuring the amount of water, we measure it in volumetric unit cm^3 . Why do we measure rainfall in a unit of length mm?

Try It!

1. Make two "rain gauge in a can" using cans with different opening area (e.g. canned soup, luncheon meat, canned sardines).
2. Put the two cans adjacent to each other on the floor of your shower.
3. Turn on the shower head in medium water flow, so that the water enters the cans evenly for 30 to 60 seconds. The shower should cover both cans.
4. Measure the water levels of the two cans.
5. Measure the water volumes in the two cans, using a measuring cylinder.

Try It!

Can A is the can of _____, the area of opening is _____ cm^2 , the water level is _____ mm.

Can B is the can of _____, the area of opening is _____ cm^2 , the water level is _____ mm.

Is there a difference in water level between the two cans?

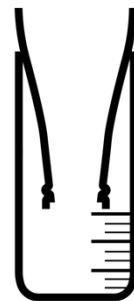
There should be no, or a very small difference. But variable due to experimental settings.

When the areas of the cans are different, the volumes of water collected in the cans in the same rainfall event are different. The volume of water collected by the can is directly proportional to the opening area of the can.

In the same rainfall event, containers which are cylinders with right angled base will have the same water level.

Rain Gauge in Plastic Bottle

1. Prepare a plastic bottle with flat base.
2. Cut the bottle to two halves in the middle.
3. Invert the upper half of the plastic bottle, with opening pointing downwards, and insert into the lower half of the bottle, and ensure the upper half vertical.
4. Adhere the two halves using sticky tapes.
5. Make gradational marks on the bottle.



Making this kind of rain gauge is also simple and the materials are easy to prepare. It improves from the evaporation problems and rain drop bounce off problems in the "rain gauge in a can", and clear bottles are good for observation. However, there are some disadvantages for "rain gauge in plastic bottle":

1. Sunlight can penetrate the clear plastic bottle, so this may increase the evaporation rate for a bit.
2. It is not easy to find a plastic bottle with a perfectly flat base, and the rounded base also affect the rainfall estimation.

How to flatten the base? You can try with many different methods, such as filling the bottom part with wax. (Please seek assistance from an adult when using wax)

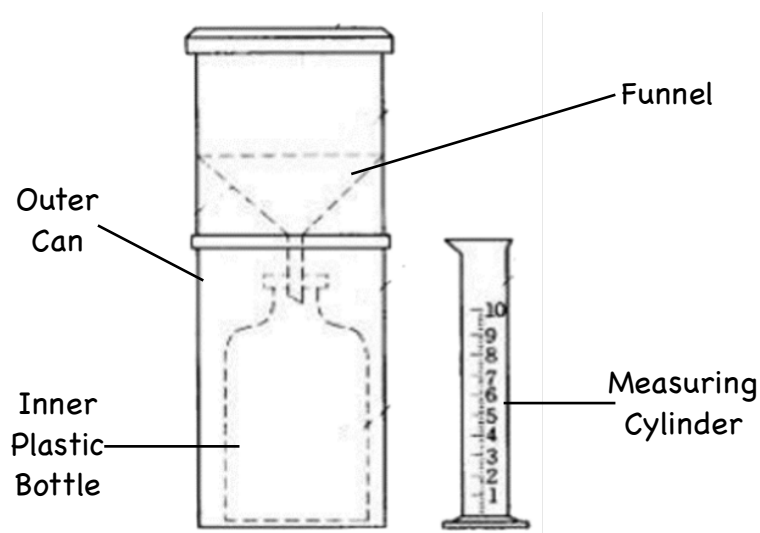
The Hong Kong Observatory uses a variety of rain gauges to measure rainfall. In Weatherman Badge, we are going to discuss two of them.

Ordinary Rain Gauge

The ordinary rain gauge is made up of a plastic bottle and a funnel. Rain is collected by the funnel and drips in the plastic bottle. If the rain is too heavy, the bottle overflows and will be collected by the outer can. The following pictures show the ordinary rain gauge used by HKO, which has an opening diameter of 203mm. The accumulated rain in the bottle is measured by weather observers using a measuring cylinder every hour. This is used as the official rainfall record at present days.



