Enhancing Students' Soft Skills Through Climate Action: Developing Critical Thinking and Problem-Solving Abilities

OPEN: WIDE MINDS WILL FIND ECO VIRTUAL STEAM SOLUTIONS TOWARDS CLIMATE CHANGE

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“We do not inherit the Earth from our ancestors, we borrow it from our children.” – Native American Proverb

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OBJECTIVES

- Introduce the goals of the WI Mi Project.
- Foster collaborative learning on climate solutions.
- Develop decision-making skills through role-playing.
- Promote problem-based learning for real-world challenges.
- Enhance critical analysis of climate media.
- Encourage creativity in sustainable solutions.
- Reflect on and apply training outcomes.

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Learn more about the project:

Open: Wide Minds will Find Eco Virtual STEAM Solutions towards Climate change

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ICEBREAKER: CLIMATE FACTS AND MYTHS

Climate facts and myths

Created by: Deyana
Language: English

Plays: 0	Shares: 0
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Play

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ICEBREAKER: CLIMATE FACTS AND MYTHS

1. **Polar Bears and Grizzly Bears are Interbreeding**
   - Melting Arctic ice has led to a hybrid species called “pizzly” or “grolar” bears, combining polar and grizzly bears.
2. **Frozen Diseases Could Return**
   - Melting permafrost may release ancient viruses and bacteria that have been dormant for thousands of years.
3. **Cows Emit More Methane than Cars**
   - Livestock, especially cows, produce more greenhouse gases than all the cars, planes, and trains in the world combined.

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ICEBREAKER: CLIMATE FACTS AND MYTHS

4. Plastic Rain

- Tiny plastic particles now fall from the sky in rain, even in remote areas like the Arctic and the Rocky Mountains

5.Your Cup of Coffee is in Danger

- By 2050, the land suitable for growing coffee could shrink by 50% due to rising temperatures and erratic weather.

6. Antarctica Has a Waterfall of Blood

- The "Blood Falls" in Antarctica are iron-rich water oxidizing and turning red as it flows through the ice, creating a dramatic visual effect.

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ICEBREAKER: CLIMATE FACTS AND MYTHS

7. Fish are Shrinking

- Warmer oceans are causing fish to grow smaller as they burn more energy due to faster metabolisms.

8. Bananas Could Go Extinct

- Climate change is accelerating the spread of diseases threatening one of the world’s most popular fruits.

9. The Northern Lights May Fade

- Changes in Earth's magnetic field and solar activity could make the Aurora Borealis less visible in the future.

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SESSION 1

Collaborative Learning – Group Projects on Climate Solutions

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IMPORTANCE OF COLLABORATIVE LEARNING IN TACKLING CLIMATE ISSUES.

- Fosters Creativity and Innovation
- Builds Problem-Solving Skills
- Encourages Diverse Perspectives
- Prepares for Real-World Challenges
- Promotes Engagement and Ownership
- Builds Communication and Leadership Skills
- Encourages Collective Action

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EXAMPLES OF SUCCESSFUL GROUP PROJECTS ON CLIMATE SOLUTIONS

- School Recycling Program
- Green Energy Model
- Community Tree Planting Drive
- Climate Awareness Campaign
- Composting Project
- Water Conservation Initiative
- Eco-Friendly Product Design
- Carbon Footprint Challenge
- Upcycling Workshop
- Sustainable School Garden

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BRAINSTORM BLITZ

How students can work collaboratively?

Divide participants into groups of 3-5.

Provide each group with a prompt, such as:

- **Setting Up a School Recycling System**

How can students create an effective system to separate and recycle paper, plastic, and other materials?

- **Designing a Green School Garden**

What steps are needed to establish and maintain a garden that uses sustainable practices (e.g., composting, rainwater collection)?

- **Organizing a No-Plastic Day Campaign**

How can students and staff organize a successful event to eliminate the use of plastics for one day in school?

- **Creating a Student-Led Energy-Saving Initiative**

What practical actions can students take to reduce energy use in classrooms, such as turning off lights or using energy-efficient devices?

