Eco-green Mediterranean house

Adaptation to global change problems by creating an ecological house model

Type of pedagogical project, activity, action, accompanying	**Multidisciplinary project on imagination and modelling an ecological house model adapted to local climate problems**
Key words of relevant disciplines/ Pedagogical content	model/eco-responsibility/energy consumption/renewable energy/sustainable development/recycling/water/major risks
Problematic	**How to imagine an ecological habitat in the Mediterranean urban environment taking into account the necessary adaptations to the major risks related to climate change?**
Thematic	global warming, eco responsibility, energy consumption, renewable energy, natural resources, fossil fuels, natural catastrophes, recycling.
Disciplines (sciences, geography)	***Sciences (Biology, Physics), History, Geography, Civic Education, Arts, Technology, English Language***
Pedagogical Objectives/New targeted skills	**The students will be able to:** - Become aware of the importance of preserving natural resources (water, energy) and citizen behaviour - Get acquainted with sustainable forms of resources - Think about ways of preventing natural disasters by adapting to major risks - Have their own influence in the community and raise awareness on the need for actions - Plan prevention measures in accordance with the scientific knowledge on the risks - Study the use of natural resources in their local area - Create and imagine a project taking a reality into account - Create, Cooperate and carry out projects: Define and respect an organisation and task sharing within the framework of a working group.

	- Represent the surrounding world or give shape to your imagination by exploring various fields (drawing, collage, modelling…) - Justify choices to account for the process that leads from intention to realisation.
Public target(s) (age, requested skills…)	12-15 years old
Description (step by step)	**Step 1)** **Activities, knowledges in Geography (some examples)** - Energy consumption and its consequences: catastrophic results Write a comment on the photos to explain how energy consumption is essential but creates serious problems - Students define what is energy transition - Explain with the help of newspapers articles, the implementation of the energy transition (examples: eco-district; COP...) - Complete a geographic sketch to reflect the state of the global energy transition in the world **Step 2)** **Activities, knowledges in Sciences** - Identify an exceptional meteorological event and its consequences. (local example: September 22, 1992, in the Vaucluse, in the city of Vaison-la-Romaine) http://www.francetvinfo.fr/meteo/video-les-inondations-sont-encore-dans-les-memoires-a-vaison-20-ans-apres_144221.html) - Complete a table using documents and video related to this exceptional weather event - Protection of population and property against risks How can we reduce the vulnerability of a geographical area threatened by an extreme event? **Activity in Physics** Electrical circuit experience: producing electricity with solar panels

	Step 3) **Activities, vocabulary in Foreign Language (English for example)** - By using the documents, the student apprehends a specific vocabulary related to: public services, different places in the city, the lexicon of the environment linked to the green city, actions related to sustainable development, positive or negative characteristics of a city, some futuristic inventions - The student must send a letter from Avignon in the year 2040 to his past self (who he is today – projection) - Imagine and present a new district of your city (local Source of information: Avignon City website: http://www.avignon.fr/ma-ville/environnement/) **Step 4)** **Research of solutions for realization of the house model (Internet research)** - Preparation of research: Students collect on a summary sheet the knowledge learned in different disciplines - Split the students in groups: Each group makes researches on different ecological solution: energy solution, solution for saving water, solution for protection against local natural risks, eco-mobility, recycling etc ... **Step 5)** **Final activity in Technology or Arts:** Realisation, production of a model of ecological house integrated in an urban environment (eco-district)
Place (meeting room, outside space, …)	Inside spaces: Classroom, library Outside: city - visit of an eco-district
Individual and / or collective actions	Individual, collective
Material needed	Material for model creating (wood, cardboard, insulating materials, various recycled materials, natural materials.
Duration of pedagogical project or activity	**4-6 months**
Evaluation of the new acquired skills	Evaluation by the teacher at the end of each step in each discipline.

	Evaluation of the result of research for an ecological solution: consideration of the constraints set to make the model of a Mediterranean eco-house logical technical solution and original production Evaluation of the model with students Initiate eco-citizen adaptation in your home or in your school and adopt behavioural changes
Eco-citizen adaptation, knowledge enhancement and links to other topics	**Link to:** **Activity:** - **"Experiment about the creation of electricity with a solar panel "** - **"Design of an ecological house model adapted to regional constraints and available local resources "** **Project:** - **"Electrical energy and climate change "** **Croatian:** ● https://ekoseloblatusa.com/ **Greek:** ● http://www.wwf.gr/images/pdfs/pe/katoikein/Vioklimatiko_VioklimatikiArxitektoniki.pdf (Bio-climatic architecture) Energy consomation and cost of electrical appliances **Italian:** ● Link to articles in Italian to reflect on houses & sustainability : http://blog.dida-net.it/wp-content/uploads/2012/05/Casa_Passiva.pdf ● http://www.aipe.biz/mondo-eps/wp-content/uploads/sites/2/2015/10/EXPOCLIMA_Speciale82-CasaPassiva-bassa_feb_2015.pdf ● http://www.bioecogeo.com/ambiente-arredamento-cosa-scegliere-casa-impatto-zero/; ● http://www.duomoimmobiliare.it/magazine/191-abitare_sostenibile_consigli_per_una_casa_che_rispetta_l%E2%80%99ambiente_e_vi_fa_risparmiare.html ● Link to EU project on ecological areas in big cities : http://www.urbancenter.comune.genova.it/node/36

