

TUTORIAL 4

Quintic[®]

1 for Sports Analysis

Tutorial 4 - Answer Sheet

RECAP – Only compete this if you have Quintic Sports, Quintic Coaching or Quintic Biomechanics.

Open 'IG-Side' from the golf folder

- 1)
 - (i) Scroll to the frame just before the golfer starts his back swing.
 - (ii) Measure the angle between the golfers arms.
 - (iii) Create a 6 frame multiple screen capture sequence of this skill with this angle visibly drawn in each frame.
 - (iv) Save this as a JPEG.
 - (v) Open this multiple screen capture sequence in Microsoft Word and add an appropriate title.
 - (vi) Below this picture, type a short description of putting technique that you have learned from watching this clip. Focus particularly on the angle of the arms throughout the shot. Ask your teacher if you may print this.

BACK TO TUTORIAL SHEET

(PAGE 35)

QUESTIONS

- 1) Open the following videos. For each one state whether they are best viewed in the vertical mode the horizontal mode or whether they are equally as good in both. (*Hint: Watch the whole clip through in both modes before deciding on your answer*)

Video	Best in Vertical	Best in Horizontal	Both
Athletics 100m sprint		X	
Rugby Punt	X		
Boxing UC Shot	X		
Fast bowling SV			X
Trampoline 2.5 twist	X		

(5)

- 2) Think of 3 other sports actions that could be seen completely in the Vertical and Horizontal Mode.

<u>Vertical</u>	<u>Horizontal</u>
<i>Trampoline</i>	<i>Hurdles</i>
<i>Rings</i>	<i>100 m sprint</i>
<i>Diving (vertical movement)</i>	<i>Golf swing (horizontal movement)</i>

(6)

Open the video clip ‘Drop-punt right’ from the Rugby Folder

- 3) You are a PE teacher; describe this skill to a beginner : They are right footed.
- *Start with feet shoulder width apart, arms slightly in front of your body with elbows flexed holding the ball at the top (left hand) and the bottom (right hand) at waist height.*
 - *Look down at the ball and take 2 strides starting on your left leg, leaning slightly forward.*
 - *When right foot contacts with the ground after the 2nd stride drop the ball from waist height. Extending the left arm to the side and behind.*
 - *As the ball is dropping aim to plant the left leg to the side of where the ball is dropping.*
 - *Start to lean back slightly while bringing right (striking) leg forward. Keep leg flexed at the knee until both thighs are level.*
 - *Flex knee causing kicking action of the lower leg, while plantar flexing the foot. So that contact with the ball is made on the laces (top of the foot).*
 - *Aim to kick the ball when it is about 15 cm off the floor.*
 - *After kicking the ball the leg should continue to flex at the hip joint, extension of the knee continues until horizontal.*
 - *Left arm should also flex forward to help keep balance.*
 - *The leg will start to decelerate 2 frames after impact and be brought back down to the ground under control.*
- (5)
- 4) Now, imagine you are teaching this skill to a left-footed person. Write down how you would describe the movement to them.
- *Start with feet shoulder width apart, arms slightly in front of your body with elbows flexed holding the ball at the top (right hand) and the bottom (left hand) at waist height.*

- *Look down at the ball and take 2 strides starting on your right leg, leaning slightly forward.*
- *When left foot contacts with the ground after the 2nd stride drop the ball from waist height. Extending the right arm to the side and behind.*
- *As the ball is dropping aim to plant the right leg to the side of where the ball is dropping.*
- *Start to lean back slightly while bringing left (striking) leg forward. Keep leg flexed at the knee until both thighs are level.*
- *Extend the knee quickly causing kicking action of the lower leg, while plantar flexing the foot. So that contact with the ball is made on the laces (top of the foot).*
- *Aim to kick the ball when it is about 15 cm off the floor.*
- *After kicking the ball the leg should continue to flex at the hip joint, extension of the knee continues until horizontal.*
- *Right arm should also flex forward to help keep balance.*
- *The leg will start to decelerate 2 frames after impact and be brought back down to the ground under control.*

(5)

BACK TO TUTORIAL SHEET

(PAGE 36)

5) In the video clip **Drop-punt right** from rugby folder you have ‘flipped’ the image.

(i) Use this **mirror-image** to write a description of the skill to the left-hander you are teaching.

See answer for question 4

(4)

(ii) Was it easier to write this description than your answer to question 4? Explain your answer.

This exercise should now be a lot easier as the video will now show the skill, as a left footed player would perform it.

