



National Certificate of Educational Achievement  
TAUMATA MĀTAURANGA Ā-MOTU KUA TAEA

**2008**

## **Internal Assessment Resource**

Subject Reference: **Physical Education 1.2**

Internal assessment resource reference number:  
**Phys Ed/1/2\_A6**

### **Tae Bo**

Supports internal assessment for:

Achievement Standard 90068 v2  
Demonstrates knowledge of body structure and function related to  
performance of physical activity

Credits: 5

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**Date version published:**

August 2008

**Ministry of Education  
quality assurance status**

For use in internal assessment  
from 2008

## **Teacher Guidelines:**

### **Context/setting:**

It is expected that the anatomical features, biomechanical principles and physiological responses have been taught previously in conjunction with various physical activities as well as a “Tae-Bo” context. This activity requires students to apply a sample of this knowledge of the above principles to a “Tae-Bo” context.

### **Conditions:**

This assessment is to be completed in a controlled classroom setting. Students should **not** have access to notes.

### **Resource requirements:**

Photocopied assessment activities.

### **Possible local adaptation:**

A range of physical activities could be used.

Where local adaptations are made, teachers and schools should ensure that they have:

- checked that the adapted assessment validly assesses the achievement standard;
- checked the copyright status of any material imported into the assessment resource;
- complied with all internal and external quality assurance requirements.

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**Student Instructions Sheet**

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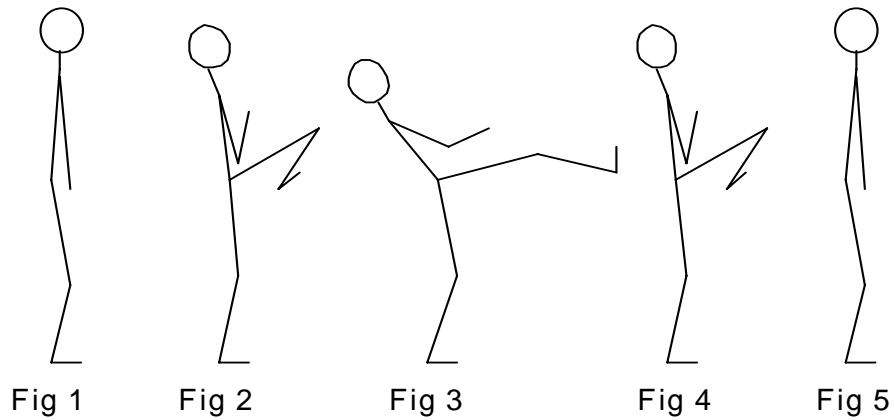
School/Institution	
Student Name	
Teacher or class	
Date	

Read through all the information given to you before starting work. Make sure that you understand what you are being asked to do. Ensure that you know what level of performance will be required to obtain an achievement, merit or excellence grade for this achievement standard.

You will complete this assessment at a specified time. Your teacher will give you clear instructions about the time and place for your assessment, and for the preparation work.

*You will have one hour to complete this activity in class. You are not to use notes or other resources. Attempt all questions.*

Figures 1 to 5 show a side-on view of a front kick. Use these figures to answer questions 1 and 2.



1. Complete the table to describe the movements identified for the kicking leg:

Figures	Joint	Action	Prime mover	Antagonist
1-2	Hip (kicking leg)	Flexion	Hip flexors	
2-3	Elbow		Triceps	
3-4	Knee (kicking leg)			
4-5	Hip (kicking leg)			Hip flexors

2. Explain how the quadriceps and hamstrings muscle groups work to control extension at the knee as shown from figures 2-3.

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Figure 6 shows a “cross” punch. Use this figure to answer question 3.

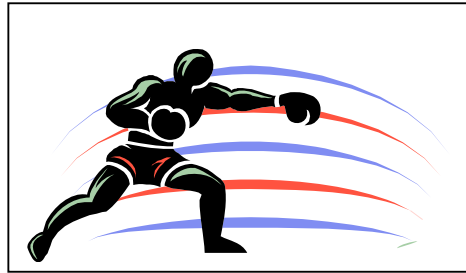


Figure 6

3. To achieve maximum power in a “cross” punch the trunk leads the movement. Explain why?

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Figures 7 and 8 show a side-kick. Use these figures to answer question 4.

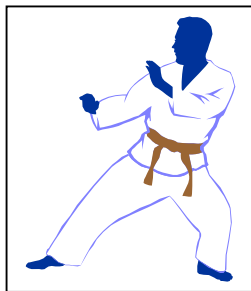


Fig 7



Fig 8

4. Show the approximate position of the centre of gravity in each diagram. (Mark the point with an “x”)
5. Explain how the position of the centre of gravity is important for balance.

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6. Identify and explain biomechanical principles that contribute to way the body moves in a side-kick.

