Quintic Software

Tutorial 2

Make a Mark

Contents Page

1. Markers and Stopwatch

Open the video **'400m Hurdles'** in the **'Athletics'** folder.

Open up the marker tab. Markers are used to jump between key frames of a video file. Use the video scroll bar to advance the video to frame 59. Once you have done this press Marker number **'1'**. This will now change to show frame number 59, see below.
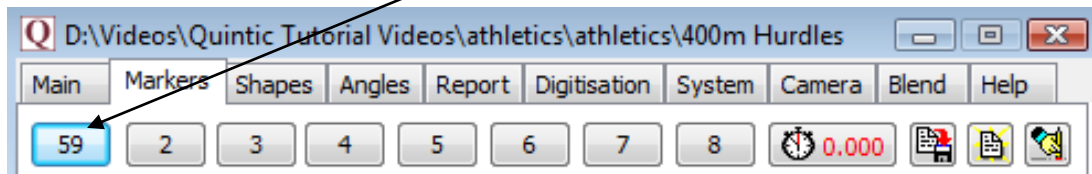
Repeat this process and set the other markers to the key frames: 65, 71, 77, and 85. Once you have done this press the **'Save all Markers'** 🖼️ button.

If you make any mistakes and want to clear the markers you have indicated, press this button 🖼️ and start again.

If you want to delete one marker click on the marker and press the 'CTRL' button to reset this marker.

This has the same effect as for the memo pad. If you close down the whole program and reload this video, the saved markers will also be loaded by pressing the 📄 button.

Click on Marker 1 - frame 59, the moment of take-off. Click on the ⏱️ 0.000 button. This has set the stopwatch to measure the time elapsed from Marker 1 (frame 59). If you then click on Marker 4 (frame 77), this will show the elapsed time between the two frames (0.36 seconds) and advance the video to this frame.

N.B. If the video has been recorded over a speed of 100fps please set the correct recording speed via the **'Digitisation'** menu, otherwise elapsed times will be calculated at the default speed of 30fps (see Tutorial 8a for more details).

2. Creating Lines, Shapes and Text

Reset the **'400m Hurdles'** video clip to the beginning and click on the **'Shapes'** tab as shown below.
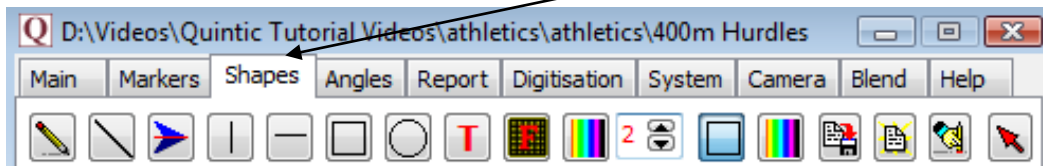
A number of the buttons under this tab allow you to draw shapes on the video image. The shapes will stay on throughout the video clip unless you remove them. Try them out.

Draw any of the shapes by clicking on the shape button you require, moving the cursor over the screen to where you want the shape to be, then holding down the left mouse button and dragging the shape across the screen.

Play the video through once you have added some shapes.

This buttons allow you to erase all the shapes you have drawn.

The button allows you to select any shape and erase it. Select this button, and then hold the cursor over the shape you'd like to erase. The shape will be highlighted and if you then double-click the left mouse button it will be erased.

There are some buttons that allow you to change the thickness and colour of the lines you draw.
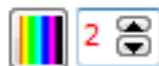
There are some more buttons that allow you to decide whether the shapes drawn have a clear or coloured background.

