Mini-Map for M.EE.6.NS.1

Subject: Mathematics
The Number System (NS)
Grade: 6

Learning Outcome

DLM Essential Element	Grade-Level Standard
M.EE.6.NS.1 Compare the relationships between two unit fractions.	**M.6.NS.1** Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions (e.g., by using visual fraction models and equations to represent the problem).

Linkage Level Descriptions

Initial Precursor	Distal Precursor	Proximal Precursor	Target	Successor
Communicate understanding of a unit by recognizing a group of countable objects. Communicate understanding of "wholeness" by recognizing an object that has all the parts joined together. Recognize parts of an object and the whole object.	Recognize two glasses with an equal amount of liquid. Divide familiar shapes, such as circles, squares, and/or rectangles, into two or more equal parts.	Recognize a fraction as a number expressed as a quotient of two integers in the form a/b, with b not equal to zero. Demonstrate understanding of a unit fraction (e.g., 1/4) as the quantity formed by one part when a whole is partitioned into n (e.g., 4) equal parts. Recognize the number above the fraction bar as the numerator and the number below the fraction bar as the denominator.	Communicate understanding that when a whole is divided into more parts, each part is smaller than when that same whole is divided into fewer parts (e.g., 1/5 is smaller than 1/2 because in 1/5 the whole is divided into five equal parts and in 1/2 the same whole is divided into two equal parts).	Communicate understanding that the numerator represents a number of equal parts and the denominator represents how many equal parts make up the whole. Compare fractions (i.e., which fraction is greater than and which is less than) using manipulatives. Add fractions with common denominators (e.g., 2/5 + 1/5 = 3/5), and decompose fractions into sums of unit fractions with the same denominator

Initial Precursor	Distal Precursor	Proximal Precursor	Target	Successor
				(e.g., 3/7 = 1/7 + 1/7 + 1/7).

Initial Precursor and Distal Precursor Linkage Level Relationships to the Target

How is the Initial Precursor related to the Target?

In order to compare unit fractions, students need to gain experience with parts and wholes. This concept can literally be taught in every area of mathmatics (i.e., sets, number sense, counting, operations, patterns, measurement, data analysis, geometry, and algebra). Educators can start by having students work with sets, taking whole sets and breaking them into parts based on attributes. When counting, label what has been counted (e.g., two balls, one marker, three CDs), count the items, label it again, and encourage students to use numerals to label and count the separate sets. Use tools like the ten-frame to point out whole and parts (e.g., a row of 5 dots and a row of 4 dots are parts or subsets of 9).

How is the Distal Precursor related to the Target?

As students begin to develop the understanding of sets and numbers, educators will highlight the differences between sets on the basis of overall area or discrete number using the words more, less, and equal. Provide students with multiple opportunities to count and compare a wide variety of sets with an increasing number of items, label the set (e.g., eight ball, 12 bears, 15 blocks), and move items in and out of the sets, labeling and counting them again (e.g., "You just said this set has 11 cubes; if I take two cubes, how many will you have?").

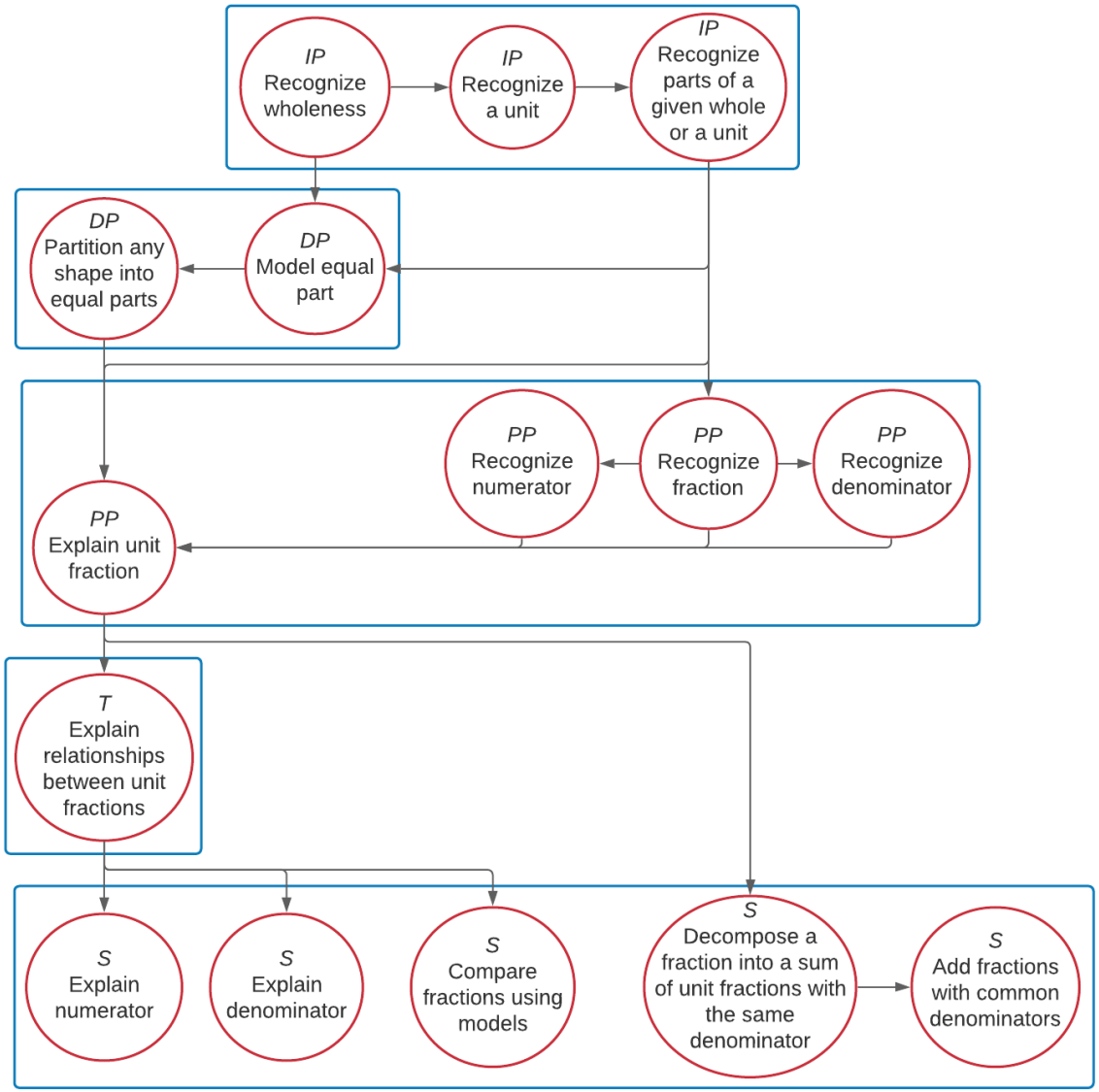
Being able to partition shapes requires a student to recognize a unit and recognize when basic objects are in whole and part forms. Work on this understanding by giving students an opportunity to observe, feel, or otherwise interact with objects and shapes in their whole and part forms. The general goal is to explore the differences between whole units or objects and parts of units or objects. As students explore shapes, label them and describe them as whole or part. Have students build (construct) and take apart (deconstruct) shapes.

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.6.NS.1 Compare the relationships between two unit fractions.



Map Key	
IP	Initial Precursor
DP	Distal Precursor
PP	Proximal Precursor
T	Target
S	Successor
UN	Untested

Boxes indicate tested nodes