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7. Complete the table below:  
a. Identify 2 other physiological changes in response to a "Tae-Bo" workout.  
b. For each change, explain in detail how it helps the body to manage the demands of the exercise.

a. Physiological response	b. Explanation (why?)
e.g. Sweating	Helps to remove extra heat generated by muscle action and helps cool the body.
1.	
2.	

8. For **each** of the two **body shapes** shown in figure 9, identify and explain an anatomical feature and a biomechanical principle that could provide an advantage in producing a more powerful punch.  
( Answer on diagrams and/or on following page)

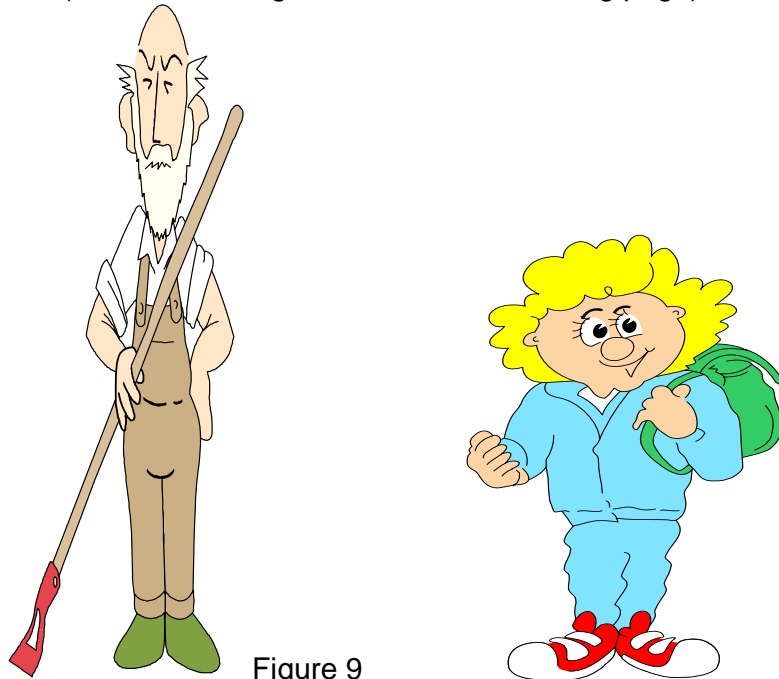


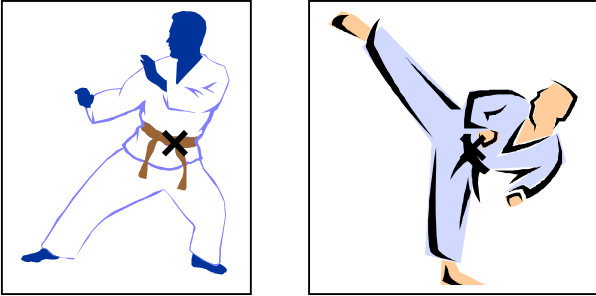
Figure 9



### Assessment Schedule – PhysEd/1/2\_A6 - Tae Bo

Note that the achievement, merit and excellence statements in normal print indicate the main requirement for the grades. Statements in italics show situations where students may supply further evidence to support the overall grade decision.

QUESTION	EVIDENCE	ACHIEVEMENT	MERIT	EXCELLENCE																									
1	<p>Table is completed.</p> <table border="1"> <thead> <tr> <th><i>Figures</i></th> <th><i>Joint</i></th> <th><i>Action</i></th> <th><i>Prime mover</i></th> <th><i>Antagonist</i></th> </tr> </thead> <tbody> <tr> <td>1-2</td> <td>Hip</td> <td>Flexion</td> <td>Hip flexors</td> <td><b>Gluteals</b></td> </tr> <tr> <td>2-3</td> <td>Elbow</td> <td><b>Extension</b></td> <td>Triceps</td> <td><b>Biceps</b></td> </tr> <tr> <td>3-4</td> <td>Knee</td> <td><b>Flexion</b></td> <td><b>Hamstrings</b></td> <td><b>Quadriceps</b></td> </tr> <tr> <td>4-5</td> <td>Hip</td> <td><b>Extension</b></td> <td><b>Gluteals</b></td> <td>Hip flexors</td> </tr> </tbody> </table>	<i>Figures</i>	<i>Joint</i>	<i>Action</i>	<i>Prime mover</i>	<i>Antagonist</i>	1-2	Hip	Flexion	Hip flexors	<b>Gluteals</b>	2-3	Elbow	<b>Extension</b>	Triceps	<b>Biceps</b>	3-4	Knee	<b>Flexion</b>	<b>Hamstrings</b>	<b>Quadriceps</b>	4-5	Hip	<b>Extension</b>	<b>Gluteals</b>	Hip flexors	At least 4 of 8 correct.		
<i>Figures</i>	<i>Joint</i>	<i>Action</i>	<i>Prime mover</i>	<i>Antagonist</i>																									
1-2	Hip	Flexion	Hip flexors	<b>Gluteals</b>																									
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2	E.g. quadriceps is the prime mover for extension at the knee and contracts to produce the movement. The hamstrings relax to allow extension to occur then contract towards the end of the movement to slow the extension.	Some valid information is described	Explanation shows understanding of the interaction between agonist and antagonist muscles, i.e., quadriceps contracts, hamstring relax.	Explanation shows greater detail of understanding of the interaction between agonist and antagonist muscles, see example																									
3	E.g. the bigger stronger muscles of the upper body/trunk initiate the movement followed by the muscles of the upper arm and finally the lower arm. To gain maximum force in the cross punch all muscles will be used. The muscles need to be used sequentially. The entire movement must be completed over a stable base as this will ensure maximum force.	Some valid information is described	Explanation shows some understanding of the principle of force summation as it applies to a punch.	Explanation shows detailed understanding of the principle of force summation as it applies to a punch.																									

