

7.SP.7a How Many Buttons?

Alignments to Content Standards: 7.SP.C.7.a

Task

Look at the shirt you are wearing today, and determine how many buttons it has. Then complete the following table for all the members of your class.

	No Buttons	One or Two Buttons	Three or Four Buttons	More Than Four Buttons
Male				
Female				

Suppose each student writes his or her name on an index card, and one card is selected randomly.

- What is the probability that the student whose card is selected is wearing a shirt with no buttons?
- What is the probability that the student whose card is selected is female and is wearing a shirt with two or fewer buttons?

IM Commentary

This task uses student generated data to assess standard 7.SP.7. This task could also be extended to address Standard 7.SP.1 by adding a small or whole class discussion of whether the class could be considered as a representative sample of all students at

your school.

In implementing this task, you might also ask students to come up with other probabilities that could be calculated using this table (for example, the probability that the selected student is male or the probability that the selected student is male and wearing a shirt that has no buttons). Students could then use the table to calculate these probabilities.

This task can also be easily adapted to use other variables for which students in the class could collect data.

[Edit this solution](#)

Solution

Table values will vary depending on the composition of the class.

Using the following letters to represent the counts in each cell,

	No Buttons	One or Two Buttons	Three or Four Buttons	More Than Four Buttons
Male	p	q	r	s
Female	t	u	v	w

$$a. P(\text{no buttons}) = \frac{p+t}{\text{total of all cells}} = \frac{p+t}{p+q+r+s+t+u+v+w}$$

$$b. P(\text{Female and two or fewer buttons}) = \frac{t+u}{\text{total of all cells}} = \frac{t+u}{p+q+r+s+t+u+v+w}$$



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