

Internal Assessment Resource

Physical Education Level 1

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| This resource supports assessment against:  Achievement Standard 90963 version 3  Demonstrate understanding of the function of the bodyas it relates to the performance of physical activity |
| Resource title: Shoot Hoops |
| 5 credits |
| This resource:  Clarifies the requirements of the standard  Supports good assessment practice  Should be subjected to the school’s usual assessment quality assurance process  Should be modified to make the context relevant to students in their school environment and ensure that submitted evidence is authentic |

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| Date version published by Ministry of Education | February 2015 Version 3  To support internal assessment from 2015 |
| Quality assurance status | These materials have been quality assured by NZQA.  NZQA Approved number A-A-02-2015-90963-02-4557 |
| Authenticity of evidence | Teachers must manage authenticity for any assessment from a public source, because students may have access to the assessment schedule or student exemplar material.  Using this assessment resource without modification may mean that students’ work is not authentic. The teacher may need to change figures, measurements or data sources or set a different context or topic to be investigated or a different text to read or perform. |

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| Internal Assessment Resource |

Achievement Standard Physical Education 90963: Demonstrate understanding of the function of the body as it relates to the performance of physical activity

Resource reference: Physical Education 1.2A v3

Resource title: Shoot Hoops

Credits: 5

Teacher guidelines

The following guidelines are designed to ensure that teachers can carry out valid and consistent assessment using this internal assessment resource.

Teachers need to be very familiar with the outcome being assessed by Achievement Standard Physical Education 90963. The achievement criteria and the explanatory notes contain information, definitions, and requirements that are crucial when interpreting the standard and assessing students against it.

Context/setting

This activity requires students to participate in a number of 3 v 3 street-ball games, in preparation for a street-ball competition.

As part of the teaching and learning programme, students need to build knowledge that enables them to be able to demonstrate their understanding of how the body functions in relation to the performance of specific skills involved in the game. This understanding needs to incorporate aspects of anatomy, biomechanics and exercise physiology.

During the ‘practice’ period (at least 2 weeks) when students are training for the tournament phase of the street ball competition, you need to ask the student to explain what he or she has just demonstrated in terms of the anatomy and biomechanics of the movement.

Teachers will need to do this on two occasions with different skills.

It is expected that students will give a verbal response that will take less than 5 minutes. Teachers will need to record comments about the quality of the student responses and their level of understanding.

For example: a student practices a free throw shot. The student then explains the movement and corresponding muscular involvement, and discusses any aspects of biomechanics that are involved.

Teachers could record these conversations using a dictaphone, digital recorder or video recorder.

At the end of the street ball tournament, the student will have reflected on the physiological requirements for this sport. They will complete a report which is to be supervised, during class time, about the exercise physiology involved in the sport of street ball.

Conditions

This assessment activity will take place in ongoing assessment opportunities during in-class time.

You will need to draw evidence of comprehensive understanding holistically from the demonstrations, verbal student responses and homework assignments.

You may wish to set up interview times for your students or allow them to see you during the normal lesson(s).

Resource requirements

Students will need access to exercise facilities (e.g. gym, sports fields, track, swimming pool, dance studio), and exercise equipment such as weights.

Additional information

Adapt assessment modes to reflect the needs of your students, the nature/context of your teaching and learning programme, and the facilities/environment you work in.

Teachers might select other appropriate modes of assessment, such as:

* self-assessment
* peer assessment
* written task
* electronic portfolio
* Blog/Wiki
* visual portfolio.

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| Achievement | Achievement with Merit | Achievement with Excellence |
| Demonstrate understanding of the function of the body as it relates to the performance of physical activity. | Demonstrate in-depth understanding of the function of the body as it relates to the performance of physical activity. | Demonstrate comprehensive understanding of the function of the body as it relates to the performance of physical activity. |

Student instructions

Introduction

This assessment activity requires you to participate in a teaching and learning programme with a focus on 3 v 3 street-ball games, in preparation for a street ball competition.

During the practice phase prior to the tournament, you will need to show your understanding of the relationship between anatomy and biomechanics and your performance of street ball skills. This will be gathered by oral reports during in-class time.

