



eTwinning Project - Eco-Metrics: Decoding Nature's DNA

This school year 10 pupils from the 10th grade D in our high school were involved in an eTwinning project **Eco-Metrics: Decoding Nature's DNA**, which was aimed at developing students' skills in observing, measuring, and interpreting nature.

The pupils collected data by examining natural elements in their environment, taking measurements such as temperature and precipitation, monitoring plant growth, and expressing their findings through graphs and observations. Mathematical concepts (such as Pi and the Golden Ratio) were made concrete by relating them to examples in nature. Students also improved their language skills through activities such as keeping nature journals, writing short research texts, and English letter writing. Through cultural exchange activities, they communicated with peers from different regions, introducing their own cultures and discovering different ways of life. At the end of the project, students shared what they learned through posters, presentations, and exhibitions, strengthening their scientific thinking, collaboration, and communication skills.

Project Objectives

- **Data Literacy:** To enable students to systematically measure natural phenomena and represent this data through charts and graphs.
- **Mathematics in Nature:** To help students identify abstract concepts like Pi and the Golden Ratio within natural patterns.
- **Scientific Inquiry:** To develop students' observation and analysis skills by encouraging them to explore the environment like young scientists.

Language and Communication Skills

- **Written Expression:** To enhance students' ability to express themselves in their mother tongue through nature journaling and research writing.
- **Language Practice:** To improve English communication skills by engaging in authentic pen-pal activities with European partners.
- **Digital Competence:** To promote the effective use of ICT tools in creating posters, presentations, and virtual exhibitions.

Social and Cultural Awareness

- **Cultural Exchange:** To foster a sense of global citizenship by discovering different cultures and environments through peer interaction.
- **Collaboration:** To strengthen teamwork and social skills by producing collaborative outputs with project partners.

- Environmental Stewardship: To raise individuals who not only observe nature but also analyse and value it for a sustainable future.

PROJECT ACTIVITIES

MARCH: Observation, Recognition & Pi Day

The focus of this month was to raise awareness, develop basic measurement skills, and discover mathematics in nature.

- Nature Explorers at Work: Conducting an "Observation Walk" in the schoolyard to examine flora and weather events; recording the collected data on standardized observation forms.
- Climate Diary: Creating weekly datasets by measuring temperatures at the same time every day and visualizing this data by converting it into column charts.
- Nature's Circle (March 14 - Pi Day): Discovering the number Pi (3.14) through circumference and diameter measurements of various objects; analysing circular forms in tree trunks and flowers.
- Cultural Bridges - First Greeting: Preparing short English letters titled "Introducing Myself" and establishing the first contact by sending them to partner schools.

APRIL: Measurement, Research & Cultural Sharing

The focus of this month was on sustainability, data tracking, and academic/social interaction with different cultures.

