Mini-Map for M.EE.3.OA.9

Subject: Mathematics
Operations and Algebraic Thinking (OA)
Grade: 3

Learning Outcome

DLM Essential Element	Grade-Level Standard
M.EE.3.OA.9 Identify arithmetic patterns.	**M.3.OA.9** Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. For example, observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends.

Linkage Level Descriptions

Initial Precursor	Distal Precursor	Proximal Precursor	Target	Successor
Recognize "same" as the object that shares all of the same attributes as other objects in a group. Recognize "different" as the object that shares some or none of the attributes as other objects in a group.	Arrange objects in a specific order by following a specific rule (e.g., arrange objects from the largest to the smallest size). Group like items by attributes such as size, shape, and color. Contrast or distinguish objects based on attributes such as shape, size, texture, and numerical pattern.	Recognize that patterns (or cycles) exist in nature or in everyday life.	Recognize the pattern that either repeats or grows when shown different patterns involving numbers, letters, symbols, or shapes (e.g., 1, 1, 2, 1, 1, 2, 1, 1, 2…, or 2, 4, 6, 8...).	Determine the pattern rule in a repeating, growing, or shrinking pattern by finding how a term in the pattern is obtained from a previous term (e.g., in the pattern 1, 3, 5, 7..., each term is obtained from the previous term by adding 2, which implies that the pattern rule is "add 2"). Apply a given pattern rule to find the next term in a pattern.

Initial Precursor and Distal Precursor Linkage Level Relationships to the Target

How is the Initial Precursor related to the Target?

Recognizing patterns is an important building block to many mathematical concepts and skills such as skip counting, repeated addition, and multiplication. In order to build toward arithmetic patterns, students need to engage in activities that compare at least two items. Calling attention to both how they are the same and how they are different. This type of instruction should include but may not be limited to quantities, shapes, and attributes across the school day so students have many opportunities to experience same and different.

How is the Distal Precursor related to the Target?

Building on same and different, educators can use some of the other mathematical concepts like working with sets or recognizing a whole and parts to help students identify same and different. For instance, students may create a set and then create a second set that has the same amount. Then, they can change one of the sets to make it different. As students are learning to create and identify sets that are same and different, educators can draw student attention to the various attributes of an object to teach students to order, classify, and contrast the objects. These understandings will then lead to students having the attentional skills to begin recognizing 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.

Link to Text-Only Map

M.EE.3.OA.9 Identify arithmetic patterns.