

Math and Measuring the Star-Spangled Banner

Objective: Students apply historical information to math problems to gain an understanding of the flag's size.

Time: 50 minutes (in class or homework)

Skills: Measurement, finding area and perimeter, metric system, subtraction

Content Area: Mathematics- Geometry, Mathematics- Measurement, Social Studies- United States history

Materials:

- ◆ Copies of the math problems and “Flag Facts”

Standards:

NCHS History Standards

K-4 Historical Content Standards

4E: The student understands national symbols through which American values and principles are expressed.

5-12 U. S. History Content Standards

Era 4: Expansion and Reform (1801—61)

1A: The student understands the international background and consequences of the Louisiana Purchase, the War of 1812, and the Monroe Doctrine.

Principles and Standards for School Mathematics

3-5 Standards: Geometry

Identify, compare, and analyze attributes of two- and three-dimensional shapes and develop vocabulary to describe the attributes

Use geometric models to solve problems in other areas of mathematics, such as number and measurement

Recognize geometric ideas and relationships and apply them to other disciplines and to problems that arise in the classroom or in everyday life

K-2 Standards: Measurement

Understand such attributes as length, area, weight, volume, and size of angle and select the appropriate type of unit for measuring each attribute

Understand the need for measuring with standard units and become familiar with standard units in the customary and metric systems

The Star-Spangled Banner Project

Select and apply appropriate standard units and tools to measure length, area, volume, weight, time, temperature, and the size of angles

Develop, understand, and use formulas to find the area of rectangles and related triangles and parallelograms

3-5 Standards: Problem Solving

Solve problems that arise in mathematics and in other contexts

Introduction:

A variety of math problems can be created based on the Star-Spangled Banner, so that children can learn about the flag while they are improving their math skills. Below are some sample problems, based on the information given in “Flag Facts.” You can also find more research on and images of the Star-Spangled Banner at

<http://www.americanhistory.si.edu/starspangledbanner>.

Directions:

1. Write the information from “Flag Facts” on the blackboard.
2. Solve the suggested problems in class.
3. Ask your class to write their own word problems about the flag as a homework assignment.

“Flag Facts”

The original Star-Spangled Banner measured 30 feet by 42 feet when it was created in 1813. In the 1800s, a few people were given pieces of the flag as mementoes. Some of the flag was lost due to wear and tear through use. The flag was given to the National Museum of American History in 1912. Today, the flag measures 30 feet by 34 feet.

Suggested Math Problems:

1. What was the perimeter of the original flag? What is the perimeter of the flag today? What is the difference between the two perimeters?
2. What was the area of the original flag? What is the area of the flag today? Find the difference. How much of the original flag was lost—measure the loss in total area inches and in the fraction of the original area that was lost.
3. How old is the flag today? How old was it when it was given to the National Museum of American History?
4. The flag was made with 15 stars. Each star is 24 inches wide. How wide is each star in centimeters?
5. Each star on the American flag represents a state. How many more states are there today than there were represented on the flag in 1813?

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For the History Channel

Editor

Libby O’Connell, Ph.D.
V.P. Historical Alliances

Business Manager

Beth Ann Marian, M.Ed.

Business Coordinator

Lourdes Gamez

Created By

Libby O’Connell, Ph.D.
Beth Ann Marian, M.Ed.
Kevin Blake
Jodi Greenwald

Research

Jamie Eschric
Jodi Greenwald
Kevin Blake

Creative Design

Madeline Gleason
Wendy Toffel

For The National Museum of American History

Director, Education and Visitor Services

Nancy McCoy

Director, Star-Spangled Banner Project

Ron Becker

Director, Hands-On Science Center

Theresa Esterlund

Chief Conservator

Suzanne Thomassen-Krauss

Education Specialists

Amy Bartow-Melia
Burt Glassman
Tim Grove

Curator, Star-Spangled Banner

Conservation Exhibition
Lonn Taylor

Chief of Education, Lemelson Center

Michael Judd

Teacher Advisors

Gloria Allen, Bunker Hill Elementary, Washington, D.C.
Veronica Bryant, Cameron Elementary, Fairfax Co., VA
Rhonda Dillard, Francis Scott Key Middle School, Montgomery Co., MD
Henry Edwards, Burgundy Farm Country Day, Alexandria, VA
Susan Hurscalderone, Blessed Sacrament, Chevy Chase, MD
Mike Rutherford, Manassas County Public Schools, VA
Robert Sindall, Cold Springs Elementary, Montgomery Co., MD
Vikki Wismer, Flintstone Elementary, Prince Georges Co., MD