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SESSION 2

Role-Playing and Simulations to Develop Decision-Making Skills

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WHY ROLE-PLAYING IS EFFECTIVE FOR DECISION-MAKING

Encourages Critical Thinking

Participants must analyze situations, consider different viewpoints, and predict potential consequences before making a decision.

Develops Problem-Solving Skills

Real-world challenges often involve multiple stakeholders with conflicting interests. Role-playing teaches participants to find balanced and practical solutions.

Enhances Empathy and Perspective-Taking

Playing different roles forces individuals to understand various interests, concerns, and motivations, helping them appreciate multiple perspectives.

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WHY ROLE-PLAYING IS EFFECTIVE FOR DECISION-MAKING

Improves Communication and Negotiation

Participants practice articulating their arguments, listening actively, and working toward compromises in a structured setting.

Encourages Collaboration and Teamwork

Many climate-related decisions require cooperation. Role-playing fosters group discussions, where participants learn to build consensus and make collective decisions.

Boosts Confidence in Decision-Making

By participating in simulations, individuals gain experience in making informed choices under pressure, preparing them for real-life decision-making.

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A SCENARIO-
"RESOLVING A LAND USE CONFLICT"

A local government must decide whether to allow land to be used for a solar farm, keep it as agricultural land, or preserve it as a nature reserve.

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ROLE ASSIGNMENT

Divide participants into small groups, assigning each group one of the following roles:

- **Local Farmer (concerned about losing agricultural income).**
- **Environmental Activist (focused on preserving biodiversity).**
- **Renewable Energy Developer (advocating for clean energy projects).**
- **Local Resident (concerned about community impact).**
- **Government Official (responsible for making the final decision).**

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GUIDING QUESTIONS

- "What are your priorities and concerns?"
- "What solutions can you propose?"
- "What compromises are you willing to make?"

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ROLE-PLAYING DISCUSSION

- Groups come together for a simulated town hall meeting.
- Each group presents their position and engages in a discussion to reach a consensus or decision.

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DEBRIEF AND REFLECTION

- What decisions were made, and why?
- Were compromises reached?
- What challenges did participants face during negotiation?

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SESSION 3

Problem-Based Learning – Addressing Real-World Climate Challenges

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PROBLEM-BASED LEARNING

Problem-Based Learning (PBL) is an active, student-centered teaching method that focuses on solving real-world problems through critical thinking, inquiry, and collaboration. Instead of passively receiving information, participants engage in identifying, analyzing, and developing solutions to complex issues, making learning more meaningful and practical.

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KEY FEATURES OF PBL

1. **Real-World Problems as the Starting Point**
   - Learning begins with a real and relevant challenge rather than abstract concepts.
   - Problems are open-ended, encouraging exploration and creativity.
2. **Inquiry-Driven Approach**
   - Participants research and investigate the problem before proposing solutions.
   - They develop questions, collect data, and explore different perspectives.

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KEY FEATURES OF PBL

3. Collaboration and Teamwork

- PBL encourages group work, where participants share knowledge, debate ideas, and build solutions together.
- Each group member contributes based on their strengths and expertise.

4. Critical Thinking and Problem-Solving

- PBL promotes higher-order thinking by requiring learners to analyze, evaluate, and synthesize information.
- Participants learn to address real-world constraints (e.g., costs, policies, feasibility).

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KEY FEATURES OF PBL

5. Self-Directed Learning

- Instead of receiving direct answers from a teacher, participants take responsibility for their own learning.
- They research solutions, test ideas, and refine their approaches.

6. Interdisciplinary Connections

- PBL integrates multiple disciplines (science, social studies, economics, etc.), reflecting how real-world problems require cross-sectoral solutions.

