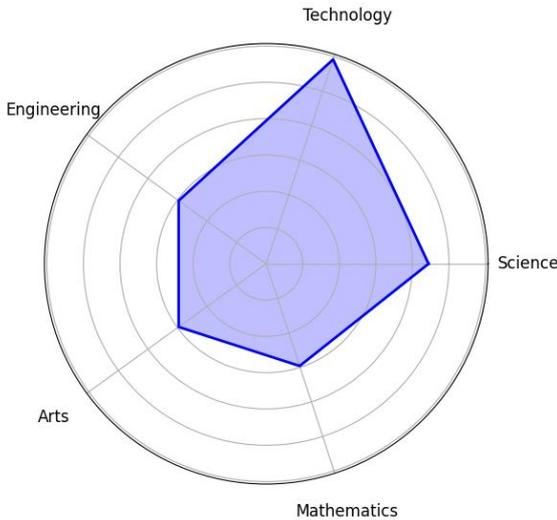




Curricular



SMART SPORTS – DESIGNING A FITNESS TRACKER PROTOTYPE

Duration	Age	Difficulty
90	15-16	Medium
#EXPERIMENTATION #SCIENCE		

DESCRIPTION

Students will explore the intersection of sports and technology by designing a prototype for a wearable fitness tracker. They will investigate current technologies, understand sensor functionality, and apply user-centered design principles to create a paper or digital prototype. Teams will present their design to peers, simulating a product pitch. Ethical, inclusive, and cultural considerations are emphasized throughout. Students will:

- Investigate existing sports technologies and their applications.
- Learn how fitness trackers work (accelerometers, heart rate sensors, etc.).
- Design a paper or digital prototype of a new fitness tracker app or wearable.
- Create a pitch to present their product to peers or a mock panel.

ACTIVITY OBJECTIVES

- Understand the role of technology in monitoring athletic performance.
- Learn how digital sensors collect, transmit, and display biometric data.
- Apply user-centered design principles to prototype a wearable or mobile app.
- Develop teamwork, communication, and presentation skills in a tech-focused context.
- Reflect on ethical, cultural, and privacy considerations in sports technology.
- Promote gender equity and inclusive representation in design.

KEY COMPETENCES (EU)

- Digital competence
- Learning to learn
- Sense of initiative and entrepreneurship
- Cultural awareness and expression
- Citizenship competence



MATERIALS



Presentation slides on sensor types (HRM, accelerometer, GPS)



Templates for sketching the interface or wearable



Optional: Mock sensor data



Notebook, pen



Optional: mobile device or computer for mockups



"Tracker Sketch Template"



"User Feedback Form"



"Sensor types and functions in sports tech" Guide

- Provided by students
- Provided by the teacher/institution
- Downloadable Elements

PREVIOUS PREPARATION

- Form student groups (3-4 members)
- Prepare and test access to sketching/prototyping tools (e.g., Canva, Marvel App)
- Print handouts (Sensor Guide, Templates, Feedback Form)
- Watch video: "How Wearables Are Changing Sports"

CONTEXTUALIZATION AND ADAPTATION

From amateur runners to Olympic athletes, technology has transformed how people train and perform. Fitness trackers help monitor heart rate, distance, speed, and more. But... what makes one device better than another? And what could the next generation of wearables look like?

Key Questions:

- What kind of data can wearables track?
- What features matter most to different types of athletes?
- How should design balance performance and comfort?





ACTIVITY

STEP 1: Inspiration & Brainstorm (15 min)

- Introduce key wearable components (sensor types, data output, interfaces).
- Students brainstorm what kind of tracker they'd build and for whom (e.g., sprinters, yoga fans, skaters).

STEP 2: Design Phase (30 min)

- Groups sketch the layout of their wearable or mobile app interface.
- Annotate what each part does (e.g., step counter, hydration alert, posture feedback).
- Optional: Use free prototyping tools like Marvel App or Canva.

STEP 3: Pitch Preparation (25 min)

- Each team prepares a 2–3 minute product pitch explaining their user, features, and tech.
- Use visual aids (drawings, slides, mockups).

STEP 4: Presentations & Feedback (20 min)

- Teams present and get feedback from peers using the "User Feedback Form."
- Reflect on functionality, usability, and creativity.

CONCLUSION AND SHARING

Reflection prompts:

- What was your biggest challenge in designing your tracker?
- How can tech like this improve physical performance or health?
- What ethical concerns might arise when collecting personal data?

Provide students with ideas to further explore the topic beyond the activity and to create other projects related to the topic worked through the activity.

Examples:

- Develop a branding concept around their design.
- Explore biodegradable materials for sustainable solutions.

Social Sharing (optional):

#SmartSportsSTEAM

Don't forget to take a photo of your experience and share it with us!



[LinkedIn](#)



[Instagram](#)



[X](#)



BIBLIOGRAPHY AND REFERENCES

- <https://www.wearable-technologies.com/>
- <https://www.whoop.com/the-locker/sports-science/>
- "What is a Fitness Tracker and How Does It Work?" – TechRadar

