

*Creating an ECO online Natural Fit Virtual Programs to Prepare Students for
boosting 21st century Skills 4 the Future (UNITY)*

2021-1-SE01-KA220-SCH-000032448

*STE(A)M-focused PBL for transferring 2021st skills for fighting against
climate change*

**LESSON PLAN 8:
Traffic light labeling and healthy life**

*Presented by
Malmö Sweden*

Lesson procedure:

Date:	2022 __/ __09 __/ __15 __
Teaching staff:	Mr/Miss/Ms
Term:	2022-2023
Week:	8
Year Level:	Secondary
Time/length	2 hours
Key Learning Area:	The lesson is designed to examine the impact of behavioral interventions designed to encourage consumer change around food choices in line with more sustainable consumption as well as healthy eating. More specifically impact on the environment (e.g. carbon emission levels) as well as on their health.
Topic/focus:	Traffic light labeling of meals and its impact on environment /e.g. CO2 emission level) Programming with Micro:bit
Lesson Name: Traffic light labeling of meals and healthy eating	
Foreseen Outcomes:	
At the end of this lesson, students will be able to:	
<ul style="list-style-type: none"> ✓ food choices in line with more sustainable consumption ✓ Food habit in healthy living and impact of food to environment ✓ using programming ex. Micro:bit to create a traffic light 	
Lesson Description:	
<p>In this lesson, you will create a program with variables, pins and diode to generate a traffic light with the help of micro:bit</p> <p>The traffic light labels led to positive shifts (green light) towards lower carbon emission and lower calorific content meals.</p> <p>The focus is to examine the impact of food choices in sustainable consumption as well as healthy eating.</p> <p>Using traffic light labeling attached to different meal options signaling their impact on the environment (e.g. carbon emission levels) as well as on their health (e.g., calorific content).</p>	
Prerequisites to this lesson plan: Students need to have access to digital technology and a computer in the classroom. 2-3 pupils can work together to know the key words in English about environmental problems and what they mean.	

Length (Lesson procedure):

This lesson will take 2 hours, which also includes interdisciplinary learning.

A big problem in today's society is that young people move far too little. Today's technology leads to more and more people sitting still instead of being active. The body requires physical activity in order to grow and to feel good. Lack of movements leads to pain in the body. Reduced physical activity and poor food habit also leads to less performance

Step 1. Lead in:

Step 2

The teacher asks if students know the basic blocks of Micro:bit. Then, students are divided according to their learning intelligence and or learning style. Here, teacher group students as:

- ✓ Group A: 2-3 students, having science learning interest/intelligence/capability/style
- ✓ Group B: 2-3 students, having technology learning interest/intelligence/capability/style.
- ✓ Group C: 2-3 students, having engineering (creativity) learning interest/intelligence/capability/style.
- ✓ Group D: 2-3 students, having art learning interest/intelligence/capability/style.
- ✓ Group E: 2-3 students, having math learning interest/intelligence/capability/style.

Note: As grouping the students, the number of students can change according to the class-size.

Lesson standard:

The lesson is standardized around STEAM-focused PBL for transferring 2021st skills for understanding and taking against climate change.

A big problem in today's society is that young people move far too little. Today's technology leads to more and more people sitting still instead of being active. The body requires physical activity in order to grow and to feel good. Lack of movements leads to pain in the body. Reduced physical activity and poor food habit also leads to less performance

Common Core State Standards:

The teacher shall connect and correlate the lesson with the national syllabus and or school year program, which shall incorporate the lesson with the national program.

Enduring Understandings:

The students will understand the device Micro:bit.

- ✓ Get basic knowledge of Block programming
- ✓ Java script and Python which is combined in Micro:bit
- ✓ Learn mathematics
- ✓ Increase logical thinking in order to solve Climate problems

The lesson will also answer the following questions:

- ✓ In which way programming helps the pupil to understand the Global Goals of Climate Change
- ✓ How does logical thinking and coding help the pupils to get interested in Climate problems
- ✓ How to use programming in order to solve a problem in a collaborative environment
- ✓ How to combine different subjects in coding with Micro: bits

Essential Questions:

- ✓ What are the connections of the effects of climate change with STEAM skills?
- ✓ What are the connections of the effects of climate change with PBL?
- ✓ How can the study of the effects of climate change transfer soft skills?
- ✓

Before the lesson implementation, the teaching staff shall brainstorm the above questions with the colleagues at the same school.

