



<b>Scheme Title</b>	<b>Mathematics and the Paralympics</b>		
<b>Duration</b>	<b>7 weeks</b>	<b>Year Group</b>	<b>Year 10 and 11</b>
<b>Introduction and overview</b>			
<p>This scheme of work can be used with Y10 and Y11 students, including those preparing for a GCSE Data Handling module but it could also be delivered to more able Y8/9 students. The objective of the scheme is to use sport (and the Paralympics in particular) to motivate and encourage students to engage in and understand key concepts in data handling and to develop their thinking about an inclusive and tolerant society in which different needs and challenges are understood and empathised with.</p> <p>This project encourages students to be healthy, enjoy and achieve and make positive contributions; to value and recognise achievement across all nations and across all disabilities; and to learn that success is setting goals and striving to meet them. They will engage in physical activities and use this to motivate the learning of mathematics.</p> <p>Teachers may wish to use the QCA Framework of personal, learning and thinking skills to chart student progress in some key PLT areas- particularly in the skill groups <i>Independent enquirers</i> and <i>Reflective learners</i>.</p>			
<b>Key questions</b>			
<p>The scheme uses some key questions to provide teachers with background information about the scheme. Questions are often a good way to make the objectives of a sequence of work real for students, and they also provide a focus for students' final self-assessment activities.</p> <ul style="list-style-type: none"> <li>• Could the Paralympics and Olympics ever be fully integrated?</li> <li>• Would particular athletes be at an unfair advantage?</li> <li>• What are the moral and ethical issues that exist, were such a full integration to actually take place?</li> <li>• How can mathematics be used to explore these issues and provide evidence to support student views?</li> </ul>			
<b>Scheme resources</b>			
<p>Students will use a wide range of resources including the CD Rom provided with the initial <i>abilityvsability</i> packs. Other new materials are available on the <i>abilityvsability</i> website.</p>			

Key content of stages	Timings	Key words
<p><b>Stage 1 - Introduction to the Paralympics</b></p> <p>The lesson focuses on results in the Paralympic Games and addresses the issue of disability classification. Students produce pie charts and improve their knowledge of Paralympic sports.</p>	One hour	<p>These key words should feature in the assessed outcomes completed at the end of the scheme.</p> <ul style="list-style-type: none"> <li>• Olympic Games</li> <li>• ambulant</li> <li>• amputation</li> <li>• histogram</li> <li>• median</li> <li>• quartile</li> <li>• cumulative frequency curve</li> <li>• box and whisker graph</li> <li>• scattergraph</li> <li>• correlation</li> <li>• extrapolation</li> <li>• interpolation</li> </ul>
<p><b>Stage Two - Simulating Disabilities</b></p> <p>This lesson is entirely practical and explores a practical simulation of Paralympic sports. Students run a set distance, investigate the different times and compare the results with other students.</p>	One hour	
<p><b>Stage Three - Analysis of class times - Olympics vs Paralympics</b></p> <p>Students will improve their knowledge of the background to the Paralympic Games and then create histograms which compare the times of athletes in the Olympic and Paralympic Games.</p>	One hour	
<p><b>Stage Four - Averages</b></p> <p>This lesson uses Paralympic data to teach a range of approaches to the sorting of data including mean and mode averages, cumulative frequency curves, box and whisker plots and how to identify medians in grouped data and quartiles.</p>	One hour	
<p><b>Stage Five - Could we integrate the Olympic and Paralympic Games?</b></p> <p>The lesson uses the issue of an integrated Olympic and Paralympic Games and the case study of Oscar Pistorius to explore the mathematics and data implications of the differences between Olympic and Paralympic times for the male 100m, teaching the key principles of scatter graphs.</p>	One hour	
<p><b>Stage Six - Comparing times for the male 100m sprint</b></p> <p>Students produce a data handling report which focuses on the differences between Olympic and Paralympic times, the likely points of intersection of the times, how the profile of the Paralympics can be raised and will bring out the issues around athletes such as Oscar Pistorius.</p>	One hour	

