

WEATHER

All levels



Purpose

To explore one of the great mysteries of God's creation: the weather. Man has tried without success to predict and even control it. This badge will illustrate the equipment used to make weather reports and the difficulties involved.

Exploring

Learn the following information which is associated with the weather and weather forecasts.

1. **Low Pressure System** warm air, which is lighter than cold air, rises and creates an area of low pressure. Air currents move upwards, the air cools and clouds are often formed.
 2. **High Pressure System** cold air, which is heavier than warm air, settles downward and compresses, creating areas of high pressure. This compression creates heat and evaporative clouds, bringing warm weather.
 3. **Isobars** lines on a weather map indicating pressure, measured in millibars.
 4. **Barometer** an instrument used to measure atmospheric pressure.
 5. **Cloud Formations**
CIRRUS curly, white clouds very high in the sky. They are usually formed by ice crystals and indicate fine weather.
CUMULUS towering masses of white cloud with irregular rounded tops and usually flat or nearly flat bases. Often parts of it are dark, indicating that it may rain (or snow).
STRATUS clouds that appear in layers of sheets and often bring rain.
NIMBUS low, dark rain clouds.
- Cloud formations are often a combination of the above and are then given names such as nimbostratus, stratocumulus, etc.
6. **Humidity** the amount of moisture in the air. Very damp, warm air will feel hotter than it really is and cold, damp air will feel incredibly chilly. It is measured and expressed as a percentage of 100 which is saturation point.

Do the following.

7. Obtain a copy of a weather map from your local newspaper. Have it enlarged if possible so that the information on it is clearer. Highlight any high or low pressure system and the isobars. Indicate the maximum and minimum temperatures, humidity, wind direction and speed, atmospheric pressure and rainfall in your area for that particular day.
8. Weather satellites are now used to assist in forecasting the weather. From your local newspaper, obtain a copy of a photograph taken by a satellite at the same time on the same day as your weather map was drawn. Have it enlarged if possible. Compare the cloud formations with the pressure systems and demonstrate how they relate to each other.

Doing

1. Obtain the following instruments: a barometer, thermometer and hygrometer (for measuring humidity). Make or obtain a rain gauge and wind vane. Ask your

Counsellor to assist if you have any difficulty.
Set up a Weather Station in your backyard, clear of any trees, shrubs or sheds. At the same time each day, observe and record the weather conditions. Do this for seven days (remember to empty the rain gauge after each reading and keep the thermometer in the shade). Prepare a chart similar to that below and record the results.

	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
Temperature							
Humidity							
Atmospheric Pressure							
Wind Direction							
Cloud Formation							
Rainfall							

Using the knowledge you have learned through observation, predict the weather for the eighth day, then compare your prediction with the actual weather.

- 2. Ask your Counsellor to arrange for your group to visit a weather station. The Bureau of Meteorology will have a list of manned, registered weather stations in your area.

Reflection

People very often complain about the weather forecast. Did you notice any sudden changes in the weather during your eight days of observation? Were you able to predict accurately? What caused the change? What makes forecasting so difficult? Is it possible to control the weather? Why/why not?

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REFERENCES

Books are available from your Library which will provide more information about weather. Also look up an encyclopedia.

Ask your Counsellor to sign below and arrange for the presentation of your badge.

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