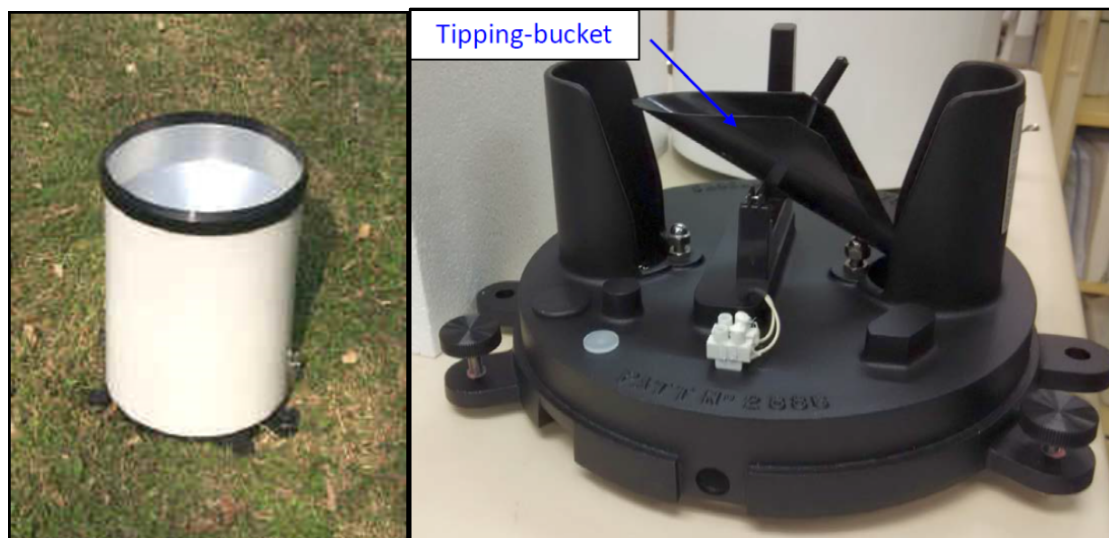
(Image source: HKO)



(Image source: HKO)

Tipping-bucket Rain Gauge

Tipping-bucket rain gauge is another type of rain gauge commonly used by HKO and other weather stations, especially common in automatic weather stations. The rain collected by the funnel does not fall into a bottle, instead, there is a “see-saw” like compartment below the funnel. The “see-saw” like structure collects the rain on one side and flips to the other side for each 0.5mm (or 0.1mm) of rain collected. The new upper bucket continues to collect rain while the rain in the lower bucket is then drained. Each flip of the structure will produce a signal and the signal will be recorded by computer.



(Image source: HKO)

Wind

Wind is the movement of air. If we light a candle, we can know the movement of air by looking at how the flame tilt or how the smoke moves. Scientists and meteorologists measures wind direction and wind speed.

Parameter	Explanation	Instrument	Unit
Wind Direction	Where does the wind come from.	Anemometer	Direction Compass bearing (°)
Wind Speed	The speed of air movement.	Wind vane	Km/h m/s

Let's Try It!



Baloo



Mowgli



Bagheera



Akela

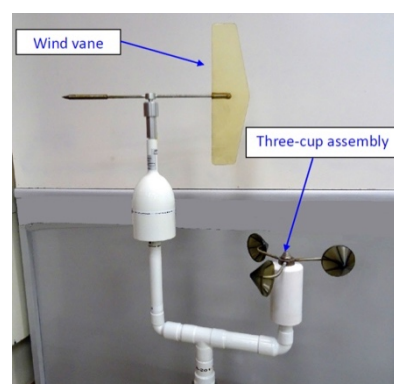
1. In the morning, wind blows from the location of Mowgli to the location of Akela. This is northerly wind.
2. At noon, wind blows from the location of Bagheera to the location of Akela. This is westerly wind.
3. In the evening, wind blows from the location of Baloo to the location of Akela. This is north-westerly wind.
4. At night, wind blows from the location of Mowgli to the location of Bagheera. This is north-easterly wind.

