SDG13 Climate Change Engage Game Design

Lesson 10: Working with Nature-Based Solutions and Green Infrastructure 2

Subjects: Design, Environmental Science, Game Design, Geography, Science, Technology

Lesson Title and Summary: Working with Nature-based solutions and Green Infrastructure 2

How and why should we rethink the way we design our villages, towns and cities?

Adapting to climate change involves rethinking how we design the places where we live, work and play. This lesson introduces learners to the closely associated concepts of ‘nature-based solutions’ and ‘green infrastructure’. Key terms related to these concepts are defined. The lesson challenges learners to rethink how and why the places they are familiar with could and should be redesigned.

Vocabulary: Biodiversity; Connectivity; Drainage Management; Green Infrastructure; Green Roof; Green Wall; Habitat; Mutual benefit; Multi-functionality; Nature-Based solutions; Resilience

In this lesson, the learner will:

- develop an awareness of ‘why’ we should design with nature and ‘how’ we can do this
- be introduced to the concepts of nature-based solutions and green infrastructure
- scan for specific information
- summarise and paraphrase
- share opinions
- apply new concepts

Materials

- Poster size paper
- Markers, coloured pens

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Activity Instructions

Activity 1 Applying Concepts (10 mins)

1. The learners stay in their groups from the previous lesson and continue to develop the group's map and ideas for introducing nature-based solutions into the locality.

Activity 2 Elevator Pitch (40 mins)

1. Each of the groups prepare an 'elevator pitch' (a one-minute 'sales pitch') for one of the three key solutions they have developed and detailed on their map.
2. Select one of the solutions from their map.
3. Develop notes under the following headings:

    - What is the solution called?
    - Describe the solution.
    - How will the solution help the locality adapt to climate change?

4. Each group nominates a member to provide this 'elevator pitch' (other group members can assist by holding the map).

5. Elevator pitches are presented to the class.

    Questions can be asked about how and why the proposals advance: (i) multi-functionality; (ii) mutual benefit; and (iii) connectivity.

NB: Allow approximately 8 mins per group, this includes getting the group ready to pitch ('on and off') and questions or feedback from their peers.

REFLECTIVE EXERCISE: 3-2-1 (10 mins)

- Three things they feel they have learnt from the tasks
- Two things they found most interesting and would like to explore more
- One opinion they have about the activities, what did they like or how they would improve them

Use Post-its or a mentimeter survey - www.mentimeter.com to gather reflections

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EXTENSION / REDUCTION ACTIVITIES

Reduction: For a shorter lesson, complete Activity 2 only.

Extension: For a longer lesson,

Option A: Each group sources images and ideas online to help communicate their idea(s). These are copied and collated onto a 'vision board'. The students use these images to illustrate their idea(s) in the elevator pitch. The vision board in lesson 20 can be used to support this activity.

Option B: Walk around the school neighbourhood and ask the learners to identify / note specific locations and green infrastructure interventions that could be used to enhance the resilience of the locality to climate change. Integrate these ideas into their map in Activity 1.

Option C: Watch the video Nature-based solutions for natural flood management, and consider how this might be relevant to the learners' neighbourhood.

MEDIA BOX: (materials, online video links, extra resources, case studies etc)

Additional Resources: World Wildlife Foundation

'Nature-based solutions for natural flood management', produced by Earthwatch Europe (1:39min) https://www.youtube.com/watch?v=-F6M3RWsJH0

'Urban Nature-Based Solutions: What are they and why are they so important?' (3:12min) https://youtu.be/SRXx0QyxBFo

'Urban Nature-Based Solutions: Buildings and Neighbourhoods' (3:37min) https://youtu.be/wlOj2R697GQ

See also Lesson 9 Flipped Classroom for further links on nature-based solution case studies.

Local Trip / Expertise / Additional Work and Assessments

Take a walk around the neighbourhood of the school. Ask the learners to identify specific locations and green infrastructure interventions that could be used to enhance the resilience of the locality to climate change. Working in small teams, each team provides an elevator pitch for their idea(s) at the location where they think their idea(s) should be implemented.

Visit the offices of the local authority (city or county council) to provide the elevator pitch to planners and/or councillors (or invite a planner or councillor from the local authority to the class to hear the elevator pitches; this could be via Zoom).