You will then show your understanding of how exercise physiology is related to your performance in street-ball, in a written report that you will complete in class time under supervised conditions.

Your verbal reports will take place in two training/practice sessions over the course of three weeks. Your teacher will specify a due date for your written report.

You will be assessed on your depth of understanding of how the body functions in relation to performance of street-ball.

Task

There are two parts to this task. Complete both parts.

Anatomy and Biomechanics

During the street-ball training/practices, think about what is happening to your body, its movements and your resultant performance. What is happening in the performance of skills involved in street-ball, in relation to:

* basic anatomy
* biomechanics.

After you have had sufficient time to develop your understanding in practice/training sessions, demonstrate at least two different skills and explain comprehensively the anatomy and biomechanics involved. You can present your explanations verbally.

Your teacher will ask you what is happening in a particular action, e.g. a free throw, and how anatomy and biomechanics are involved.

Your teacher will ask you this on two occasions, about two different skills.

Your teacher will record notes about the level of understanding you demonstrate. For guidance, refer to: Student Resource A: Further guidance.

Exercise physiology

Present a report that demonstrates your understanding of how exercise physiology is involved in street-ball. Note that this will be supervised during in class time.

For guidance, refer to: Student Resource A: Further guidance.

Student Resource A: Further guidance

Anatomy and Biomechanics

You will need to explain:

* the movements that occur around the joints that are involved
* the muscles involved; both agonist and antagonist and how these contribute to the movement
* the biomechanical principles that are involved in the action of the skill. These principles may include balance/stability, projectile motion, Newton’s laws or force summation. You should explain what the principle is, how it is applied in action in relation to your skill, why it is important to apply, what the resultant effect will be on your performance of the skill.

Exercise physiology

During practice/training sessions, you are advised to take measurements (e.g., recovery rates; heart rate; breathing rate; look, feel and colour of skin), record notes and develop conclusions about how your body performs, and why.

Consider the following about when you played the game of street-ball:

* what were the immediate (acute) physiological changes that were happening to your body for each of the cardiovascular, respiratory, and muscular systems? How did these affect the way you played?
* what are the major energy systems used in street ball? Explain when the energy systems are used in street-ball and provide specific examples from your participation to support your understanding of the energy systems and contribution they play. Explain how/why does that affect the way you play the game?
* If you wanted to play this game at the highest level, and trained hard for 6 months to a year, what chronic (long term) changes would you see?