QUESTION	EVIDENCE	ACHIEVEMENT	MERIT	EXCELLENCE
4		Position of centre of gravity accurately shown in diagrams.		
5	E.g. for balance the centre of gravity must be vertically over the base of support.	Statement shows understanding that the line of gravity passes through the support.	Explanation indicates that a force outside the line of support causes a turning/toppling moment.	
6	E.g. as the foot moves away from the base of support, the upper body moves the opposite direction to keep the centre of gravity above the support and therefore maintain stability.	Some valid information is described	Explanation shows understanding that as one part of the body moves another part must move in the opposite direction.	As for merit, plus additional detail demonstrating understanding that the movements compensate to keep the centre of gravity above the support.

QUESTION	EVIDENCE	ACHIEVEMENT	MERIT	EXCELLENCE								
7	<p>The table is completed.</p> <table border="1" data-bbox="338 354 1041 743"> <thead> <tr> <th data-bbox="338 354 606 423">a. Physiological response</th> <th data-bbox="606 354 1041 423">b. Explanation why?</th> </tr> </thead> <tbody> <tr> <td data-bbox="338 423 606 493">e.g. sweating</td> <td data-bbox="606 423 1041 493">Helps to remove extra heat generated (by muscle action).</td> </tr> <tr> <td data-bbox="338 493 606 631">1. Breathing rate increases</td> <td data-bbox="606 493 1041 631">Gets more oxygen into the lungs (so it can be taken by the blood to be used by the working muscles).</td> </tr> <tr> <td data-bbox="338 631 606 743">2. Heart rate increases</td> <td data-bbox="606 631 1041 743">Gets blood, (and therefore oxygen), around the body faster to the working muscles.</td> </tr> </tbody> </table>	a. Physiological response	b. Explanation why?	e.g. sweating	Helps to remove extra heat generated (by muscle action).	1. Breathing rate increases	Gets more oxygen into the lungs (so it can be taken by the blood to be used by the working muscles).	2. Heart rate increases	Gets blood, (and therefore oxygen), around the body faster to the working muscles.	2 additional changes are described.	An accurate explanation is given for each response.	A detailed and accurate explanation is given for each response.
a. Physiological response	b. Explanation why?											
e.g. sweating	Helps to remove extra heat generated (by muscle action).											
1. Breathing rate increases	Gets more oxygen into the lungs (so it can be taken by the blood to be used by the working muscles).											
2. Heart rate increases	Gets blood, (and therefore oxygen), around the body faster to the working muscles.											
8	<p>A biomechanical and an anatomical feature are identified and explained for each of the 2 body shapes.                      E.g. the tall person has longer bones that provide longer levers. Longer levers will result in greater speed for punching power.                      The small muscular person could have greater mass in the arms and shoulders. A greater force could be applied with larger muscles.</p>	Student describes valid anatomical and biomechanical principles.	As for achievement but reasons are explained	As for merit but detailed reasons are explained in detail.								
9	<p>E.g. high intensity exercise uses mainly anaerobic energy sources. A by-product of using anaerobic sources of energy can be lactic acid, which is hard to get rid of. It accumulates in the muscles and blood creating fatigue. Therefore the high intensity exercise can only be maintained for a short time.</p>	At least 2 ideas related to physiology principles are described in a basic way.	Explanation indicates why duration and/or intensity of exercise will cause fatigue.	Explanation shows a clear understanding of the relationships between duration and intensity of exercise.								

**The final judgement for Achievement, Merit and Excellence will be awarded as follows:**

Achievement: 6 of the 9 opportunities for achievement or better.

Merit: 5 of the 7 opportunities for merit or better, and achieved for all other questions

Excellence: 4 of the 6 opportunities for excellence, and highest possible grade in questions 1, 4, and 5