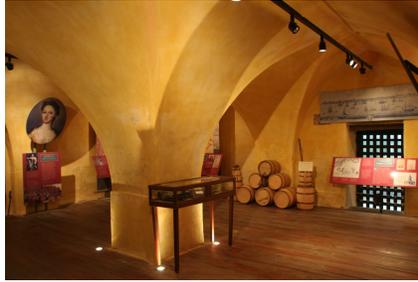


Containing an Explosion



Standards addressed:

Geometry

3-4.1 I identify the specific attributes of circles: Center, radius, circumference, and diameter.

Visual Arts

VA4-6.3 Students identify similarities, differences, and connections between the visual arts and other subjects in the school curriculum.

Background: The teacher will facilitate a discussion on arches. "An arch is a curved structure that spans an opening, usually made of stone or other masonry". The teacher will show pictures of The Powder Magazine from the website: www.powdermag.org emphasizing all the arches, the importance of the structure of the architecture, and what The Powder Magazine was used for during Colonial times.

The teacher will lead a discussion of "implosion" (implode) versus "explosion" (explode). Implosion is to burst inward (collapsing to the center). Explosion is to burst outward and upward.

The Powder Magazine was a military storage area for loose gunpowder during Colonial times. It is a small, brick building with walls 3 feet thick and consists of four arches that were designed to implode in case of an explosion.

Leading Questions: Why would it be important for a building like The Powder Magazine to fall in on itself rather than explode outward? If it exploded outward, it would spread the fire and cause damage. What forms within the building make it possible for the building to implode? The arches and sand between the roof and ceiling make implosion possible.

Objective: Students will compare and contrast circles and arches. Students will Draw circles and identify the properties of a circle - the center, the Diameter, the circumference, and the radius.

Materials: Construction paper

Old compact discs or coffee can lids for circle templates

Pencils/colored pencils

Rulers

Book: (optional) Sir Cumference and the First Round Table by Cindy Neuschwander

ISBN-13:9781570911521

Procedure: The children will trace an old cd, coffee can lid, or some other circular object that can be traced.

The teacher will write and model the properties of a circle on the board and identify the circumference, the center, the diameter, and the radius.

The teacher will show how to measure the diameter of her circle and ask the children to measure the diameter of their own circle.

The teacher will show them how to fold their circle in half and then in quarters to find the center of the circle.

The teacher will show how to draw the radius and explain that it is measured from the center to the outer circle.

They should notice that the radius is half of the diameter!

The teacher should also explain circumference.

Remind the students that an arch is very similar to half of their circle. They created an arch when they folded the circle in half.

As an extension to this activity, the students can trace an arch with the circle shape they just made. The students can create a drawing or picture using the arch as a focal point. They can brainstorm places they have seen an arch and create a picture based on their own experience with arches like bridges, churches, buildings, Tunnels, McDonald's, and even turtles! Students may also locate arches of historic Charleston structures at: <http://www.thul-online.com/charlestontour/index.htm>

Learn even more about arches and historic architecture! Call The Powder Magazine to book an architectural scavenger hunt field trip experience! (843)722-9350