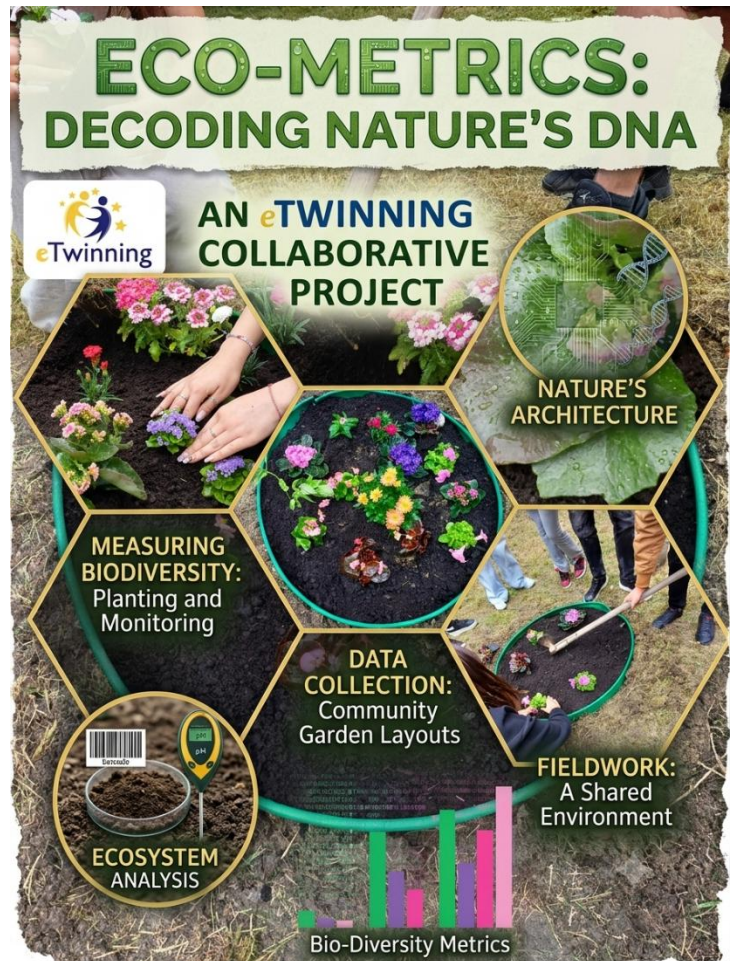
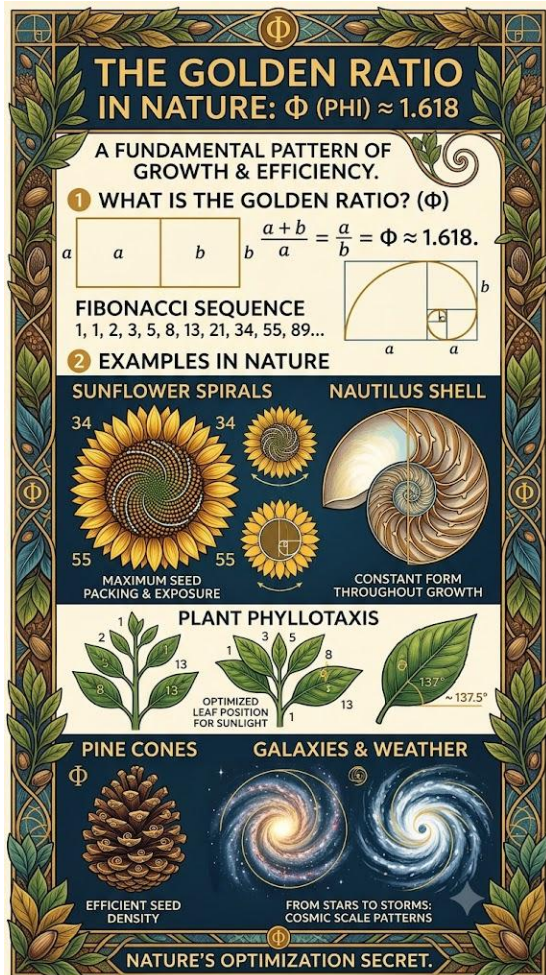
- The Growth of Life: Tracking and recording plant development numerically through weekly height measurements following seed planting (beans, etc.).
- Young Researcher Texts: Drafting informative 5-6 sentence research essays focusing on a specific plant or animal species in the immediate environment.
- Flavors and Culture Stops: Compiling local food recipes and introducing them to partner schools with simple English presentations.
- East-West Letter Network: Deepening the "Pen-pal" activity by sharing insights on nature, lifestyles, and cultural values with peers from different regions.

MAY: Interpretation, Golden Ratio & Sharing

The focus of this month was to establish the relationship between aesthetics and mathematics, exhibit products, and conduct the final evaluation.

- Nature's Aesthetic Code: Explaining the concept of the "Golden Ratio" simply; discovering the aesthetic mathematics in leaf arrangements, seashells, and flower petals.
- Mini Thematic Projects: Completion of small-scale research projects by students based on their choice of topics: "Plants, Air, or Environment."

- Visual and Digital Design: Creating posters and digital presentations where the data and photos collected throughout the process are supported by English descriptions.
- eTwinning Final Meeting: Uploading the works to TwinSpace and sharing experiences during an online meeting with all project partners.



Coordinating teacher,
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