STEM Env SPORTS EDUCATION

BUILDING MINDSETS

Attitude Unit

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Environment and Physical Education: Exploring STEM through Sports

Attitude Unit: Building Mindsets for Sustainable Sports & STEM

Unit Theme

"Healthy Minds, Healthy Planet: Attitudes for STEM, PE, and the Environment"

This unit is designed to help you develop key skills and positive attitudes that are essential for learning, performing, and growing—both in science and sports. You'll explore inclusion, teamwork, responsibility, sustainability, and stress management as everyday habits, while reflecting on your own role in creating a healthy, supportive, and eco-friendly world.

Learning Objectives

- Foster responsibility and commitment to sustainability through sports and STEM.
- Develop self-efficacy and motivation for STEM, PE, and environmental care.
- Challenge stereotypes and promote inclusivity and social justice in all activities.
- Strengthen communication, reflection, and teamwork skills.
- Recognize the importance of mental and physical health for learning and performance.

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Overview of Activities

The activities below prioritize hands-on, collaborative, and reflective learning and can be adapted for different classroom or outdoor settings.

1. Exploring Inclusion & Breaking Stereotypes

Activity: "Who Belongs? Who Leads?"

Goal: To help students recognize and challenge stereotypes in sports and science, and to explore how inclusion makes teams and communities stronger.

Materials Needed: Paper, markers or colored pencils, magazines for collage (optional), scissors, glue, or digital poster tools if available.

Instructions:

1. Form Teams: Divide the class into mixed groups of 4–6 students. Make sure each team has a variety of backgrounds and interests.
2. Create Two Images or Skits:
    - Part 1 – Stereotypes: Ask each group to show a typical image of an athlete or scientist as they often appear in movies, advertisements, or social media. This can be a short skit or a poster collage.
    - Part 2 – Inclusion: Next, have them redesign or re-act the scene to include more diversity—different genders, abilities, backgrounds, and roles.
3. Presentations:Each group presents both versions to the class. Encourage creativity and humor, as long as the message remains respectful.
4. Class Discussion: Guide a short conversation using questions like:
    - Who was missing from the first image or story?
    - How did the inclusive version feel different?
    - What can we do to make sports and science spaces more welcoming?
    - Why do diverse teams often perform better?

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2. Being an Eco-Leader

Activity: "Green Sports Ambassadors"

Goal: To inspire students to design eco-friendly sports events and understand how science and technology can help protect the environment.

Materials Needed: Paper or digital documents for checklists, markers, internet access (optional), projector or board for presentations.

Instructions:

1. Set the Scene: Tell students: *"You are the Eco-Team planning a school sports day. Your mission is to make it as green and sustainable as possible!"*
2. Group Work – The Plan: In groups of 4–5, ask students to create a checklist of eco-actions under three categories:
    - Reduce waste: reusable bottles, no single-use plastics, recycling bins.
    - Save water and energy: automatic taps, efficient field watering, local materials.
    - Protect nature: tree-planting, clean-up zones, no litter areas.

    Encourage them to include one STEM-based idea, like:
    - Sensors to measure air quality.
    - Using recycled materials for sports equipment.
    - Solar-powered scoreboards or lighting.
3. Presentations: Each group presents its *Eco-Action Plan* to the class. They should explain how science or technology supports their ideas and how athletes or students can help.
4. Quick Quiz and Reflection:
   Ask fast-fire questions such as:
    - What can students do daily to make PE classes greener?
    - How can schools reduce their environmental footprint?
    - Which idea from another team inspired you most?

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4. Exploring Careers in STEM, PE, and Environmental Stewardship

Activity: "Paths to Change"

Goal: To help students explore careers that connect sports and science, and understand how professionals in these fields contribute to solving environmental and social challenges.

Materials Needed: Career role cards (teacher-prepared or student-researched), name tags, paper and pens for note-taking, space for movement around the classroom.

Instructions:

1. Introduction:Explain that science and sports are not separate worlds. Many careers—like eco-engineers designing sustainable stadiums or biomechanics coaches improving athlete performance—combine both fields to make positive change.

2. Career Gallery Walk: Place career cards or posters around the room (examples: *Eco-Engineer*, *Biomechanics Coach*, *Sports Statistician*, *Sustainable Materials Designer*, *Health Data Analyst*).Students walk around, read the descriptions, and note one interesting fact or problem each profession helps solve.

3. Group Interview Simulation:

    - Assign each student or small group one career role.
    - Half the class becomes “professionals” who speak about their job’s impact on people and the planet. The other half are “journalists” who prepare interview questions such as:
        - “How does your work improve environmental sustainability in sports?”
        - “What challenges do you face when combining science and athletics?”
    - After one round, switch roles so everyone experiences both perspectives.

4. Class Reflection:Bring students together and ask:

    - Which science-and-sports career interested you most?
    - How do these professionals help create change beyond sports performance? What new skills or studies might help you pursue such roles?

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Key Attitudes Developed

Skill/Attitude	Example Behaviors
Responsibility for sustainability	Actively proposing eco-friendly solutions
Self-efficacy & motivation	Taking initiative; trying new roles
Inclusivity & social justice	Welcoming all voices; challenging stereotypes
Collaboration & communication	Sharing ideas and listening in teams
Reflection & resilience	Learning from setbacks; setting personal goals

Activity Guidance and Options

- **Format:** These activities can be done as group workshops, outdoor sessions, or movement-based classroom tasks.
- **Adaptability:** Suitable for all students, with options to adjust physical intensity and task complexity.
- **Recording:** Students are encouraged to keep a written (or digital) "Attitude Log" after each activity—summarizing what they learned about themselves, their team, and the STEM-PE-environment connection.
- **Additional ideas:**
    - Integrate a first-aid mini-workshop (focus on collaboration, responsibility).
    - Use simple digital quizzes or gamified tasks to reflect on stereotypes and sustainability actions.

Closure & Forward Link

- End the unit with a group circle: each student shares one attitude or skill they want to strengthen—not just in sports or science, but in all areas of life.
- Preview: The next module units will let you put these attitudes into practice—collecting data, solving challenges, and making a positive impact in both sport and science.

Remember: The habits and perspectives you build here will support your learning and wellbeing beyond the classroom or playing field. Every student can lead, include, and care—for themselves, their team, and the environment.

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