Assessment schedule: Physical Education 90963 Shoot Hoops

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| **Evidence/Judgements for Achievement** | **Evidence/Judgements for Achievement with Merit** | **Evidence/Judgements for Achievement with Excellence** |
| The student demonstrates understanding of the function of the body as it relates to the performance of physical activity.  The student completes a range of suitable physical activities in training/practice sessions in preparation for a street-ball tournament, observes how their body functions in these activities, and gives a demonstration and verbal account of how aspects of anatomy and biomechanics are involved in the two specific physical activities/skills.  In their verbal account, the student describes at least one aspect of basic functional anatomy involved in the street-ball activity/ies, e.g. anatomical movement, bones and muscles involved in the movement, agonists and/or antagonists.  In their verbal account, the student describes at least one basic principle of biomechanics (depending on the context used), e.g. balance/stability, projectile motion, Newton’s laws or force summation.  The student reports on how exercise physiology is involved in/affects how the body functions in the physical activities of the sport. This might include, for example, a simple account of basic physiological responses to large muscle locomotor-type activities (depending on the context used) such as acute and chronic response to training, energy systems.  For example:  Free Throw shot  Anatomy and biomechanics demonstration and verbal evidence  *“The movement at my elbow is flexion to extension when I shoot the ball. The agonist muscle is the tricep and the antagonist is the bicep.*  *I need to think about force summation when I do my free throw. I need to use as many segments of the body as possible and use the correct timing and use my full range of motion to try to get the ball in the hoop.”*  Exercise physiology report  *“When I played my heart rate increased and so did my respiration rate. After I had been playing for about 5 minutes I began to sweat and my muscles were really tired from running up and down the court.*  *“Because we were playing nonstop for 7 minute halves it was an aerobic activity which uses my aerobic energy system. That is an activity that happens for more than 60 seconds.*  *If I trained hard for 6 months to a year for street-ball I would be fitter because my heart would be stronger and more efficient…”* | The student demonstrates in-depth understanding of the function of the body as it relates to the performance of physical activity.  The student completes a range of suitable physical activities in training/practice sessions in preparation for a street-ball tournament, observes how their body functions in these activities, and gives a demonstration and verbal account of how aspects of anatomy and biomechanics are involved in the two specific physical activities/skills.  In their verbal account, the student explains basic functional anatomy involved in the street-ball activities, e.g. anatomical movement, bones and muscles involved in the movement, agonists and/or antagonists.  In their verbal account, the student explains basic principles of biomechanics (depending on the context used), e.g. balance/stability, projectile motion, Newton’s laws or force summation.  The student reports on how exercise physiology is involved in/affects how the body functions in the physical activities of the sport. This might include, for example, an account of basic physiological responses to large muscle locomotor-type activities (depending on the context used) such as acute and chronic response to training, energy systems.  The student explains, in their verbal account and written report, why the body functions in the manner described in performing the physical activities completed.  For example:  Free Throw shot  Anatomy and biomechanics demonstration and verbal evidence  *“The movement at my right elbow (hinge joint) for the free throw shot is flexion to extension when I shoot the ball. The agonist muscle is the tricep and the antagonist is the bicep. At the same time my left and right knees (hinge joint) are moving from flexion to extension. This means that the quadriceps is the agonist and the hamstrings are the antagonist. Muscles work in pairs to produce movement. While one is contracting, the other is relaxing.*  *I need to think about force summation when I do my free throw. I need to use as many segments of the body as possible as well as use the correct timing using my large muscles first, and then my smaller muscles last, but fastest. If I did not get the correct timing of my body segments then my free throw shot would be un-co-ordinated and there would not be as much maximum force put behind the ball to go into the hoop. I also need to use a full range of motion which would also generate more force.”*  Exercise physiology report  *“The immediate effects from when I played were that my breathing and heart rate increased which allowed more oxygen to be delivered to my muscles. Because of this I can perform with more effort as I don’t get tired as quickly as the increase in oxygen fuels my muscles.*  *I also noticed that I was sweating lots. Sweating occurs to help cool down the temperature of the body because all the intense exercise is heating up the body.*  *I found that I used two major energy systems in street-ball. I think that you need an aerobic base (aerobic energy system – as the game lasts for more than 60 seconds) but there is a large part of the game that uses the Lactic acid system as we have a rest when the ball goes out and when it is thrown in from half way when a goal is scored. This rest allows me to suck up the oxygen.*  *“If I trained hard for 6 months to a year for this then there would be some significant long term changes to my body. My muscles would get bigger and stronger as I would do a weights programme to help me jump higher. I would also do some aerobic training to improve my cardio vascular efficiency and some anaerobic training so my body can get used to getting less tired. When I train like this my heart gets bigger and can pump more blood in one beat therefore more oxygen to the muscle…”* | The student demonstrates comprehensive understanding of the function of the body as it relates to the performance of physical activity.  The student completes a range of suitable physical activities in training/practice sessions for a street-ball competition in Sport Education, observes how their body functions in these activities, and gives a demonstration and verbal account of how aspects of anatomy and biomechanics are involved in the two specific physical activities/skills.  