Content Standard	***MAFS.7.SP*** *Statistics and Probability* ***MAFS.7.SP.1*** *Use random sampling to draw inferences about a population*. ***MAFS.7.SP.1.2*** Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions. *For example, estimate the mean word length in a book by randomly sampling words from the book; predict the winner of a school election based on randomly sampled survey data. Gauge how far off the estimate or prediction might be*. Also Assesses: ***MAFS.7.SP.1.1*** Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences.
Assessment Limits	Numbers in item must be rational numbers. Context must be grade appropriate.
Calculator	Yes
Item Type	Equation Editor GRID Multiple Choice Multiselect Open Response
Context	Required

Sample Item	Item Type
A chocolate company selects 50 random packages to check their weight. It finds that 2 packages have an incorrect weight. How many packages out of 2000 should the company predict have an incorrect weight?	Equation Editor
A chocolate company produces 2 types of chocolate: type A and type B. The company selects 25 random packages of each type to check their weight and finds that one package of type A has an incorrect weight and 3 packages of type B have an incorrect weight. How many packages should the company predict have an incorrect weight when it checks 2000 of each type?	Equation Editor

Sample Item	Item Type
A middle school has • 220 students in grade 6; • 170 students in grade 7; and • 100 students in grade 8. The media specialist wants to know which books are the most popular among the students in her school. Since she cannot ask all the students, she will survey a group of them. Which sample can best help the media specialist draw conclusions about the preferences of all the students in the school? A. 45 sixth graders, 35 seventh graders, 20 eighth graders B. 20 sixth graders, 35 seventh graders, 45 eighth graders C. 45 sixth graders, 45 seventh graders, 45 eighth graders D. 20 sixth graders, 20 seventh graders, 20 eighth graders	Multiple Choice

Multiple Choice

A company has three sales departments (local, regional, and national) at each of several locations across the United States. Each local sales department has 120 employees. The company wants to survey its employees to determine the most effective sales method.

Which sample should the company use to arrive at the most reliable conclusion?

Ⓐ 24 employees from one sales department at one location

Ⓑ 24 employees from one sales department at each location

Ⓒ 24 employees from each sales department at one location

Ⓓ 24 employees from each sales department at each location

Equation Editor

A company plans to ship 2000 packages of chocolate. The company randomly selects 100 packages and finds that five packages have an incorrect weight.

Based on this data, how many packages out of the 2000 should be predicted to have an incorrect weight?