

(1. grade)



Can you determine the most representative student in the class?

Conduct a **Census** of the students of your class on a particular day to determine the most representative student on that day.

Census (data collected from all the students in class that day)

Instructions for teachers:

Subjects: Mathematics, art

Materials: One table printed for the teacher, color pencils, paper for drawing, measuring tape

Lesson:

The aim is to determine, for each characteristic of interest, the value that is most representative of the students in class. The teacher will ask, and record for each student in the class that day, the following variables (characteristics): name, sex, height, month of birth, number of siblings, eye color, hobbies, and pets. Students will then find out "the most representative student of the class" based on the information found. In the process, students will learn the definition of the statistical terms average (mean), median, and mode.

Determining the most representative student in class:

General instructions:

Teachers write the results in the table (see below). If it is not possible to determine a characteristic for a student unambiguously, there can be more than one student or none with that characteristic.

Name:

"Name" is a qualitative (or categorical) variable. For this kind of variable, the students will prepare a bar graph.

The MODAL category (the one with more elements) describes the most representative name.

Sex:

"Sex" is a qualitative (or categorical) variable. For this kind of variable, the students will prepare a bar graph.

The MODAL category (the one with more elements) describes the most representative sex.

Height:

"Height" is a quantitative (or numerical) variable. If we want the "middle value," students will look for the **MEDIAN (The value that has the same number of data values on each side of it in the ordered data*)**. In that case, students will stand in increasing order of height. The teacher will determine the middle student and measure his/her height. If, in the middle, two students have the same height, that height will represent the class's height. Students can decide that the **Mode** will represent the height of the class (the height that most children have). Or, you can decide that the most representative height will be the **Average (i.e., how tall all should be if they were all the same height)**.

* If you have an odd number of students. If the number of students is an even number, then the average of the heights of the two middle students is the median.

Month of Birth:

The teacher lists all the months and asks the students to raise their hands when they hear their birth month. The month in which the most pupils have been born is the **MODE** month, and that month might be the most representative of the class's birth month.

Number of Siblings: The teacher asks the students to raise their hands when they hear the number of siblings they have. This is a numerical variable (characteristic), and students would define the most representative number of siblings as the most often, **the mode, the median, or the average.**

Eye Color:

The teacher asks students to raise their hands when they hear their eye color. The **mode** value will be selected by the students as the most representative eye color.

Hobbies:

The teacher asks students to tell what hobbies they have and writes them in a table. If, for example, a student says his hobby is playing football, the teacher can either draw a football or write the word "football" in the table. Because "hobbies" is a qualitative variable, the only possible characteristic will be the **mode.**

Pets:

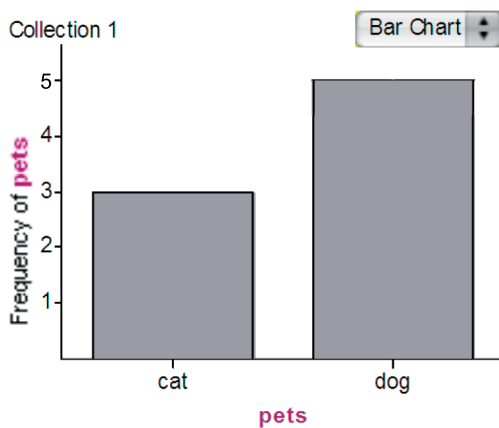
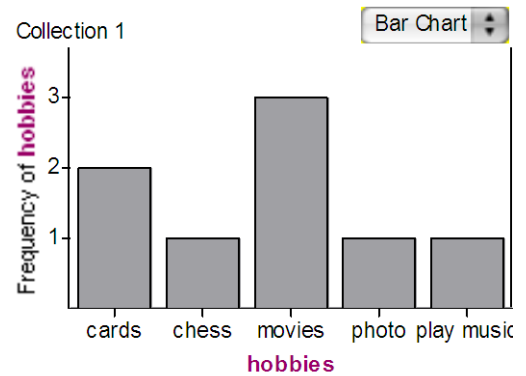
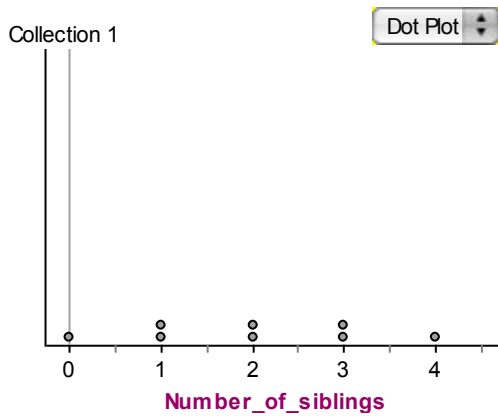
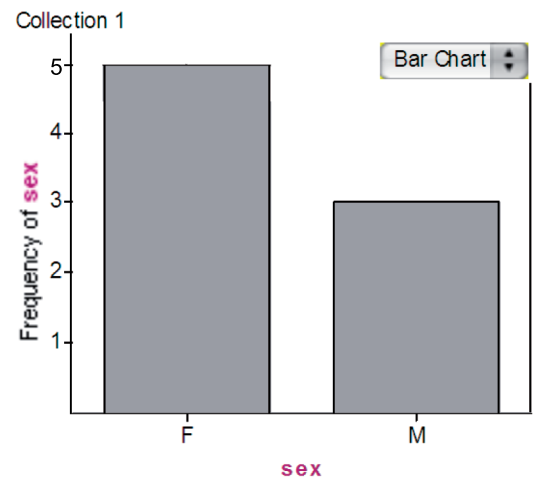
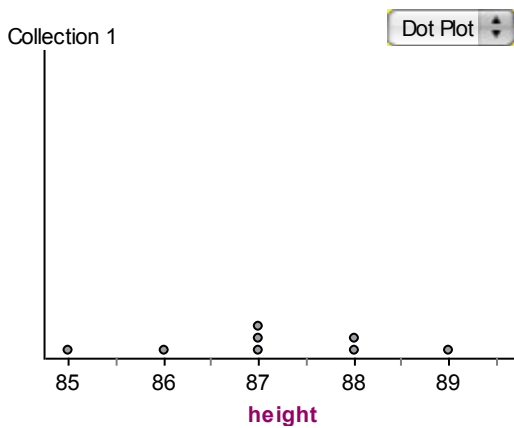
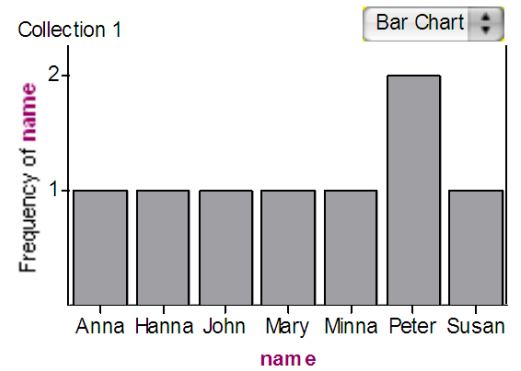
The teacher asks students to tell what pets they have and writes them down. As a qualitative variable, the statistic they have to select is the **mode.**

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Example:

Suppose the class has exactly 8 students with the following characteristics:

Collection 1	name	sex	height	month_of_birth	Number_of_siblings	eyes_color	hobbies	pets
1	Anna	F	87	Feb		1 Blue	chess	dog
2	Susan	F	86	Jan		0 Brown	cards	dog
3	Minna	F	87	Dec		3 Blue	movies	dog
4	Peter	M	89	Nov		3 Brown	cards	cat
5	John	M	85	Feb		2 Blue	play music	dog
6	Peter	M	88	Oct		4 Brown	movies	cat
7	Mary	F	87	July		1 Blue	photo	dog
8	Hanna	F	88	Mach		2 Blue	movies	cat



Who is the most representative of the students in the class?

The student is a girl named Peter, who is 87 cm tall and has blue eyes and a dog and likes to watch movies.

Students' material (1. grade)




Name: _____

SEX:		
	Girl 	Boy 
Number		

Height: _____cm

THE MONTH OF BIRTH:												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Number												

SIBLINGS:									
	0	1	2	3	4	5	6	Other	
Number									

EYE COLOR:			
	Blue 	Green 	Brown 
Number			