Measurement of Wind Speed and Wind Direction

Scientists and meteorologists use anemometer and wind vane to measure wind speed and wind direction.

Anemometer

- Anemometer is composed of cups or vanes, a rotational axis and an electrical sensor.
- Cup anemometers usually has 3 wind cups, sometimes 4, at the top of the anemometer.
- Vane anemometers are usually installed at the tip of a wind vane, composed of a set of "electric-fan liked" vanes. Vane anemometers can also be an independent instrument.
- When wind blows across the anemometer, the cups or vanes rotates around the axis.
- A faster wind leads to faster rotation of the cups or vanes.



Cup anemometer
(Image source: HKO)

Wind Vane

- Wind vane is composed of a head pointer, a horizontal beam and a tail vane.
- The head pointer points to where wind comes from, which is the wind direction.
- Note that the tail vane points to the direction opposite to the wind direction.

Try It!

Let's try to make a model of wind gauge to complete item 7 of Weatherman Badge!

Do You Know?

In the old days of the Western culture, people use a chicken shaped wind vane to indicate wind direction. You can still find such wind vanes in some places. In the Weatherman Badge

Ultra-violet Radiation (UV Radiation)

What is UV radiation?

Our sun radiates different types of radiations, including visible light which can be visible by human eyes, such as different colours we can see in the rainbow. There are also different types of radiations which cannot be seen by human naked eyes, such as infra-red radiation and ultra-violet radiations. Ultra-violet radiation is just outside the visible light spectrum beyond the purple side.

UV radiation can be classified into type A, B and C based on the energy or wavelength of the radiation. All UVC radiation and most of the UVB radiation are

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absorbed by the atmosphere, therefore only a majority of UVA and small part of UVB can reach the ground.

How can UV radiation benefit or harmful to us?

(Fill in the brackets with the letters representing the statements.)

A. Sterilizing water	B. Increasing the chance of cancer	C. Causing sun burnt
D. Detecting counterfeit banknotes	E. Causing cataract (a type of eye disease)	F. Luring insects like mosquitoes into traps
G. Medical uses	H. Stimulating vitamin D production in our body	I. Causing skin aging and wrinkles

Good use of UV: (A) (D) (F) (G) (H)

Disadvantage of UV: (B) (C) (E) (I)

Measuring UV radiation

HKO uses a broadband UV sensor to measure the intensity of UV radiation.



(Image source: HKO)

UV Index









HKO uses the UV Index to classify the intensity of UV radiation and recommend people with protective measures.

UV Index	Exposure Level	Recommended Protective Measures
0-2	Low	No special protective measures required
3-5	Moderate	<ul style="list-style-type: none"> Seek shade during midday hours when staying outdoors Use a sunscreen lotion that can block both UVA and UVB (with SPF 15 and PA+, or above) Wear long-sleeved and loose-fitting clothing, wear a broad brim hat, use an umbrella, wear sunglasses
6-7	High	
8-10	Very high	<ul style="list-style-type: none"> Avoid being outdoors in the sun during midday hours If you have to stay outdoors, make sure to seek shade Use a sunscreen lotion that can block both UVA and UVB (with SPF 15 and PA+, or above) Wear long-sleeved and loose-fitting clothing, wear a broad brim hat, use an umbrella, wear sunglasses
≥11	Extreme	

3. Hong Kong Weather Warning and Signals

There are over 20 weather warning and signals issued by HKO.

Can you match the following tropical cyclone warning signals?

