Introduction

Math is an integral part of our everyday lives. It is crucial for students to develop the math skills necessary for solving a wide range of problems encountered in the real world.

This binder includes reproducible activities that provide practice with a variety of math formats commonly used in our daily lives. The activities are divided into six units, each focusing on a different math-related topic.

Based on her years of teaching at-risk middle school students as well as GED classes to struggling adult learners, Bonnye Wier Cavazos created this program to reach and engage students who struggle with math. Each activity sheet includes clear, simple directions and short activity questions and sentences written at a low reading level. The activities feature realistic graphic representations that middle school and high school students and adults already encounter or will soon encounter.

Six Units

Each unit provides a teacher lesson plan to introduce the real-world math skills to be covered. Also included are a parent letter, ten practice pages, a list of extension activities, and an assessment. The units are:

Weather

Sports

Contracts

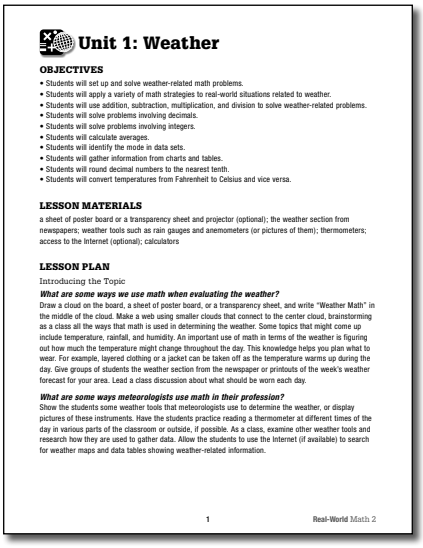
Jobs

Banking

Budgeting

Unit Lessons

At the beginning of each unit is a two-page lesson that introduces and teaches the real-world math topic. Each lesson includes objectives, a materials list, and a lesson plan that provides for class discussion, grouping of students, and hands-on participation.



Unit 1: Weather

OBJECTIVES

- Students will set up and solve weather-related math problems.
- Students will apply a variety of math strategies to real-world situations related to weather.
- Students will use addition, subtraction, multiplication, and division to solve weather-related problems.
- Students will solve problems involving decimals.
- Students will solve problems involving integers.
- Students will calculate averages.
- Students will identify the mode in data sets.
- Students will gather information from charts and tables.
- Students will round decimal numbers to the nearest tenth.
- Students will convert temperatures from Fahrenheit to Celsius and vice versa.

LESSON MATERIALS

a sheet of poster board or a transparency sheet and projector (optional); the weather section from newspapers; weather tools such as rain gauges and anemometers (or pictures of them); thermometers; access to the Internet (optional); calculators

LESSON PLAN

Introducing the Topic

What are some ways we use math when evaluating the weather?

Draw a cloud on the board, a sheet of poster board, or a transparency sheet, and write "Weather Math" in the middle of the cloud. Make a web using smaller clouds that connect to the center cloud, brainstorming as a class all the ways that math is used in determining the weather. Some topics that might come up include temperature, rainfall, and humidity. An important use of math in terms of the weather is figuring out how much the temperature might change throughout the day. This knowledge helps you plan what to wear. For example, layered clothing or a jacket can be taken off as the temperature warms up during the day. Give groups of students the weather section from the newspaper or printouts of the week's weather forecast for your area. Lead a class discussion about what should be worn each day.

What are some ways meteorologists use math in their profession?

