

WORKSHEET 2

the day / night and seasons temperature variation

The main purpose of this worksheet is to check the day / night and seasons temperature variation.

I) The first step is to identify the closest meteorological station on the map found on the website:

<https://rp5.ru/Weather in the world>

For your chosen location, we are going in the **Weather archive** and Download weather archive in the XLS (Excel) format for a particular data range. We recommend to select a short range to not have very large file.

Task to carry out:

1. The students will identify the day with the larger variation of temperature between night and day
2. The students will plot the data using Excel software.
3. The students will identify the time at which the temperature reaches the maximum value.
4. The students should explain why the temperature has the maximum value at that particular time? and also should describe the mechanisms by which the atmosphere is heating.

II) For the second goal, the students should obtain from the website:

<https://rp5.ru/Weather in the world> the season average temperature of the closest meteorological station on the map. To do this, in the **Weather archive and Weather statistics** the student should select at the data range, the months corresponding to each season and then to select **Calculate**.

Example: if for a particular location we have selected **data range: 01.12.2015 - 29.02.2016** - we have winter. At the **Select within the date range:** we have **all days**. Selecting **calculate**, we obtain the mean value for all the parameters for that particular location.

The experimental data will be written in the following table.

Season	Mean value of temperature [units]
winter	
spring	
summer	
autumn	

Task to carry out:

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1. The students will plot the data using Excel software
 2. They will search the average values for the locality on the web and compare them to the mean values found for the selected year and compare the results.

Additional materials

In order to explain the results obtained the teacher could use one of the following video related to the energy transfer:

video 1: www.youtube.com/watch?v=Y3kZVX6ZCsY (9.04 min)

video 2: www.youtube.com/watch?v=U3ee3rSg7xs (9.11 min)

video 3: www.youtube.com/watch?v=Atnjo7dD_bA (3.24 min)