Click on the button with a red **'T'** on it and you can place some writing anywhere on the video image you like. Click the **'F'** that appears next to the sample text box and you can change its font.
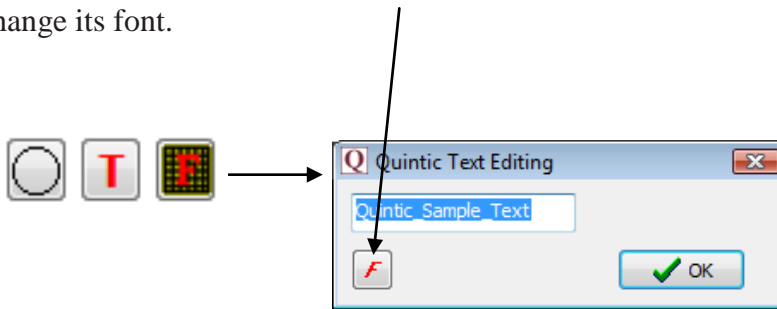
3. Calibrating and Measuring Linear Distances

To measure a desired distance on a video, the video first needs to be calibrated, this is done by right clicking on the ◻ button and then following the on screen instructions.

N.B. This process only works in Sports. Extra calibration methods can be performed in Coaching and Biomechanics for improved accuracy. Please refer to Tutorial 8a.

After the calibration process has been completed a desired distance can be measured by left clicking on the ◻ button and drawing a straight line between the two points you wish to measure. When the line has been drawn on the video, the distance in metres or inches (depending on calibration) will appear on the bottom tool bar underneath the **'Photo'** and **'Memo Pad'** buttons.
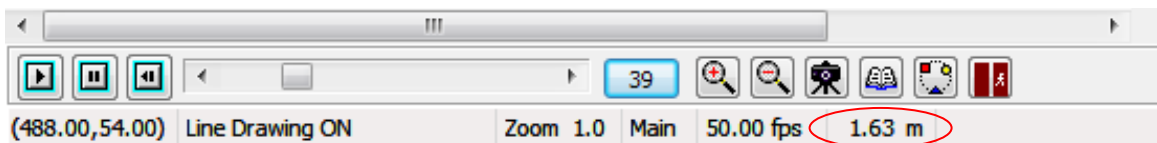
4. Angles

Open the video **'Batting back foot drive - SV'** from the **'Cricket'** folder. Now click on the **'Angles'** tab. This function allows you to draw angles on the screen.

There are three different types of angles that can be created. For each one, hold down the left mouse button and drag on the screen the length of the object for which you wish to measure an angle, then release the mouse button. Examples of these angles are shown below:
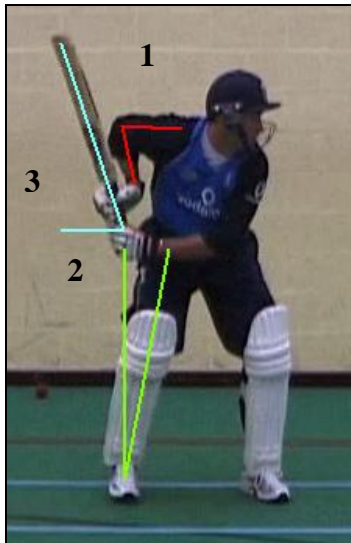
1. The angle between two straight lines (1) e.g. Elbow angle.

2. The angle between a line you specify and an exactly vertical line (2) e.g. angle of body lean.

3. The angle between a line you specify and an exactly horizontal line (3) e.g. angle at which the bat is being held.

In the same way as the shapes, the colour and thickness of the angles can be changed using the ▐▐▐ 2 ⬍ buttons.

These angles have automatically been calculated for you and can be displayed by clicking the 🞒 button on the right hand side at the top.

The results shown in the left column are the acute angles, and the results shown in the right column are the obtuse angles.

Acute Angle

Obtuse Angle
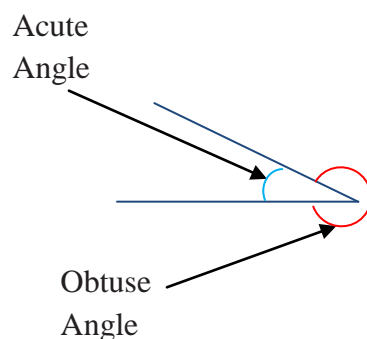
Results	
Trace Angles	
75.32°	284.68°
9.95°	350.05°
60.56°	299.44°

5. Floating Toolbars

To load the floating toolbars left click on the desired window tab ('Markers', 'Shapes' or 'Angles') and this will load the desired window. Now right click on the 'Markers', 'Shapes' or 'Angles' tab again. This will load the relevant floating toolbar for the selected window.