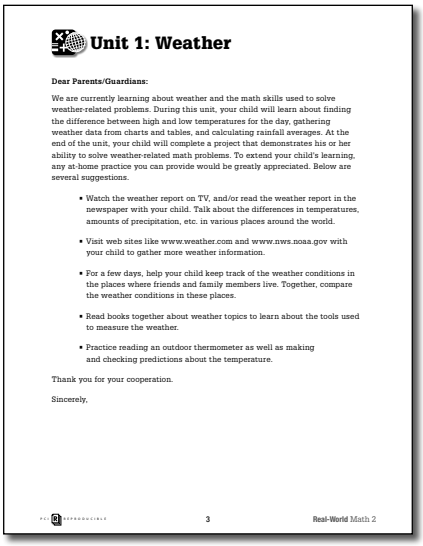
Show the students some weather tools that meteorologists use to determine the weather, or display pictures of these instruments. Have the students practice reading a thermometer at different times of the day in various parts of the classroom or outside, if possible. As a class, examine other weather tools and research how they are used to gather data. Allow the students to use the Internet (if available) to search for weather maps and data tables showing weather-related information.

1 Real-World Math 2

Introduction (Continued)

Parent Letter

Before beginning a new unit, a copy of the parent letter should be sent home with each student. The parent letter explains the topics being studied in the unit and offers suggestions for at-home practice.



Unit 1: Weather

Dear Parents/Guardians:

We are currently learning about weather and the math skills used to solve weather-related problems. During this unit, your child will learn about finding the difference between high and low temperatures for the day, gathering weather data from charts and tables, and calculating rainfall averages. At the end of the unit, your child will complete a project that demonstrates his or her ability to solve weather-related math problems. To extend your child's learning, any at-home practice you can provide would be greatly appreciated. Below are several suggestions.

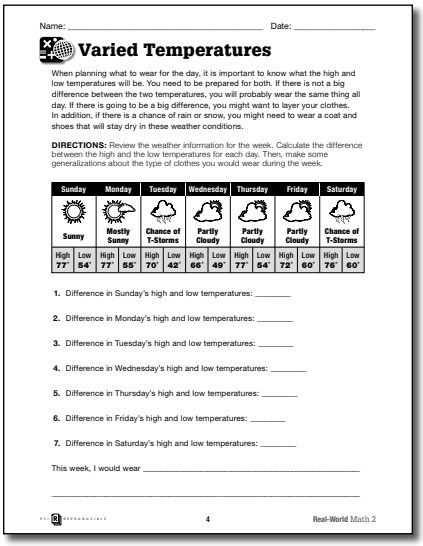
- Watch the weather report on TV, and/or read the weather report in the newspaper with your child. Talk about the differences in temperatures, amounts of precipitation, etc. in various places around the world.
- Visit web sites like www.weather.com and www.nws.noaa.gov with your child to gather more weather information.
- For a few days, help your child keep track of the weather conditions in the places where friends and family members live. Together, compare the weather conditions in these places.
- Read books together about weather topics to learn about the tools used to measure the weather.
- Practice reading an outdoor thermometer as well as making and checking predictions about the temperature.

Thank you for your cooperation.

Sincerely,

Activity Sheets

Each reproducible activity sheet features a clear and concise introduction to the topic. After reading the brief introduction, students will review a realistic graphic representation of information pertaining to the topic. They will then read simple directions instructing them to use the chart, table, or diagram to solve math problems related to the topic. Students will use a variety of math skills to solve the problems as the skills naturally relate to the material. In many cases, students may need to use calculators to find answers and/or check their work.



Name: _____ Date: _____

Varied Temperatures

When planning what to wear for the day, it is important to know what the high and low temperatures will be. You need to be prepared for both. If there is not a big difference between the two temperatures, you will probably wear the same thing all day. If there is going to be a big difference, you might want to layer your clothes. In addition, if there is a chance of rain or snow, you might need to wear a coat and shoes that will stay dry in these weather conditions.

