

# GEOMETRY

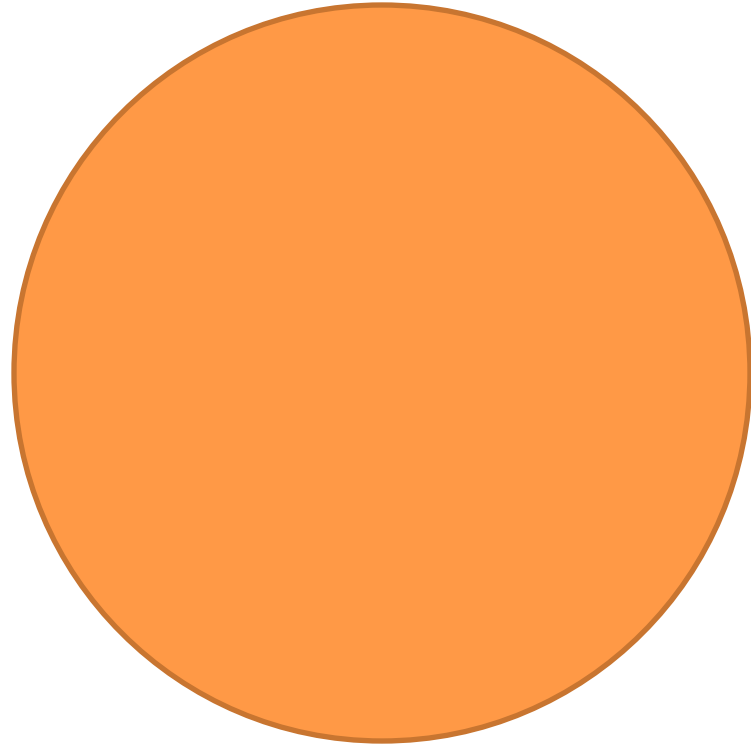
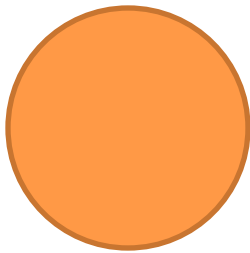
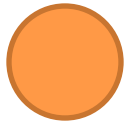


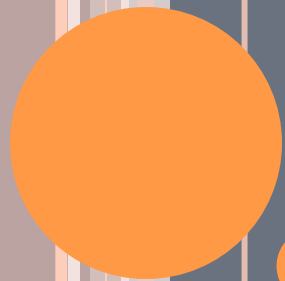
**Jonathan L. Brendefur, Ph.D.**  
**Sam Strother, MA.E.**

**Boise State University**



# PI ACTIVITY I





# CIRCLE ACTIVITY I

# CIRCLE ACTIVITY I

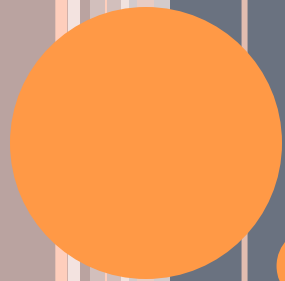
- Task 1
  - Using only a piece of string, find the ratio of the distance around a circle to its largest chord. Do this for three or four (five or ten or . . . ) circles.
  - Write a conjecture about the ratio of the distance around and any circle to its largest chord.
- Task 2
  - Test your conjecture (using measuring devices and calculations).



# CIRCLE ACTIVITY I

- What is the name of the distance around the circle?
- What is the name of the largest chord?
- What is the ratio of these two distances called?
- How can you use this information to determine a formula for the distance around the circle?

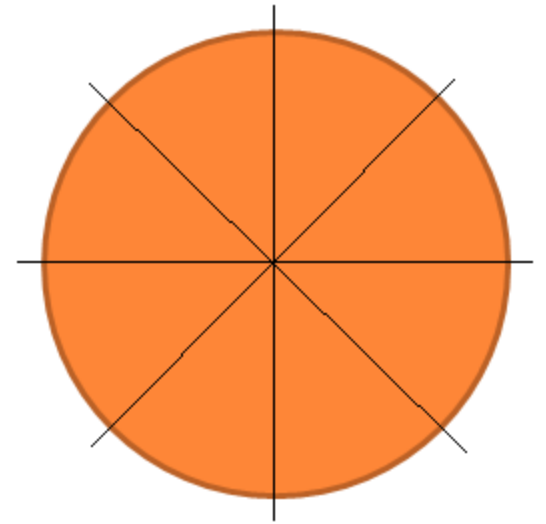




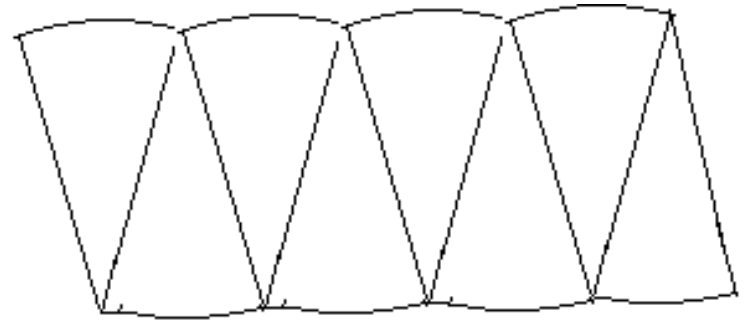
# CIRCLE ACTIVITY II

## CIRCLE ACTIVITY II

- Choose one of the circles and cut it out.
- Fold the circle in half and half again. (If you can, cut it half one or two more times.)
- Cut the 'pie' shape pieces out and lay them next to each other.



## CIRCLE ACTIVITY II



- Starting with the formula for the area of a parallelogram, create the formula for the area of circle.
- What is the height?
- What is the length of the base?



# THE MATHEMATICAL STRUCTURE OF GEOMETRY

- Space (Describing the world around us)
  - Measuring
  - Maneuvering
    - Transformations
    - Locations
  - Boundaries
    - Defining or **Describing Space** (including visualization)
    - Dimensions
    - 2-d, 3-d
- Shapes
  - Attributes and properties
  - **Composing/Decomposing**
  - Congruency and similarity
    - Growing and Shrinking
    - Transformation

