ACT BEFORE THE GAME’S OVER!

ACOEP TEACHING PACK

10 lesson plans for environmental education

Erasmus+ | KA210-SCH | School education

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A practical, interdisciplinary collection for students aged 14-17, combining environmental awareness, creativity, digital skills and collaborative learning.

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Teacher guidance

Each lesson is designed for 45 minutes and can be adapted to local circumstances. Use verified local information where available; fictional datasets and simulation rules are clearly identified. Digital tools may be replaced with paper equivalents. Teachers should supervise online sharing and follow school safeguarding and data-protection procedures.

LESSON 01

Environmental Heroes

English | Ages 14-17 | 45 minutes

Focus: Creative storytelling and an interactive journey map

Learning objectives

• Identify a local threatened species and explain a credible threat and conservation action.

• Write a structured story in English and map the hero's journey.

Materials

Species fact sheet, paper, pens, local map or a digital mapping tool, devices if available.

Lesson outline

Introduction | 5 min

Show a local habitat and ask: What makes a species vulnerable? Review habitat, threat, rescue and protection. Check species status using a reliable local source.

Plan | 8 min

In groups of 3-4, choose a locally occurring threatened species. Note its habitat, one verified threat and a realistic action; record the source.

Create | 17 min

Write a 150-200 word story with a beginning, problem and resolution. Include dialogue and at least two actions that protect habitat without disturbing wildlife.

Map the journey | 10 min

Mark 3-4 story locations on a paper or digital map. Add a short caption explaining the action at each stop; use general locations for sensitive species.

Share and reflect | 5 min

Groups present one map stop. Class identifies the threat and action; each student writes one conservation idea.

Assessment

Story and map: clear narrative, accurate species information, plausible action and participation. Exit ticket: name the threat and one response.

Deliverable and adaptation

Output: a short story and annotated map. Offline option: a hand-drawn map.

LESSON 02

Sustainability Debate Challenge

English | Ages 14-17 | 45 minutes

Focus: Conservation versus development

Learning objectives

• Construct evidence-based arguments and respond respectfully to another view.

• Interpret audience feedback from a poll.

Materials

Scenario cards, timer, board, voting slips or a digital poll.

Lesson outline

Introduction | 5 min

Present a fictional proposal to build a visitor centre beside a wildlife habitat. Ask which benefits and risks require investigation.

Prepare positions | 10 min

Assign teams: conservation group, local business, residents and planning authority. Each prepares two arguments and one question, noting evidence gaps.

Debate | 18 min

Each team presents for two minutes. Allow questions, rebuttals and a final one-minute proposal for a compromise. Moderator ensures equal speaking time.

Poll and interpret | 7 min

Audience votes for approve, revise or reject, then explains why. Count votes and compare the result with arguments heard; the poll is feedback, not scientific proof.

Reflection | 5 min

Students write one argument that changed or challenged their view and one condition that could protect biodiversity.

Assessment

Observe quality of reasoning, evidence, listening and respectful rebuttal; review exit reflections.

Deliverable and adaptation

Output: position notes, poll results and a proposed decision. Offline option: paper ballots.

LESSON 03

Calculating Resource Use

Mathematics | Ages 14-17 | 45 minutes

Focus: Local consumption and a management simulation

Learning objectives

• Calculate totals and percentage changes from resource data.

• Compare strategies using a transparent model and explain its limits.

Materials

Calculator, spreadsheet or worksheet; verified local figures if available.

Lesson outline

Introduce data | 5 min

Define a unit and baseline. Use real school data if available; otherwise use the fictional monthly water data below.

Calculate | 10 min

Example: classroom 40 m³, toilets 100 m³, kitchen 60 m³; total 200 m³. Calculate each share: 20%, 50% and 30%.

Simulation game | 18 min

Teams have 6 tokens. Repair leaks costs 3 and reduces toilet use by 20%; tap reminders cost 1 and reduce classroom use by 10%; kitchen checks cost 2 and reduce kitchen use by 10%. Choose measures and calculate savings against the baseline.

Compare | 7 min

All three measures cost 6 tokens and save 20 + 4 + 6 = 30 m³, or 15%. Compare other choices and discuss costs, assumptions and possible overlap.

Close | 5 min

Each team recommends a plan and names one real measurement needed to verify results.

Assessment

Check totals, percentages and justification; assess whether students distinguish simulated estimates from measured savings.

