

Learning Targets: Assessing a Range of Students' Abilities

Learning Target	Meaning	Examples
Mathematics Facts	Knowing conventions and correct terms for concepts	<ul style="list-style-type: none"> ▪ Knowing addition facts ▪ Knowing the names of polygons with 3, 4, 5 sides ▪ Knowing that the name given to the point (0, 0) is origin ▪ Remembering that (2, 3) indicates the point on a graph that is two units to the right of the y-axis and three units above the x-axis
Mathematics Skills and Processes	Knowing how to carry through standard procedures	<ul style="list-style-type: none"> ▪ Solving an addition problem with three addends quickly and accurately ▪ Following rules for measuring length with a ruler
Mathematics Concepts	Concepts we want students to know; Understanding the meaning of mathematics concepts and how they relate to each other	<ul style="list-style-type: none"> ▪ Interpreting a graph and using the range of the set to describe the data ▪ Understanding that the two sides of a number sentence should represent the same value and explaining why $2 + 3 = 4 + 1$ ▪ Generalizing and extending a pattern
Mathematical Reasoning and Proof	Using knowledge to reason and solve problems	<ul style="list-style-type: none"> ▪ Prove that a square is a rectangle ▪ Knowing which operation to use in a problem and justifying why the answer is reasonable

continued

<p>Mathematical Strategies, Problem Solving and Application</p>	<p>Being able to approach problems and use techniques and strategies to solve problems</p>	<ul style="list-style-type: none"> ▪ Classify quadrilaterals by a rule or common property ▪ Develop strategies for finding the variable in an equation ▪ Take one strategy and apply it to multiple problem solving contexts
<p>Personal Attitudes, Confidence and Competence</p>	<p>Develop a positive orientation toward the subject; becoming more confident, creative, cooperative, committed, and able to work as a team</p>	<ul style="list-style-type: none"> ▪ Students cooperate and work as a team to classify and sort polygons, lines, angles, and quadrilaterals ▪ Students gain confidence in their problem solving abilities by sharing and discussing various strategies in class ▪ Students continue working on challenging problems and are committed to finding a solution rather than giving up quickly or quitting ▪ Students enjoy math and see themselves as mathematicians

Creating Learning Targets

Learning Target (Year-Long Goal):

Learning Targets	Assessment Tasks	Evidence of Mastery	Vocabulary	Connections	Prior Knowledge & Background

Bloom's Revised Taxonomy	
Factual Knowledge	<ul style="list-style-type: none"> ▪ Basic elements that students must know in order to solve problems in the discipline ▪ Knowledge of terminology ▪ Knowledge of specific details and elements
Conceptual Knowledge	<ul style="list-style-type: none"> ▪ Knowledge of the inter-relationships of the basic elements of the discipline and how they fit the larger structure ▪ Knowledge of classifications, principles, and generalizations, models and structures, and theories
Procedural Knowledge	<ul style="list-style-type: none"> ▪ How to do something - inquiry, algorithms, techniques and methods ▪ Knowledge of subject specific skills and use of algorithms ▪ Knowledge of criteria for determining appropriate procedures
Metacognitive Knowledge	<ul style="list-style-type: none"> ▪ Knowledge of the process of thoughts and awareness of one's own cognition ▪ Strategic knowledge ▪ Self-knowledge

Creating an Assessment

Clarifying Objective: Use strategies with 3-digit by 1-digit division with and without remainders to develop fluency.

Learning Target: Use a break-apart strategy to decompose a number with three digits.

Assessment:

1. Break 425 apart in one way.
2. Break 613 apart in two different ways.
3. Break 347 apart in three different ways.

Learning Target: Use a break-apart strategy to decompose a number in preparation for dividing by one digit.

Assessment:

1. Show one way to break apart 216 for this problem: $216 \div 3$
2. Show one way to break apart 216 for this problem: $216 \div 4$
3. Explain why you might need to break 216 apart differently for different divisors.

Learning Target: Use a break-apart strategy to divide by one digit.

Assessment:

1. Use a break-apart strategy to solve $248 \div 2$
2. Use a break-apart strategy to solve $359 \div 7$
3. Use a break-apart strategy to solve $783 \div 4$