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HOW PBL WORKS IN CLIMATE EDUCATION

1. **Identify a Climate Problem**
   - Examples: Plastic pollution in schools, energy inefficiency, food waste, air pollution.
2. **Analyze the Problem Through Research**
   - Investigate root causes, affected stakeholders, and potential impacts.
3. **Develop and Test Solutions**
   - Brainstorm innovative approaches, considering feasibility and sustainability.
4. **Present and Reflect on Outcomes**

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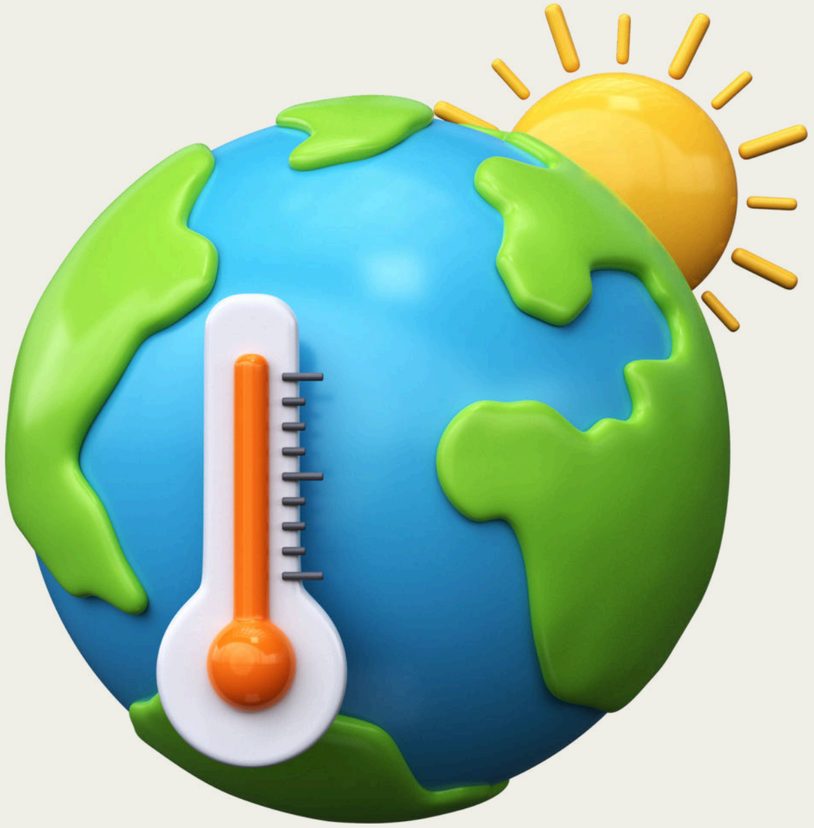
CHALLENGE

Participants will identify and propose solutions for a pressing climate issue affecting their community or schools.



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GROUP WORK- BRAINSTORMING

Divide participants into small groups (3-5 people). Each group selects or is assigned a real-world climate issue, such as:

1) Littering on School Grounds

Trash is often found in hallways, playgrounds, and schoolyards. How can students be motivated to keep their school clean?

2) Plastic Bottle Waste from School Drinks

Should schools introduce refillable bottle policies and water stations?

3) Lack of Incentives for Eco-Friendly Actions

Students don't feel motivated to take climate-friendly actions. How can schools create rewards or challenges that encourage sustainable behavior?

4) Unaware Parents on Climate Issues

Many parents don't engage in sustainability efforts at home. How can students raise awareness and involve families in eco-friendly habits?

Each group develops a practical and innovative solution to their selected issue.

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PRESENTING SOLUTION, DEBRIEF & REFLECTION

- Each group presents their problem and solution in 1-2 minutes.
- Peers and facilitators can ask questions or offer suggestions for improvement.
- Debrief & Reflection
- Discuss key takeaways:
  - What solutions stood out?
  - What challenges did teams face when developing solutions?
  - How can these ideas be implemented in real schools or communities?

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MORE IDEAS FOR EACH TOPICS

1) Littering on School Grounds

How can students be motivated to keep their school clean?

✅ Gamification & Competitions

- "Cleanest Classroom Challenge" – Award points to classes that maintain the cleanest spaces.
- Litter-Free Zones – Students "adopt" areas to keep clean and win recognition.

✅ Student-Led Campaigns

- "Trash Detectives" – Students track the most littered areas and propose solutions.
- "Before & After Photo Challenge" – Encourage students to transform dirty spaces.

✅ Hands-On Initiatives

- Litter Patrol Teams – Rotating student groups take charge of keeping playgrounds and halls litter-free.
- Recycling Art Projects – Turn waste into creative displays or school decorations.

