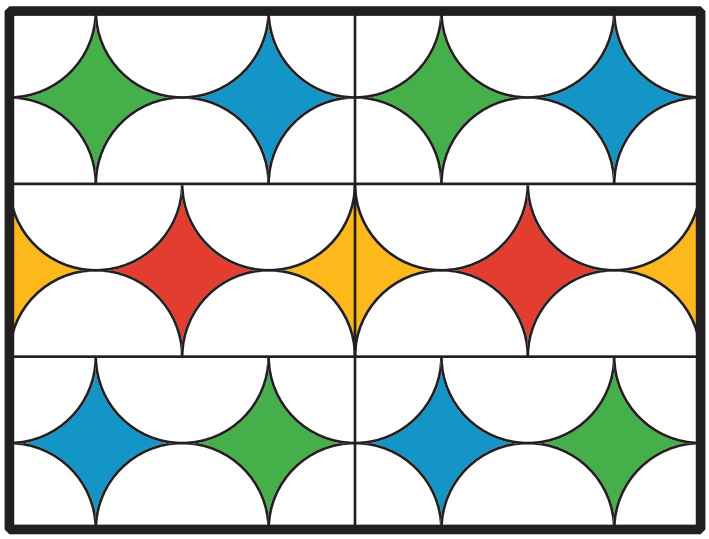
Stained-Glass Windows

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

11.1 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.
- The clear glass costs $2 per square foot.
- The material they need to join the pieces of glass together costs 10 cents per foot.
- The frame around the window costs $4 per foot.

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

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11.2 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.

11.3 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.