(2. grade − 3. grade)

Can you determine the most representative student in the class?

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

Census: data will be collected from all the students in the class that day

Instructions for teachers:

Subjects: Mathematics, art

Materials: One table printed for the teacher, and one for each students in the class, color pencils, paper for drawing, measuring tape

Lesson:
The aim is to find out for each characteristics of interest the value which will be most representative of the students in the class. The teacher will ask, and record for each student in the class that day, the following variables (characteristics): his/her name, sex, height, the month of birth, the number of siblings, color of his/her eyes, 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.

General instructions:
Teachers write the results down in the table (see below). If there is not possible to determine a student for some characteristics unambiguously, then 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 MODE 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" they 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 be placed to stand according to the height in increasing order of height. Teacher determines the middle student in the order and measures his height. If in the middle two students have the same height, that will be the height which 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 (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.

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

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

Eye color:
Teacher asks pupils to raise their hands when they hear their eye color. **The mode** value will be selected by the students as the most representative eye's color.

Hobbies:
Teacher asks pupils to tell what hobbies they do and writes them down. He fills in the table as pupils tell them. If for example a pupil says that his hobby is playing football 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.**

Pet:
Teacher asks pupils to tell what pets do they have and writes them down. As a qualitative variable, the statistics they have to select **is the mode.**

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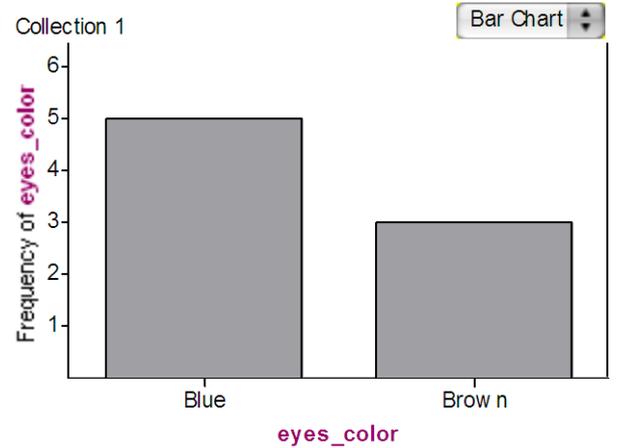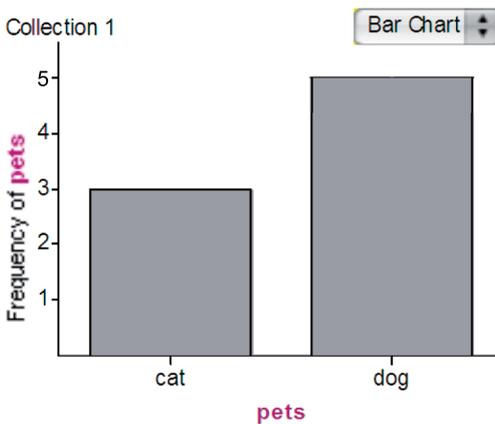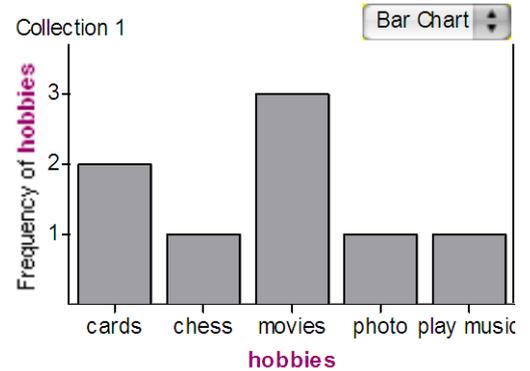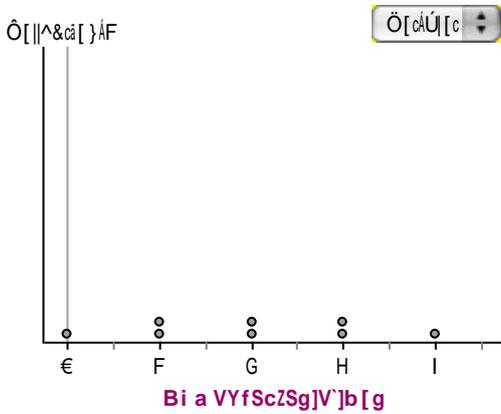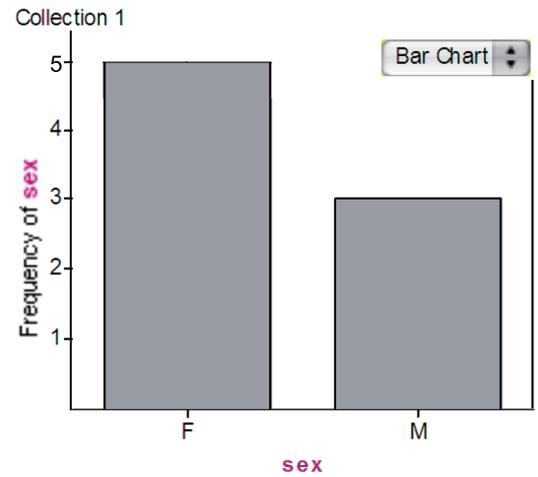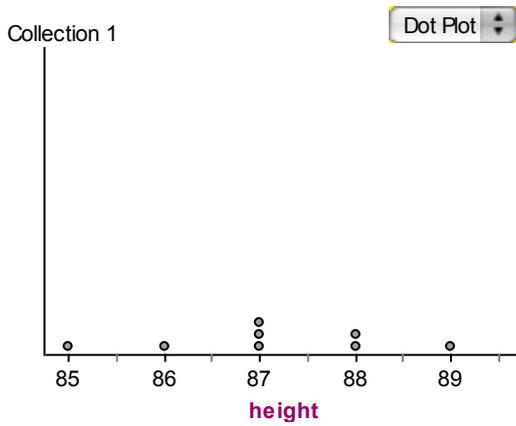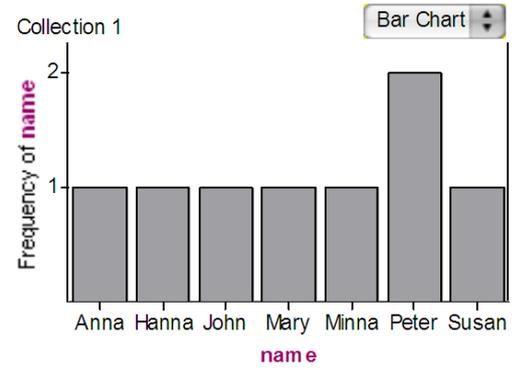
Who is the most representative of the students in the class?

The student is a girl named Peter, who is 87 cm tall and has blue eyes and a dog and likes to watch movies.
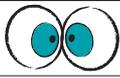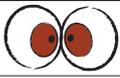
Students' material (2.−3. grade)

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			

HOBBIES:

Hobby	Number

PET:

Pet	Number