

ESTABLISHING PURPOSE

1

What are the key content standards I will focus on in this lesson?

Content Standards:

Virginia Mathematics Standards of Learning

K.13. The student will identify, describe, extend, create, and transfer repeating patterns.

K.10. The student will (a) identify and describe plane figures (circle, triangle, square, and rectangle); (b) compare the size (smaller, larger) and shape of plane figures (circle, triangle, square, and rectangle); and (c) describe the location of one object relative to another (above, below, next to) and identify representations of plane figures (circle, triangle, square, and rectangle) regardless of their positions and orientations in space.

Standards for Mathematical Practice:

- Look for and express regularity in repeated reasoning.
- Use appropriate tools strategically.
- Reason abstractly and quantitatively.

2

What are the learning intentions (the goal and why of learning stated in student-friendly language) I will focus on in this lesson?

- Content: I am learning that the same pattern can be represented in many ways, including numbers and shapes.
- Language: I am learning the mathematical symbols that describe a pattern's core or unit.
- Social: I am learning to talk and listen about our mathematical ideas.

3

When will I introduce and reinforce the learning intention(s) so that students understand it, see the relevance, connect it to previous learning, and can clearly communicate it themselves?

Think-aloud connecting success criteria to choice board

Conference questions

Partner share based on success criteria

Exit task self-evaluation

SUCCESS CRITERIA

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What evidence shows that students have mastered the learning intention(s)? What criteria will I use?

I can statements:

- I can represent the same pattern in multiple ways, including numbers and shapes.
- I can describe a repeating pattern's core and a changing pattern's rule using symbols.
- I can compare and categorize patterns and explain my reasoning.
- I can respond to someone else's ideas with questions, noticings, and connections.

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How will I check students' understanding (assess learning) during instruction and make accommodations?

Formative Assessment Strategies:

- Conference/observation notes
- Student work
- Exit task with self-evaluation

Differentiation Strategies:

- Differentiate the process and product by situational interest: choice board

INSTRUCTION

6

What activities and tasks will move students forward in their learning?

"Which One Doesn't Belong?"

Think-aloud

Tic-tac-toe choice board

Needs-based strategy groups

Partner sharing

Anchor charts

Exit tasks with self-evaluation

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What resources (materials and sentence frames) are needed?

Word wall words

Anchor chart of representations, repeating pattern cores, changing pattern rules, and examples/nonexamples of patterns

"Which One Doesn't Belong?" images

Math folders

Tictactoe choice boards and task cards

Tiles

Cubes

Paper tiles

Paper shapes

Pattern blocks

Buttons

Noodles

Keys

Counting bears, dinosaurs, insects

Pattern song books

Mathematical literature with patterns

Pattern task cards

Alphabet dice

Rule spinner

Calendars
Number charts
Number lines
Markers
Scissors
Glue

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How will I organize and facilitate the learning? What questions will I ask? How will I initiate closure?

Instructional Strategies:

- "Which One Doesn't Belong?"
- Think-aloud
- Tic-tac-toe choice board
- Needs-based strategy groups
- Exit tasks with self-evaluation
- Partner sharing of success criteria
- Anchor charts
- Talk knee-to-knee, eye-to-eye

Scaffolding Questions:

- What do you see happening? How are the _____ changing?
- How could you use words to describe and point to the pattern?
- What would you predict comes next? Why?
- How will you record your thinking on paper?
- What kind of pattern is this?
- What is the core of the repeating pattern?
- What is the rule for changing the growing pattern?
- How could you represent the same pattern using _____?

Extending Questions:

- How are these representations similar? Different?
- How would you write a description of the core using letters? Using numbers?
- How would you write a description of the rule for changing the growing pattern using numbers? Using letters?
- What if I changed this, how would that change the pattern?

Self-Reflection and Self-Evaluation:

- The green circle in the middle with the tooth-smiley face means "I've got it!"
- The yellow middle ring with the smiley face is "I need a little more time. I'm just starting to get it."
- The red outer ring with the straight face is "I'm stuck. I don't understand".