Interreg VI – A Italia - Österreich
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# Electric vs. Petrol: Which One Wins?

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DOCUMENT APPROVAL

| Name | Organization | Role | Action | Date |
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| V1.1 | | | |
| V1.2 | | | |
| V1.3 | | | |
| V1.4 | | | |

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# 1. Introduction

This interactive workshop helps pupils explore the environmental and practical differences between electric vehicles (EVs) and petrol-powered cars. Through discussion, comparison games, and design tasks, students will learn about emissions, energy use, and the broader sustainability impact of transportation choices. The goal is to develop critical thinking around everyday technologies and empower students to imagine greener solutions.

## 1.1 Learning Objectives

- Understand the environmental impact of electric and petrol-powered cars
- Learn about energy sources, $CO_2$ emissions, and fuel types
- Engage in critical thinking and debate about sustainability
- Explore future vehicle concepts through creative design

## 1.2 Required Knowledge

- No prior technical knowledge needed
- Basic awareness of cars, electricity, and fuel is helpful
- Willingness to participate in discussion and group work encouraged

# 2. Workshop Structure

*Table 1: Workshop structure*

| Phase | Duration | Activities | Purpose | Materials |
|---|---|---|---|---|
| Opening | 15 min | Icebreaker and brainstorm: "What powers our cars today?" | Set tone and expectations | Name tags, agenda, whiteboard, marker |
| Context Setting | 15 min | Presentation: EVs vs. Petrol Cars – Emissions, Noise, Efficiency | Introduce core sustainability concepts | Slides, projector |
| Main Content | 60-70 min | Debate, comparison activity, eco-car design challenge | Deepen understanding, encourage creative input | Fact cards, drawing materials, design sheets |
| Wrap-up | 20-25 min | Group presentations & summary reflection | Share insights and connect to real-world issues | Flipchart, feedback cards |

## 2.1 Workshop Agenda

*Table 2: Workshop agenda*

| Time | Activity | Format | Duration | Materials | Facilitator Notes |
|---|---|---|---|---|---|
| 0:00-0:10 | Icebreaker: "What makes a car eco-friendly?" | Group discussion | 15 min | Name tags, whiteboard | Note student answers for later reference |
| 0:10-0:25 | EV vs. Petrol – The Big Picture | Presentation | 15 min | Slides | Include CO2 data, energy source impact, lifecycle view |
| 0:25-0:45 | Game: "Fact Check Showdown" (EV vs. Petrol) | Interactive game | 20 min | Fact cards | Students match statements to the right car type |
| 0:45-0:55 | Break | Networking | 10 min | Refreshments | Encourage informal connections |
| 0:55-1:20 | Team Challenge: Design an Eco-Car | Creative teamwork | 25 min | Drawing paper, pens, eco-material cards | Ask students to design a car of the future |
| 1:20-1:40 | Team Presentation | Group presentations | 15 min | Flipchart or slides | Each team explains why their design is sustainable |
| 1:40-2:00 | Wrap-up & Next Steps | Group discussion | 20 min | Feedback cards | Encourage students to share what they learned |

## 2.2 Required Equipment

*Table 3: Required Equipment*

| Category | Item | Quantity | Purpose | Alternative Options |
|---|---|---|---|---|
| Technology | Projector/screen | 1 set | Presentations | Large monitor, flip charts |
| Materials | Fact cards (EV vs. Petrol) | 1 set/group | Interactive comparison game | Digital quiz format |
| Supplies | Drawing & design tools | Per group | Eco-car design challenge | Tablets with drawing apps |
| Documentation | Handouts | 1 per student | Reflection and learning confirmation | Verbal roundtable |

## 2.3 Evaluation Framework

*Table 4: Workshop Evaluation*

| Evaluation Type | Timing | Method | Key Metrics | Follow-up Actions |
|---|---|---|---|---|
| Immediate | End of workshop | Feedback forms | Satisfaction, objective achievement | Adjust balance between presentation and activity |
| Short-term | 1-2 weeks later | Online quiz | Retention of sustainability facts | Share quiz results with class |
| Long-term | 3-6 months later | Interview/survey | Interest in green transport and future tech | Recommend online resources on EV innovation |

# 3. Detailed Explanation

- **Brainstorming Warm-Up**: Ask students what makes a car “eco-friendly” and collect keywords on the board.
- **Presentation**: Explain differences between EVs and petrol cars, including emissions, maintenance, noise, and cost.
- **Game**: Present a mix of fact cards (e.g. “Emits no tailpipe gases”, “Needs regular oil changes”) and have students guess the vehicle type.
- **Design Challenge**: Each team designs a car of the future using paper or templates — choosing eco-materials, engine type, and design ideas.
- **Presentations**: Each group presents their vehicle, explains its environmental benefits, and votes for the most innovative one.
- **Final Summary**: Facilitator highlights key learnings, common misconceptions, and invites students to reflect on future sustainable transport trends.