TEACHERS AND RESEARCHERS EXPLORING AND COLLABORATING

PolarTREC Lesson Resource

Amanda Ruland

Fire and Carbon in Siberian Forests

PolarTREC Expedition Page
https://www.polartrec.com/expeditions/fire-and-carbon-in-siberian-forests

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Janet Warburton and Judy Fahnestock
Education Project Managers
Arctic Research Consortium of the US (ARCUS)
3535 College Rd. Suite 101
Fairbanks, AK 99709
(907) 474-1600
info@polartrec.com
www.polartrec.com

Overview

Students will learn to:

- Observe and record weather patterns
- Process data by creating graphs/charts
- Compare actual weather data from the Siberian Arctic to local weather patterns, draw conclusions and make future predictions concerning weather patterns.

Big Idea

Why do people need to track weather over time?

Lesson Preparation

You will need a thermometer, tracking calendar, and a weather bar graph.

Procedure

1. Activate prior knowledge- Sing "Head, Shoulder, Knees, and Toes" 2x as a group. Touch your head then your shoulders and stop. Ask, “What comes next? How do you know?” Say: “Patterns repeat themselves over and over again, which makes them predictable.”
2. Have a class discussion about the seasons. What weather do we expect in Saratoga, Wyoming (replace with your own location) in the winter? spring? summer? fall?
3. Introduce the class to the tool you will be using - a thermometer. Tell them that over the next 30 days we will be using the thermometer to tell us the temperature outside. We will also have to observe and record the weather (sunny, partly cloudy, windy, rainy, stormy, snowy).
4. On chart paper, make predictions about anticipated weather and weather patterns for the month.
5. Incorporate collecting the temperature and weather as part of your daily routine.
6. Record your findings on a blank calendar, as well as the weather bar graph.
7. At the conclusion of the month ask students: What do you notice? Are there any patterns? Why is it important to track the weather over time?
8. Revisit predictions about weather patterns you made at the start of the month. Did your predictions match your findings?
9. Compare your local weather patterns with those of the 2019 June Siberian weather data in the Lesson Materials.
10. Allow students to create posters using illustrations and words to demonstrate their conclusions.
11. Share findings with another class.

Resource Details

Date

29 February 2020

Region

Arctic

Completion Time

More than a week

Grade

Elementary and Up

Permission

Download and Share

Expeditions

Fire and Carbon in Siberian Forests

Author(s)

Amanda Ruland

Related Members

Amanda Ruland

Jennie DeMarco

Materials

Lesson Materials

Thermometer

Topic

Water Cycle, Weather, and Climate

12. Ask students what new questions they have.

Extension

Select another location. Make predictions about the weather patterns in that location. Track and collect weather data online over the next 30 days and compare your findings to your predictions. Draw conclusions. Share your data with the class.

Transferability

While this lesson is designed for a kindergarten classroom, it can be easily adapted for upper grades by integrating additional data from various parts of the globe and comparing weather patterns on a larger scale over a longer period of time. Students can also look at warming temperatures around the world using real weather data from resources such as NOAA-National Oceanic and Atmospheric Administration. In the upper grades it is also vital to differentiate between weather (the day to day state of the atmosphere) and climate (the weather of a place averaged over a period of time i.e. 30 years).

Resources

Included in the Lesson Materials is:

- Calendar for Data Collection
- Weather Bar Graph
- June 2019 Temperature and Weather Data
- Sample calendar: June 2019 NE Science Station Weather Data

Assessment

Formative Assessment: Initiate a student discussion "Why do people need to track the weather over time?".
Summative Assessment: Allow students to create posters using illustrations and words to demonstrate their conclusions.

Author/Credits

Amanda Ruland, PolarTREC Educator 2019
Saratoga Elementary/Middle School
Saratoga, WY
agr5032 [at] gmail.com

Date: June-2019
Location: Northeast Science Station, Cherskii, Siberia, Russia- Arctic Circle
Note: all measurements taken with a standard thermometer at 12:00pm
Units: degrees Fahrenheit

1:sunny 72
2:sunny 80
3:sunny 78
4:partly cloudy 76
5:cloudy 56
6:partly cloudy 62
7:partly cloudy 66
8:partly cloudy 62
9: sunny 72
10:sunny 86
11:sunny 85
12:sunny 78
13:sunny 64
14:partly cloudy 62
15:sunny 66
16:sunny 70
17:sunny 64
18:partly cloudy 63
19:sunny 74
20:sunny 82
21:sunny 77
22:partly cloudy 70
23:partly cloudy 70
24:sunny 86
25:sunny 78
26:windy 78
27:partly cloudy 68
28:cloudy 68
29:partly cloudy 70
30:rainy 58