In their verbal account, the student explains in detail basic functional anatomy involved in the street-ball activities e.g. anatomical movement, bones and muscles involved in the movement, agonists and/or antagonists.  In their verbal account, the student explains in detail basic principles of biomechanics (depending on the context used), e.g. balance/stability, projectile motion, Newton’s laws or force summation.  The student reports on how exercise physiology is involved in/affects how the body functions in the physical activities of the sport. This might include, for example; basic physiological responses to large muscle locomotor-type activities (depending on the context used) such as acute and chronic response to training, energy systems.  The student explains, in their verbal account and written report, how and why the body functions in the manner described in performing the physical activities completed.  The student explains how anatomical structure relates to (affects/limits) the performance of a physical activity, uses biomechanical principles to explain the performance of a physical activity  The student explains how physical activity and how the physiological responses (e.g. heart rate) relate to the intensity of a physical activity.  For example:  Free Throw shot  (Anatomy and biomechanics demonstration and verbal evidence)  *“The movement at my right elbow (hinge joint) for the free throw shot is flexion to extension when I shoot the ball. Extension is when you straighten or increase the angle between two bones. The agonist muscle is the tricep and the antagonist is the bicep. At the same time my left and right knees (hinge joint) are moving from flexion to extension. This means that the quadriceps is the agonist and the hamstrings are the antagonist. Muscles work in pairs to produce movement. While one is contracting, the other is relaxing. Antagonists help control the speed of the movement and ensure the joint does not move beyond its range.*  *The antagonist muscles of the Bicep contract at the end of the motion to slow down the speed of the elbow and to help with the control and accuracy of the shot.*  *I need to think about force summation when I do my free throw. In order for the ball to go into the hoop for the free throw, a force must be applied to the ball. I need to use as many segments of the body as possible as well as use the correct timing using my large muscles first, and then my smaller muscles last, but fastest. This means that I would use my quadriceps, hamstrings and gluteal muscles first and the muscles in my wrist the last, but fastest. If I did not get the correct timing of my body segments then my free throw shot would be un-co-ordinated and there would be less force generated meaning that the free throw shot would be unsuccessful. It would probably not have enough height or distance to reach the hoop. I also need to move the body segments through the greatest range of motion as I possibly can. I found that when I did not do this, the ball fell short of the backboard, and so by using the full range of motion, I could generate more force behind the ball, and my shots would be more successful.”*  Exercise physiology report  *“When I played the game my immediate short term effects was that my breathing rate increased as well as my heart rate so this allows more oxygenated blood to be delivered to the working muscles when I am playing street-ball. An example of this is when my heart rate changed from its resting heart rate of 60 beats per minute to 120 beats per minute and my breathing rate changed from 16 breaths per minute to 22 breaths per minute. My heart had to speed up as my muscles were working harder while I ran around the court and therefore needed more oxygen to work efficiently. I did notice they got sore. My breathing rate got quicker as I had to get more oxygen into my lungs so that this oxygenated blood could be transferred to working muscles. I found that I got tired quite quickly and this caused me to not be so efficient on defence and my free throw shots were not effective.*  *I also noticed that I was sweating lots which meant that my body temperature was increasing. Sweating occurs to help cool down the temperature of the body because all the intense exercise is heating up the body. Also because my body temperature was increasing my muscles also were getting warmer which made them more elastic and flexible.*  *“I found that I used two major energy systems in street-ball. I think that you need an aerobic base to start with but there is a large part of the game that uses the lactic acid system as we have a rest when the ball goes out and when it is thrown in from half way when a goal is scored. This rest allows me to suck up the oxygen. I need to suck up the oxygen to replace what I have used and also to allow the lactate in my muscles to reduce and my legs will not feel as tired.*  *“If I trained hard out for 6 months to a year for this then there would be some significant long term changes to my body. My muscles would get bigger and stronger as I would do a weights programme to help me jump higher. I would also do some aerobic training to improve my cardio vascular efficiency and some anaerobic training so my body can get used to getting less tired. When I train like this my heart gets bigger and can pump more blood in one beat therefore more oxygen to the muscle. Both my resting and working heart rate will decrease as your heart is doing less work because the heart becomes more efficient at transporting oxygenated blood around the body. This is possible because with training, the heart, just like a muscle, becomes bigger and stronger. The heart can pump out more blood per beat (SV) and therefore can beat less often that at the start of my training programme. The heart rate also returns to normal more quickly after a game. Your will recover quicker as your body is fitter and can handle and take physical activities due to this benefits of the long term training.*  *“My muscles would also be more tolerant to the build up of lactic acid and they would have more fibres to be stronger and faster. This will help me beat an opponent around the court and be more accurate with my lay up as I can get higher of the ground and closer to the net.”* |

Final grades will be decided using professional judgement based on a holistic examination of the evidence provided against the criteria in the Achievement Standard