PDHPE

Mechanical principles of movement

In pairs, students video each other participating in an individual movement activity of their choice, e.g. a basketball lay up, a punt kick in AFL, a goal shot in netball, a golf swing, a softball swing, a volleyball serve.

Using the video, students explore how they absorb and apply force, use balance, stability and momentum whilst performing the activity. Students will identify and demonstrate ways they can improve their performance.

Syllabus links:

5.4 A student adapts, transfers and improvises movement skills and concepts to improve performance

5.16 A student predicts potential problems and develops, justifies and evaluates solutions

Students learn about:

Applying mechanical principles to enhance performance
- absorbing and applying force
- balance and stability
- momentum

Students learn to:

Experiment with the application of simple mechanical principles to enhance performance and ensure safety, e.g. modify body position and technique

Resources/ Preparation

Mobile devices, tablets, video cameras, mobile apps

Learning activity description

Explain to students that they will be exploring the mechanical principles of movement and identifying ways to improve performance.

Students:

1. Identify a suitable movement skill to perform and video.
2. Work in pairs to record the performance of the skill on video.
3. Answer the following questions about the performance.
   - How is your skill affected by absorbing and applying force?
   - Identify the main parts of your skill that require balance and stability.
   - How important is momentum to the execution of your skill?
4. Create a series of still photos from the performance video. These photos should represent the key steps in the movement, e.g. backswing, point of impact, follow through.
5. Analyse the photos and identify the forces being applied, the centre of gravity and other important features.

6. Find a video of an expert performance of the skill and compare the two performances. Identify where they can improve.

7. Practice the identified areas to improve and then video the skill performance again.

8. Analyse the final performance and compare it with the earlier performance.

9. Develop a written evaluation of their performance.

Allow time for students to showcase their final production. This can be in the form of formal presentations, in 'speed dating' style where each individual or pair is seated in two circles facing each other and they are given five minutes to present to each other before moving to next person.

You could consider publishing the final products in a suitable space, e.g. school website or a class blog.