To open another floating toolbar follow the same procedure, open the desired window then right click on the window tab again. All three of the floating toolbars (Markers, Shapes and Angles) can be opened at one time.

After opening the desired floating menu bars, minimise the window by dragging the bottom right hand corner, this will allow you to watch the video in the main window and still have access to the Markers, Shapes and Angles toolbars (see example below).
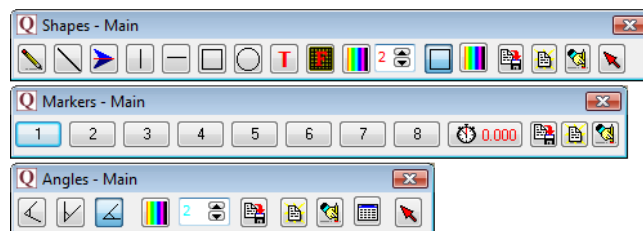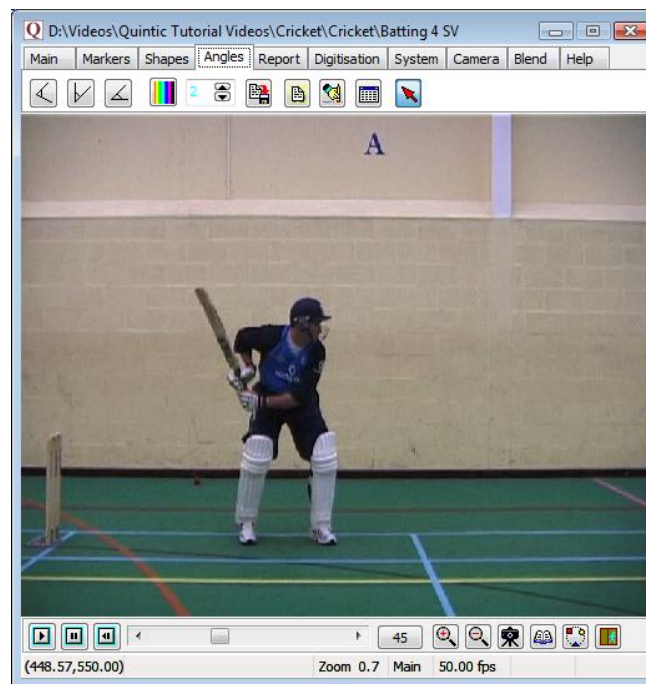
GO TO QUESTION 8 ON THE QUESTION SHEET (PAGE 12)

Question Sheet

RECAP

Open **'Bowling – Back view'** from the **'Cricket'** folder.

1) Set the video at frame 40 and zoom of 1.0. What point has the co-ordinates.

   X = 387.00, Y =142.00?

   …………………………………………………………………………………

2) At Frame 53 and zoom of 1.0, what are the coordinates of:

   a) The top of the bowler's right hand   X = ………   Y = ……….

   b) The ball   X = ………   Y = ……….

   c) The toes on the bowler's right foot   X = ………   Y = ……….

QUESTIONS

Using the video file **'400m Hurdles'** from the **'Athletics'** folder.

1) What distinctive point during the action do these markers indicate?

   59 = ………………………………………………………………………

   65 = ………………………………………………………………………

   71 = ………………………………………………………………………

   77 = ………………………………………………………………………

   85 = ………………………………………………………………………

   (5)

2) Use these markers to find out how much time there is between:

    a) Take-off and landing?   ……….secs

    b) Take-off and the left foot passing over the hurdle?   ……….secs

    c) Frames 65 and 71?   ……….secs

    d) Frames 77 and 85?   ……….secs

                                                      (2)

3) Open another video of your choice and use the markers to pinpoint 5 key stages during the action. Note down the 5 frames you have marked, what key stages of the action they mark and the times between them.

