



KLiC Activity Scenario Template – Informal Setting

Activity title:

Taekwondo: Punches and Kicks

Subject:

Informal Sports Activity

Athlete age:

All Ages

Estimated duration:

75 minutes (excluding setup time)

Learning content

- 10 minute warm up
- practice patterns
- kick pads in groups of 2 or 4
- sparing
- optional pad work
- stretches to finish

Learning objectives

The aim of the lesson is to advance the athletes skills and techniques with their performance in the lessons material through the use of the SensVest technology. After the lesson with the trainer additional time is granted to convey the results of the wearer's performance to all the athletes as well as any observer.

Inquiry-based character (if applicable)

Questioning the correct stance (posture) and movement of the athlete by observing accelerometer readings, in an empirical way (e.g. looking at the salient features of the accelerometer outputs such as a "spike" rather than actual detailed measurements).

Applied technology (if any)

KLiC SensVest with wrist and ankle accelerometers and base station with a Laptop and projector.

Materials needed (if applicable)

Taekwondo Uniform

Description of Activities

At the beginning of the lesson the athletes will be set to warm up their muscles through a series of stretches, to ensure that any athlete won't injure themselves during the course of the lesson. Proceeding the stretches the athletes will then proceed to perform their patterns. This entails the athletes to perform different stances and practicing to improve their patterns. After the patterns exercise the athletes will split up to groups of 2-4 where one athlete will be wearing pads and the others will be practicing their kicks and punches. During these exercises one of the athletes will be wearing the SensVest kit.

During the time of the practice it will be explained to observers what is happening during the athlete's movements and in terms of the output data. During the explanation if any observer has any questions or need clarification of understanding for the output data this will be followed up at the end of lesson discussion.

The SensVest kit will then be removed to prevent damage by the work performed later in the lesson.

The athletes will then be split up into two groups of pairs for sparring. One group will be resting while the other group will be sparring. The groups will be changing every few minutes.

If there is excess time left over in the lesson more work with the pads will be done but without the SensVest.

At the end of the lesson, after the athletes have finished their stretches, everyone will be given a talk on the performance of the SensVest technology worn by the athlete. Explanations of how the output data is to be read will be given and answering of any questions. After the talk the athletes, observers and trainer will then be requested to fill in a questionnaire which will be about their satisfaction of what they learnt while the SensVest technology was used.

Lesson Guidelines:

10 minutes	Warm ups
10 minutes	<ul style="list-style-type: none">- Torso punch- Forward step kick- Turning Kick
5 minutes	Practicing patterns currently learnt by the athlete
10 - 20 minutes	Training Exercises
10 minutes	Optional pads work or sparring
5 minutes	Stretches to finish
15 minutes	Discussion about the results from the SensVest data and explain where athletes

	can improve their skills followed by a quick questionnaire for any observer, athlete and trainer to fill in making it clear in the feedback what they have learnt from the discussion.
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Torso punch

From Low Front Stance, position yourself with your right hip slightly forward and left hip slightly back, so the upper body is rotated. Do not rotate yourself so much so that your right elbow is not pointing in parallel with your feet. Right arm extends forward with a back of the hand pointing down, just before impact the right hand rotates so the back of the hand is pointing right. The fist is aimed for the face with fist tilted forward to have the index and middle knuckle hit the eye area. Simultaneously left hand closes into a fist and pulls back to the left hip ready for the next punch. During this technique do not turn the head, keep it fixated on the target.

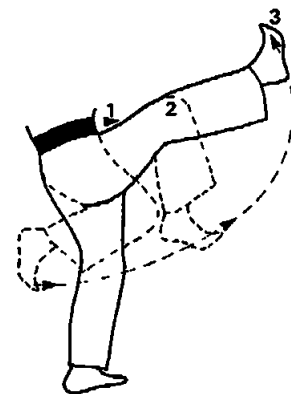


During this technique the SensVest technology can be used to examine the performance of the wearer and determine if they're correctly holding their posture along with applying enough force in their attack.

Foward Step Kick

Move both arms to the sides of the body held away from the body but straight. Fists should be level with the hips.

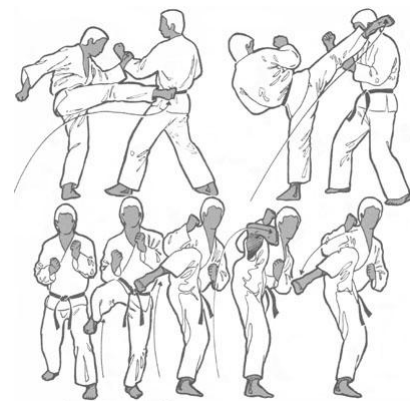
To start this move the athlete needs have their kicking leg as their leading leg, from there they will step forward with their rear leg and then the kicking leg is brought forward and upwards bending the knee. The Knee should now be in front of the body. The leg is then extended at the knee until almost straight. The leg should not be completely straight as this could damage the knee. The foot should be angles to kick with the ball of the foot with all toes pulled back. The leg should then be brought back to the knee. Then the kicking leg now the front leg should be placed down in front and the athlete should end as a low front stance with the kicking leg now in front.



During this technique the SensVest technology can be used to examine the performance of the wearer and determine if they're correctly holding their posture along with applying enough force in their attack.

Turning Kick

Similar to the Forward Step Kick the Turning Kick starts in a similar way. The athlete has their right foot, the kicking foot, in front of them then taking a step forward using their left





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foot and then proceed to kick with right by swinging it outwards away from the body and landing the blow between the opponents ribs and waist. During the kicking sweep it is important that the athlete turns their left leg 90° so their foot is no longer facing their opponent, this must be done otherwise the athlete is at risk of causing irreparable damage to their knee. Like the Forward Step Kick the athlete will be strike the opponent with the arch of the foot rather than the balls.

During this technique the SensVest technology can be used to examine the performance of the wearer and determine if they're correctly holding their posture along with applying enough force in their attack.

SensVest Discussion

After the athletes have completed the lesson material a 15 minute discussion will be held to explain how the athletes can improve their performance with the use of the SensVest Technology. When a single athlete is wearing the SensVest with the wrist and ankle accelerometers the data will be captured and translated into a graph showing the X, Y and Z of the accelerometers. Indicating to the class what the orientation of the accelerometer when placed on the athletes body, the class will then be shown that when the athlete moves his arm forward the respective axis will show a spike of movement. Through this it can be show how much force a athlete is putting into the movements and what direction it is travelling in.

Assessment (if applicable)

provides suggestions how to assess the activity in an informal setting