



LESSON PLAN

Winter Camp: Climate Data with AI

ZONE: Investigation Zone

AGE GROUP: 15-18

EQUIPMENT: Computers, phone for monitoring, internet access, printer, glue, scissors

DESCRIPTION:

Over the course of three days, participants will collect and analyze climate data from various software. The collected data will be analyzed by AI and visualized using graphic software to create impactful designs. On the last day, participants will be introduced to digital fabrication, transforming the data into a digital manufacturing prototype.

ENGINEERING DESIGN CHALLENGE:

The challenge is to understand how data visualization and AI can be fundamental tools for understanding the world around us. Moreover, participants will learn how to communicate through data visualization by creating outcomes using different technologies.

LEARNING OBJECTIVES:

After attending this session, participants will be able to:

- **Collect and Compile Climate-Related Data:** Students will gather comprehensive climate data using various software tools and research methodologies, ensuring accurate and relevant information collection.
- **Apply Artificial Intelligence for Advanced Data Analysis:** Develop skills in utilizing AI technologies to analyze complex datasets, identifying patterns, trends, and insights that enhance understanding of climate information.
- **Create Impactful Data Visualizations:** Design compelling visual representations of climate data using graphic software, transforming raw information into clear, engaging, and informative visual narratives.
- **Translate Data Insights into a physical curated piece:** creation of a three-dimensional prototypes, demonstrating the practical application of data analysis and visualization.

LESSON PLAN

Time / Duration

Activity Day 1

Materials/requirements

10 min

a. Participants arrive, collection of the names.

Computers, phone for monitoring, internet access, printer, glue, scissors

40 min

Presentation :

- a. Presentation of Studio5
- b. Introduction to Winter Camp agenda.
- c. Introduction about data and little ice-breaking activity.
- d. What are data? and what about climate data?

1h 10 min

Activity:

- a. How to collect data, small activity during the workshop
- b. Demonstration about Starlogo NOVA
- c. Homework for Day 2

LESSON PLAN

Time / Duration

Activity Day 2

Materials/requirements

10 min

a. Participants arrive, collection of the names.

Computers, phone for monitoring, internet access, printer, glue, scissors

20 min

Presentation :

- a. Some case studies about the use of AI in the context of Climate awareness
- b. Overview of the tools Julius and Flourish.

30 min

Activity:

- a. Let's take the data that we collected and place them into an excel.
- b. Let's open Julius and start working on the data
- c. Analysing and understanding the data
- d. Let's open Flourish and let's play with different visualizations
- e. Tour of the museum

30 min

LESSON PLAN

Time / Duration

Activity Day 3

Materials/requirements

10 min

a. Participants arrive, collection of the names.

Computers, phone for monitoring, internet access, printer, glue, scissors

50 min

Presentation :

- a. Introduction to the process of laser cutting
- b. And step-by-step about how to put everything together
- c. Prepare the layout with Studio5 logo and participant name

1h

Activity:

- a. Download the PNG of the data visualization from Flourish
- b. Open Figma, click on the shape placeholder and add IMG
- c. Select the file from the PC
- d. Resize if necessary



THANK YOU