

Things That Come in Groups (Multiplication and Division)

Students work with things that come in groups, with patterns in the multiplication tables using 100 charts, and with rectangular arrays. They invent and solve problems in multiplication and division.

	NCTM Standards								
	Estimation	Number Sense and Numeration	Whole Number Operations	Whole Number Computation	Geometry and Spatial Sense	Measurement	Statistics and Probability	Fractions and Decimals	Patterns and Relationships
Mathematical Emphases	5	6	7	8	9	10	11	12	13
Finding things that come in groups		1:1, 2	1:2	1:2					
Using multiplication to mean groups		1:1,2 2:3-4	1:1,2, 3,4 2:3-4	1:2,3,4 2:3-4					1:1,2
Recognizing that skip counting represents multiples of the same number and has a connection to multiplication		2:1,2, 3-4 5:3 TMM	1:4 2:1,2, 3-4 5:1 TMM	5:1					TMM 2:2
Finding patterns in multiples of 2, 3, 4, 5, 6, 9, 10, 11, and 12 by using the 100 chart and the calculator		2:1,2, 3-4,5-6	2:1,2, 3-4,5-6						2:1,2, 3-4,5-6
Understanding that number patterns can help in multiplication			2:3-4	2:3-4					2:3-4
Recognizing that multiplication can be used to find the area of a rectangle		3:3	3:1,2,3	3:3	3:1,2,3				
Using arrays to skip count; multiplying and dividing with skip counting		3:2,3	3:1,2,3	3:2,3	3:1,2,3				3:2
Finding factor pairs			3:2,3	3:2,3 4:1	3:2				3:3 4:1
Understanding relationships between multiplication and division			1:3 3:3 4:1 5:4	3:3 4:1 5:4	3:3				3:3 5:4
Identifying whether word problems can be solved using division and/or multiplication			4:1,3-4	4:1,3-4					
Using multiplication and/or division notation to write number sentences			1:2,4 2:3-4 4:1	4:1					
Using patterns to solve multiplication and division problems			3:3	3:3 5:1	3:3				3:3 5:1
Organizing and presenting data in tables and line plots			5:1,3	5:1,3				5:1,3	5:1
Sorting out complex problems that require both multiplication and addition		5:4	5:1,4	5:1,4				5:1	5:4
TMM—Describing events as likely and unlikely							4:2 5:1 TMM		

TMM = Ten-Minute Math
1:2-3 = Investigation 1, Sessions 2-3