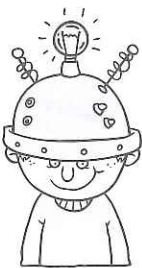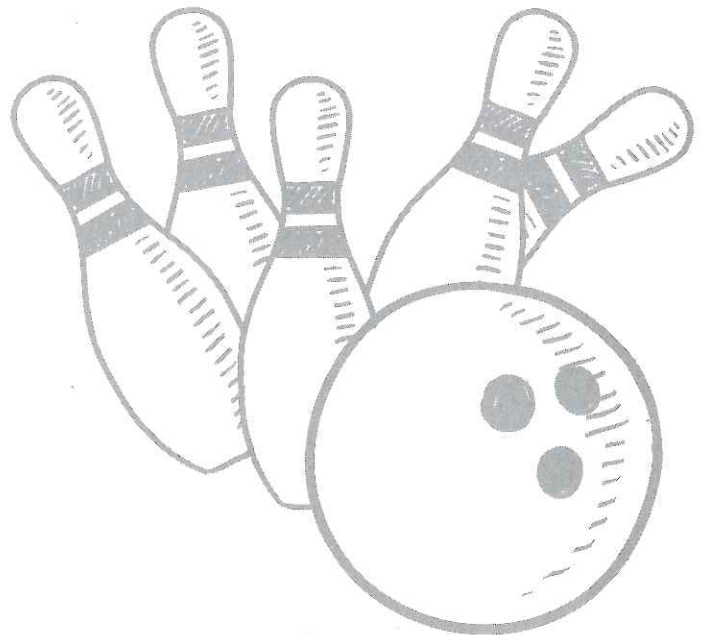# It's About Average

Mean

Wendy and six of her friends went bowling last weekend. They each bowled five games and recorded their scores on a chart. When Wendy got home and looked at the chart, she realized they had forgotten to record their scores for the fifth game! But she remembered that they each had an average score of 105 and was able to figure out the missing scores. Decide how she found the missing scores and complete the chart.

	Game 1	Game 2	Game 3	Game 4	Game 5
Wendy	125	112	101	91	
Shilah	108	96	102	117	
Marcella	140	90	93	96	
Jaime	83	90	150	85	
Amber	100	105	110	102	
Amy	75	100	105	80	
Mac	98	95	122	107	

Thinking Cap

Do you think the mean of 105 is representative of how well each person bowled? Explain your answer.

It's About Average

Mean

Instructional Strategies

Hands On:
Use interlocking cubes to demonstrate how the mean works. Give each group of four 20 interlocking cubes. Challenge them to build 4 towers that are equal length (they should come up with 5 blocks in each tower for a group of 4). Ask the whole class what they just did. Guide the discussion so that students realize that by building towers of equal length, they share the 20 cubes equally and that this represents the mean. Give groups more cubes and try again. To encourage understanding, for the first few examples make sure that the mean comes out as a whole number. As a challenge, give them cubes that will not give a whole number mean and discuss what the implications are for these examples.

Getting Started
Challenge students to find the missing test score if their average was 80. There were 5 total tests and the first 4 scores were 80, 99, 75, 83. What was the last score? Ask groups to find the missing test score and be ready to present their findings to the class.

Calculator Notes

Students use the calculator in this activity to find the missing number in a set of data when they know the mean of the data.

The [STO M] key can be used to enter the necessary sums into the memory of the calculator.

The [RCL M] key can be used to recall the number stored in memory.

The [(] and [)] keys can be used to group expressions.

Example:

1. For all seven bowlers, the mean is 105 and they each bowled five games. There fore, the sum of the scores for all five games for each bowler was 105 x 5 = 525. To calculate this and add it to memory, press [1] [0] [5] [X] [5] [STO M].

Note: this product will be used to find the missing score for every bowler.

2. To find Wendy's score for Game 5, press [RCL M] to recall 525 from the memory of the calculator.

3. Then, enter [−] [(] [1] [2] [5] [+] [1] [1] [2] [+] [1] [0] [1] [+] [9] [1] [)] [=] to find that Wendy's score for Game 5 was 96.

☑ **Assessment:**
Have students calculate the average for all five scores for each bowler. If the score they found for Game 5 is correct, the mean will be 105.

It's About Average

Mean

	Game 1	Game 2	Game 3	Game 4	Game 5
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Marcella	140	90	93	96	106
Jaime	83	90	150	85	117
Amber	100	105	110	102	108
Amy	75	100	105	80	165
Mac	98	95	122	107	103

Thinking Cap Answers:

The mean score is representative of how some of the people bowled. For example, it is very representative of Amber's scores since her scores did not vary significantly. On the other hand, Jaime was an inconsistent bowler and the mean score does not show the wide range of her scores.