Circles and Pi

<---Sketch Title

Sketch Filename: CirclePi.gsp

Movie Filename: CirclePi.mov

Math Concept(s)

Properties of 2D Shapes
Area
Circumference?or

Suggested Grades

☐ 7
☒ 8
☒ 9 Applied

Sketchpad Level

Easy
- drag points and click buttons

Beginner
Intermediate
Experienced

Learning Goals:

- investigate the relationships among Pi, circumference and area of a circle
- develop the formulas for circumference and area

"Sketchy" Description:

This 11-page sketch includes:
- the use of a Frayer model for building vocabulary
- a guided exploration of properties of circles
- visualization activities for circumference and area of circles
- a self-checking practice page for calculating the area and perimeter of shapes

Lesson Plan Suggestions

- description of how the sketch might be used in each of the three lesson parts - Minds On, Action!, Consolidate.
- includes student groupings, instructional strategies, and connections to manipulatives or other technologies.

Minds On - students work in pairs to complete the Frayer model for "circumference", "diameter", and "radius" (this can be done with a printed version or directly onscreen)
- use the Investigate Circumference, What is Pi?, Cutting up a Circle, and/or Finding the Area of a Circle sketches to introduce and explore the contained topics with the whole class

Action! - After working with the sketches students could collect circles in the classroom and/or school to find the area and circumference

Consolidate - Students collect circles, find circumference, find diameter and verify the ratio of Pi

Extensions:

- Apply new learning to area and perimeter of polygons. (See Exploring and Exploring 2)

Questions or activities for students/parents to explore together: