LESSON PLAN

Subject: IT (Information Technology) and ICT(Information and Communication Technologies).

Topic: Using Microsoft Excel to plot a chart.

Age of students: 16/17 Students of 1st grade, CLIL beginner stage

Language level: B1

**Time**

45-60 minutes

**Theme (methodical unit)**

Using Microsoft Excel to plot a chart.

**Content aims**

After completing the lesson, the student will be able to:

Define the chart type and category of XY axis.

List different types of graphs used to display data.

Differentiate drawing a graph on the computer from drawing on papers.

Plot a chart from Excel data table.

Use the chart wizard to create the chart.

Format the chart elements (chart axis, change the units, legends, fonts).

Select proper chart for different data.

**Language aims**

After completing the lesson, the student will be able to:

Use subject vocabulary.

Explain how to plot a chart using Microsoft Excel.

# Materials:

**Materials needed**

Computer stations with installed Microsoft Excel 2007 or higher.

Printed or made in Microsoft Excel worksheet file with examples data tables.

**Optional materials**

Network to access the Internet

# Organization of lesson:

**Introduction**

Teacher asks students questions:

* How can I represent data? (table, graph).
* Have you ever made the charts on the computer?
* On what subjects can I meet with presentation of the results on a graph? (physics, mathematics)?
* What is different about drawing a graph on the computer from drawing on papers?
* On what the chart types can I present data?

**Procedure**

Lead-in:

* Teacher tells the students what a chart/graph is.
* Teacher informs about kinds of graphs used to display data.
* Teacher shows how to plot a chart from Excel data table.
* Teacher explains terms: a data series (a group of cells in a single row or column as the base for plotting the chart)

Practice/task:

* Students sit at dedicated computer station. Open Microsoft Excel file (students.xlsx) created in the previous lesson.
* Teacher supplies printed materials with tasks for students (student handout).
* Teacher shows students how to use the chart wizard to create the chart step by step. Students view the various types of charts selecting the right to represent the data.
* Students themselves create a chart from series data table specified in Microsoft Excel file (class.xlsx).
* Teacher shows how to format the chart elements (chart axis, change the units, legends, fonts).
* Automatic updating chart - students come to an important conclusion that a changed value of the data series affects the chart.

**Summary**

After completing the exercise and save file.   
Remind:

* how to create a chart in Microsoft Excel,
* how to change the format of chart elements,
* how to customize a chart type to the data,

## Student handout[[1]](#footnote-1)

Create table 1 and table 2 in Microsoft Excel if it were not created in the previous lesson. Microsoft Excel spreadsheet save as name given below each table.

**first task**

Represent the number of students at the classes in a pie chart. The percentage of students from the same village represent in a bar chart. Suggest, as you think, the best way to presenting data series for students from the same village and students from the outside village on the same chart.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **class name** | **number of students** | **students from the same village** | **%** | **students from the outside village** | **%** |
| IA | 31 | 28 | 90,3% | 3 | 9,7% |
| IB | 30 | 20 | 66,7% | 10 | 33,3% |
| IIA | 28 | 16 | 57,1% | 12 | 42,9% |
| IIB | 29 | 12 | 41,4% | 17 | 58,6% |
| IIC | 26 | 20 | 76,9% | 6 | 23,1% |
| IID | 30 | 30 | 100,0% | 0 | 0,0% |
| IIIA | 26 | 24 | 92,3% | 2 | 7,7% |
| IIIB | 27 | 19 | 70,4% | 8 | 29,6% |
| IVA | 24 | 23 | 95,8% | 1 | 4,2% |
| IVB | 25 | 17 | 68,0% | 8 | 32,0% |
| **Total** | **276** | **209** |  | **67** |  |

Table 1: students.xlsx

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**Second task**

represent total number and arithmetic average in a line chart.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **2011** | **2012** | **2013** | **2014** | **2015** | **Total** | **arithmetic average** |
| class I | 86 | 90 | 80 | 110 | 96 | 462 | 92,4 |
| class II | 115 | 104 | 96 | 99 | 91 | 505 | 101,0 |
| class III | 91 | 94 | 106 | 91 | 91 | 473 | 94,6 |
| class IV | 86 | 82 | 97 | 88 | 79 | 432 | 86,4 |
| **Total** | **378** | **370** | **379** | **388** | **357** | **1872** |  |

Table 2: class.xlsx

1. Helpful resources are available on the website at http://chemed.chem.purdue.edu/genchem/lab/datareports/excel/intro.html [↑](#footnote-ref-1)