Case section:

The teacher shall follow the following steps:

Step 1. The teacher will give an introduction of the lesson by showing the different aspects of climate change from <https://www.gapminder.org/>

and also show the film

<https://www.youtube.com/watch?v=v7WUpGPZzpI>

or choose a film from Hans Rosling about Climate change.

Discuss the questions by making different students group

<https://upgrader.gapminder.org/t/sdg-world-un-goals/5/>

✓

Step 2: The teacher will listen to the answer from different and create interest to the project from different aspects such as

- ✓ Effect of climate change on the population in the water?
- ✓

Step 3: The teacher will introduce programming in that context of understanding and solving climate problems using programming and robotics. Explain the device micro:bit and its use in real life in the society and then follow the instructions stepwise in lesson plan 1(Pdf Lesson 1).

Skill focus:

During the lesson, Cognitive Skills, such as decision making, problem solving, creative thinking and interpersonal skills will be the focus.

Content:

Building knowledge on the effects of climate change through STEAM-focused PBL approach.

Assessments:

The teacher will use formative assessments during every lesson by giving feedback. Pupil will dokument every program stepwise in form av dokument or presentation. The pupils will help each other to improve individual skills in programming.

Evidence of Student Learning:

Students' learning evidence will be the graphics, posters, prototypes that they have made during the lessons.

Texts/Resources:

Please see the annex 1 attached to the lesson plan, which are to be used for this lesson.

Video to show and image:

change from <https://www.gapminder.org/>

and also show the film

<https://www.youtube.com/watch?v=v7WUppZzpI>

or choose a film from Hans Rosling about Climate change.

Discuss the questions by making different students group

<https://upgrader.gapminder.org/t/sdg-world-un-goals/5/>

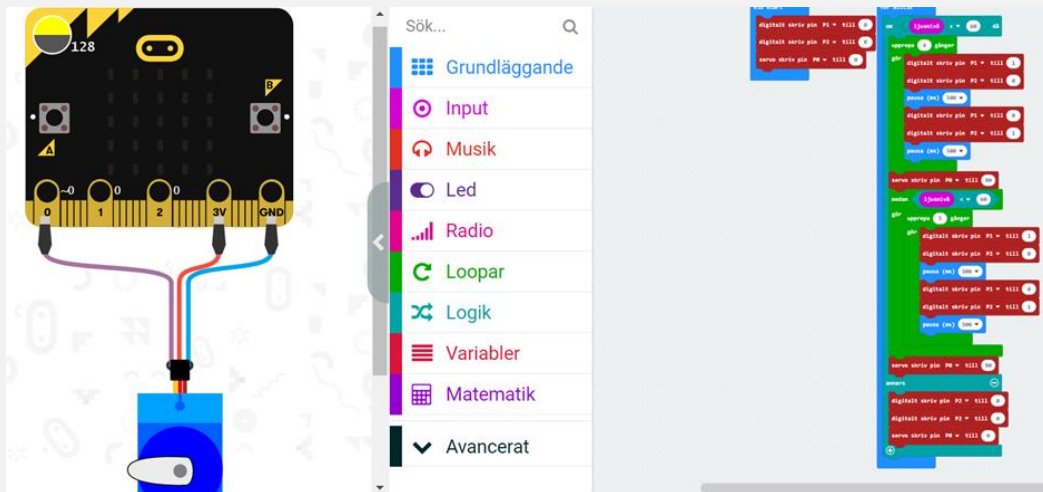
Website: <https://makecode.microbit.org/> . [Open the website](#)

[Codes:](#)

Learning Activities:



Practice:



Suggested Extensions:

- ✓ Explore basic blocks to create different text or image Ex. “Show string” write “Global Goal 13”; duplicate it and write “Agenda 2030”.
- ✓ You can try now to use different pins to couple diode and servo

