Course document

Inquiry Scenario Plan Design form for the promotion of Sustainability Citizenship

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SYNAPSES

Title:

Installing Solar Panels on Our School's Roof

Short Description (Max 500 words):

This project is built around the central challenge: *How can our school contribute to a more sustainable future using solar energy?* Students aged 6–15 will work in mixed-age teams to investigate, understand, and propose real solutions for implementing solar panels on the school's roof.

Over several weeks, students will explore how solar energy works, evaluate its benefits and limitations, analyze the school's energy use, and design a realistic solution. Older students will calculate energy savings, create budget plans, and communicate with experts. Younger students will work with basic models, learn about renewable energy through games and creative activities, and contribute to awareness campaigns.

The outcome will be a presentation of the proposal to the school community and potentially to local authorities.

Keywords (Up to 5):

Solar energy, sustainability, school, renewable, energy

Information about the Implementation

Language of the students:

Czech

Age of the students:

☒ 9-12 ☒ 12-15 ☐ 15-18 ☐ 18+

Number of Lessons – Duration (per lesson):

Number of Lessons: 10–15

Duration per Lesson: 45–90 minutes

Is this activity a STEM Activity?

☑ Yes

For which subject(s) the activity is usable, is it an interdisciplinary activity?

Science ☒

Physics ☐ Chemistry ☐ Biology☒ Geosciences☐ Environmental☒ Other☐

Technology ☒

Engineering ☒

Arts ☒

Mathematics ☒

Information about the Scenario

Curriculum and country: Framework Educational Program for Basic Education (FEP)

Rámcově vzdělávací program (RVP), Czech Republic

Link of the current activity to the curriculum: The activity connects science, math, arts, ICT, citizenship education, and environmental education. It supports cross-disciplinary competencies and real-life application of knowledge.

Country: Czech Republic Class: 1st. – 9th, mixed-age learning groups Grade: first, second

Topic: Solar Energy and the School's Sustainable Future

Learning Objectives (Max 100 words):

Students will:

- Explain how solar panels work
- Compare renewable and non-renewable energy sources
- Investigate the school's energy consumption
- Propose a solution for implementing solar panels
- Create information and campaign materials
- Collaborate and present their ideas publicly

Resources / Materials (Max 100 words):

Which resources and materials (software, hardware) are needed?

Software	Hardware
Google Workspace, Canva, Excel, PVGIS or similar solar calculators	Tablets/laptops, internet access, projector, 3D printer, solar panel kits

Use of School Infrastructure

How are school facilities and equipment used in your educational scenario?

School Infrastructure	School Materials
Classrooms, schoolyard, access to the school roof, makerspace/workshop, library, atrium	Paper, art supplies, energy measuring tools, science kits

Green competences:

Which green competences are covered by the activity?

Embodying Sustainable Values	Valuing Sustainability	☒	Supporting Fairness	☒	Promoting Nature ☒
Embracing Complexity in Sustainability	Systems Thinking	☒	Critical Thinking	☒	Problem Framing ☒
Envisioning Sustainable Futures	Futures Literacy	☒	Adaptability	☒	Exploratory Thinking ☒
Acting for Sustainability	Political Agency	☒	Collective Action	☒	Individual Initiative ☒

The definition of the following terms can be found in GreenComp which is translated in all European Union languages.

Working with the community

Which external actors will be involved within the framework of the training scenario?

Organisation Type	Organisation Name
NGOs (Non-Governmental Organisations)	Hnutí Duha, Zelený kruh
PTA (Parent-Teacher Association)	Scio school parents association
Local business	Local solar technology provider
Other (please explain)	Municipal district of Prague 7

How will the above-selected institutions help in the educational scenario?

- Offer guest lectures and workshops
- Provide real data and consultation
- Support public outreach and funding
- Help students connect their work to real-world impact

Detailed activity description

Project Phase	Activity Description
Challenge Launch	Opening discussion: *Can our school run on solar energy?*
Research& Inquiry	Exploring solar power, energy use at school, advantages, and limitations
Solution Design	Teams create proposals, models, calculations, and artistic or technical outputs
Taking Action	Presentations to the school community, awareness campaign, and advocacy
Reflection	Self-assessment, group reflection, next steps planning

Teaching strategy: **Challenge-Based Learning**

Assessment (if any):

Learning journals and portfolios

Presentations of proposals and models

Self-assessment and peer review

Quizzes and formative check-ins

Rubrics for collaboration, creativity, and content

Reflection/Evaluation (if any)

Surveys for students, teachers, and partners

Evaluation of students' knowledge, skills, and attitudes

Feedback from school community and partners

Reflections on real-world impact and next steps

Sustainable Contact Details:

Name	Mgr. Iva Sochorová
Email	iva.sochorova@scioskola.cz

School Informations:

School Name	ScioŠkola Praha Holešovice - základní škola, s.r.o.
City name	Prague 7
Number of pupils and teachers	70 pupils and 7 teachers
How many students and teachers will be involved?	All if they want