Deliverable and adaptation

Output: calculation sheet and strategy. The figures and effects are illustrative, not real local data.

LESSON 04

Sustainability Statistics

Mathematics | Ages 14-17 | 45 minutes

Focus: Biodiversity report and digital scavenger hunt

Learning objectives

• Calculate percentages and compare biodiversity observations.

• Explain what a small dataset can and cannot show.

Materials

Spreadsheet or calculator, task cards, teacher-selected dataset or the fictional data below.

Lesson outline

Introduction | 5 min

Distinguish observations from individual animals and species richness from abundance. Avoid assuming that more observations mean more species.

Scavenger hunt | 12 min

Find in the dataset: number of habitats, total observations, highest count and source. Example: Park A: birds 12, butterflies 8, beetles 10; Park B: birds 6, butterflies 12, beetles 2. These are fictional counts.

Analyze | 13 min

Calculate totals A = 30 and B = 20; butterflies are 8/30 = 26.7% in A and 12/20 = 60% in B. Build a labelled bar chart.

Report | 10 min

Write a short report with one comparison, a chart, dataset description and a limitation: different survey effort can affect comparisons.

Close | 5 min

Peers check a calculation and identify one additional field that would improve interpretation.

Assessment

Check calculations, chart labels, interpretation and discussion of limitations. Use verified local data only when source and sampling dates are supplied.

Deliverable and adaptation

Output: one-page biodiversity report. Offline option: printed data and graph paper.

LESSON 05

Creating a Sustainable Community

Social Studies | Ages 14-17 | 45 minutes

Focus: Conservation-focused community model

Learning objectives

• Balance development needs with habitat conservation.

• Test and revise a community design using explicit simulation rules.

Materials

Base map, coloured paper, pencils, scenario and token cards.

Lesson outline

Introduction | 5 min

Discuss housing, mobility and habitat needs. Provide a fictional map with a stream, woodland and existing settlement.

Design | 12 min

Teams place housing, transport, green areas and facilities. Identify habitat connections and explain who benefits or may be affected.

Simulate | 15 min

Each team starts with 10 points. Add 2 for a protected stream buffer and 2 for a habitat corridor; subtract 3 if housing occupies woodland and 2 for a road across the stream without wildlife passage. Apply rules consistently.

Revise | 8 min

Respond to a scenario: population grows. Adapt the plan and recalculate its score; explain a trade-off the score cannot capture.

Close | 5 min

Each group presents its original and revised plan and one question for residents.

Assessment

Assess explanation of choices, correct use of rules, consideration of stakeholders and thoughtful revision.

Deliverable and adaptation

Output: annotated community map and simulation record. The score is a classroom model, not an environmental impact assessment.

LESSON 06

Cultural Approaches to Sustainability

Social Studies | Ages 14-17 | 45 minutes

Focus: Portuguese conservation practices and a virtual gallery

Learning objectives

• Research a conservation practice in Portugal and explain its context.

• Compare approaches respectfully, citing sources.

Materials

Internet access or printed source pack, gallery template, paper or shared presentation.

Lesson outline

Introduction | 5 min

Discuss how conservation practices depend on place, community and history. Avoid treating any country as culturally uniform.

Research | 15 min

Groups investigate a Portuguese example such as cork oak landscape management, a protected area or a local water practice. Locate at least two reliable sources; record title, organisation, date and URL.

Create gallery | 15 min

Prepare one slide or poster: location, practice, environmental purpose, people involved, source and one limitation or challenge. Use appropriately licensed images.

Gallery walk | 7 min

Students visit two exhibits, ask a question and compare a practice with their own community. Share digitally only in a teacher-controlled space.

Close | 3 min

Each student names one lesson that could transfer locally and what would need adapting.

Assessment

Review factual accuracy, citations, explanation of local context and quality of comparison.

Deliverable and adaptation

Output: a cited virtual or classroom gallery. Offline option: print trusted sources and display posters.

LESSON 07

Recycled Art Challenge

Art | Ages 14-17 | 45 minutes

Focus: Art installations about local environmental issues

Learning objectives

• Communicate a local issue visually through reused materials.

• Explain material choices and provide constructive feedback.

Materials

Clean, safe recovered cardboard, paper and plastic; tape, scissors, labels; camera and moderated voting tool if available.

Lesson outline

Introduce | 5 min

Discuss local litter or habitat loss and how art can communicate an issue without adding waste.