✅ Incentivized Behavior

- "Green Points System" – Students earn rewards for picking up litter and using bins correctly.
- Eco-Badges & Recognition – Certificates for students actively involved in keeping the school clean.

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MORE IDEAS FOR EACH TOPICS

2) Plastic Bottle Waste from School Drinks

Should schools introduce refillable bottle policies and water stations?

✅ Gamification & Competitions

- "Plastic-Free Week" Challenge – Students commit to avoiding plastic bottles for one week.
- Classroom Leaderboard – Track and reward students who bring reusable bottles.

✅ Student-Led Campaigns

- "Refill, Don't Landfill" Awareness Drive – Posters and videos promoting refillable bottles.
- Student Pledge – Get students to commit to using only reusable bottles.

✅ Hands-On Initiatives

- Install More Water Refill Stations – Raise funds or get sponsorships to make this happen.
- Eco-Friendly Bottle Discounts – Cafeteria incentives for students who bring reusable bottles.

✅ Community Engagement

- Reusable Bottle Sales Drive – Partner with local businesses to offer discounted eco-bottles.
- Local Business Support – Encourage shops near schools to support bottle refilling.

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MORE IDEAS FOR EACH TOPICS

3) Lack of Incentives for Eco-Friendly Actions

How can schools create rewards or challenges that encourage sustainable behavior?

✅ Gamification & Competitions

- "Eco Hero of the Month" Award – Recognize students who contribute to sustainability.
- Classroom Eco Points – Teams or individuals earn points for eco-friendly actions (recycling, turning off lights, reducing waste).

✅ Hands-On Initiatives

- Eco-Treasure Hunt – Find and fix sustainability issues (e.g., unplug devices, close taps, recycle).
- Green Clubs & Leadership Roles – Give students responsibility for environmental initiatives.

✅ Incentivized Behavior

- Privileges Instead of Material Rewards – Extra recess time, dress-down days, or leadership roles for sustainable actions.
- Eco-Certificates & Badges – Digital or physical badges for sustainability achievements.

✅ Community Engagement

- Green Marketplace – Students can exchange points for eco-friendly rewards like plants or sustainable stationery.
- Sustainability Day – A school-wide event featuring fun eco-friendly activities.

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MORE IDEAS FOR EACH TOPICS

4) Unaware Parents on Climate Issues

How can students raise awareness and involve families in eco-friendly habits?

✅ Gamification & Competitions

- "Family Eco-Challenge" – Families track their waste reduction, energy savings, or sustainable habits.
- Home Recycling Race – Students log how much they recycle at home, with parent involvement.

✅ Student-Led Campaigns

- "Eco at Home" Newsletter – Students create monthly sustainability tips for families.
- Social Media Awareness – Schools post eco-friendly challenges for parents to participate in.

✅ Hands-On Initiatives

- Family Green Pledge – Parents commit to small eco-friendly changes at home.
- Eco-Themed Parent-Teacher Meetings – Include sustainability discussions in parent meetings.

✅ Community Engagement

- Family Green Day at School – Parents and students participate in activities like tree planting, DIY upcycling, or eco-workshops.
- Partnerships with Local Organizations – Invite experts to speak to families about sustainable living.

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MORE TOPICS TO THINK ABOUT

Top 10 Most Discussable Climate Problems

1. High Energy Consumption in Schools
2. Food Waste in the School Cafeteria
3. Transportation Pollution Around Schools
4. Single-Use Plastics in School Events
5. Overconsumption of Meat in School Meals
6. Unaware Parents on Climate Issues
7. Fast Fashion Waste in Schools
8. School Waste Overload
9. Carbon Footprint of School Trips
10. Plastic Bottle Waste from Vending Machines

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SESSION 4:

Critical Reflection on Media Coverage of Climate Issues

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ANALYZING CLIMATE ARTICLES

✅ Media Framing of Climate Issues

- The way climate change is reported varies depending on who is reporting, their audience, and their interests.
- Some media outlets emphasize scientific consensus and urgency, while others downplay or question climate change.

