NBS ACADEMY
Co-funded by the European Union

Worksheet Template (For Lesson plan 1)

Title and Instructions

The students get the chance to Explore the phenomenon of the Urban Heat Islands Effect conducting a small investigation in their school.

- First the students must identify 5 different surfaces: grass, pavement (driveway, road), sidewalk, plant (tree or bush), and bare soil and mark them with something visible etc. a cone. Then with an infrared thermometer they will measure the temperature of each surface in sunlight and shade, which will help them calculate the temperature difference of each one. (Activity 1)

- After collecting the data from their investigation, they will present it in the form of a bar chart. They will need to develop 2 bar charts in total, one which will show the surface temperature in sunlight and one that will show the surface temperature in shade. (Activity 2).

- Based on the bar charts that will be developed each group will now try to interpret their data, trying to give a reason for the temperature difference observed (Activity 3).

- Lastly, students should draw conclusions based on the results (data collected, bar charts and interpretation) of their investigation (Activity 4).

Content Area

Activity 1

For each group:

- infrared thermometer
- pencil
- data table
- 5 different types of surfaces found outside: grass, pavement (driveway, road), sidewalk, plant (tree or bush), and bare soil

Investigation:

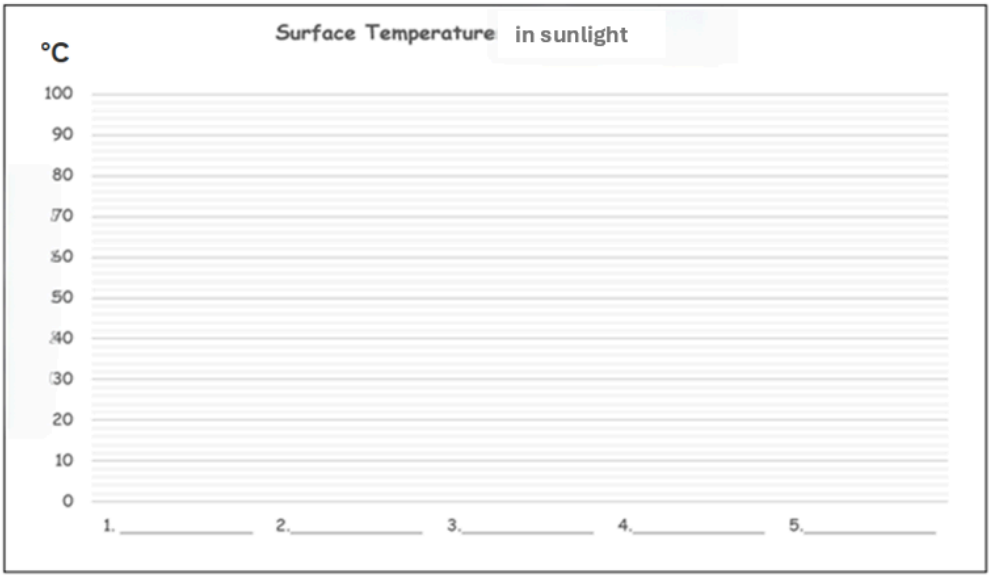
1. Using the infrared thermometer, measure the temperature of each surface during the day when it is in direct sunlight. Record the temperature for each object in the first row of the data table.
2. Wait for the Sun to set (or in shade/ later in the day).
3. Measure the temperature of each surface an hour after sunset. Record the temperature for each object in the second row of the data table below.
4. Record the temperature difference in the bottom row of the data table.

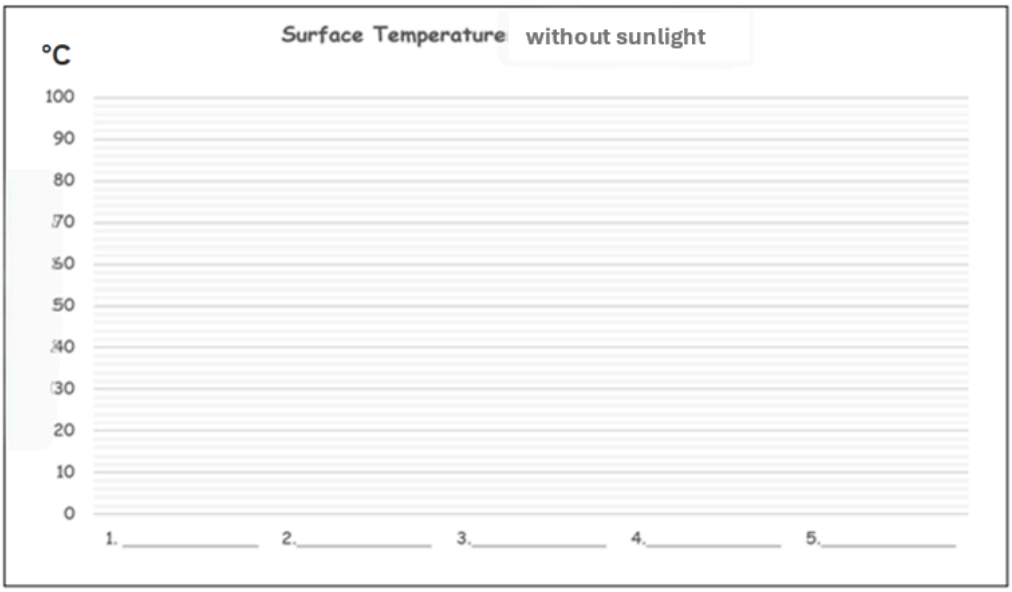
DATA TABLE	plant	grass	soil	pavement	sidewalk
temperature in the sunlight (°C)					
temperature in the shade (°C)					
difference in temperature (°C)					

Activity 2

Create a bar chart that shows the difference in temperature of each surface explored during the previous activity.

Create 2 charts in total, one for the temperature of surfaces in sunlight and one without sunlight.





Activity 3

Now try interpreting the data from your investigation.

The following questions will help guide you.

- Which surfaces had the highest/lowest temperature in sunlight/shade? Why do you think so?

- Which surfaces had the least/most difference in temperature? Why do you think so?

Write your answer here

Activity 4

Fill in the gaps with the words given to draw a conclusion to your investigation.

Artificial Natural

..... surfaces are cooler than ..... surfaces.

Summary and Reflection

- What is the main reason for the different temperatures of surfaces?
- If our school was surrounded by a forest, would we feel hotter or cooler?