

WEATHER / OCEANOGRAPHY

Prepared by:

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Target Group:

All scouts

Pre-Requisites:

None

Materials Needed—Staff:

Instructional Outcomes:

Upon completion of this activity, scouts will have a basic knowledge of Meteorology. In addition to learning how everyday weather is predicted, Scouts can learn about extreme weather such as thunderstorms, tornadoes, and hurricanes, and how to stay safe.

And

The oceans cover more than 70 percent of our planet and are the dominant feature of Earth. Wherever you live, the oceans influence the weather, the soil, the air, and the geography of your community. To study the oceans is to study Earth itself.

NOTE: Remember that this lesson plan is a guideline. Not every requirement must be completed in the order they are typed here. Many of the topics discussed in these badges are related to each other or heavily affect each other and should likely be discussed together.

MONDAY

(Ocean)Requirement 1:

Name four branches of oceanography. Describe at least five reasons why it is important for people to learn about the oceans.

(Ocean)Requirement 9:

Describe four methods that marine scientists use to investigate the ocean, underlying geology, and organisms living in the water.

(Weather)Requirement 1:

Define meteorology. Explain what weather is and what climate is. Discuss how the weather affects farmers, sailors, aviators, and the outdoor construction industry. Tell why weather forecasts are important to each of these groups.

(Weather)Requirement 7

Draw a diagram of the water cycle and label its major processes. Explain the water cycle to your counselor.

(Weather)Requirement 10a:

(a) Make one of the following instruments: wind vane, anemometer, rain gauge, hygrometer. Keep a daily weather log for one week using information from this instrument as well as from other sources such as local radio and television stations, NOAA Weather Radio All Hazards, and Internet sources (with your parent or guardian's permission). Record the following information at the same time every day: wind direction and speed, temperature, precipitation, and types of clouds. Be sure to make a note of any morning dew or frost. In the log, also list the weather forecasts from radio or television at the same time each day and show how the weather really turned out.

Scouts will use straws and cups to build an anemometer.

(Weather)Requirement 12:

Find out about a weather-related career opportunity that interests you. Discuss with and explain to your counselor what training and education are required for such a position, and the responsibilities required of such a position.

TUESDAY

(Ocean)Requirement 5:

List the main salts, gases, and nutrients in sea water. Describe some important properties of water. Tell how the animals and plants of the ocean affect the chemical composition of seawater. Explain how differences in evaporation and precipitation affect the salt content of the oceans.

(Ocean)Requirement 6:

Describe some of the biologically important properties of seawater. Define benthos, nekton, and plankton. Name some of the plants and animals that make up each of these groups. Describe the place and importance of phytoplankton in the oceanic food chain.

(Ocean)Requirement 7b:

(b) Make a series of models (clay or plaster and wood) of a volcanic island. Show the growth of an atoll from a fringing reef through a barrier reef. Describe the Darwinian theory of coral reef formation.

Use the Play-Doh in the lodge for this.

(Weather)Requirement 8:

Identify some human activities that can alter the environment, and describe how they affect the climate and people.

WEDNESDAY

(Ocean)Requirement 2:

Define salinity, temperature, and density, and describe how these important properties of seawater are measured by the physical oceanographer. Discuss the circulation and currents of the ocean. Describe the effects of the oceans on weather and climate.

(Ocean)Requirement 3:

Describe the characteristics of ocean waves. Point out the differences among the storm surge, tsunami, tidal wave, and tidal bore. Explain the difference between sea, swell, and surf. Explain how breakers are formed. Explain what a rip current is, how to avoid them, and what to do if you are caught in one.

(Ocean)Requirement 8c: (Time permitting)

(c) Explain to your troop in a five-minute prepared speech "Why Oceanography Is Important" or describe "Career Opportunities in Oceanography." (Before making your speech, show your speech outline to your counselor for approval.)

Let the scouts choose between a speech or a group skit, If thoughtful and well done the time requirement can be lenient

(Weather)Requirement 2:

Name five dangerous weather-related conditions. Give The safety rules for each when outdoors and explain the difference between a severe weather watch and a warning. Discuss the safety rules with your family.

(Weather)Requirement 4:

Explain the difference between high and low pressure systems in the atmosphere. Tell which is related to good and to poor weather. Draw cross sections of a cold front and a warm front , showing the location and movements of the cold and warm air, the frontal slope, the location and types of clouds associated with each type of front, and the location of precipitation.

(Weather)Requirement 5:

Tell what causes wind, why it rains, and how lightning and hail are formed.

(Weather)Requirement 8:

Describe how the tilt of Earth's axis helps determine the climate of a region near the equator, near the poles, and across the area in between.

(Weather)Requirement 11: (Time permitting)

Give a talk of at least five minutes to a group (such as your unit or a Cub Scout pack) explaining the outdoor safety rules in the event of lightning, flash floods, and tornadoes. Before your talk, share your outline with your counselor for approval.

Let the scouts choose between a speech or a group skit, If thoughtful and well done the time requirement can be lenient

Consider grouping weather's 10 and oceanography's 8c into a single combined activity.

THURSDAY

(Ocean)Requirement 8c:

Continue or start with the speeches/skits.

(Weather)Requirement 10:

Continue or start with the speeches/skits.

FRIDAY

(Ocean)Requirement 4:

Draw a cross-section of underwater topography. Show what is meant by:

- (a) Continental shelf
- (b) Continental slope
- (c) Abyssal plain

(Ocean)Requirement 8c: (If needed)

Finish any remaining speeches/skits.

(Weather)Requirement 6:

Identify and describe clouds in the low, middle, and upper levels of the atmosphere.
Relate these to specific types of weather.

(Weather) Requirement 3:

Identify at least two sources of weather forecast that can be used to prepare for hikes, overnights, and other outdoor activities. Name two emergency weather warnings.

(Weather)Requirement 9

Describe how the tilt of Earth's axis helps determine the climate of a region near the equator, near the poles, and across the area in between.