

How much are you costing me!

Teacher Guide

Organization of work

At the beginning of the first lesson groups are established. Each group consists of 4/5 students and among them a coordinator, a note-taker and a speaker are identified. The roles are rotated for each activity change. All issues have to be addressed by students which, confronting each other under the guidance of the teacher, are able to reach a solution (also open).

Within each group, activities of research, of comparison and graphical processing of data are carried out. At the end of each working phase, the different groups generally discuss conclusions and the obtained results.

At the end of each activity, notes are withdrawn. The assessment is carried out through the systematic observation of the students' behaviors (ability to coordinate, to relate or to record, participation to the activity).

Stage 2

For the second activity, the teacher guides the students so that each group chooses a different operator, about which students will look for tariff plans and offers.

Stage 3

The third activity should include theoretical investigations. Students are guided in the interpretation of a graph and of its features, by studying step functions and linear functions. Also by drawing different graphs in the same Cartesian axis system the ability to perform a comparison is highlighted.

Stage 4

In the fourth activity, students have to choose appropriate units of measure and use a different scale on the two axes in order to make the comparison between simplified fake offers related to the addressed issue (for example: between a tariff plan in which 1 SMS costs 10 cents, or a plan with 10 SMS at the cost of 80 cents, depending on the number of text messages sent, what should I choose? The solution is not the most banal if I usually send a number of messages greater than 10!).

Stage 5

The fifth step includes the activities of each group. The proper performance of this step is useful to confirm the learning of the addressed concepts, which will be useful in later years.

Stage 6

The final discussion will highlight how the absolute best choice does not exist. The way to address the problem may also be proposed by referring to offers for other services (eg. electricity supply).

The theoretical analysis carried out by the use of spreadsheets or programs for the study of functions (DERIVE, etc.), allows to extend the analysis to more complex situations, with a higher number of variables or with offers ranging in time. In this way the practical difficulties related to the construction of a graph are overcome, also by using functions of different types (degree greater than one) and functions with several variables.

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