Grade Level 3

Magical Mystery Machine

NCTM Content Standard:
Number & Operations, Algebra

NCTM Process Standard:
Communication, Reasoning & Proof

Specific math content or skill addressed:
Addition, subtraction, multiplication, division (as appropriate)

Component:
Activity

Materials needed:
A ball that's easy to catch

Chart, markers (optional)

Preparing students for success:
Students should be familiar with whichever operation(s) you plan to use.

Students should have had practice with the ball-toss greeting/activity so that they can toss accurately and not focus so much on the ball.

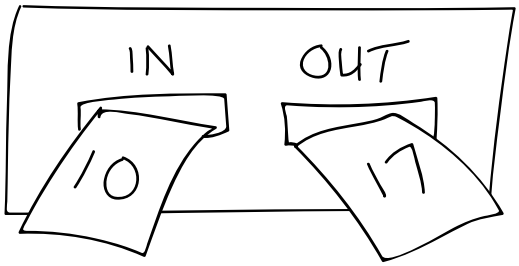
Vocabulary:
Depending on the operations you use: adding, subtracting, multiplying, dividing, doubling, etc.

How to do it:

- Tell the students that in a minute, you're going to turn into the Magical Mystery Machine. The class will feed you a number, and you're going to pop out a different number. The group's job is to figure out how you're changing the numbers (you will apply the same change each time).
- Toss the ball to a student, who will say *"I give you ____"* and toss the ball back to you. You say back *"I give you _____."* (An alternate wording could be *"In goes____"* and *"Out comes _____."*) For example, perhaps you have decided that the function will be "add seven." You toss the ball to a student, who says *"I give you ten,"* then tosses the ball back to you. You announce *"I give you seventeen."*
- Students must wait until three exchanges have occurred before offering a guess at the change you're making, even if they suspect they know the change.

EXTENSIONS DURING A LATER MATH LESSON:

- Play again later, asking students what went on in their brains as they figured out what the "machine" was doing.
- If necessary, show the "in" and "out" numbers on paper, with a column for the "in" numbers and a column for the "out" numbers, or a picture of a number going into a machine with a different number coming out. Ask the students how they can get from the "in" number to the "out" number. They might say *"I can count up"* or *"It looks like you double the 'in' number."*



- Challenge the students to write a number sentence representing what happens to various numbers as they go through the Magic Mystery Machine. For example: 10 + 7 = 17.
- Put the students in pairs or small groups to play the game, with individuals taking turns being the Magic Mystery Machine.

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