

Mini-Map for M.EE.5.OA.3

Subject: Mathematics

Operations and Algebraic Thinking (OA)

Grade: 5

Learning Outcome

DLM Essential Element	Grade-Level Standard
M.EE.5.OA.3 Identify and extend numerical patterns.	M.5.OA.3 Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane.

Linkage Level Descriptions

Initial Precursor	Distal Precursor	Proximal Precursor	Target	Successor
Group together objects by attribute values such as shape or size (e.g., group together a square, a rectangle, and a rhombus, as they all have four sides). Contrast or distinguish objects based on attributes such as shape, size, texture, and numerical pattern. Order objects by following a specific rule (e.g., arrange three objects with different sizes from the smallest to largest).	Recognize patterns (or cycles) that exist in nature (e.g., seasons occur in a pattern, day and night occur in a pattern) or in everyday life (e.g., music, P.E., and art classes occur in a pattern in school).	Recognize a repeating pattern as a pattern that has a core unit repeated over and over (e.g., 1, 1, 2, 1, 1, 2...). Determine the core unit in a pattern that repeats over and over again. Recognize a growing pattern as a pattern that increases (e.g., 3, 6, 9, 12...) and a shrinking pattern as a pattern that decreases (e.g., 12, 10, 8...). Identify the pattern rule in growing and shrinking patterns by	Communicate the next term in a repeating, growing, and shrinking pattern, consisting of numerals or letters, by recognizing the core unit or the pattern rule and applying it to the pattern (e.g., the pattern rule in the pattern 3, 6, 9, 12... is "add 3," so the next term in the pattern is $12 + 3$ equals 15).	Predict an element in a repeating, growing, and shrinking pattern by analyzing a given pattern, determining its core unit or the pattern rule, and applying it beyond just the next term (e.g., the pattern rule in the pattern 3, 6, 9, 12... is "add 3," so the sixth term in the pattern equals 18).

Initial Precursor	Distal Precursor	Proximal Precursor	Target	Successor
		determining how each step in a pattern differs from the preceding step.		

Initial Precursor and Distal Precursor Linkage Level Relationships to the Target

How is the Initial Precursor related to the Target?

In order to understand and work with patterns, students begin by learning to notice what is new. The educator draws the students' attention to new objects or stimuli, labels them (e.g., “these are two red cubes and two blue cubes,” “you have two fidgets; one is big and one is small but they are both fidgets”) and the student observes, feels, or otherwise interacts with them. Educators encourage students to begin placing like objects together, drawing attention to the characteristics that make an item the same or different.

How is the Distal Precursor related to the Target?

As students develop their awareness of attributes and putting like objects together, educators will draw the students' attention to patterns in words, symbols, numbers, images, routines, and the environment, allowing the student to observe, feel, or otherwise interact with the patterns.

Instructional Resources

Released Testlets
See the Guide to Practice Activities and Released Testlets .
Using Untested (UN) Nodes
See the document Using Mini-Maps to Plan Instruction .

M.EE.5.OA.3 Identify and extend numerical patterns.

