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**Standards Solution Holding**

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# Patterns in Place Value

## Goal

- ✚ To discover and apply the place value relationships between digits in multi-digit whole numbers and to describe the relationships using statements of multiplicative comparison.

## Resources

- ✚ *Patterns in Place Value* Student Page

## Procedures

- ✚ Put students in pairs and provide each student with a *Patterns in Place Value* student page.
- ✚ Students should each choose their own numbers to put in the chart but will check each other's work and discuss the patterns that they find.
- ✚ Once students have finished, ask them to share the patterns that they discovered.
- ✚ Have students apply this knowledge by asking questions such as, “[What is the relationship between 7 and 700?](#)” (Seven hundred is 100 times more than 7- multiplicative comparison), “[What is the relationship between 7 and 107?](#)” (107 is 100 more than 7- additive comparison) \*Though the focus of the lesson is on multiplicative comparison, students should recognize the difference between additive comparison (which does not describe the relationship between places values) and multiplicative comparison (which does.)

## Patterns in Place Value

Directions: For each set of procedures, try 2 single-digit numbers, 1 two-digit number, and one number of your choice (any number of digits.)

Start	Multiply by 100	Divide by 10	Add 10	Divide by 10

Start	Multiply by 1000	Divide by 100	Add 10	Divide by 10

Start	Multiply by 1000	Divide by 10	Multiply by 100	Divide by 10

Start	Multiply 100	Divide by 10	Add 100	Divide by 10