STEAM &Sports

Lesson 9 - Move Smart: *Using Data to Boost Health*

Co-funded by
the European Union

Move Smart: Using Data to Boost Health

Concept

This lesson connects mathematics, technology, and physical education by exploring how data collection and analysis can inform health and wellness decisions. Students develop surveys, analyze results, and apply their findings to create evidence-based PE activities, linking statistics, computational thinking, and movement in a real-world context.

Learning objectives and Outcomes

PE: Competency 6: Health, Wellness, and Lifestyle Education
Technology: Competency 2: Computational Thinking and Problem-Solving
Mathematics: Competency 5: Data Literacy, Statistics, and Probability

Methodology

This lesson follows an inquiry-based and project-based learning approach, where students actively explore health-related topics through data collection, analysis, and practical application in PE.

1. **Collaborative Learning** – Students work in small groups to design surveys, collect and analyze data, and apply findings in a team-based setting.
2. **Inquiry & Investigation** – Students ask health-related questions, gather data from peers, and use statistical methods to interpret results.
3. **Hands-On Application** – Students translate data insights into a physical education activity, connecting mathematical analysis to real-world wellness decisions.
4. **Presentation & Reflection** – Groups present findings, discuss implications, and reflect on how data-driven decisions impact health and fitness.

This cross-disciplinary method strengthens critical thinking, problem-solving, and data literacy, while making learning engaging and relevant to students' everyday lives.
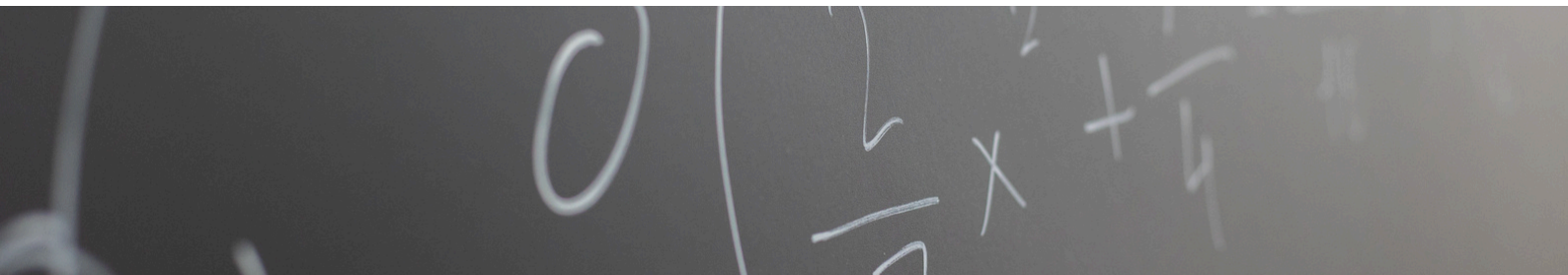
Educational standards in connection with sports

This lesson aligns with key educational standards in Physical Education, Mathematics, and Technology, ensuring relevance to broader curriculum goals.

Physical Education

- Health, Wellness, and Lifestyle Education – Students analyze real-world data to understand health habits and apply findings to improve physical activity and well-being.

Mathematics

- Data Literac y, Statistics, and Probability – Students develop surveys, collect and organize data, and analyze results using statistical methods such as averages, percentages, and trends.

Technology

- Computational Thinking and Problem-Solving – Students engage in structured data collection, analysis, and visualization using digital or manual methods, enhancing their ability to use technology for real-world problem-solving.

This STEAM-integrated approach supports critical thinking, collaborative learning, and real-world application, aligning with national curricula that emphasize interdisciplinary learning and practical application of knowledge. If you have a specific country or curriculum framework in mind, I can tailor the standards further.

This lesson includes elements of these school subjects

Mathematics, Physical Education, IT

Timeframe

4 hours

Students Age

14 - 15 years old

Material needed

Microbit
Computer

Short description of the content

Students work in groups to design a survey on health and wellness topics, collect and analyze data, and present their findings. Using their results, they create a PE-related activity or recommendation to improve well-being. This hands-on approach connects data literacy, computational thinking, and physical education.

Sequence of Lesson

Total Time Needed: 90 minutes (Two 45-minute sessions or one extended session)

1. Engage (10 min) – Introduction & Discussion
- Introduce the lesson by asking: "How do we know what is healthy?" and "How can data help us make better health decisions?"
- Discuss real-life examples (e.g., fitness trackers, health studies, nutrition guidelines based on data).
- Explain the goal: Students will create surveys, analyze results, and apply findings to PE activities.

2. Explore (20 min) – Survey Design & Data Collection
- Group Work: In teams of 3, students choose a health-related topic (e.g., hydration, sleep, screen time, exercise habits).
- Each group creates 5–7 closed questions for a short survey.
- Surveys are distributed, and students collect responses from classmates.

3. Elaborate (25 min) – Data Analysis & Visualization
- Groups organize and analyze their data using basic statistics (percentages, averages, trends).
- They create visual representations (bar graphs, pie charts) on paper or using digital tools.
- Class discussion: "What does our data reveal about our health habits?"

4. Evaluate (25 min) – Applying Data to Physical Education
- Based on their data findings, groups design a PE activity or propose a wellness strategy.
- Examples:
  - If data shows low hydration, create a water break challenge.
  - If many students don't get enough exercise, design a short fitness routine.
  - If sleep is an issue, suggest relaxation/stretching exercises.
- Groups present their findings and proposed PE activity to the class.

5. Extend (10 min) – Reflection & Real-World Connection
- Class discussion: "How can we use data to improve personal and school-wide health habits?"
- Students reflect on one personal change they can make based on the results.
- Option: Extend by tracking personal wellness habits over a week and analyzing trends.

Lesson Developer

Name: Group 1
Julia, Elizabeth, Vanesa, Gabrijela, Biljana, Djurdjica

Tips for age group differentation (for older/younger kids than indicated in the lesson)

For younger students (11–13 years): Use fewer, simpler survey questions and guide them through the data collection steps with templates.

For older students (16+): Include correlation analysis or trends over time. Ask them to evaluate external datasets or compare with national health data.

To which SDG(s) does the lesson relate most

SDG 3: Good Health and Well-being
Encourages awareness of personal and peer health.

SDG 4: Quality Education
Combines data literacy and computational thinking with practical application.

What Inclusivity and Accessibility measures can or should the teacher take for this lesson

Provide sentence starters or templates for creating survey questions.

Allow voice responses or one-on-one interviews instead of written surveys for students with language barriers.

Ensure students can analyse data with or without digital tools.

Make group roles flexible and supportive of different skill levels.

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