Docente: *Elisa Dardanelli*

Scuola: Liceo Peano-Pellico – Cuneo

Titolo del modulo: DESCRIPTIVE STATISTICS

Classi coinvolte: 1D/1S - 2017/18

Numero di allievi coinvolti: 28+22

Numero di ore dedicate al modulo in ogni classe: 8

Metodologia utilizzata: le lezioni si sono svolte sia in aula con il supporto di materiale multimediale (presentazioni ppt, video tratti dal sito della bbc, esempi e quiz da www.bbc.co.uk/bitesize/ks3, www.mathopolis.com e www.mathisfun.com …), sia in laboratorio di informatica per lo svolgimento di quiz sulla piattaforma moodle. Le lezioni si sono sempre svolte in modo interattivo, coinvolgendo l'intera classe in attività di *brainstorming*, interviste per raccolta dati, lavori a coppie e in gruppo. Il docente ha svolto l'intero modulo in L2 e gli studenti hanno risposto con interesse, mettendosi in gioco anche nell'uso della lingua, nonostante si trattasse di classi iniziali

Esempi di attività svolte/*task*/verifiche finali:
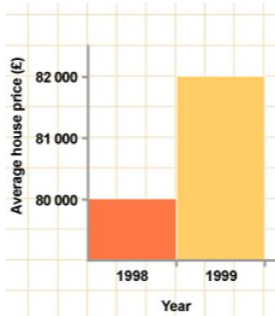
Esempio di attività lezione 1:

Esempio di attività lezione 4:

Activity 4 – misleading graphs

Question1

Average house price (£)

82 000
81 000
80 000

1998   1999

Year

What is wrong with this bar chart?
How should the information be represented?

Question2
What is wrong with this graph?

16
8
4
2
1
0

1   2   3   4

Question3
What is wrong with this 3D bar chart?

Number of singles sold

1995   1996   1997   1998
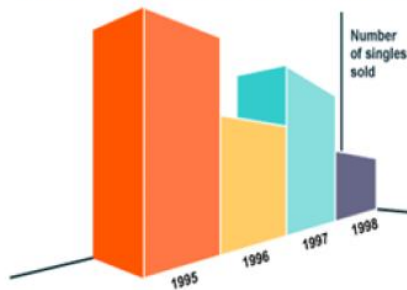
Question4
What is wrong with this pictogram showing the number of people who own different types of pets?

Key: 50 people   50 people   50 people   50 people

Dog

Cat

Horse

Other
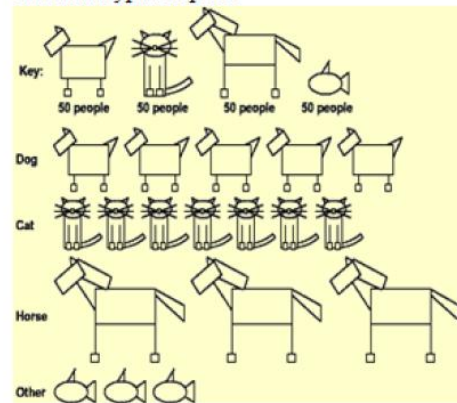
Esempio di attività: Final assessment

1. Matching

a. They can be descriptive or numerical		1. Pie chart
b. The first can take any value, the second can take only certain values		2. Discrete data – continuous data
c. They must be grouped before they can be represented in a frequency table or statistical diagram.		3. Histogram
d. The first is counted, the second is measured		4. Pictogram
e. In this chart, the height of the rectangles shows the frequency of the result.		5. Data
f. It uses pictures to represent data.		6. Continuous data – discrete data
g. It uses different-sized sectors of a circle to represent data.		7. Mode
h. In this graph the area of each rectangle is equal to the frequency.		8. Bar chart
i. To calculate it you must add the numbers together and divide the total by the amount of numbers.		9. Continuous data
l. If you place a set of numbers in order, it **is the middle one.**		10. Median
m. It is the **value that occurs most often.**		11. Mean

2. Reading and interpreting a frequency table.

50 students take an exam and have to answer 8 questions. The following table collects the data about the number of right answers of each student:

Number of right answers	1	2	3	4	5	6	7	8
Frequency	2	1	3	20	12	3	5	4
Percentage frequency								

a) Which variable is this survey about? Is it a discrete or continuous variable?

_____

b) Add a line to the table and fill it with the percentage frequencies.

c) Which is one suitable graph to represent these data? Draw it on the back.

d) Which is the number of the students who give less than 6 right answers? Which kind of frequency do you use to get this answer?

_____

3. Reading and interpreting a bar chart.

Leon conducts a survey to find the age of the participants to a football tournament. The bar chart below shows his results:
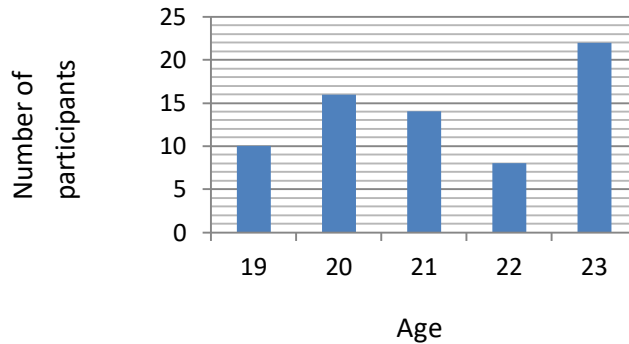
Answer the following questions:
a) How many participants are there in the tournament?
b) What is the mean age?
c) What is the median?
d) What is the mode?

4. Drawing a pie chart
The table below shows the grades achieved by 30 pupils in their end-of-year exam.

Grade	A	B	C	D	E
Frequency	7	11	6	4	2
Angle					

Complete:
to show this information in a pie chart, you have to take the following steps:
1) work out the .... number of pupils
2) calculate the relative frequencies: 7/......=.........; 11/......=.........; 6/......=..........; 4/......=.........;
2/......=.........
3) work out the angle (remember that there are 360° in a full turn, so you have to multiply the relative frequencies by……………..)
Now draw the pie chart.

5. Calculating the mean and the standard deviation
In four different tests, Andrew gets these marks: 5, 7, 6, 8.
a) Calculate the mean of Andrew's marks.
b) Andrew's teacher decides to increase every mark by 1. Does the mean change? Why?
c) Andrew wants to reach the mean of 6.75, thus in the fifth test he has to get at least this mark:
.... How can you get this result?