

Just In Time Quick Check
[Standard of Learning \(SOL\) 5.17b](#)

Strand: Probability and Statistics

Standard of Learning (SOL) 5.17b

The student, given a practical context, will describe mean as fair share.

Grade Level Skills:

- Describe mean as fair share.

[Just in Time Quick Check](#)

[Just in Time Quick Check Teacher Notes](#)

Supporting Resources:

- VDOE Mathematics Instructional Plans (MIPS)
 - [What's the Data All About?](#) (Word) / [PDF version](#)
- VDOE Word Wall Cards: Grade 5 ([Word](#) / [PDF](#))
 - Mean
 - Mean: Fair Share
- VDOE Instructional Videos for Teachers
 - [Mean as Fair Share](#)

Supporting and Prerequisite SOL: [5.4](#), [5.17a](#), [4.4d](#), [3.4a](#)

SOL 5.17b - Just in Time Quick Check

- 1) A family of chipmunks are storing acorns for the winter. Each of the five chipmunks has gathered some acorns as shown in the table below. Each chipmunk in this family wants to have the same number of acorns.

Chipmunk	Acorns
A	2
B	4
C	3
D	6
E	5

Draw a picture to show a fair share of acorns each chipmunk should receive. What measure of center did you use in your drawing?

- 2) There are varieties of apples in each of four displays at a grocery store.

- The first display has twenty apples.
- The second display has fourteen apples.
- The third display has twelve apples.
- The fourth display has twenty-two apples.

A grocery store employee wants each display to have the same number of apples. Explain what the grocery store employee should do in order for each display to have the same number of apples.

- 3) Eight friends each receive a bag of M&M's. They want to make sure each of them get a fair share. Describe what the eight friends need to do to make sure everyone gets a fair share of M&M's.

SOL 5.17b - Just in Time Quick Check Teacher Notes

Common Errors/Misconceptions and their Possible Indications

- 1) A family of chipmunks are storing acorns for the winter. Each of the five chipmunks has gathered some acorns as shown in the table below. Each chipmunk in this family wants to have the same number of acorns.

Chipmunk	Acorns
A	2
B	4
C	3
D	6
E	5

Draw a picture to show a fair share of acorns each chipmunk should receive. What measure of center did you use in your drawing?

A common misconception some students may have is to draw a picture of exactly what is represented in the table. This may indicate that a student does not understand that a fair share of acorns can only be achieved by dividing all the acorns gathered equally among the five chipmunks. A teacher may find it helpful to ask follow-up questions about the students' pictures. "Does each chipmunk have the same number of acorns? What changes can be made to your picture so that each chipmunk has a fair share?" It might be beneficial to use manipulatives such as linking cubes to model the problem if students appear to have difficulty deciding how to draw a revised picture. It is important for students to make the connection that mean represents a fair share concept of the data. The VDOE framework states, "this idea of dividing as sharing equally should be demonstrated visually and with manipulatives to develop the foundation for the arithmetic process."

- 2) There are varieties of apples in each of four displays at a grocery store.
- The first display has twenty apples.
 - The second display has fourteen apples.
 - The third display has twelve apples.
 - The fourth display has twenty-two apples.

A grocery store employee wants each display to have the same number of apples. Explain what the grocery store employee should do in order for each display to have the same number of apples.

A common misconception some students may have is to consider mean as the sum of the values of the data set. This may indicate that the student organizes all of the apples into one display rather than equally dividing the apples into four displays. It might be beneficial to use manipulatives to model the problem if students appear to have difficulty determining the number of apples for each of the four displays. It is important for students to make the connection that mean represents a fair share concept of the data.

- 3) Eight friends each receive a bag of M&M's. They want to make sure each of them get a fair share. Describe what the eight friends need to do to make sure everyone gets a fair share of M&M's.

A common misconception some students may make is to describe the fair share as removing M&M's rather than using all of the M&M's that the eight friends have collectively. This may indicate that a student does not understand that equally dividing all of the M&M's that the eight students have collectively constitutes a fair share. It might be helpful to guide students to use a strategy of assigning arbitrary numbers (or manipulatives) to each of the friends representing the number of M&M's in order to describe the process. Encourage students to explain what they need

to do with the assigned numbers in order to achieve a fair share. Numerical values were intentionally omitted from this problem so students would think about the process and meaning of fair share, rather than focus on solving a problem.