Plan | 8 min

Teams select a message and sketch an installation. List materials and how they will be reused or sorted afterwards.

Create | 20 min

Build a tabletop installation with clean materials. Add a title and a 40-word artist statement describing the issue and intended response.

Exhibit and vote | 8 min

Photograph and present works in a teacher-controlled digital gallery or classroom. Each student votes for clarity and creative reuse and gives one constructive comment.

Close | 4 min

Discuss whether the message was understood; dismantle and sort materials responsibly.

Assessment

Assess message clarity, thoughtful reuse, collaboration and artist statement; votes are feedback, not the sole grade.

Deliverable and adaptation

Output: installation, statement and gallery. Avoid sharp, contaminated or hazardous materials.

LESSON 08

Visual Campaign for Climate Action

Art | Ages 14-17 | 45 minutes

Focus: Preserving local species

Learning objectives

• Develop a persuasive visual message grounded in a verified local conservation issue.

• Use peer ratings to improve a campaign.

Materials

Species fact sheets, poster materials or design software, rating slips or a controlled digital platform.

Lesson outline

Explore | 7 min

Select a local species and verify its habitat, threats and status using a conservation organisation or public authority. List the source.

Plan | 8 min

Define audience, one specific action and a short slogan. Avoid unsupported claims and never disclose sensitive nesting locations.

Design | 18 min

Create a poster or digital graphic with a clear image, message, action and source. Ensure legible text and accessible contrast.

Present and rate | 8 min

Share in a moderated gallery. Peers rate clarity, credibility and visual impact on a 1-3 scale and suggest one improvement.

Close | 4 min

Revise one element and explain why the change improves the campaign.

Assessment

Assess source accuracy, actionable message, design clarity and response to feedback.

Deliverable and adaptation

Output: revised species-protection visual and source. Offline option: paper exhibition.

LESSON 09

Digital Eco-Journal

Information Technology | Ages 14-17 | 45 minutes

Focus: Interactive tracking of local conservation efforts

Learning objectives

• Design a simple, usable conservation activity tracker.

• Use game mechanics responsibly to encourage participation.

Materials

Spreadsheet, forms or paper template; fictional sample activity cards; devices if available.

Lesson outline

Introduce | 5 min

Discuss what can be tracked: date, action, general location, participants and evidence. Avoid personal identifiers and sensitive wildlife locations.

Design | 12 min

In groups, sketch a form and a summary dashboard. Add clear field labels, a validation rule and a visible note on privacy.

Build and test | 18 min

Create a spreadsheet or paper prototype. Enter three fictional actions: litter collection, native planting and awareness poster. Award one point per completed verified action; explain that points do not measure ecological impact.

Game challenge | 7 min

Teams test another prototype, try to enter an invalid date and suggest one improvement. Use cooperative class milestones instead of exposing individual scores.

Close | 3 min

Present one feature and one safeguard before any real community use.

Assessment

Review usability, field validation, privacy, functioning totals and distinction between activities and outcomes.

Deliverable and adaptation

Output: tracker prototype and test notes. No personal data or public deployment is required.

LESSON 10

Data Analysis for Environmental Impact

Information Technology | Ages 14-17 | 45 minutes

Focus: Biodiversity visualization and simulation

Learning objectives

• Select a suitable chart and label biodiversity data accurately.

• Test visualization choices and explain uncertainty.

Materials

Spreadsheet or charting tool, projector, fictional dataset cards or verified local data.

Lesson outline

Introduction | 5 min

Ask which chart helps compare categories and why a misleading axis or missing units can distort a message.

Prepare data | 10 min

Use fictional counts from two equal-length visits: Site A: birds 12, butterflies 8, beetles 10; Site B: birds 6, butterflies 12, beetles 2. Record that counts are observations, not species totals.

Build tool | 15 min

Create a grouped bar chart with title, site and category labels, count axis starting at zero, legend and source note. Add a simple filter or separate chart for one site.

Visualization simulation | 10 min

Swap chart types or omit a label in a duplicate draft. Peers answer which site had more butterfly observations and identify which design communicates best; restore complete labels.

Close | 5 min

Present one finding and one limitation, such as seasonal variation or imperfect identification.

Assessment

Check data entry, chart choice, labels, interpretation and limitation. A chart of counts does not establish population trends.

Deliverable and adaptation

Output: biodiversity dashboard or chart prototype and peer feedback. Offline option: graph paper.