

Science in Weather Lesson Plan

Science and Technology Branch

Lesson Plans are designed to accompany the related Helps documents for each Step. Please refer to the resources in the appropriate Helps document found in the Leader Pages while you prepare your lesson.

The six "F"s are presented in a suggested order, but you are not required to complete them in that order. You may rearrange them as fits your troop's particular needs.

Necessary Resources



- 2-liter bottle
- Matches
- Cardstock
- Cotton Balls
- Markers



- 2-liter bottle
- Matches
- Paper
- Pencil
- Blue Construction Paper
- Cotton Balls





- Baseball Bat
- Supplies needed for the weather station: http://www.ehow.com/how_4867576_makesimple-weather-station.html

FUN



Obstacle Course

Set up an obstacle course for the Trailmen to follow. Time each Trailman for the quickest time. Before each Trailman begins the course, he must stand a baseball bat upright on the ground, place his forehead on it, and spin around 5 times.



Cloud in Bottle

Fill a 2-liter bottle about I/8 full of warm water. Place the lid tightly on the bottle; squeeze the bottle with both hands. Hold it there for a moment then release pressure while still holding the bottle. Did anything change (probably not)?



Open the bottle and return it to its original shape. Allow one boy to light a match and drop it into the bottle. It will extinguish when it hits the water. Replace the lid and squeeze again. Did something happen this time? Repeat the last two steps several times to allow each boy to light a match and drop it in the bottle.



FOCUS



Predicting the Weather!

Before you go camping, you need to know what the weather is going to be like. Will it be rainy or clear? Clues we observe in nature can help us predict the weather. Here are a few hints nature gives us:

- Did you know that you can tell by the clouds if it's going to rain? Big, billowy clouds—cumulus clouds mean that there is fine, clear weather ahead. Very high clouds are called cirrus clouds or "mare's tails." They are wispy clouds that look like a horse's tail. They hint at rain or bad weather within 36 hours.
- A circle around the moon at night foretells rain. An old proverb says, "Circle around the moon, rain or snow soon."
- A red sky in the morning means there may be rain.
 But a red sky at night tells of good weather and clear skies. The old proverb says, "Red sky at night, sailor's delight. Red sky at morning, sailors take warning." And campers, too!
- Make a campfire. The smoke usually rises. If it blows to the side or hangs low, you might want to listen to the old proverb that says, "If smoke hangs low, you're in for a blow." Rain coming!
- Walk in the grass in the morning. If grass is dry, it means that rain is coming. If it is wet, unless it rained the night before, the day will be clear.
- Seagulls may stop flying and take refuge at the coast if a storm is coming.
- Cows often will lie down and stay close together before a thunderstorm.
- Ants go down into the ground and will not come to the surface before foul weather. They might even build their ant beds higher before a storm.
- Turtles search for higher ground when a lot of rain is coming. Watch for them on the road before a rain.



God, in his wisdom, made plants and animals to react to coming weather in certain ways. We are wise when we look for those clues and heed the warnings they give us.



Meteorology!

If possible, watch a video about clouds: http://www.youtube.com/watch?v=7MnxnOHCCic



Identify and describe the three main cloud types and how they affect weather:

http://eo.ucar.edu/webweather/cloud3.html. Discuss the following types of clouds:

Stratus: low clouds

• Altostratus: middle clouds

• Cirrus: high clouds

• Cumulus: clouds with vertical development

Ask the Trailmen what they think it means when you add the word "nimbus" to the name of a cloud. If no one guesses correctly, tell them that "nimbus" indicates a rain cloud.

Weather Terms

Discuss weather with the Trailmen. Address terms such as temperature, precipitation, humidity, fronts, high pressure system, low pressure system, etc.



FINGERS



Weather Poster

Teach the Foxes about predicting the weather using clues in nature. You might want to go to the Faith section and teach about the proverbs or sayings first. Then make a weather poster.

Glue or tape pictures on a piece of cardstock to help the Foxes remember some things about the weather. Some things to glue or draw might be:

- Cumulus clouds (use cotton balls glued close together into a cloud)
- A turtle
- A moon on a black background (let the boys color a white circle around the moon)
- Ants
- Mare's tail clouds (print pictures from the internet in advance)
- A red sky (show a picture of a red sky for boys to color, or print pictures from the internet in advance)
- Cows lying down
- A campfire on dark paper (color the smoke "hanging low")



Models of Clouds

Give each Trailman a sheet of blue construction paper and several cotton balls. Have the Trailmen tear cotton balls apart to make models of each type of cloud. Glue each type of cloud to the construction paper, and label the clouds using black marker.





Weather Station Make a simple weather station.

http://www.ehow.com/how_4867576_make-simple-weather-station.html

Or

Weather Map

View a current local weather map and discuss the symbols such fronts, highs, lows, precipitation, etc. A radar map can be pulled up on the internet as well.



FAITH (TRAIL GUIDE THOUGHTS)



God Knows the Weather

In Matthew I6, Jesus is talking to some religious leaders. He knows they know how about the weather, like when the sun rises and sets every day and how the summer will be sunny and the winter will be cold. Jesus says to them, "When it is evening, you say, it will be fair weather: for the sky is red. And in the morning, it will be foul weather today: for the sky is red and lowering. . . ye can discern the face of the sky" God has given us many ways to understand the weather.

Pray with the Trailmen.



God Created the Weather

God knows all about the weather. He created all of it! Read and discuss Job 36:26-30.

Pray with the Trailmen.



God's Consistency

Read and discuss Genesis 8:22. God created the weather. The pattern of the seasons and of day and night reminds us of God's consistency. God will never change. Read and discuss Hebrews I3:8.

Pray with the Trailmen.



FAMILY



Weather Forecast

Watch a weather forecast on TV with your parent or guardian. Answer some of the following questions:

- What did the weatherman say the weather would be like for tomorrow?
- What did he say it would be like for the next week?
- Will it rain?
- Will it be hot and dry?
- Will it snow?



Tracking the Weather

Track weather with your Trailman for at least five days. Track and chart the following: (chart included below)

- Temperature (Was it warmer, cooler, or the same as yesterday?)
- Wind (Was it calm or windy? What was the direction of the wind?)
- Precipitation (Was it rainy or dry?)
- Clouds (What type of clouds do we see?)

Discuss the potentially dangerous weather condition(s) in your community. Make a plan for safety precautions and procedures with these conditions.



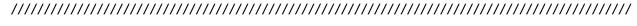
Predict the Weather

Observe the weather for one week by recording basic elements such as the predicted temperature, the actual temperature, sunrise, sunset, precipitation, etc. Watch the weather on TV, or look at the chart in your newspaper.

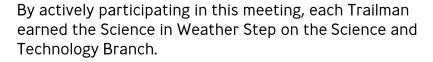
Discuss the potentially dangerous weather condition(s) in your community. Make a plan for safety precautions and procedures with these conditions.



FOREST BADGE









*Note: It is up to the Trail Guide to determine whether or not a Trailman was an active in the meeting. Even if he attended the meeting, you are not required to award him the Step if he did not participate.