A. 	B.  SW 西南	C. 
D. 	E.  NE 東北	F. 
G.  NW 西北	H.  SE 東南	
Symbol	Signal	Precautionary Measures
A	Standby Signal No. 1	<ul style="list-style-type: none"> • Precautions should be taken. • If you are planning an outing, remember that the <u>tropical cyclone may affect your trips</u>. • Beware that strong winds may occur over offshore waters. Beware of possible swells. • Listen to radio, watch TV or browse the Observatory's website and mobile app for latest information of the tropical cyclone.
D	Strong Wind Signal No. 3	<ul style="list-style-type: none"> • Make sure <u>objects likely to be blown away are securely fastened or taken indoors</u>. • Overhanging facilities and temporary structures outdoors should be securely fastened or placed on the ground. • <u>Drains should be cleared</u> of leaves and rubbish. • People in low-lying areas should take <u>precautions against flooding</u>. • <u>Stay away from the shoreline and not to engage in water sports</u>. Small vessels should seek shelter without delay. • Listen to radio, watch TV or browse the Observatory's website and mobile app for further information about the tropical cyclone.
B E G H	Gale or Storm Signal No. 8	<ul style="list-style-type: none"> • <u>Complete all precautions now before gales commence</u>. Lock all windows and doors, insert reinforced shutters and gates if they are available. Adhesive tape fixed to large window-panes in exposed positions will reduce damage and injury by broken glass. • Do not stand near windows on the exposed side of your home. Make sure you have a safe place to shelter, should windows be broken. • Owners of neon signs should switch off the electricity supply to the signs. • Park your car where it is safe. • Owing to storm surge, low-lying areas may have serious flooding or backflow of seawater. <u>Avoid going to likely affected low-lying areas and stay away from dangerous places</u>. • <u>Avoid staying in the street</u>. Return home as soon as possible if conditions so permit.
C	Increasing Gale or Storm Signal No. 9	<ul style="list-style-type: none"> • <u>Stay indoors</u>. If you are reasonably protected, stay where you are. <u>Do not touch electric cables</u> that have been blown loose. • <u>Stay away from exposed windows and doors</u> because glass, already under strain from wind pressure, will shatter easily if hit by a flying object. Make sure you have a safe place to shelter. You should only fix broken windows and doors when there is no danger in doing so. • People outdoors should find a safe place now and remain there until the danger is over.
F	Hurricane Signal No. 10	<ul style="list-style-type: none"> • The same precautions as above apply. • If the eye of the tropical cyclone passes directly over Hong Kong, there may be a temporary lull lasting from a few minutes to several hours. This will be followed by a sudden resumption of violent winds from a different direction. <u>Remain where you are if protected and be prepared for destructive winds and the change in wind directions</u>.

Why there aren't No. 4,5,6,7 Tropical Cyclone Warning Signals?

Before 1973, there were signal no. 5, 6, 7, and 8, representing gales from different directions. However, to avoid misunderstanding that the wind under no. 5 signal weaker than no. 8 signal, HKO renumber the warning signals to the numbers we are using now.









Can you match the following weather warning signals?

I  Black 黑	J  黃 Yellow  紅 Red	K  VERY HOT	L  Amber 黃	M  COLD	N  雷暴 Thunderstorm	O  Red 紅	P 	Q  季候風 Monsoons
---	--	--	---	--	--	---	--	---

Symbol	Signal	Meaning
L	Amber Rainstorm Warning Signal	Heavy rain has fallen or is expected to fall generally over Hong Kong, exceeding 30 mm in an hour, and is likely to continue.
O	Red Rainstorm Warning Signal	Heavy rain has fallen or is expected to fall generally over Hong Kong, exceeding 50 mm in an hour, and is likely to continue.
I	Black Rainstorm Warning Signal	Very heavy rain has fallen or is expected to fall generally over Hong Kong, exceeding 70 mm in an hour, and is likely to continue.
N	Thunderstorm Warning	It is a short-term (within one to a few hours) notice of the likelihood of thunderstorms affecting any part of Hong Kong
M	Cold Weather Warning	The weather of Hong Kong is cold or expected to be cold ($\leq 12^{\circ}\text{C}$).
K	Very Hot Weather Warning	The weather of Hong Kong is very hot or expected to be very hot ($\geq 33^{\circ}\text{C}$).
J	Yellow Fire Danger Warning	Fire risk is high.
	Red Fire Danger Warning	Fire risk is extreme.
P	Landslip Warning	A landslip warning will be issued by the Hong Kong Observatory in conjunction with Geotechnical Engineering Office when there is a high risk of many landslips as a result of persistent heavy rainfall.
Q	Strong Monsoon Signal	The Strong Monsoon Signal is issued when winds associated with the summer or winter monsoon are blowing in excess of or are expected to exceed 40 km/hr near sea level anywhere in Hong Kong.