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ANALYZING CLIMATE ARTICLES

✅ **Factors That Influence Media Bias:**

- **Political Influence** – Some news sources align with political agendas that either support or oppose climate policies.
- **Economic Interests** – Fossil fuel companies, corporations, and lobbyists may fund or influence climate narratives.
- **Target Audience** – Media outlets tailor their messaging to appeal to their specific readership or viewership.
- **Emotional vs. Neutral Language** – Sensational headlines can exaggerate, while neutral headlines aim to inform.

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ANALYZING CLIMATE ARTICLES

✅ Real-World Examples of Biased vs. Objective Climate Reporting

🔹 ***Objective Headline (Fact-Based Reporting):***

"Global Temperatures Hit Record Highs, Scientists Warn of Urgent Action."

🔹 ***Manipulated Headline (Framing or Misleading):***

"Is Climate Change Just Another Government Scare Tactic?"

🔹 **Objective:**

"UN Report Confirms Human Activity as Main Driver of Climate Change."

🔹 **Manipulated:**

"Extreme Cold Weather Proves That Global Warming is a Myth!"

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GROUP WORK – ARTICLE ANALYSIS

- Divide participants into small groups.
- Each group receives different climate-related news excerpts or headlines (some factual, some biased/manipulative).
- **Guiding Questions:**
- Who wrote this article, and what might be their interest?
- Is the language neutral, emotional, or exaggerated?
- What facts vs. opinions are presented?

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GROUP 1: THE ALARMIST PERSPECTIVE

- 📌 Headline:
- "The 'Gulf Stream' will not collapse in 2025: What the alarmist headlines got wrong"
- 📍 Link: https://www.downtoearth.org.in/climate-change/the-gulf-stream-will-not-collapse-in-2025-what-the-alarmist-headlines-got-wrong-90994
- 🔗 Read the article
- 🔍 **Guiding Questions:**
- Does the article correct or challenge exaggerated climate narratives?
- How do alarmist headlines impact public perception of climate change?
- What are the risks of using extreme or fear-driven messaging in climate reporting?
- How could this topic be framed in a more balanced, fact-based way?

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🟡 GROUP 2: THE DENIALIST PERSPECTIVE

- 📌 Headline:
- "Climate change: The Kenyan influencer promoting denial"
- 📍 Link: https://www.bbc.com/news/articles/c133r4gyx1no
- 🔗 Read the article
- 🔍 Guiding Questions:
- What arguments does the influencer use to deny climate change?
- Does the article provide evidence to counter the misinformation?
- What role do social media influencers play in shaping climate opinions?
- How can educators and students respond to climate denial in public discussions?

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GROUP 3: THE POLITICALLY FRAMED PERSPECTIVE

- 📌 Headline:
- "Climate Deniers of the 118th Congress"
- 📍 Link: https://www.americanprogress.org/article/climate-deniers-of-the-118th-congress/
- 🔗 Read the article
- 🔍 Guiding Questions:
- How does political affiliation influence climate policies and reporting?
- Does the article focus on facts, or does it carry a political bias?
- How can readers differentiate between political framing and factual reporting?
- Should climate science be a political issue? Why or why not?

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GROUP 4: THE OBJECTIVE PERSPECTIVE

- 📌 Headline:
- "We are damned fools': scientist who sounded climate alarm in 80s"
- 📍 Link: https://www.theguardian.com/environment/2023/jul/19/climate-crisis-james-hansen-scientist-warning
- 🔗 Read the article
- 🔍 Guiding Questions:
- How does this article present scientific evidence on climate change?
- Does the language remain neutral, or does it advocate for urgent action?
- Why is it important to rely on scientific studies in climate discussions?
- How can students and educators promote fact-based climate reporting?

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DEBRIEF QUESTIONS FOR ALL GROUPS:

- How did different articles shape your perception of climate change?
- What techniques do media outlets use to influence public opinion?
- How can students and educators promote critical thinking in climate reporting?
- What tools or strategies can help verify climate facts vs. misinformation?

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INTERACTIVE GAME: "TRUTH OR MANIPULATION?"

- This game enhances critical thinking and builds media literacy by helping participants identify bias, misinformation, and trustworthy reporting in climate news. 🌍📰
- 🎯 Game Setup:
- Display a series of climate-related headlines (some factual, some misleading).
- Participants vote (by raising hands, using colored cards, or digital polling) on whether each headline is trustworthy (truth) or misleading (manipulation).
- Discuss the reasoning behind their choices.

