Mini-Map for M.EE.8.F.1-3

Subject: Mathematics
Functions (F)
Grade: 8

Learning Outcome

DLM Essential Element	Grade-Level Standard
M.EE.8.F.1-3 Given a function table containing at least 2 complete ordered pairs, identify a missing number that completes another ordered pair (limited to linear functions).	**M.8.F.1** Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output. **M.8.F.2** Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). **M.8.F.3** Interpret the equation $y = mx + b$ as defining a linear function, whose graph is a straight line; give examples of functions that are not linear.

Linkage Level Descriptions

Initial Precursor	Distal Precursor	Proximal Precursor	Target	Successor
Form a pair of objects by arranging two objects in a specific order (e.g., form a pair by first placing a pencil and then placing a ruler). Arrange objects by a specified rule (e.g., arrange pencils in order by length).	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...).	Communicate understanding that the numbers in the coordinate pair (*x*, *y*) represent *x* units left or right on the *x*-axis and *y* units up or down on the *y*-axis. Communicate the next term in a growing or shrinking pattern, consisting of numerals or letters, by recognizing the core	Generate ordered pairs by recognizing the pattern rules for each coordinate and applying these rules to the *x*- and *y*-values [e.g., given (1, 3), (2, 5), (3, 7)..., the next ordered pair would be (4, 9)].	Recognize covariation as the pattern in which two variables or quantities change together. Recognize correspondence as the relationship between each *x*- and *y*-value.

Initial Precursor	Distal Precursor	Proximal Precursor	Target	Successor
		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).		

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 function tables, students begin by learning to notice what is new. The educator draws the students' attention to new objects or stimuli, labels them (e.g., “this set has all red objects; this set has all blue,” “these fidgets are big; these fidgets are small”) 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?

Building on arranging and ordering objects, 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 a set to teach students to order, classify, and contrast the sets. These understandings will then lead to students having the attentional skills to recognize growing and shrinking 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]

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