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Match weather warning types with their associated hazards. (1 hazard can be associated with more than 1 warning types)

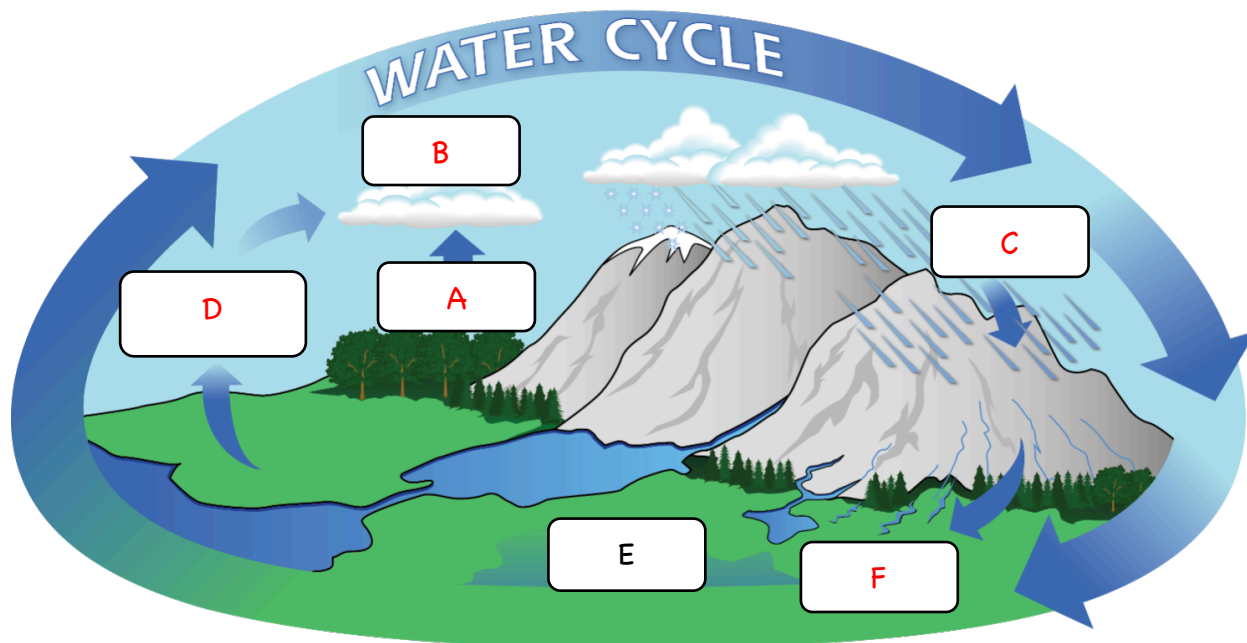
Weather Warning(s)	Associated Hazards
A	
B	
C	
D	
E	
F	
G	
H	

Weather Warning(s)	Associated Hazards
A, H	Being swept away by waves in sea activities or near shore
D	Heat stroke
B	Wild fire
E	Getting hypothermia (low in body temperature)
F	Being struck by lightning
C	Being washed away by streams or creeks
G	Being buried by landslide

4. Formation of Clouds

Water Cycle

Fill in the empty boxes with the corresponding letters.



- A. Transpiration from plants
- B. Condensation
- C. Precipitation (as rain, snow)
- D. Evaporation from oceans, lakes and streams
- E. Groundwater
- F. Surface Runoff (as river or other surface water)





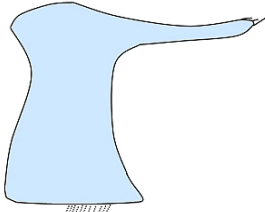



What are Clouds?