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HEADINGS

Headline	Trustworthy or Misleading?	Why? (Reasoning)
"Global Temperatures Hit Record Highs, Scientists Warn of Urgent Action"	✅ Trustworthy	Based on scientific data from credible institutions.
"Climate Change is a Hoax Created to Control People"	❌ Misleading	A conspiracy theory with no scientific backing.
"Wind Farms Destroy Bird Populations, Experts Say"	⚠️ Needs Fact-Checking	Some impact exists, but the headline lacks context and exaggerates.
"Governments Must Act Now to Reduce Carbon Emissions"	🔵 Depends (Persuasive vs. Informative)	A call to action rather than pure reporting, but based on scientific consensus.

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HEADINGS

Headline	Trustworthy or Misleading?	Why? (Reasoning)
"Scientists Disagree on Whether Climate Change is Real"	❌ Misleading	Over 97% of climate scientists agree that human-caused climate change is real.
"Climate Crisis is Causing More Frequent and Intense Wildfires"	✅ Trustworthy	Supported by scientific evidence linking climate change to extreme weather.
"Switching to Electric Cars Will Ruin the Economy, Experts Warn"	⚠️ Needs Fact-Checking	Economic shifts occur, but studies show long-term benefits of green energy.
"Climate Change is the Greatest Threat to Humanity, UN Report Finds"	✅ Trustworthy	Based on UN reports, which summarize scientific findings.
"Billionaires Use Private Jets While Asking Us to Go Green"	❌ Misleading (Emotionally Driven)	Uses a real issue but distracts from broader climate solutions.

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HEADINGS

Headline	Trustworthy or Misleading?	Why? (Reasoning)
"Cold Weather This Year Proves Global Warming is a Myth"	❌ Misleading	Climate and weather are different; global warming affects overall trends, not single events.
"Recycling is a Scam: Most Plastic Still Ends Up in Landfills"	⚠️ Needs Fact-Checking	Recycling has challenges, but the headline oversimplifies the issue.
"Solar and Wind Energy Now Cheaper Than Fossil Fuels"	✅ Trustworthy	Supported by research on falling renewable energy costs.
"Climate Protesters Cause Chaos in City Center, Angering Residents"	🔵 Depends	The event may have happened, but the wording focuses on disruption rather than the message.
"The World Only Has 10 Years Left to Stop Climate Change"	⚠️ Needs Fact-Checking	The 10-year timeframe is debated, though urgent action is needed.

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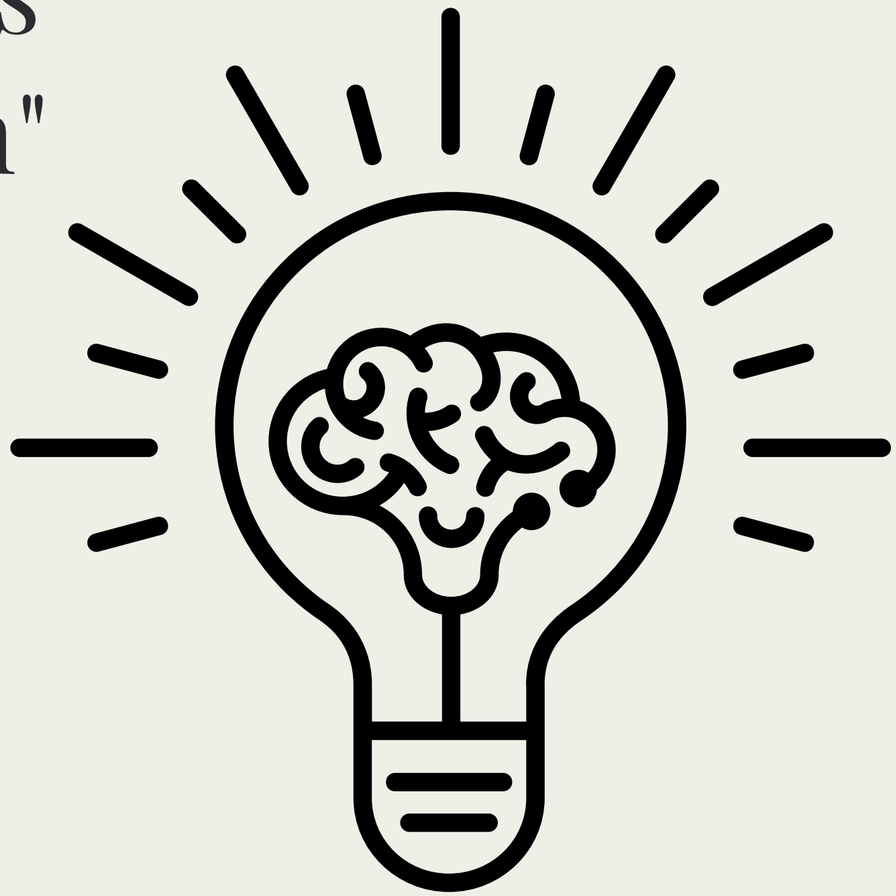
SESSION 5

