



## KLiC Activity Scenario Template – Informal Setting

Activity title:

Taekwondo: Defence Techniques

Subject:

Informal Sports Activities

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)

## Project Number

505519-LLP-1-2009-1-GR-KA3-KA3MP

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. Preceding 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"><li>- Axe Kick</li><li>- Break Boards</li></ul>
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.

### *Axe Kick*

The athlete begins in a front low stance and then proceeds to perform a kick in similar to a turning Forward step kick. The athlete must first step forward with their left foot then lift the right leg as high as the athlete can. The athlete is required to strike their target with the balls of their foot as a glancing blow with a downward action. When the athlete brings their leg down in a sweeping action it is crucial that they turn their left leg at the foot so not to damage the left knee. During this technique the athlete will use their arms for balance, when they lift their right leg up they will quickly lower their legs down in order to maintain balance and precision in their attack.



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.

### *Breaking Boards*

Unlike many martial arts Taekwondo utilises many of its attacks to inflict as much as possible in order to prevent further attacks from their opponent. This is why most often sparring involves protective gear to prevent permanent injury to the athletes. Because during sparring the athletes have to hold back during their practice while sparring the teaching has the opportunity to introduce work with break boards. Break boards are special boards made from plastic or wood that clips together allowing the athlete to attack in a variety of different ways in order to put enough force into the board to separate the two pieces. Initially the athlete will announce to the trainer, who is holding the break board, what attack they are performing and the trainer will get into position with the board to receive the attack. After the athlete has successfully performed the attack the trainer will proceed to give constructive criticism and the athlete will then proceed to perform their attack again. Traditionally there are many athletes being taught so the athlete may have to queue up before they can perform their technique on the board again.



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.



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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)

The purpose of this informal scenario is to encourage the understanding of salient features that can be recorded during training, in order to understand movement and force. No specific assessment recommendation is given, as the technology is there to support the trainer in illustrating techniques in an empirical way.