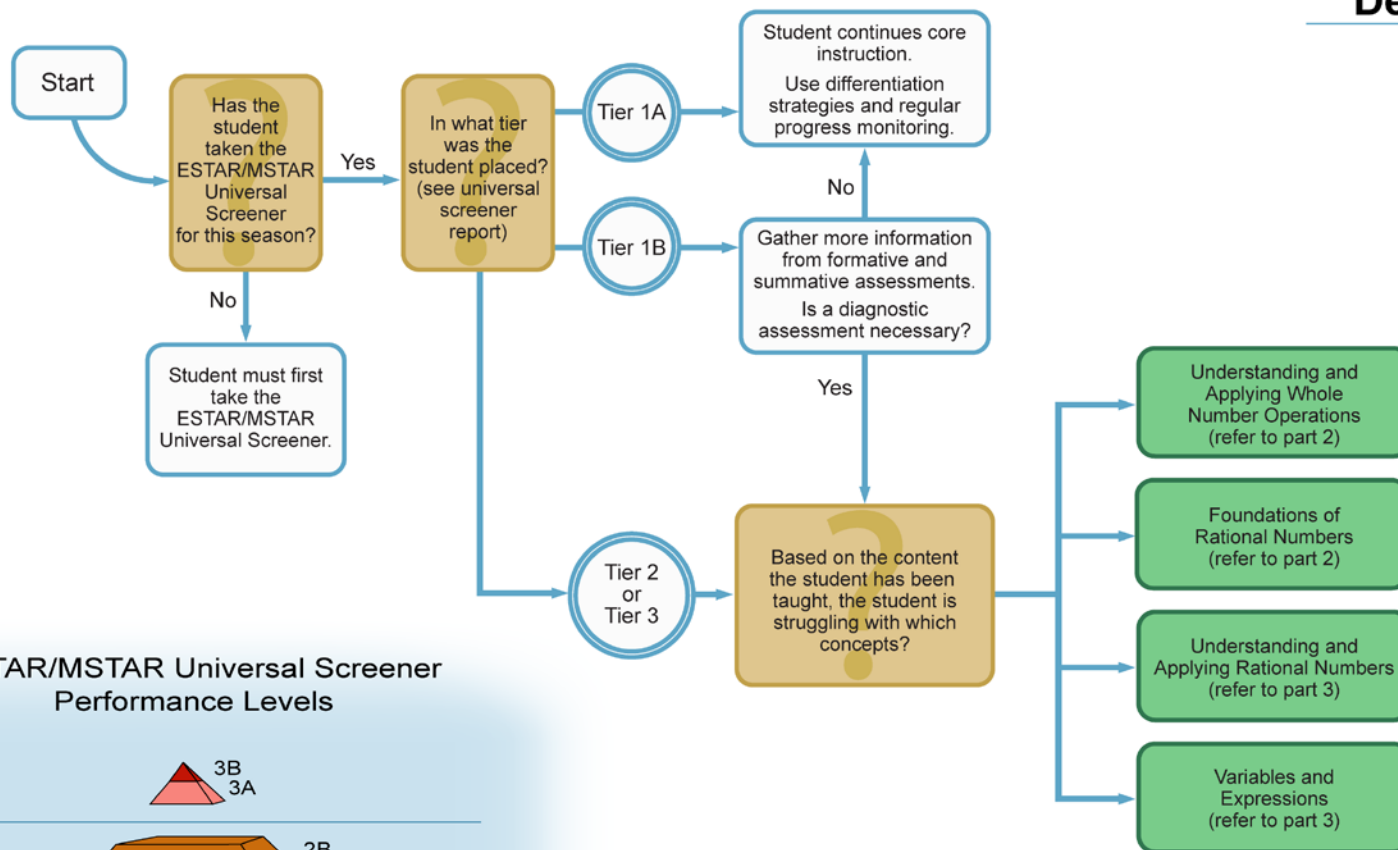


## ESTAR/MSTAR Diagnostic Assessments Decision Tree and Assessment Guides

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This resource is intended to supplement the administration of the ESTAR/MSTAR Diagnostic Assessments. It is not intended to replace the ESTAR/MSTAR Diagnostic Assessments or Learning Progressions professional development courses. Use the ESTAR/MSTAR Decision Tree along with student work samples to determine an appropriate ESTAR/MSTAR Diagnostic Assessment to administer. Then, verify your decision by reading the description of the assessment in the ESTAR/MSTAR Assessment Guide. Remember, only students identified on the ESTAR/MSTAR Universal Screener as struggling (Tier 2 or Tier 3) should be administered an ESTAR/MSTAR Diagnostic Assessment.

