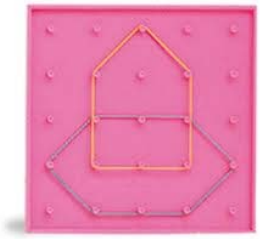


PRACTICE TASK: Geoboard Museum

Approximately 1 day move

STANDARDS FOR MATHEMATICAL CONTENT

MCC.K.G.4. Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/"corners") and other attributes (e.g., having sides of equal length).

MCC.K.G.5. Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.

MCC.K.G.6. Compose simple shapes to form larger shapes. *For example, "Can you join these two triangles with full sides touching to make a rectangle?"*

STANDARDS FOR MATHEMATICAL PRACTICE

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
8. Look for and express regularity in repeated reasoning.

BACKGROUND KNOWLEDGE

To help students in the very early grades copy geoboard designs, suggest that they mark the dots in the corners of their shape. Encourage students to say the name for each peg, such as "second row, end peg" as they point to their geoboard. This will allow to them to match the corresponding dot on the task sheet. Because a standard for ordinal words is not explicitly stated in the CCGPS, they should be integrated whenever possible.

ESSENTIAL QUESTIONS

- What makes shapes different from each other?
- How do shapes fit together and come apart?
- What shapes can we see in our world?

MATERIALS

- Geoboards
- Rubber bands

GROUPING

Individual, small group or math work station

TASK DESCRIPTION, DEVELOPMENT AND DISCUSSION

Part I
Gather the students together to discuss the characteristics of shapes. How are they alike? How are they different? Have students focus on the number of sides as a way to describe a shape. Give students geoboards and rubber bands. Allow students time to explore the different shapes that can be made with the rubber bands. As students explore with the rubber bands and geoboards, ask "What happens if we combine more than one shape on the geoboard? For example, if I put two triangles together what does it look like?"

Part II
Read the *Greedy Triangle* by Marilyn Burns to students and have them model the shape as it transforms throughout the book. After reading the story, have students model the multiple ways that shapes can be represented. (be sure to include conversation about the difference appearance of shapes such as an "upside down" triangle. Students share the different shapes they have created. Discussions should include conversations about how the students have created their shapes.

Part III
Completed geoboard designs are displayed in the classroom as Geoboard Gallery. The teacher should label each geoboard with a number. Model for students how to record the shape using dot paper. Provide each student with a student task sheet and have them record what shapes they see in each picture at the museum. This part of the task will require very clear directions and modeling. You may want to take pictures for future activities.

FORMATIVE ASSESSMENT QUESTIONS

- Observe students as they create designs to see which students have figured out how to make designs using multiple shapes and which students use shapes to make abstract designs.
- We are want student to be able to create both types.
- Can most students make quadrilaterals and triangles?
- Are they sharing their findings?
- Can they create multiple shapes within their design?

DIFFERENTIATION

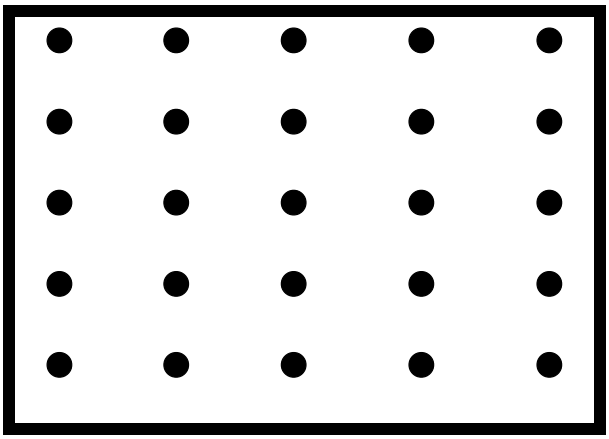
Extension

- Ask students "What happens if we combine more than one shape on the geoboard? For example if I put two triangles together what does it look like?"

Intervention

- Some students may struggle with creating shapes on the geoboard. These students can be given cards that have examples of geoboard designs to copy or provide them with toothpicks and marshmallows to demonstrate what would be happening on the geoboard.

