

Geometric Design

BROAD AREAS OF LEARNING: Environmental Awareness / Personal and Career Planning

CROSS-CURRICULAR COMPETENCIES:

- Uses information
 - Solves problems
 - Uses creativity
 - Adopts effective work methods
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Application Question

- **To develop Competency 2:** Uses mathematical reasoning
- **To develop Competency 3:** Communicates by using mathematical language

Designing a Quilt

Your class is making a quilt as a class project. Each student will be responsible for designing a square for the quilt. You want your quilt square to be attractive and to have clear geometric characteristics. Your math teacher has provided criteria that you must meet for the design of your quilt square.

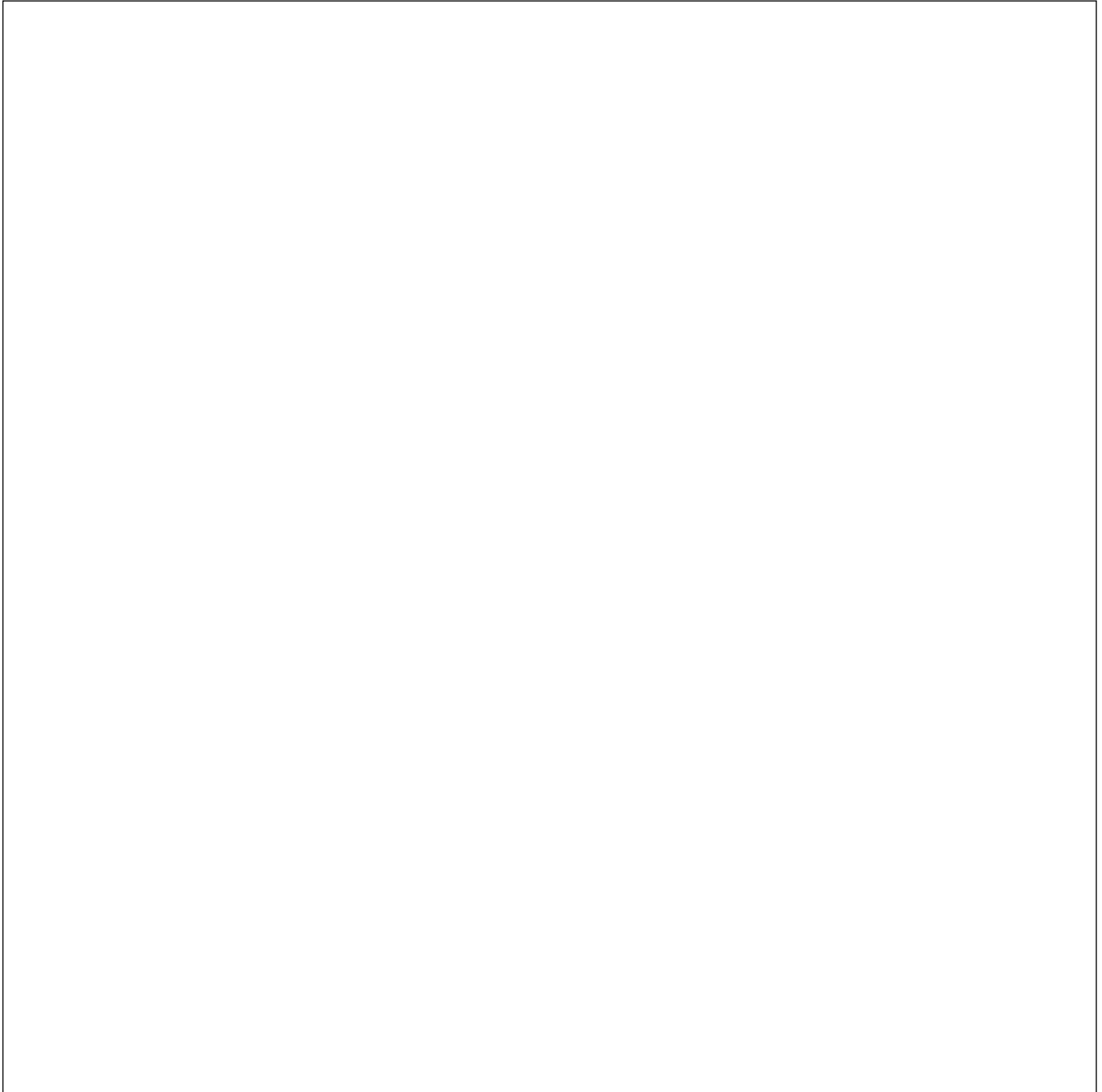
? How can you design an attractive quilt square that meets the given conditions?

Criteria for the quilt square design

- Your design must fit inside a square with an area of 225 cm^2 .
- Your design must include at least one complex shape.
- The area of the complex shape must be less than 100 cm^2 .
- The perimeter of the complex shape must be between 20 cm and 40 cm.
- In addition to the complex shape, your design must include at least three other shapes.
- It must be possible to describe your design using at least one translation, rotation, or reflection.

Name: _____ Date: _____

A. Show your quilt square design in the space provided.

A large, empty square box with a thin black border, intended for a student to draw a quilt square design. The box is centered on the page and occupies most of the middle section.

Name: _____ Date: _____

B. Show or explain how your design meets all of the given criteria. Explain your process for creating the design to make sure all of the criteria were met.

Evaluation Criteria Checklist

- Your design fits inside a square with an area of 225 cm^2 .
- Your design includes at least one complex shape.
- The area of the irregular shape is less than 100 cm^2 , and the perimeter is between 20 cm and 40 cm.
- Your design includes at least three other shapes.
- Your design includes at least one transformation.
- Your design can be described by using at least one translation, rotation, or reflection.