## Decision Tree Part 1



### ESTAR/MSTAR Universal Screener Performance Levels

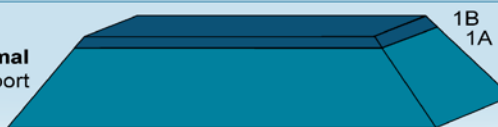
Tier 3: **Intensive**  
Instructional Support



Tier 2: **Strategic**  
Instructional Support

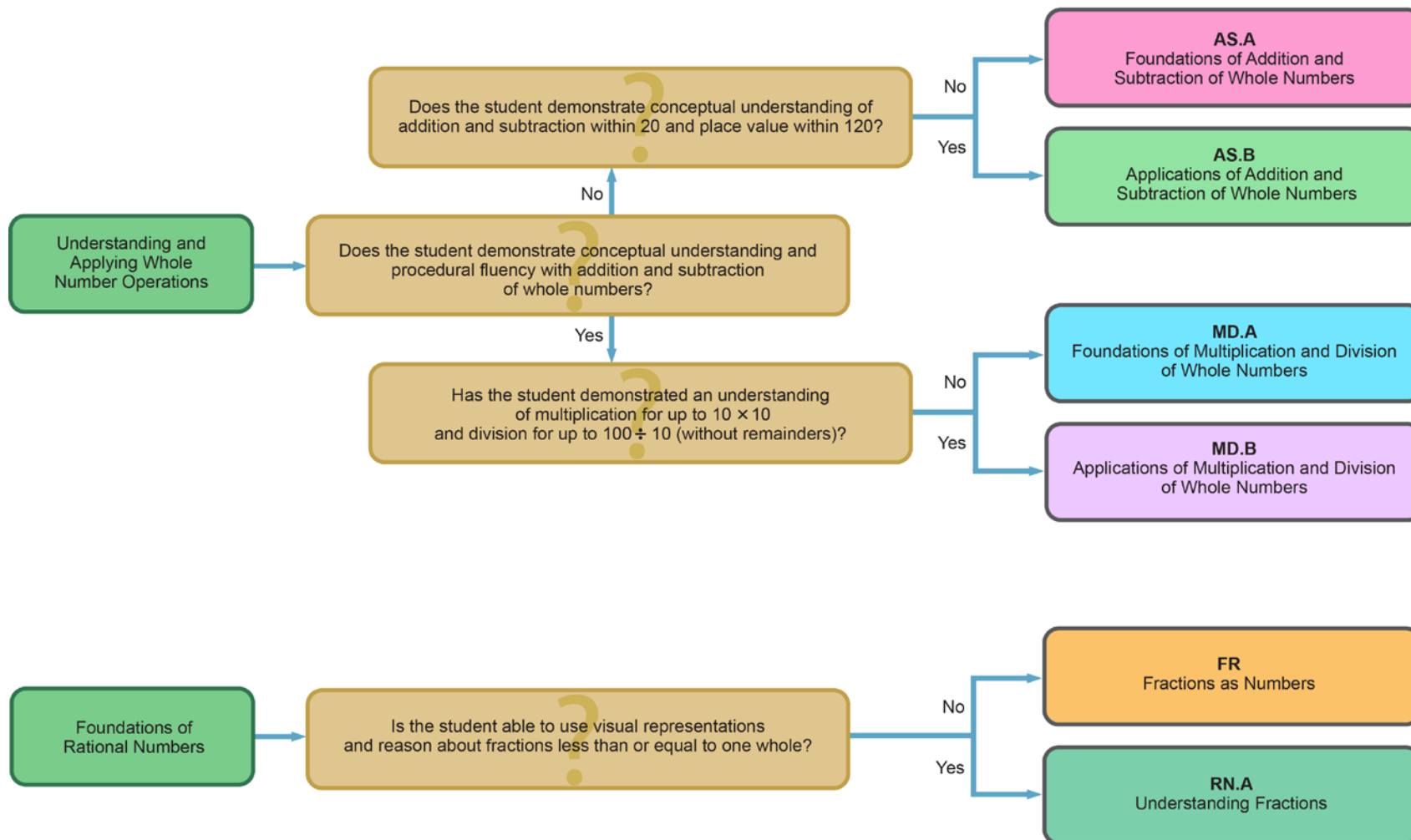


Tier 1: **Minimal**  
Instructional Support



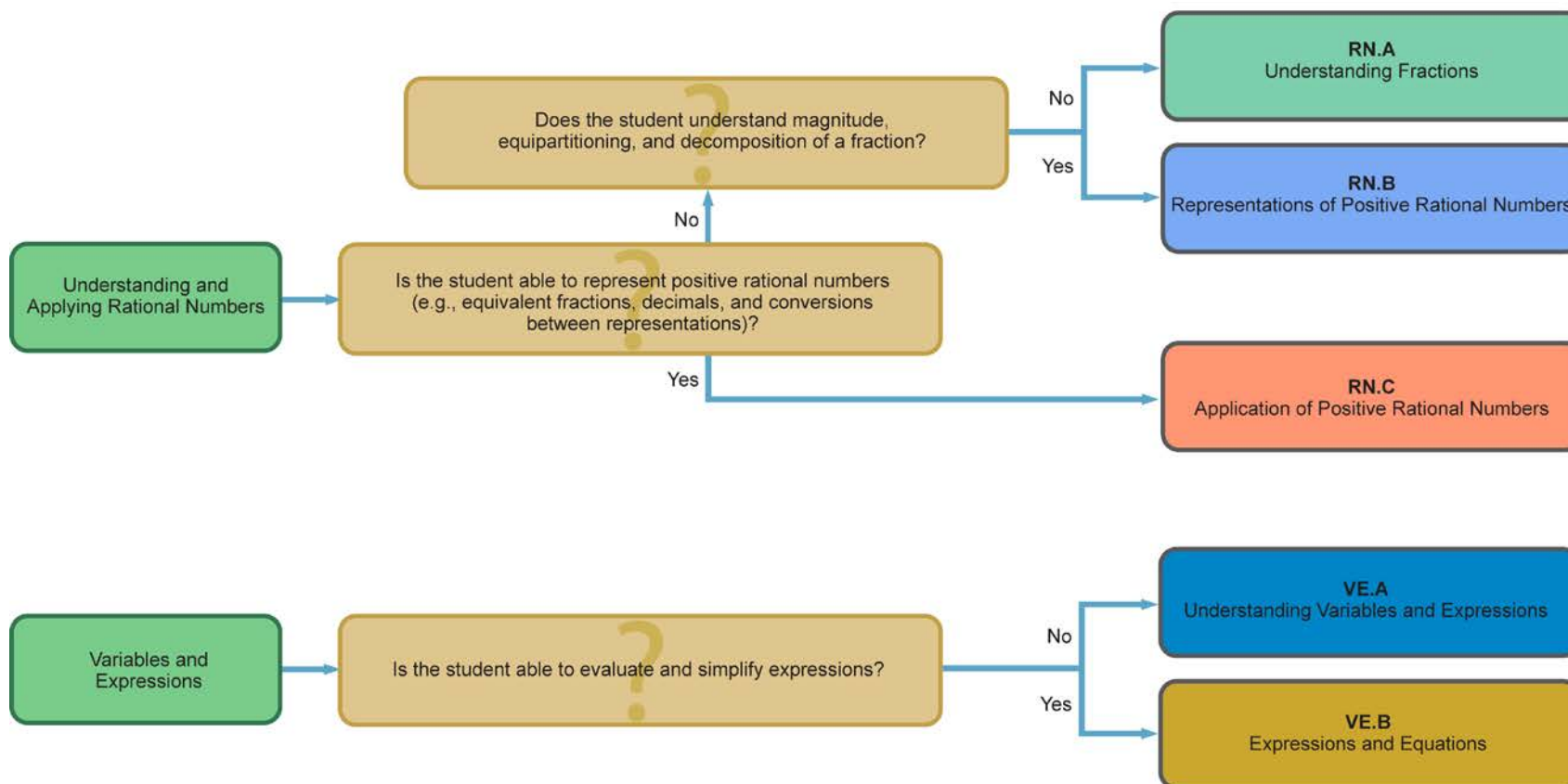
## Decision Tree

### Part 2



## Decision Tree

### Part 3



## ESTAR Diagnostic Assessment Guide

Assessment	Content / Assessment Focus
<b>AS.A</b> Foundations of Addition and Subtraction of Whole Numbers	<p><b>For whole numbers less than or equal to 120:</b></p> <ul style="list-style-type: none"><li>• Represent, compose, decompose, and compare whole numbers using pictures/objects, place value models, number lines, and numerals</li></ul> <p><b>For whole numbers less than or equal to 20:</b></p> <ul style="list-style-type: none"><li>• Represent unknown values for joining, separating, or comparison contextual situations with pictures or numerals</li><li>• Identify expressions/equations that represent joining, separating, or comparison contextual situations where the unknown value is in any position</li><li>• Identify inverse relationships between addition and subtraction using models and equations</li></ul>
<b>AS.B</b> Applications of Addition and Subtraction of Whole Numbers	<p><b>For two and three digit numbers:</b></p> <ul style="list-style-type: none"><li>• Add and subtract multiples of ten and a 2-digit number or multiples of one-hundred and a 3-digit number using place value models and properties of numbers and operations</li><li>• Add and subtract whole numbers</li><li>• Identify expressions/equations that represent joining, separating, or comparison contextual situations where the unknown value is in any position</li><li>• Find the unknown value in joining, separating, or comparison contextual situations</li></ul>

