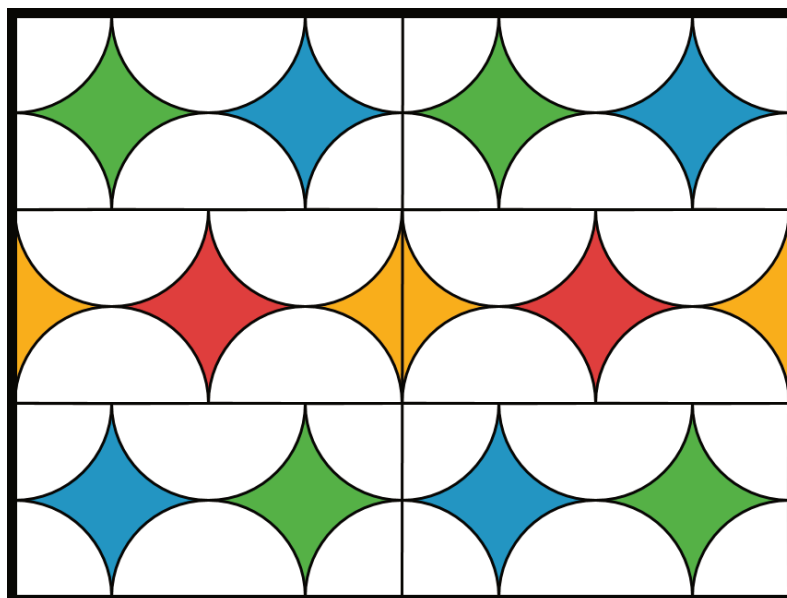


Lesson 20: Stained-Glass Windows

Let's use circumference and area to design stained-glass windows.

20.1: Cost of a Stained-Glass Window

The students in art class are designing a stained-glass window to hang in the school entryway. The window will be 3 feet tall and 4 feet wide. Here is their design.



They have raised \$100 for the project. The colored glass costs \$5 per square foot and the clear glass costs \$2 per square foot. The material they need to join the pieces of glass together costs 10 cents per foot and the frame around the window costs \$4 per foot.

Do they have enough money to cover the cost of making the window?

20.2: A Bigger Window

A local community member sees the school's stained-glass window and really likes the design. They ask the students to create a larger copy of the window using a scale factor of 3. Would \$450 be enough to buy the materials for the larger window? Explain or show your reasoning.

20.3: Invent Your Own Design

Draw a stained-glass window design that could be made for less than \$450. Show your thinking. Organize your work so it can be followed by others.