Encouraging Creativity in Developing Innovative Solutions "Climate Hackathon"



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CREATIVITY IS KEY TO SOLVING CLIMATE CHALLENGES

Plastic-eating bacteria used for recycling

Solar roads that generate electricity

Apps that track personal carbon footprints and suggest eco-friendly actions.

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GROUP CHALLENGE - CLIMATE HACKATON

- Divide participants into small teams (3-5 people per group).
- Each team must come up with an innovative climate solution in one of these areas:

1. Reducing plastic waste
2. Energy conservation
3. Sustainable transportation
4. Food waste reduction
5. Green school initiatives

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GROUP CHALLENGE - CLIMATE HACKATON

- Divide participants into small teams (3-5 people per group).
- Each team must come up with an innovative climate solution in one of these areas:

1. **Reducing plastic waste** – Finding new ways to cut down or reuse plastic.
2. **Energy conservation** – Creative solutions for reducing energy consumption.
3. **Sustainable transportation** – Greener, low-emission travel solutions.
4. **Food waste reduction** – Ideas to minimize waste in schools and communities.
5. **Green school initiatives** – Climate-friendly projects for schools.

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GROUP CHALLENGE - CLIMATE HACKATON

WHAT IS THE PROBLEM?
WHAT IS THE CREATIVE SOLUTION?
HOW CAN IT BE IMPLEMENTED?

🎤 Present & Vote

- Each team presents their solution in 1 minute.
- The group votes on the most creative and feasible idea using digital polling or colored cards.

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FINAL Q&A AND WRAP-UP

💡 Discussion Prompts:

- What is one key takeaway from today's training?
- How has your understanding of climate education and innovation changed?
- What new strategies will you implement in your classroom or community?
- What are the biggest challenges in promoting climate action, and how can we overcome them?
- How can we keep ourselves accountable for making a difference?

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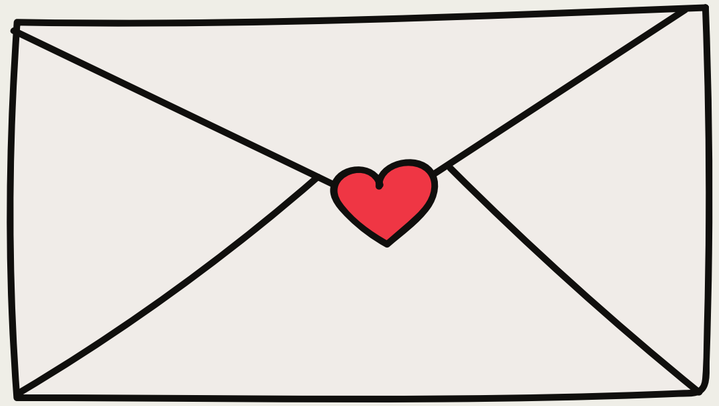
"LETTER TO FUTURE SELF"

💌 Instructions:

- Each participant writes a short letter to their future self (3-6 months from now).
- The letter should include:
- ✅ What they learned today.
- ✅ A personal commitment to take action (big or small).
- ✅ Hopes and goals for their role in climate education.
- ✅ A message of encouragement for their future self.



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