## ESTAR Diagnostic Assessments Guide (Continued)

Assessment	Content / Assessment Focus
<b>MD.A</b> Foundations of Multiplication and Division of Whole Numbers	<p><b>For multiplication up to <math>10 \times 10</math> and division up to <math>100 \div 10</math>:</b></p> <ul style="list-style-type: none"> <li>Represent equal groups with objects, number lines, or arrays/area models</li> <li>Represent contextual situations involving measurement and partitive division without remainders using objects, number lines, or arrays/area models</li> <li>Recognize multiplicative patterns</li> <li>Identify inverse relationships between multiplication and division using models and equations</li> <li>Use arrays and area models to show conceptual understanding of the commutative and associative property of multiplication and the distributive property of multiplication over addition</li> <li>Find the unknown value in contextual situations for multiplication of equal groups, measurement division, and partitive division</li> <li>Identify expressions/equations that represent multiplication of equal groups, measurement division, and partitive division contextual situations</li> </ul>
<b>MD.B</b> Applications of Multiplication and Division of Whole Numbers	<p><b>For division up to <math>100 \div 10</math>:</b></p> <ul style="list-style-type: none"> <li>Represent contextual situations involving measurement and partitive division with remainders using objects, number lines, or arrays/area models</li> <li>Interpret the meaning and implications of remainders in contextual situations</li> </ul> <p><b>For multiplication up to 4-digit by 1-digit or 2-digit by 2-digit and division up to 4-digit divided by 1 digit:</b></p> <ul style="list-style-type: none"> <li>Use place value understanding to multiply multiples of 10, 100, or 1,000</li> <li>Represent the product of numbers using place value models, area models, and/or properties of operations with expressions</li> <li>Identify inverse relationships between multiplication and division using models and equations</li> <li>Multiply and divide whole numbers</li> <li>Find the unknown value in contextual situations for multiplication of equal groups, measurement division, and partitive division</li> </ul>
<b>FR</b> Fractions as Numbers	<p><b>For fractions less than or equal to 1 whole or where the denominators represented are 2, 3, 4, 6, or 8:</b></p> <ul style="list-style-type: none"> <li>Partition sets of objects, areas, and number lines</li> <li>Understand the verbal language and symbolic notation for unit fractions represented by areas, sets, and number lines</li> <li>Reason with fractional parts to show an understanding that partitioning the same whole into a greater number of parts will produce smaller partitions</li> <li>Connect unit fractions to non-unit fractions conceptually, verbally, and symbolically</li> <li>Represent equivalent fractions using area models and number lines, and justify/explain why the fractions are equivalent based on the model</li> </ul>

## MSTAR Diagnostic Assessment Guide

Assessment	Content / Assessment Focus
<b>RN.A</b> Understanding Fractions	<ul style="list-style-type: none"><li>• Understand the magnitude of whole numbers and fractions</li><li>• Partition whole and different-sized shapes, and combine partitioned parts</li><li>• Compose and decompose fractions using addition and multiplication</li></ul>
<b>RN.B</b> Representations of Positive Rational Numbers	<ul style="list-style-type: none"><li>• Represent and generate equivalent fractions</li><li>• Write, compare, and represent decimals</li><li>• Compare fractions by using visual models, reasoning about the numerators and denominators, and finding a common denominator</li><li>• Identify and generate equivalent fractions and decimals</li></ul>
<b>RN.C</b> Applications of Positive Rational Numbers	<ul style="list-style-type: none"><li>• Understand attributes of ratios, and identify equivalent ratios</li><li>• Identify, apply, and extend unit rates</li><li>• Model and solve addition and subtraction problems with rational numbers</li><li>• Model and solve multiplication problems with rational numbers</li><li>• Model and solve division problems with rational numbers</li></ul>
<b>VE.A</b> Understanding Variables and Expressions	<ul style="list-style-type: none"><li>• Identify, describe, and use variables as unknown quantities</li><li>• Evaluate single and multi-variable expressions</li><li>• Translate between verbal descriptions and symbolic representations of equations and expressions</li><li>• Simplify expressions with whole number, rational, or unwritten coefficients</li></ul>
<b>VE.B</b> Expressions & Equations	<ul style="list-style-type: none"><li>• Understand relationship between expressions</li><li>• Solve single variable equations using a variety of methods</li></ul>