

### The Olympics

In this assessment, you will explore the track – and – field medal results from the Summer Olympic Games, 1896 to 2004. The data that you will use have the winning times or distances for several of the events that both men and women compete in.

**Source:** <http://www.hickoksports.com/history/olympix.shtml>

You will use the statistical methods that you learned in this unit to investigate the following questions. Your final product should include **calculations** of means, standard deviations, and quartiles. You should also try to include the following diagrams in a *meaningful way*:

- Box and whisker plot
- Bar graph
- Grouped Frequency table
- Histogram
- Cumulative Frequency Drawing
- Scatter plot

Below is a partial list of some of the tools we can use:

#### Excel

Bar Graph  
Scatterplot  
Circle Graph  
Line of Best Fit

#### Autograph

Histogram  
Scatterplot  
Box and Whisker  
Line of Best Fit

#### GDC

Histogram  
Scatterplot  
Box and Whisker  
Line of Best Fit  
1 & 2 Vars Statistics

This task will be assessed using:

**Criteria A – Knowledge Understanding**

**Criterion C – Communication**

**Criterion D – Reflection and Evaluation**

When answering each of the following five questions, you are expected to use the correct statistical **display** and **analysis** (Criterion A), clearly communicate your findings using **words** and **displays** (Criterion C), and reflect upon your **method** while evaluating your **results** (Criterion D).

### Question 1

Select any five countries of interest that competed at the Olympic Games in Athens 2004. How do the medal counts of these countries compare? How do they compare **over time**?

### Question 2

In Olympic sprinting (100m, 200m, 400m), have men or women shown greater progress over time? Predict what will happen in future Olympics.

### Question 3

Based on China's previous gold medal totals, how many Olympic gold medals do you predict that they will win in Beijing 2008?

What do you predict to be the winning times for the 100 metre event for both men and women in Beijing 2008? Is your answer reasonable?

What do you predict will be the winning distance in the javelin event for both men and women in Beijing 2008? Is your answer reasonable?

### Question 4

Use Excel to find the total number of medals won by **each** country at **each** Olympics. Create a grouped frequency table (with equal widths) and an appropriate display for this information. Next, create a cumulative frequency **table**, and a cumulative frequency **diagram** for this data. **Estimate** the median number of medals won and the interquartile range using your diagram. Also, **estimate** the mean and standard deviation using your grouped frequency table.

### Question 5

Which countries have had the most success at the Summer Olympics? How do you measure that success?