DIRECTIONS: Review the weather information for the week. Calculate the difference between the high and the low temperatures for each day. Then, make some generalizations about the type of clothes you would wear during the week.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Sunny	Mostly Sunny	Chance of T-Storms	Partly Cloudy	Partly Cloudy	Partly Cloudy	Chance of T-Storms
High 77° Low 54°	High 77° Low 55°	High 70° Low 42°	High 66° Low 49°	High 77° Low 54°	High 72° Low 60°	High 76° Low 60°

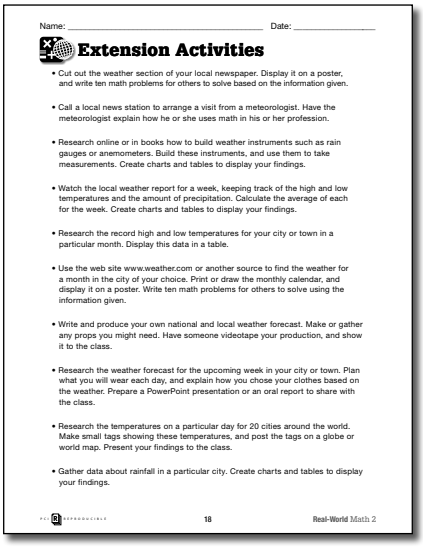
1. Difference in Sunday's high and low temperatures: _____
2. Difference in Monday's high and low temperatures: _____
3. Difference in Tuesday's high and low temperatures: _____
4. Difference in Wednesday's high and low temperatures: _____
5. Difference in Thursday's high and low temperatures: _____
6. Difference in Friday's high and low temperatures: _____
7. Difference in Saturday's high and low temperatures: _____

This week, I would wear _____

_____

Extension Activities

After completing all of the activity sheets in a unit, each student should choose one extension activity to further apply the skills that have been learned. Each unit contains a list of ten different suggestions. The activities vary in difficulty level and appeal to students with different learning styles, making this section appropriate for students of varying ability and interest levels. Some students may prefer to conduct surveys, while others might feel more comfortable writing an explanation of the math process or making a poster.



Name: _____ Date: _____

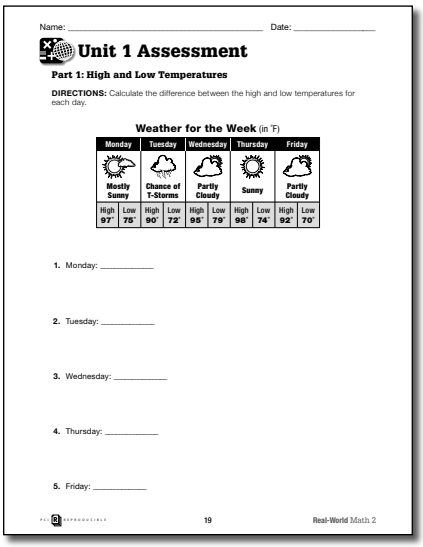
Extension Activities

- Cut out the weather section of your local newspaper. Display it on a poster, and write ten math problems for others to solve based on the information given.
- Call a local news station to arrange a visit from a meteorologist. Have the meteorologist explain how he or she uses math in his or her profession.
- Research online or in books how to build weather instruments such as rain gauges or anemometers. Build these instruments, and use them to take measurements. Create charts and tables to display your findings.
- Watch the local weather report for a week, keeping track of the high and low temperatures and the amount of precipitation. Calculate the average of each for the week. Create charts and tables to display your findings.
- Research the record high and low temperatures for your city or town in a particular month. Display this data in a table.
- Use the web site www.weather.com or another source to find the weather for a month in the city of your choice. Print or draw the monthly calendar, and display it on a poster. Write ten math problems for others to solve using the information given.
- Write and produce your own national and local weather forecast. Make or gather any props you might need. Have someone videotape your production, and show it to the class.
- Research the weather forecast for the upcoming week in your city or town. Plan what you will wear each day, and explain how you chose your clothes based on the weather. Prepare a PowerPoint presentation or an oral report to share with the class.
- Research the temperatures on a particular day for 20 cities around the world. Make small tags showing these temperatures, and post the tags on a globe or world map. Present your findings to the class.
- Gather data about rainfall in a particular city. Create charts and tables to display your findings.