Geoboard Museum



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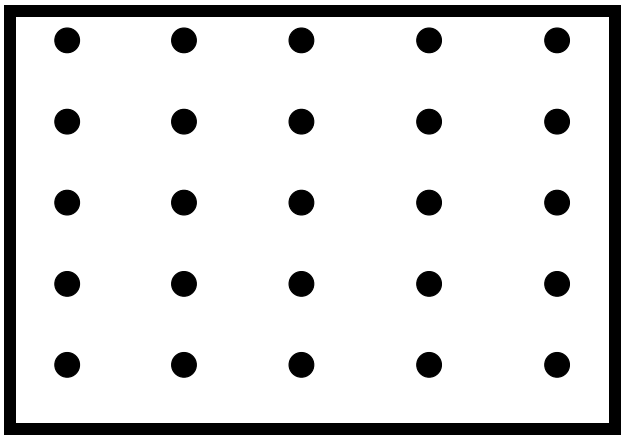

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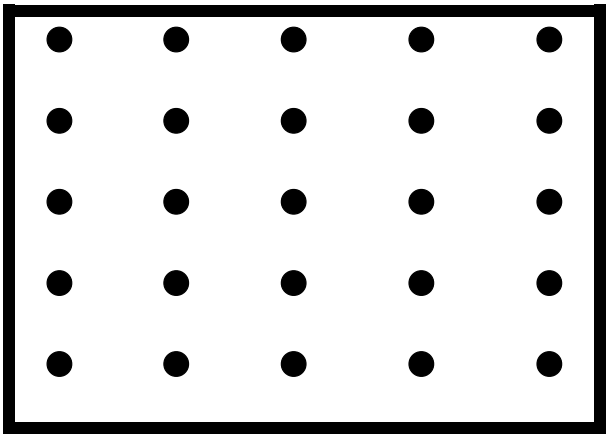

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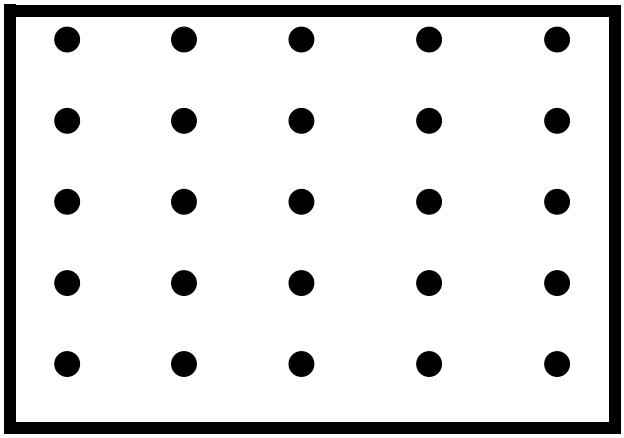

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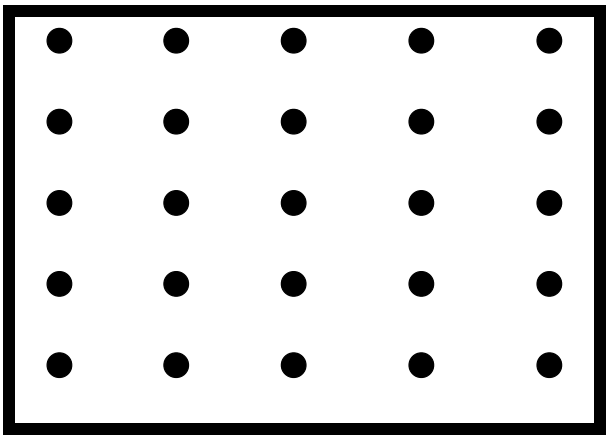

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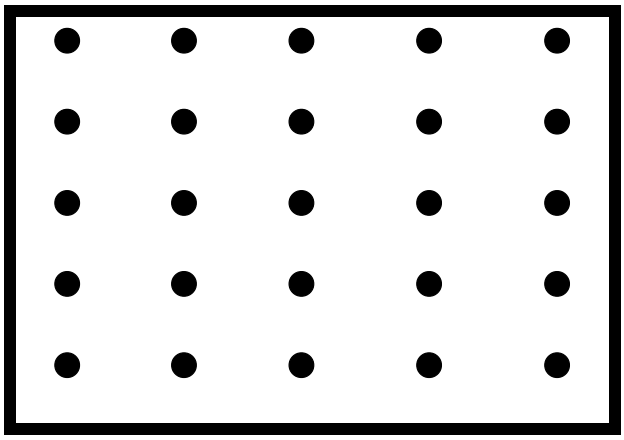

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