(3)

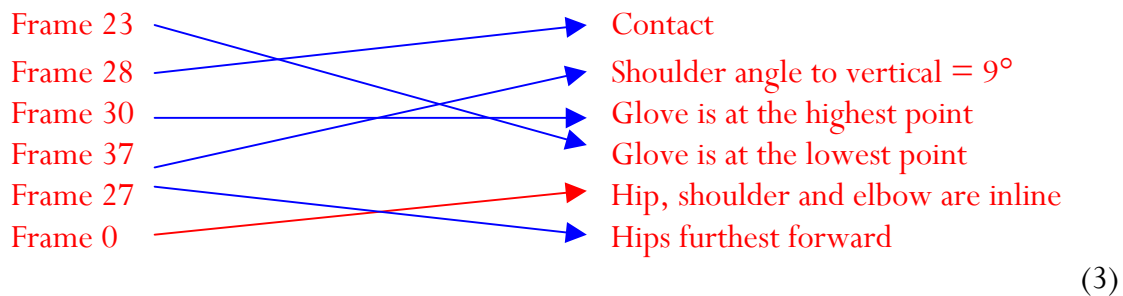
BACK TO TUTORIAL SHEET

(PAGE 36)

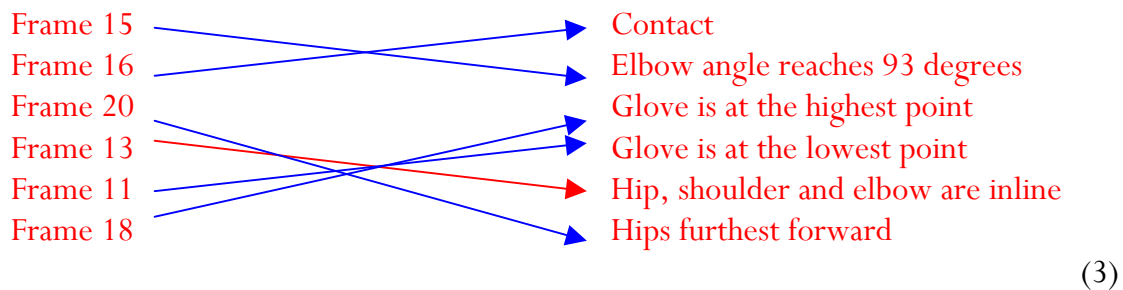
6) (i) Open the video ‘**Boxing UC shot**’ from the boxing folder in the main window.

(ii) Open the video ‘**Boxing arm shot**’ from the boxing folder in the best window.

(iii) First look at the video in the main window. Match up the frames with the correct description of the action you can see in them. The first one has been done for you.



(iv) Now look at the video in the **Best Window**. Match up the frames with the correct description of the action you can see in them.



7)

(i) Pause both videos at the point of impact (use the video scroll bar to get the exact frame).

(ii) Synchronise the videos

(iii) Describe any differences you see in:

Path of arm during the movement?

During the uppercut, the arm stays flexed throughout the movement where as with the straight arm punch the arm goes from flexion to extension in a short period of time to generate the force.

Angle of the elbow at impact?

Angle of elbow during the straight-arm punch is 167 degrees where as in the uppercut it is 112 degrees at contact this shows that the elbow is in a more flexed position at contact during the uppercut.

Height of shoulder throughout the movement?

During the straight arm shot the height of the shoulder remains constant where as during the uppercut the shoulder height drops quickly at the start then increases back to the original height by the time contact is made.

Angle of the shoulder at impact?

The angle of the shoulder at impact with the straight arm punch is 97 degrees where as with the uppercut the angle is 71 degrees.

Path of the hand in the follow-through?

In both movements the path of the hand punches through the pad before returning to the start position. During the straight arm punch the arm returns back to body in straight line. Where as during the upper cut the arm returns back to the start position before moving to the side.

BACK TO TUTORIAL SHEET

(PAGE 38)

BLEND

8)

- (i) Open the video ‘ **discus female**’ from the athletics folder in the main window.
- (ii) ‘Set Background’ at Frame 0.
- (iii) Describe the differences you can see in the player’s movement between the background and:

Frame 11?

Athlete’s arm has moved clockwise (backwards) from starting position, left leg is flexed, and closer to the Ground.

Frame 20?

Athlete has now started moving anticlockwise and has passed her starting position, body has become more upright (extended) and legs are also extended.

Frame 34?

Athlete has continued rotating anticlockwise and is now balanced on her right leg with her left leg flexed behind her. Her throwing arm (right) is also now behind her body. Athlete has also completed a full rotation and is positioned in the centre of the circle.

Frame 44?

Athlete has continued rotating anticlockwise and is now totally off the floor, her throwing (right) arm has come in front of her body and her left arm is flexed and at her side. Athlete is now also positioned at the front of the throwing circle.

Frame 54?

Athlete has continued in her anticlockwise movement and is landing on her right leg while her left leg is flexed and still in the air, the athlete is now also facing out of the cage towards the field, with both arms extended into the air.

(10)

OVERLAY

9)

- (i) Open the video '**Batting - Off-drive - FV**' from the cricket folder in the Main Window
- (ii) Open the video '**Batting - On-drive - FV**' from the cricket folder in the Best Window.
- (iii) Synchronise the two videos at ball impact.
- (iv) Name 3 differences and 3 similarities you can see between the two shots.

Differences

- *Off drive left leg steps out more.*
- *Off drive steps across line of the ball.*
- *On drive looking down at floor when contact with ball is made.*

Similarities

- *Finishing position for both shots is the same.*
- *Starting stance is the same.*
- *Back swing length and timing is the same for both shots.*

(/ 60)