



The Colonial Williamsburg Foundation

TEACHER RESOURCES

Mathematics with a Girls' Cap

Introduction

Women and girls in colonial Virginia wore a plain cap with a gathered crown and frill. The cap's shape and size varied over time with changing hair styles. Usually made of fine linen or cotton, it was one of the head coverings always worn publicly by females indoors as well as outside. To be found capless was to be found in a state of undress. Caps protected the hair from dirt acquired through everyday activities—smoke from fireplaces, grease from cooking, dust from travel, etc. Caps also covered hair which was washed infrequently (it was generally thought unhealthy to wash hair too often; it was easier to put on a clean cap). Caps were also worn under fancy bonnets and other types of hats.

The styles of women's caps changed multiple times a year. In popular culture, colonial caps have sometimes been called "mob caps," but that denotes a very specific kind of cap: one that ties under the chin and covers most of the wearer's hair. A mob cap was worn mostly by older, conservative women, or sometimes poor women doing physical, dirty work. "Cap" is the preferred term that encompasses the many varieties of cap worn by women and girls throughout this time period.

In this lesson, students explore mathematical concepts related to circles, then make their own girls' caps in a teacher-led activity. This lesson is best used within a unit on colonial America.

Note: for a hat for men, please see the Three-Cornered Hat Pattern.

Objectives

As a result of this lesson, the student will be able to:

1. connect the cap to daily life in the colonial period
2. follow directions and problem solve the creation of a girls' cap
3. identify and describe the mathematical principles of circles
4. present an oral report

Materials

- Vocabulary Graphic Organizer

- Girls' Cap Instructions
- poster paper (at least 20" x 20" per group)
- pencils, scissors, rulers
- ribbon
- linen or cotton cloth (at least 20" x 20" per group)
- lace, half inch wide (optional)

Strategy

1. Discuss with students the styles of eighteenth-century clothing. Refer to the Eighteenth-Century Clothing Teacher Institute lesson and/or the [Dressing the Part](#) activity.
2. Present the lesson in your math textbook on radius, diameter and circumference.
3. Pass out the Vocabulary Graphic Organizer to each student. Have students work in teams of three to look up definitions and draw illustrations. Allow time for each team to report its findings.
4. Either form new groups or retain original student groupings. Using the Girls' Cap Instructions, model the activity and have students follow along, completing each step as you do.

Lesson Extensions

- Have each student write a report on colonial clothing, e.g., the girls' cap, waistcoat, etc. Have students refer to the Teacher Institute lesson "Eighteenth-Century Clothing." Included in this report could be research into the natural fibers used to make the clothing being investigated. Students could also illustrate in their report the various kinds of clothing they are researching.
- Students can present first-person interpretations of 18th-century people while wearing their caps or three-cornered hats. See "Colonial Days in the Classroom" Teacher Gazette lesson or the Making History Live Teacher Guide for more information.

This lesson plan was developed by Beverly Murray, fifth grade teacher from Epperly Heights Elementary School, Del City, Oklahoma.

Girls' Cap Instructions

1. Take a 20" x 20" piece of poster paper. Fold the paper in half longwise and then shortwise. This gives you the center of the paper.
2. From the center of the paper, measure 9 inches (the radius), then mark the spot. Repeat this procedure every 2" until you have marked all the way around the paper in a circle.
3. Connect the marks until you have a completed circle. Cut out the circle. Ask, "What is the diameter for a circle whose radius is 9 inches?" Have students refer to Vocabulary Graphic Organizer.
4. Take the circle you just cut out. Follow the same procedure and mark 7 inches this time from the center of the circle. Repeat this procedure every 2" until you have marked all the way around the paper in a circle. **DO NOT CUT THIS OUT!** On each mark you will punch a hole. The pattern for the mob cap is complete.
5. Place the pattern on the cloth and trace the circumference. Cut out the circle. Mark on the cloth the places where you punched out a hole. Make a hole in the cloth at each mark.
6. Next, take a piece of ribbon. Tie it around the person's head for whom you are the making the mob cap. Tie a bow in the front. This gives you an approximate length of the ribbon. Cut the necessary length. Weave the ribbon in and out of the holes in the cloth. Gather the material as you proceed.
7. Place the cap on the person's head. Gather the material until it is properly fitted to the head. Tie a bow in front. You now have a cap!

Vocabulary Graphic Organizer

VOCABULARY	DEFINITION	ILLUSTRATION
Center		
Chord		
Diameter		
Radius		
Circumference		
Perimeter		
Approximate		
Equal		

Measurement		
Circle		
Formula		
Segment		