Weather in the Month of: _____

Number of Days

10
9
8
7
6
5
4
3
2
1
0

SUNNY 

CLOUDY

PARTLY CLOUDY 

RAINY 

WINDY 

STORMY 

SNOWY

Type of Weather

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday

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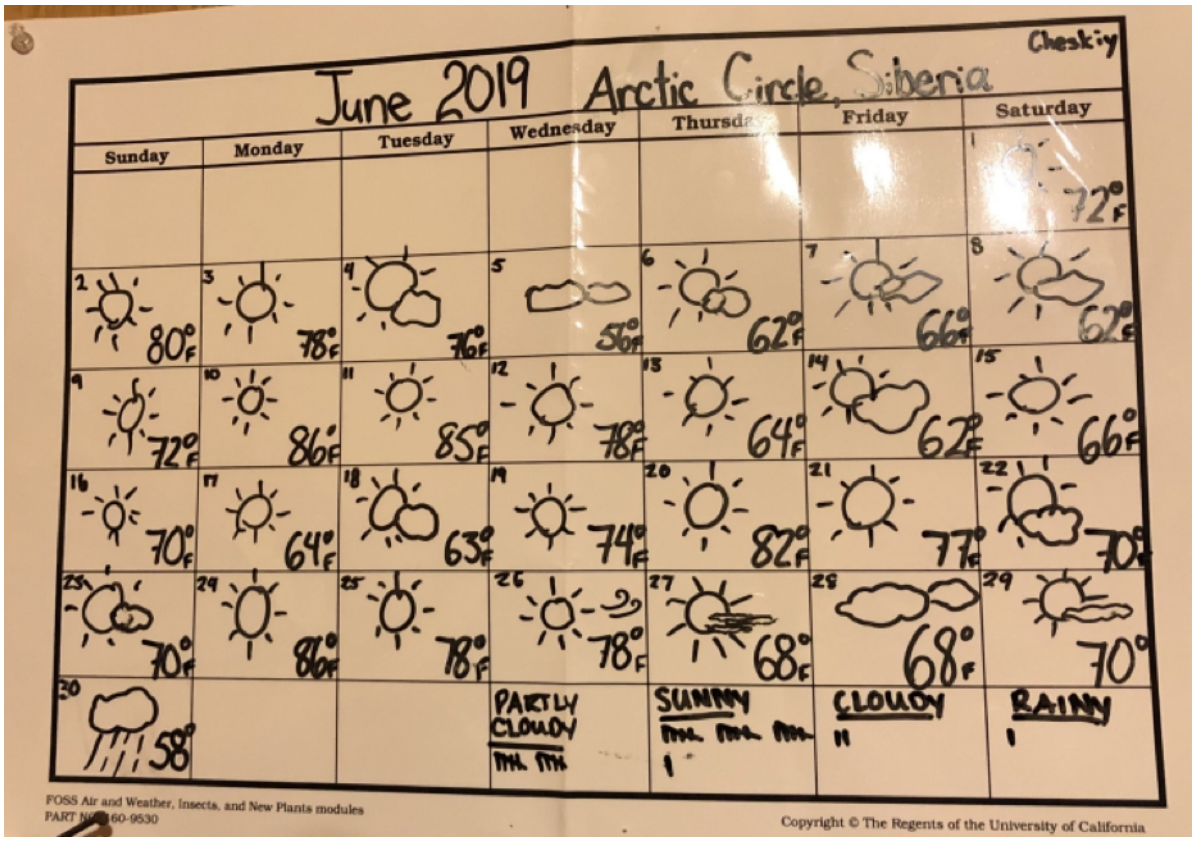

Cheskiy

June 2019 Arctic Circle, Siberia

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1 72°F
2 80°F	3 78°F	4 76°F	5 56°F	6 62°F	7 66°F	8 62°F
9 72°F	10 86°F	11 85°F	12 78°F	13 64°F	14 62°F	15 66°F
16 70°F	17 64°F	18 63°F	19 74°F	20 82°F	21 77°F	22 70°F
23 70°F	24 86°F	25 78°F	26 78°F	27 68°F	28 68°F	29 70°
30 58°			PARTLY CLOUDY tttt. tttt.	SUNNY tttt. tttt. tttt. 1	CLOUDY 11	RAINY 1

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