Clouds are visible aggregates of water droplets or small ice crystals suspending in air.

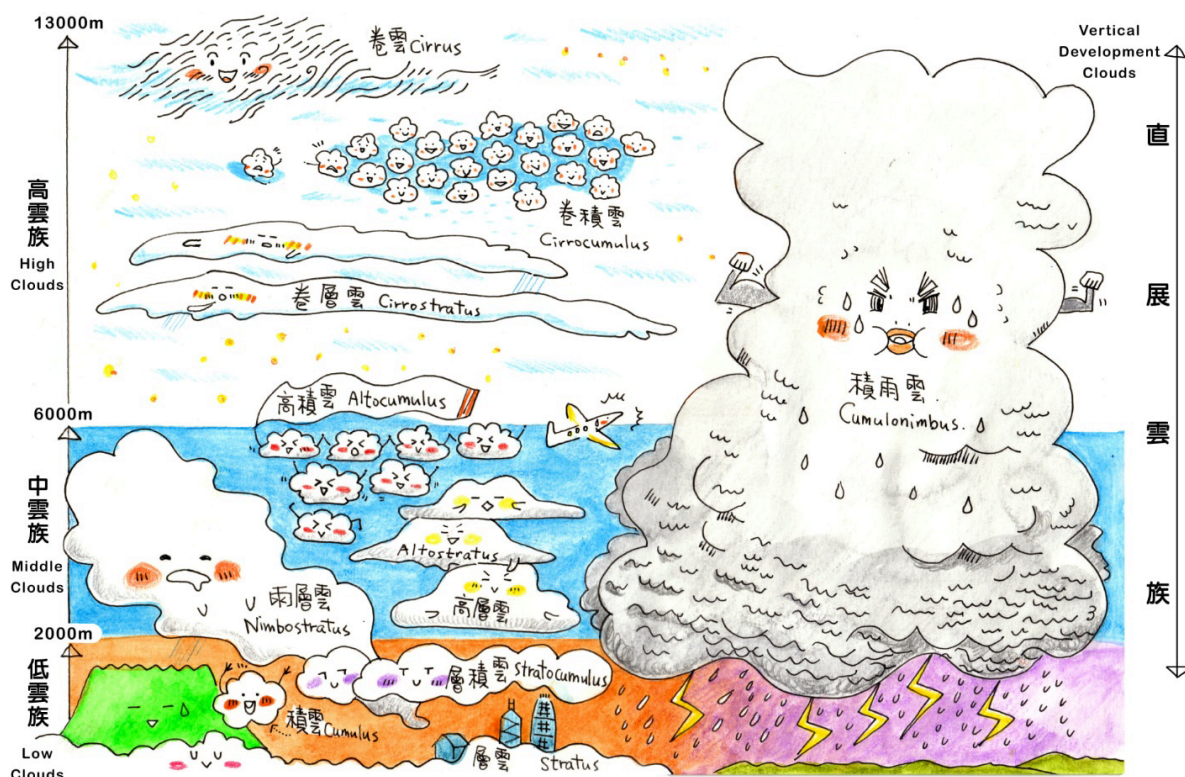


The Four Core Types of Clouds

Let's look at the four core types of clouds.

Name of Clouds	Colour / Appearance (Image source: HKO)	Associated Weather	Photos (Photo credits: Nelson Lau)
Stratus	Grey, low, looks like fog Looks like an even sheet 	Foggy Cloudy There may be drizzles	
Cumulus	Flat base Cotton-liked or cauliflower-liked top 	Surrounding areas may be sunny There may be localized rains	
Cumulonimbus	Dark grey and very thick Large individual cloud or covering the whole sky 	Stormy Thunderstorm There may be tornadoes and hails	
Cirrus	White fibrous clouds 	Mostly sunny Weather may turn bad later	

