Content Standard	**MAFS.4.OA** *Operations and Algebraic Thinking*
	MAFS.4.OA.1 *Use the four operations with whole numbers to solve problems.*
	MAFS.4.OA.1.2 Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.
Assessment Limits	Multiplication situation must be a comparison, e.g., three times as many. Operations limited to multiplication and division. Limit multiplication and division to 2-digit by 2-digit.
Calculator	No
Acceptable Response Mechanisms	Equation Response Multiple Choice Response
Context	Required

Example		
Context	Division with two one-digit numbers.	
Context easier	Multiplication with at least one one-digit number.	
Context more difficult	Division with at least one two-digit numbers.	

Sample Item Stem	Response Mechanism	Notes, Comments
Johnny has 10 marbles. Mark has 3 times as many marbles as Johnny. How many marbles does Mark have?	Equation Response	
Johnny has 30 marbles. Mark has *m* marbles. If Johnny has 10 times as many marbles as Mark, write an equation that shows how many marbles Mark has.	Equation Response	

Content Standard	**MAFS.4.OA** *Operations and Algebraic Thinking*
	MAFS.4.OA.1 *Use the four operations with whole numbers to solve problems.*
	MAFS.4.OA.1.3 Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.
Assessment Limits	Whole numbers.
	Multiplication of numbers of up to four digits by a one-digit number or of two numbers with two digits.
	Quotients and remainders with up to four-digit dividends and one-digit divisors.
	Items may contain a maximum of 3 steps.
	Problems involving remainders should require the student to interpret and use the remainder with respect to context.
	Variables must be represented by a letter.
Calculator	No
Acceptable Response Mechanisms	Equation Response
	Natural Language Response
	Multiple Choice Response
	Multi-Select Response
Context	Required

Example	
Context	Use some numbers that make the operations more difficult:

- Addition – several carryings
- Subtraction – several borrowings
- Multiplication – use some easier factors (1, 2, 3, 5) and some more difficult factors (4, 6, 7, 8)
- Division – either use zero as a digit in the quotient or use 4, 6, 7, 8 or 9 as the divisor
- Partial information with a final value can be given, but the calculations should be easy to complete.

Context easier	Use numbers that make the four operations easier: • Addition – no carrying • Subtraction – no borrowing • Multiplication – use 1, 2, 3, 5 as the factors in each partial multiplication • Division – use 2, 3, and 5 for the divisor; no remainders All information is given in a straightforward manner.
Context more difficult	Use numbers that make the four operations more difficult: • Addition – multiple carryings • Subtraction – multiple borrowings • Multiplication – use 4, 6, 7, 8 as factors and minimize 2, 3, 5 as factors in each partial multiplication • Division – have zero be a digit in the quotient and use 4, 6, 7, 8, 9 as the divisor; allow for remainders Partial information with a final value is given, and the student needs to work backwards to find a solution.

Sample Item Stem	Response Mechanism	Notes, Comments
Jack bought 2 umbrellas, each costing $13. He bought 3 hats, each costing $4. How much did Jack spend in all?	Equation Response	
Jack bought 2 umbrellas and 3 hats for $18.00. Each umbrella costs the same amount. Each hat costs the same amount. The price of a hat is $4.00. What is the cost of 1 umbrella?	Equation Response	
Jack bought 3 umbrellas and 4 hats. The umbrellas cost $15 dollars each, and the hats cost $5 each. Write an equation to show the total cost c, in dollars, of the items Jack bought.	Equation Response	
Jack has $53, and each umbrella costs $12. He writes the equation shown. $53 \div 12 = 4 \text{ R } 5$ What does the number 5 represent in terms of Jack's money?	Natural Language Response	
Jack wants to buy the same number of hats for 3 of his friends. He has $57 dollars, and each hat costs $5. What is the largest number of hats that Jack buys for each friend?	Equation Response	

Jack bought 2 umbrellas and 3 hats and spent between $30 and $50. Each umbrella costs the same amount. Each hat costs the same amount. The price of a hat is $4.00. What is the least amount Jack could have spent on an umbrella? What is the most Jack could have spent on an umbrella?	Equation Response	