



Making a Circle from Squares

Curriculum connections

Australian:

Year 1

- Recognise and classify familiar two-dimensional shapes and three-dimensional objects using obvious features (ACMMG022)
 - focusing on geometric features and describing shapes and objects using everyday words such as 'corners', 'edges' and 'faces' (??)

USA Common Core:

Kindergarten

- CCSS.MATH.CONTENT.K.G.B.4. Analyse and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts and other attributes.

Lesson Overview

Students explore the properties of circles and squares by trying to make a circle out of squares.

Lesson Objectives

1. Open the attached worksheet on all iPads (students may be able to do this themselves with some assistance).
2. Ask the children what the shape on the worksheet is.
Once they have named the circle, ask them to fill the circle with squares, with no overlapping, gaps or going over the lines.
 - Instruct students to create these squares using the shape tray.
 - They can use as many squares as they want.
3. Give students some time to attempt this before asking how many of them could fit the squares in the circle?
 - How many students couldn't get the squares to fit into the circle?

- Why or why not?
 - As students give their answers, prompt them (if needed) towards noting that circles have curved edges, whereas squares have straight edges.
 - Squares also have four vertices, whereas circles have none.
 - Can you make a square out of circles? Why or why not?
 - Therefore, you can conclude that neither shape can be made with the other.
4. Encourage them to think about what shapes they can make with squares.
- Take some suggestions before allowing students to create their own shapes with the squares.
 - As you walk around the class, ask students if they think they can make a triangle with the squares. Why or why not?
 - Encourage different types of rectangles, including different sizes of squares.
5. Ask students what shapes they made with their squares.
- What shapes couldn't they make?
 - Why or why not?

Resources

- iPads with Shape Lab installed
- Associated worksheet.