



KLiC Activity Scenario Template – Informal Setting

Activity title:

Karate: Basic Skills and Techniques

Subject:

Informal Sports Activity

Athlete age:

All Ages

Estimated duration:

75 minutes (excluding setup time)

Learning content

- 10 minute warm up
- basic punches, kicks, blocks and strikes in mid air
- practice Kata
- training exercises
- optional pad work or sparring
- stretches to finish
- 15 minute lesson review

Learning objectives

The aim of the specific scenario is to advance amateur Karate athletes basic skills and techniques through the use of the SensVest technology. After the demonstration of the use of the technology by the instructor, additional time will be spent to understand the results of the wearer's performance to all the athletes, as well as any other 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; communication base station with a Laptop and projector.

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Materials needed (if applicable)

Floor mats, Gi (clothing worn by athletes and instructor), hand pads

Description of Activities

Brief

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. Following this, the athletes will be demonstrated by the karate master the lessons basic techniques which will include punches, kicks, blocks and mid air strikes. During these exercises, where athletes practice the techniques, one of the athletes will be wearing the SensVest kit and their data will be recorded. This will also be done for the Kata.

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 have any questions or need clarification of understanding for the output data this will be followed up at the end of lesson discussion.

After the performance of the athlete's Kata, the SensVest will be removed from the athletes to prevent damage.

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 wearer athlete. Explanations of how the output data is to be read will be given and answering of any questions.

Lesson Guidelines

10 minutes	Warm ups
10 minutes	Within the first lesson the athletes will learn: <ul style="list-style-type: none">- The Yoi stance (and Kamae)- Jodan Zuki, a punch which is targeted for the head- Chudan Zuki, a punch which targets the torso
5 minutes	Practicing the Kata currently learnt by the athletes
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 feedback on what they have learnt from the discussion.

Yoi Stance

When performing the different techniques of a Kata, one must always be able to prepare themselves for a stance so that the techniques can be performed correctly. First the feet must be

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spaced apart so they're in line with the shoulders; the toes must be pointing forward forming two parallel lines. This will give a strong natural balance and make it difficult to be knocked over (figure 1). The arms are extended forward with a slight bend in the elbow, with the hands forming fists. Head remains facing forward. With the upper torso prepared like this the body is ready to strike and defend against an opponent.

Transition into Kamae (Parallel):

Extend right arm forward, as to punch an opponent and at the same time open left hand with the fingers together and thumb tucked in. Direct the left hand across right arm and covers right side of the face, this will provide momentary protection during the stance. Following punch, twist the upper torso from the hip and retract the right arm back with the fist stopping just above the belt. The right elbow must be point directly behind the individual and the back of the right hand must be facing the floor. The left arm comes around leaving the left hand placed forward in line with the centre of the body with the tip of the fingers about chin height pointing upward. During this the left hand will not rotate, the palm will still be facing the individual's right.



Figure 1: Yoi Stance

This stance (figure 2) is designed to allow the athlete to quickly and effectively deliver a right punch. It also gives a strong natural balance meaning people can't easily be toppled over. If the athlete was to simply use right hand and attack straight at the opponent, the opponent can shift your attack to miss or block it. At that instance there is an opportunity of the opponent to then strike the athlete from either the left or right side. The weakest point in the defence of the pupil will be the blind spot, the side the attack came from. From there the counter attack can cause the most amount of damage, this is why during the initial attack from the athlete will include a defensive counter measure during the attack.



This illustration has been taken from the original book of shodan. This stance looks very much like Enshin Kamae.

Figure 2: Illustration of Kamae

When the retraction from the attack is completed, the athlete is then ready to attack again in the same manner with the right fist primed next to the hip.

Chudan Zuki

From Kamae, 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 up. The fist is aimed for the solar plexus, just underneath the ribcage, at the centre of the body. Simultaneously left hand closes into a fist and pulls back to the left hip ready for the next

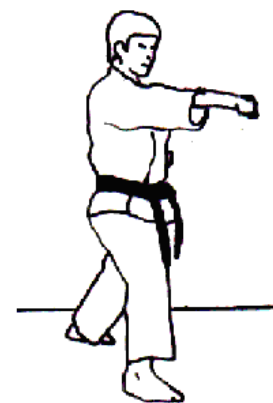


Figure 3: Ghudan Zuki

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punch. During this technique (figure 3) 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.

Jodan Zuki

From Kamae, 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 (figure 4) do not turn the head, keep it fixated on the target.



Figure 4: Jodan Zuki

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.

Training Exercises

The athletes will be separated into two teams; one team will be out training while the other team rests. The training till will be grouped in twos where they then train against each other and practice the moves they've been learning in that lesson. The instructor will be going around the class examining the performance of all the athletes and if they require any additional assistance the instructor will use provide it at his own discretion.

Optional Pads Work

It can be sometimes found that the athletes' performance is going ahead of schedule for the planned lesson. In these cases optional pads work can be done. During this the SensVest must be taken off encase of damage. The athletes will be arranged into groups of two to four where once will be wearing the hand pads and the others will be practicing their attacks. This is because during the training exercises the athletes withhold their attacks from making contact with their opponents. In this time athletes can make contact.

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



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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.

Glossary of Terms

Kata – form.

Kamae – posture.

Zuki – punch.

Chudan Zuki – chest area punch.

Jodan Zuki – head area punch.

Gi – traditional martial arts attire, commonly loose fitting trousers, shirt and a coloured belt dependant on your grading.

Image References

http://www.karate-aachen.org/images/techniken/voi_dachi.jpg

<http://pressurepointkarate.com/images/kamae-pic1.jpg>

[http://www.karateskifargentina.com.ar/Kata_Jion/Jion - 06 - Chudan zuki.gif](http://www.karateskifargentina.com.ar/Kata_Jion/Jion_-_06_-_Chudan_zuki.gif)

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[bonnevoie.lu/site/resources/images/20techimp/serie_c1_oi_tsuki_jodan.png](http://www.judoetjujitsu-bonnevoie.lu/site/resources/images/20techimp/serie_c1_oi_tsuki_jodan.png)

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.