Introduction (Continued)

Assessments

Each unit includes an assessment with questions that focus on the math topics covered in the unit. The assessments follow the same format as the activity sheets, including simple directions, realistic sample items students must use to obtain information, and problems to solve. In many cases, students may need to use calculators to solve the problems and/or check their work.



Name: _____ Date: _____

Unit 1 Assessment

Part 1: High and Low Temperatures

DIRECTIONS: Calculate the difference between the high and low temperatures for each day.

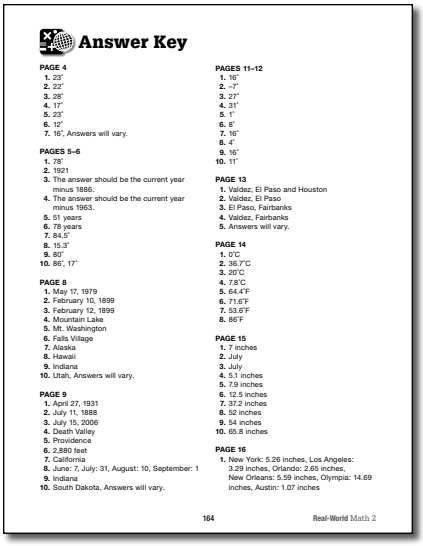
Weather for the Week (in °F)

Monday		Tuesday		Wednesday		Thursday		Friday	
Mostly Sunny		Chance of T-Storms		Partly Cloudy		Sunny		Partly Cloudy	
High	Low	High	Low	High	Low	High	Low	High	Low
97°	75°	90°	72°	95°	79°	98°	74°	92°	70°

1. Monday: _____
2. Tuesday: _____
3. Wednesday: _____
4. Thursday: _____
5. Friday: _____

Answer Key

For your convenience, an answer key is included at the end of the binder, showing the correct answers for each activity sheet and unit assessment. In cases where several answers could be correct, "Answers will vary" is noted.



Answer Key

PAGE 4
1. 23°
2. 22°
3. 28°
4. 17°
5. 23°
6. 12°
7. 16°, Answers will vary.

PAGES 5–6
1. 78°
2. 1921
3. The answer should be the current year minus 1886.
4. The answer should be the current year minus 1963.
5. 51 years
6. 78 years
7. 84.5°
8. 15.3°
9. 80°
10. 86°, 17°

PAGE 8
1. May 17, 1979
2. February 10, 1899
3. February 12, 1899
4. Mountain Lake
5. Mt. Washington
6. Falls Village
7. Alaska
8. Hawaii
9. Indiana
10. Utah, Answers will vary.

PAGE 9
1. April 27, 1931
2. July 11, 1888
3. July 15, 2006
4. Death Valley
5. Providence
6. 2,880 feet
7. California
8. June: 7, July: 31, August: 10, September: 1
9. Indiana
10. South Dakota, Answers will vary.

PAGES 11–12
1. 16°
2. –7°
3. 27°
4. 31°
5. 1°
6. 8°
7. 16°
8. 4°
9. 16°
10. 11°

PAGE 13
1. Valdez, El Paso and Houston
2. Valdez, El Paso
3. El Paso, Fairbanks
4. Valdez, Fairbanks
5. Answers will vary.

PAGE 14
1. 0°C
2. 36.7°C
3. 20°C
4. 7.8°C
5. 64.4°F
6. 71.6°F
7. 53.6°F
8. 86°F

PAGE 15
1. 7 inches
2. July
3. July
4. 5.1 inches
5. 7.9 inches
6. 12.5 inches
7. 37.2 inches
8. 52 inches
9. 54 inches
10. 65.8 inches

PAGE 16
1. New York: 5.26 inches, Los Angeles: 3.29 inches, Orlando: 2.65 inches, New Orleans: 5.59 inches, Olympia: 14.69 inches, Austin: 1.07 inches