Frame number	Description	Time Difference

                                               (10)

4) Experiment with the different buttons for drawing shapes. What are the functions of these buttons?

 = ……………………………………………………………………………………

 = ……………………………………………………………………………………

 = ……………………………………………………………………………………

 = ……………………………………………………………………………………

 = ……………………………………………………………………………………

 = ……………………………………………………………………………………

(6)

Open video **'Bowling – back view'** from the **'Cricket'** folder.

5) Use the function to circle the head of the bowler in frame 38. Now describe the movement of the head in the next 10 frames. E.g. Does it move left/right? etc.

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………………………………………………………………………………………………………
………………………………………………………………………………………………………
……………………………………………………………………………………………………   (3)

BACK TO TUTORIAL SHEET (PAGE 5)

Open video **'Bowling side view'** from the **'Cricket**' folder.

6)

(a) Scroll to frame 29 (this is the point of 'front foot contact' and is a key stage in the cricket bowling action). On this frame draw:

(i)   A thick red horizontal line along the bowler's eye line.
(ii)   A thin green vertical line starting at the bowler's left toes.
(iii)   A yellow thin circle around the ball.
(iv)   A blue, medium-thickness line that runs along the left leg.
(v)   A box filled in white with red writing inside it stating your name.

(b) Click on the camera button at the bottom of the screen .

(c) Ask your teacher if you can print this.   (8)

Open video **'10m - Twist'** from the **'Diving'** folder.

7)

(a) Scroll to frame 89**.** Draw a line down the length of the diver's body. Repeat this every 10 frames until they enter the water in frame 209.

Use <u>all</u> these buttons in the process:

This will allow you to see the path of their body during the dive.

b) Click on the camera button at the bottom of the screen to create a 'single image capture'.

(c) Ask your teacher if you can print this.   (5)

<p style="text-align:center; color:red">BACK TO TUTORIAL SHEET (PAGE 5)</p>
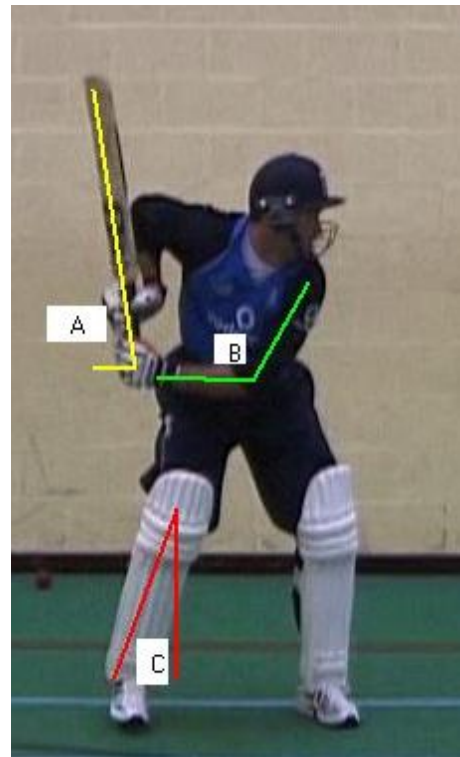
Open **'Batting 4 – SV'** from the **'Cricket'** folder.

8)

a) Scroll to frame 46:

Can you create these same angles?

What are the acute angles at:

(Bat to the horizontal)   A = **81.41**

(Elbow angle)   B = **117.36**

(Lower leg to the vertical)   C = **20.36**

(3)

b) Scroll to frame 62 (Impact).

Draw angles A, B and C again. Write down the size of the angle and any noticeable differences between the two frames.

Description ……………………………………………………………

Angle …….

Description ……………………………………………………………

Angle …….

Description ……………………………………………………………

Angle …….

(6)

(/ 45)