**Sixth Class Students Champion Energy Efficient Innovations of our local Mullahoran GAA Park and Win Prestigious Award**

In our sixth class, we have been passionately working on making energy-efficient changes to our GAA Park as part of our STEM curriculum. Utilising our developing coding skills, we showcased our project at Microsoft Dreamspace on June 10th, where we proudly won the **Department of Rural and Community Development Rural Innovation Award 2024.**

Our project, "Into the Future: Innovations for GAA Park," aims to enhance Mullahoran GAA park and set a new standard for energy efficiency and inclusivity in athletic facilities. Here are the highlights of our innovative designs:

1. **Neopixel Lighting System**: We installed Neopixel lights around the pitch, powered by eight solar panels on the club’s roof. These lights also serve as pitch floodlights, significantly reducing energy costs and setting a benchmark for energy-efficient lighting in sports facilities.
2. **E-Paper Scoreboard**: We developed an E-paper display scoreboard that only uses power to change the displayed values, conserving a substantial amount of energy. The system, running on a Micro V2 due to its enhanced RAM capacity, updates scores automatically via sensors on the goals. Infrared beams above the crossbar detect points scored, triggering automatic updates and signaling virtual umpires to raise the appropriate flags.
3. **ViewCam Car**: Our ViewCam car provides a virtual view of football matches, viewable from the sensory room and commentary box. This promotes community inclusivity and aligns with Global Goal 11: Sustainable Cities and Communities.
4. **Solar Panel Installation**: We propose installing eight solar panels on the complex roof. These panels will power the Neopixel lights, scoreboards, virtual umpires, ViewCam, and the sensory room, ensuring a sustainable energy supply for our innovations.
5. **Virtual Football Game**: Using Turbowarp, we created a virtual football game featuring an overhead view of our project pitch. Our 6th class boys’ team is included in the game, where participants can challenge advanced AI at three levels: beginner, amateur, and professional.
6. **Rainwater Harvesting System**: We designed a rainwater harvesting system with a super-slim tank to collect and store rainwater from the rooftop. The filtered rainwater will be used for flushing toilets and kitchen needs, with potential for drinking water for players. This system can sustainably support the water needs of up to 58 people daily, reducing reliance on public water systems.
7. **Sensory Room**: We created a sensory room to foster inclusivity, particularly beneficial for individuals with autism, sensory processing disorders, and other disabilities. Enhanced by the ViewCam, it provides a virtual view of football matches and serves as a hub for community activities, ensuring a supportive environment for all.

The judges at Microsoft DreamSpace encouraged us to showcase our ideas to the GAA and our County Council as a potential advancement for sustainable sports development within communities. This project has been a rewarding experience for our class, contributing to the enhancement of our local GAA park. Our energy-efficient innovations not only promote sustainability but also foster community inclusivity and engagement.