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Case Study 01

Basic data

Title of Research Teaching Unit	**Discounts and sales**
Unit created by	**Istituto Comprensivo "Malaspina" – Massa (IT)**
Based on Concept	**Discounts and Sales**
Concept created by	**Univerzita Karlova (CZ)**
Date of teaching	**24.11.2023**
Number of students in class	**20**
Number of migrant students	**1**

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1. Unit Description of Research Teaching Unit

Title	**Discounts and sales**
Age of students/grade	Grade 8
Length of the unit	2 hours
Mathematical topic	Percentages (in everyday life)
Prerequisite knowledge	Calculations with fractions
Materials needed	Supermarket leaflets, interactive whiteboard, notebook, sheets, calculator
Objectives	• Financial skills, in order to manage a budget. • Cooperating with classmates, learning words concerning purchases, discounts and meals
Notes on work with migrant students	• Use of simpler tasks with numerical responses (this will enable migrant students to succeed) • For more complex tasks, work in pairs and groups, employ mixed pairs (migrant pupil + non-migrant pupil) • Allow the sharing of experience in the initial phase of the lesson (shopping in your country, sales season, etc.) • Use visual aids • Verify understanding

Lesson plan

The activities to be developed

Students will organize a party lunch. They will be given a supermarket leaflet with special offers concerning food. They will choose a menu for a certain number of people and they will have an expenditure ceiling.

Working in groups, they will also have to choose menus which are good for every member of the groups, thus considering their cultural background.

Once the menu and the purchases are decided on the basis of the offers, they will calculate the saving in terms of percentage in comparison with normal prices.

Activity development and methodology

In the class where this teaching unit was taught there is a girl from Senegal.

Groups of students were organized and each group decided their own menu starting from the offers in the leaflet.

Most of the students remembered the formulas about percentages and discounts, so they were able to calculate the saving.

Students had a supermarket leaflet, squared papers, calculators and their book. The interactive whiteboard was used to write the necessary formulas and the schemes to be copied on the sheets in order to complete the task.

Each group thought about the cultural and food needs of each member, for example, in the group with the Muslim girl, they chose a menu without the foods she can't eat

Lesson 1

This teaching unit is based on an authentic and personalized task: the choice of a personal outfit for a particular occasion starting from a defined budget.

The work is suitable for group work.

The teacher can bring leaflets of various shops or supermarkets in the classroom, or the kids can bring them on their own or search online stores.

Formulas to obtain percentage changes will be presented:

Percentage variation = variation/initial value

...and the calculation of the discounted price from the initial price knowing the discount applied, considering the proportion:

100 : percentage discount = price : X

from which:

discounted price = list price – X

As soon as all the information are collected, each group can start writing lists with the choices made.

Based on the percentage calculations, they will be able to find any discounts in the offers of the leaflets, thus evaluating the savings.

Lesson 2

In the next lesson you can choose to work in groups or individually, proposing to the students to prepare an advertising leaflet with offers.

Softwares can be used to create flyers (looking for proper terms), in which some supermarket products are discounted.

They will then have to calculate the discounted prices, also looking for the likely discount percentage for the selected products.

The evaluation will take account of both the application of the mathematical procedures and the computer developed skills.

At linguistic level, this type of lessons allows them to learn the terms related to the products that are purchased, the purchase and the sale, to know the currency of the host country and to make assessments also with respect to the prices of their mother countries.

2. Interview Analysis

The teacher teaching this unit has 12 years teaching experience. Her other subject is Science. She did not receive any training for teaching in multicultural classrooms neither in her initial nor in-service teacher training. In her prior teaching mathematics in these classrooms experience the most relevant issue she had encountered was related to migrant students who don't speak Italian. In this case, it is difficult even to understand if they understand what she is speaking about. Consequently, she tries to cooperate with a teacher specifically dedicated to support her in such circumstances. If this teacher is not available, she usually works creating peer to peer groups, because students of the same age can be more on familiar terms with their foreign classmates.

The advantages of having migrant students in the classroom are that there is something more which can be used in the lessons. You have to be more creative and to find new strategies for migrant students, but at the same time they have to be useful for the whole class. In addition, a multicultural class gives the students the chance to know more about different countries.

Changes in her teaching strategies in classrooms with migrant depends on the students of each class. However, she always tries to involve all students in the activities.

The original lesson plan is used with additional materials - supermarket leaflets - to create a party lunch with a given budget, that is a reality task!

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3. Improvement Suggestions

The evaluation of the lesson plan is positive, with just a recommendation: the activities should be “flexible” and should be modified according to the class members and the students’ interests.

The lesson plan would take longer to be fully developed.

4. Classroom observation

The students appreciated the task even if, as it was predictable, there was a bit of confusion, due also to the lesson being different from the normal frontal lessons with chalk and book. However they worked hard, cooperating and enjoying themselves.

The working climate was really positive: each group tried to buy also ingredients to cook particular dishes and not only ready to eat foods. The groups were heterogeneous, there was cooperation and they enjoyed themselves also thinking about what they could cook.

From a motivational point of view (attitude / interest / commitment), students were interested towards the new activity. The groups were very interested, even if some students were often absent minded.

From a cognitive point of view (increase in the level of learning), students already knew the mathematical rules and they were able to put them into practice in a reality task. The creation of the menu and the expenditure ceiling were not a problem, not even for the students with special needs, but for someone it was necessary to remember the required formulas.

No evaluation test was administered.

The teaching unit made it possible to carry out an effective recovery effort for students in difficulty. In fact, In a certain way, working in groups enabled the students to fill in the pre-existent gaps and to face the task according to a more practical point of view.

The teaching unit made it possible to carry out an effective stimulus action for the brightest students, because it enabled them to put into practice some strategies in order to share their competences with the students who have difficulties.