



## Pre-Tour Lesson Plan

SUBJECT/CONCEPT: Understanding spheres with radius, diameter, circumference, and volume

LESSON TITLE: "From Pom Poms to Pinch Pots: Math In The Creative Process"

### Outline:

#### 1. Introduction of Diameter

- a. instruction on definition of diameter.
- b. calculate diameter with pencil and paper various circles in classroom
- c. verbalize student constructed definition of diameter
- d. identify need for ability to determine diameter in relation to radius, circumference
- e. measure yarn for creating pom poms with math knowledge relating to diameter
- f. create the pom pom utilizing math knowledge relating to diameter
- g. sites for instructions in creating pom poms

<https://www.youtube.com/watch?v=fjxJFcm16r0>

[http://www.ehow.com/how\\_2105188\\_make-yarn-pom-poms.html](http://www.ehow.com/how_2105188_make-yarn-pom-poms.html)

#### 2. Introduction of Radius ( $r=1/2d$ )

- a. instruction on definition of radius
- b. calculate radius with pencil and paper same various circles in classroom
- c. verbalize student constructed definition of radius
- d. identify need for ability to determine radius in relation to diameter, circumference
- e. measure yarn for creation of pom pom with math knowledge of radius
- f. create pom pom utilizing math knowledge of radius

#### 3. Introduction of Circumference ( $c=\pi R^2$ )

- a. instruction on definition of circumference
- b. calculate circumference with pencil and paper same various circles in classroom
- c. verbalize student constructed definition of circumference
- d. identify need for ability to determine radius in relation to diameter, radius
- e. measure yarn for creating pom pom with math knowledge of circumference
- f. create pom pom utilizing math knowledge of circumference

#### 4. Relating to Volume and Constructing Pom Poms ( $V + 4/3\pi^3$ )

- a. instruction on formula for volume of a sphere
- b. use diameter, radius and circumference to determine size of pom poms to construct
- c. verbalize student constructed understanding/definition of volume
- d. create pom pom

- e. verbalize process using newly acquired math vocabulary
- f. measure newly made pom poms for volume