	French: • A useful site, source of the project: my house, my planet … and me ! for the concrete realization of ecological house model*:* https://www.fondation-lamap.org/fr/ecohabitat/eleves • A local site on the layout of the integration of the house in an eco-district; in a green city http://www.avignon.fr/ma-ville/environnement/ • local example of the construction of an eco-district: Beaulieu de Monteux https://www.youtube.com/watch?v=p5v0-tUtkak
Observations	There is no obligation of the steps order in this project except in the final task Advantage of the project: The theme can bring together almost all disciplines and constitute a common thread. Students appreciate the realization of the model that unites a scientific and creative aspect.

Pictures

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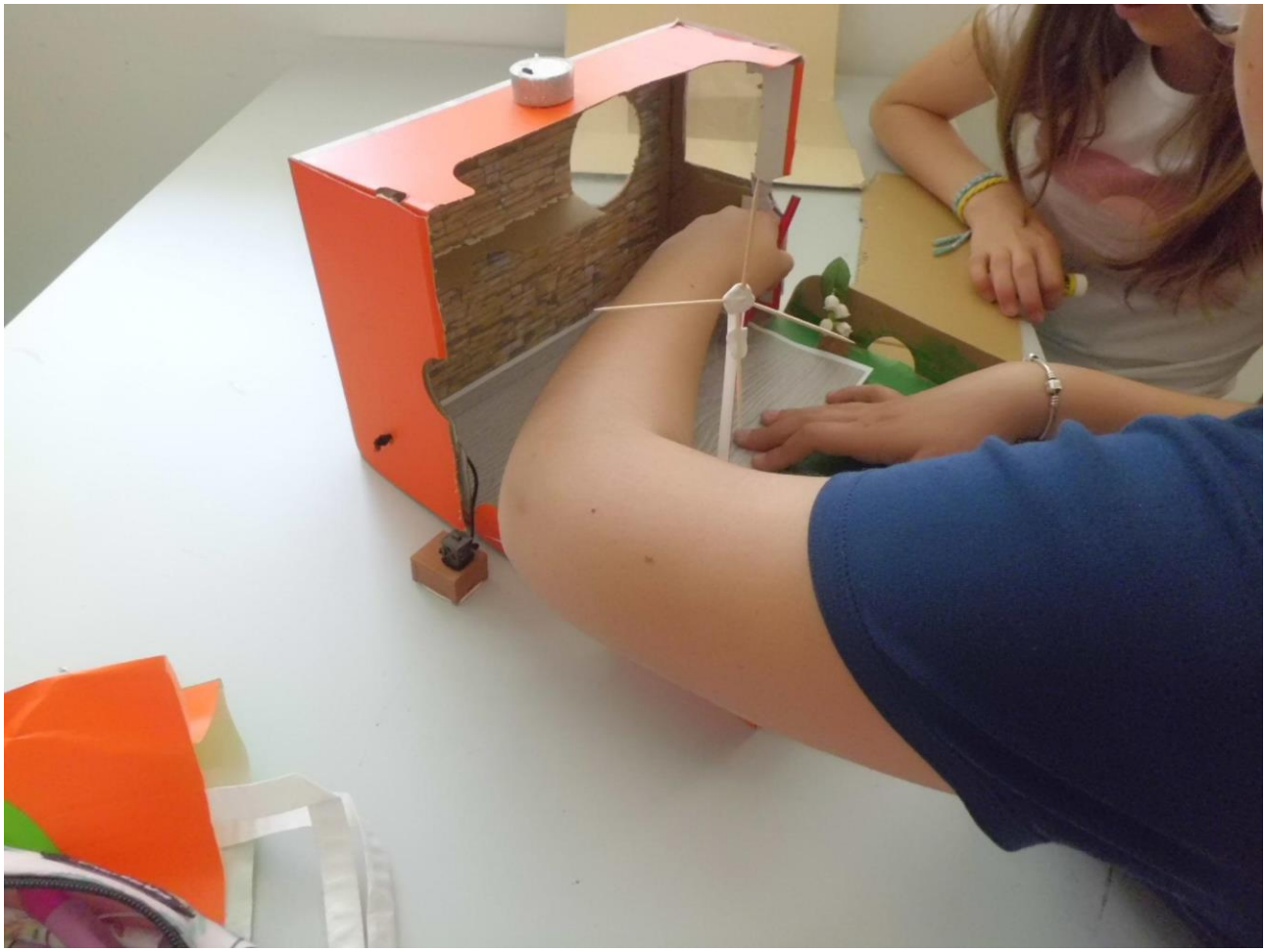

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