雲寶寶的十種分類 The 10 Basic Types of Clouds



奇美

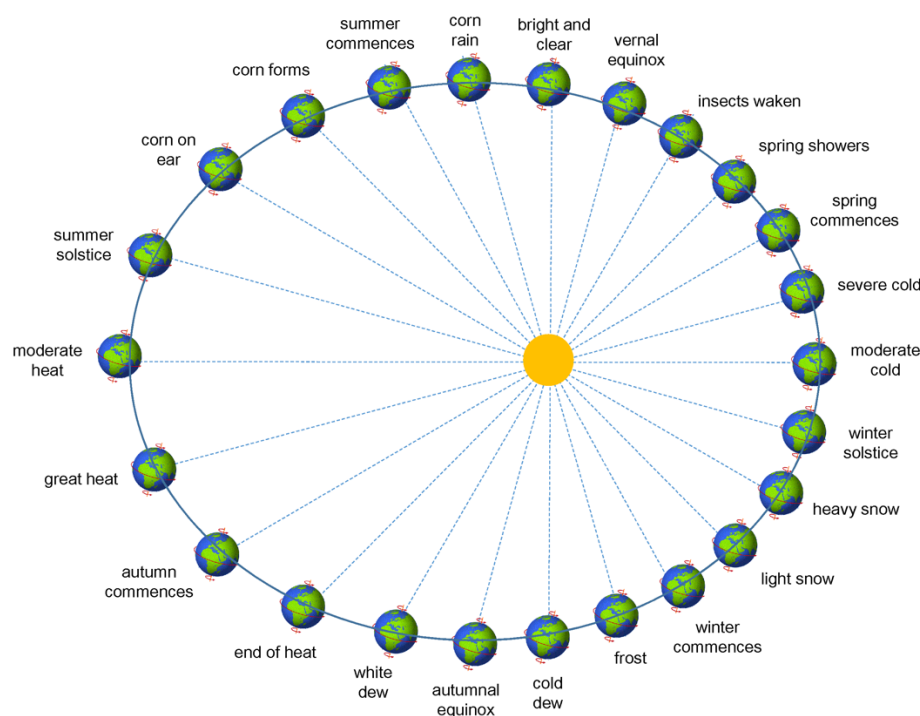
(Image source: Leungkeimei Studio)

(<https://www.facebook.com/leungkeimei/photos/a.328815197154119/2673325222703093/>)

What does the clouds look like today? Let's make a sketch!

5. 24 Solar Terms

The Chinese culture based heavily on agriculture, which depends on weather and climate. The farmers work according to the climate patterns of the year. Farmers in the ancient times observed the relationships between climate patterns, natural phenomena and the position of the sun, and made the 24 solar term system.



The elliptical Earth's orbit and positions of 24 solar terms

(Image source: Friends of UNESCO HK)

(<http://friends.unesco.hk/en/2017Apr/en/A4.html>)

Do You Know?

In 2016, the Chinese "24 solar terms" was added to the United Nations Educational, Scientific and Cultural Organization's (UNESCO) world intangible cultural heritage list.

There are 24 solar terms, so how many solar terms are there in each month?

$$24 \div 12 = \underline{2}$$

∴ There are 2 solar terms in each month.

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Let's learn about some solar terms common in our daily life.

(For some terms, there are different translations, the left one is HKO translation and the right one is UNESCO translation.)

January	Moderate Cold / Lesser Cold	Severe Cold / Greater Cold
February	Spring Commences / Beginning of Spring	Spring Showers / Rain Water
March	Insects Waken / Insects Awakening	Vernal Equinox / Spring Equinox
April	Bright and Clear / Fresh Green	Corn Rain / Grain Rain
May	Summer Commences / Beginning of Summer	Corn Forms / Lesser Fullness
June	Corn on Ear / Grain in Ear	Summer Solstice
July	Moderate Heat / Lesser Heat	Great Heat / Greater Heat
August	Autumn Commences / Beginning of Autumn	End of Heat
September	White Dew	Autumnal Equinox
October	Cold Dew	Frost / First Frost
November	Winter Commences / Beginning of Winter	Light Snow
December	Heavy Snow	Winter Solstice

Can you match the solar terms with the following meaning, characteristics and the Chinese tradition?

Solar Term	Meaning	Characteristics / Tradition
Spring Commences	Start of spring, commence to grow paddy rice.	The Lunar New Year is around this solar term.
Vernal Equinox	The middle of spring.	The day time and night time are the same on this day, and the day time is getting longer after this day.
Summer Commences	Begin of summer, living beings grows rapidly.	Temperature rises significantly. Hot summer is coming, thunderstorms become frequent.
Summer Solstice	On this day the day time is the longest in the year.	Twilight lasts until around 8:30pm on this day in HK.
Autumn Commences	Start of Autumn. Residue heat can remain. Sky tends to be clear.	Cool breezes begins in early morning and in the evening. Dews may be found in dawn if the sky is clear.
Autumnal Equinox	The middle of autumn.	The day time and night time are the same on this day, and the night time is getting longer after this day. The mid-autumn festival is around this solar term.
Winter Commences	Start of winter. Agriculture activities terminates, crops are harvested and stored.	Northerly winds become more prevalent, temperature begins to drop.
Winter Solstice	On this day the day time is the shortest in the year.	This is a very important day of Chinese families. Members of Chinese families go home to have gathering and dinners. It is a more important day than the Lunar New Year in many Chinese families.
Great Heat	The hottest period in the year.	Chinese families have "cool" food (in Chinese medicine) to reduce excess heat in the body.
Bright and Clear	It means bright and clear. The weather varies a lot.	Chinese families go to the graves of their ancestors to do tomb sweeping.
Insects Waken	Hibernating animals wakes up around this day.	The first thunderstorm in the year begins around this day. Some Hong Kong and Guangdong people do "Villain Hitting".

References:

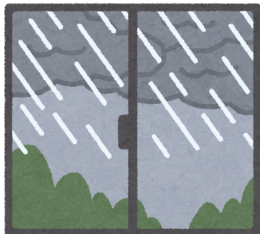
HKO— <https://www.hko.gov.hk/en/gts/time/24solarterms.htm>

UNESCO— <https://www.unesco.org/archives/multimedia/document-4397>

UNESCO HK— <http://friends.unesco.hk/en/2017Apr/en/A4.html>

6. 5-Day Weather Observation

Let's make 5-day weather observation record based on your own observation.

	(Example)	Day 1	Day 2
Observation Date	23/7 (Sunday)		
Observation Time	1:30pm (After school)		
Observation Location	At the gate of school		
Temperature	Hot		
General Weather	Sunny with occasional showers		
Humidity	Humid		
Rainfall	10 mins of heavy rain around 1:00pm		
Wind Speed / Direction	Windy / Easterly		
Cloud Cover	Many clouds / Loose		
Cloud Type(s)	Cumulus and Cirrus		
Natural Phenomena	Dragonflies flying low Lots of flying termites		
Draw the Weather Today			

Let's compare your record with the HKO weather record!

Cub Scout Weatherman Badge Resource Pack

	Day 4	Day 5	Day 6
Observation Date			
Observation Time			
Observation Location			
Temperature			
General Weather			
Humidity			
Rainfall			
Wind Speed / Direction			
Cloud Cover			
Cloud Type(s)			
Natural Phenomena			
Draw the Weather Today			

Let's compare your record with the HKO weather record!

7. Tasks for Completing Weatherman

You need to complete 2 more tasks for gaining Weatherman Badge, what are your choices?

- ☐ Make a poster or devise an experiment to describe "water cycle".
- ☐ Make a model of wind gauge (wind direction or speed).
- ☐ Learn meteorological knowledge through online resources and simply report on a meteorological phenomenon.



8. Additional Information

The website of Hong Kong Observatory: <https://www.hko.gov.hk/en/index.html>

Youtube Channel of Hong Kong Observatory: <https://www.youtube.com/@hkweather>

Website of Meteorology Team, Programme Branch, SAHK:

http://meteam.org/index_web.html

Other useful website or resources suggested by my leader:

- End of Resource Pack -