<p><b>Stage Seven - Should the Olympics and Paralympics be merged?</b></p> <p>This final lesson brings together the ideas and concepts discussed and explored throughout the scheme through the form of a formal debate. Teachers can use the public forum format to precede the debate with students representing special interest groups. Once the interest groups have made their presentation, the debate can begin...</p>	<p>One hour</p>	
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<p><b>Key assessed outcomes</b></p>
<p>Assessment is always on-going in any work with learners, but at the end of each stage there will be one or more formal assessments - it may be may in the form of a formal written assessment, an oral presentation, a discussion with the teacher - or any other approach which able to identify the progress made by each individual student. For any scheme there are likely to be two or more assessment outcomes. Teachers should customise this section and record the assessment outcomes here.</p> <p>Teachers should indicate the title and the form of assessment (for example, oral presentation, comparison chart, written essay) for each stage. In any scheme - and across a year - there should be a balance between the types of assessment. In addition, teachers should record whether work is to be assessed by the student, their peers or the teacher.</p> <p>One piece of assessed work in each scheme should be able to be moderated by a group of teachers as guidance material. Key samples will then be available with the scheme to ensure effective standardising when the scheme is repeated. This helps new teachers see what is being covered in the scheme and provides a model for a good piece of work and how that work is assessed.</p>

<p><b>Scheme resources</b></p>
<p>All students will be given a resource booklet which containing all activities and teachers will be provided with an electronic copy of all the resource booklet activities. The resources booklet contains statistics about Paralympic classification, Paralympic and Olympic results for the top five countries, workbook pages for students to complete and a data section with detailed information about results for specific competitions.</p> <p>Teachers will also need to have access to a data projector and an e-whiteboard.</p> <p>Teachers will also be able to use the original <i>abilityvsability</i> CD Rom sent to schools in 2006 and the materials on the <i>abilityvsability</i> website (including, for example, the quizzes and the Fact Zone information sheets).</p>

## Stage 1 - Introduction to the Paralympics

Teaching sequence	Learning sequence
<p>The main objectives of the lesson are that students:</p> <ul style="list-style-type: none"> <li>• understand some of the issues surrounding the classification of paralympic athletes</li> <li>• are able to use that knowledge in a discussion</li> <li>• are able to create and explain a pie chart</li> </ul> <p>The lesson begins with a starter activity which involves students acquiring some background knowledge about the Paralympic Games through a very simple quiz. It will be useful for teachers to have some background information about the issues students will raise so that discussion can be guided successfully. Teachers will find it useful to have access to the Fact Zone sheets available on the <i>abilityvsability</i> website - particularly useful at this stage will be <i>No.2 Paralympics sport history</i>.</p> <p>There should now be an introduction by the teacher with some explanation of both the learning expectations and the outcomes. Teachers will find it useful to present the objectives as a series of questions which will be answered during the course of the lesson - "Why isn't it fair for disabled people to compete with athletes? That's what we'll find out in this lesson/scheme." These questions can be referred to during the course of the lesson so that the teacher can see how much learning is taking place.</p>	<p><b>Starter</b></p> <p>Students access Quiz 1 from <i>abilityvsability</i> CD Rom or the website and complete as a collective activity. The quiz should be presented on an e-whiteboard for students to complete.</p> <p><b>10 mins</b></p> <p><b>Activities</b></p> <p>Students will then use the resource booklet to look at how the Paralympics have gained in popularity over the years. They will initially discuss different paralympian groupings in pairs and then share their conclusions with other pairs in the classroom.</p> <p>Then working in small groups, students should produce one pie chart per group showing the number of gold medals for each leading country. Each group picks a different Paralympic games - more able student can do comparative pie charts.</p> <p>Teacher intervention will be focused on ensuring that the initial objective questions are being responded to by students. Any learning at this point can be shared with other pairs/small groups.</p> <p><b>40 mins</b></p> <p><b>Plenary</b></p> <p>The plenary will be a short presentation in groups based on the research</p>

The teacher will ask students to decide upon groups in which paralympians might compete - for example, wheelchair athletes/ambulant athletes with amputations/ambulant athletes with visual imparity. The teacher will need to have information available about how paralympic groups are determined and pose the issue of athletes competing together as a discussion question. Teachers can then show how athletes are grouped (see resource booklet, information page 1). A general statement about classification can be found on the BPA's website:

<http://www.paralympics.org.uk/page.asp?section=00010001000500040003&sectionTitle=Classification>

and a position statement identifying the IPC's position on intellectual disability competition can be found here:

[http://www.paralympic.org/release/Main\\_Sections\\_Menu/Classification/](http://www.paralympic.org/release/Main_Sections_Menu/Classification/)

For details about the classification system for each Paralympic sort, teachers should refer to the BBC site for details:

[http://news.bbc.co.uk/sport1/hi/other\\_sports/disability\\_sport/2936252.stm](http://news.bbc.co.uk/sport1/hi/other_sports/disability_sport/2936252.stm)

Finally,

This new learning forms the basis of the main focus on the lesson on the growing popularity of the Paralympics - number of events, competitors and countries; the rise of China and the decline of the USA - see the resource booklet information page 1. Students can compare Paralympic with Olympic results. Teachers should ensure that the objectives are made clear and that responding to worksheet questions will support the final discussion and plenary. Students should also know the assessment criteria for any presentation - this is likely to include appropriate selection of material, clarity of presentation, creativity of presentation and quality of group interactivity.

undertaken in the lesson. It is important that this plenary and others are opportunities for students to share their learning with other students and/or with the teacher. The focus must be on student presentation rather than teacher summary. With students leading the learning here, the teacher has a built in opportunity to assess the work and their developing personal skills. Students are selected to talk about the pie charts displayed around the classroom.

Finally, students are asked to think of ways in which they might practically simulate a disability sport.

Please note: each plenary is likely to feature a small number of students, with the intention that by the end of the scheme of work, all students will have had an opportunity to present during the plenary sessions.

**10 mins**

<p>It is important that the teacher does not lead the plenary - see information in the Learning sequence section of this lesson plan.</p>	
<p><b>Assessment outcomes</b></p>	<ul style="list-style-type: none"><li>• All students will have some background knowledge of Paralympic sports and understand that Paralympic athletes are classified according to their disabilities. They will be able to create a pie chart which shows Paralympic success in a specific sport.</li><li>• Most students will have a wider understanding of the issues surrounding the classification of athletes and will be able to apply their knowledge in a discussion. They will be able to create and explain a pie chart.</li><li>• Some students will have a detailed knowledge of Paralympic classification and be able to discuss and explain the issues around the system. They will be able to make comparisons between different pie charts showing Paralympic successes.</li></ul>

## Stage 2 - Simulating disabilities

Teaching sequence	Learning sequence
<p>The main objectives of the lesson are that students</p> <ul style="list-style-type: none"> <li>• complete a 'sprint' style race of length up to 100m</li> <li>• recognise that the rank order of classmates may not be the same when running as an athlete, an ambulant athlete with an amputee and a visually impaired athlete</li> </ul> <p>The lesson should take place outdoors using the school's sports facilities.</p> <p>The starter begins with all students (in summer athletics kit) on the school playing field where a running track will be marked out. They discuss the ideas they will use as they simulate a track event disability they came up with for homework. Students should run a set distance (can be shorter than 100m) in groups of eight with another eight students timing the athletes and another eight students with position cards to hand to the eight athletes at the end of the race. All students are to complete 3 races: one race as an athlete, one race simulating an ambulant athlete with an amputee, one race simulating a visually impaired athlete. Students <i>must</i> know all three of their own times so that these can be discussed in the plenary.</p> <p>Students will require their resource booklets and the teacher will need to provide eight stopwatches, position cards numbered 1 to 8 and string/ribbon for the finish line.</p>	<p><b>Starter</b></p> <p>Students will present their homework ideas for simulating a disability. These will then be discussed and track event disabilities will be used as the basis of the practical activity.</p> <p><b>10 mins</b></p> <p><b>Activities</b></p> <p>Students undertake their own timed events. They complete and time their events and fill in the times in their resource booklets.</p> <p>Students should then begin to make some judgements about the different times in the three different classes of the same sprint event.</p> <p><b>40 mins</b></p> <p><b>Plenary</b></p> <p>The plenary will focus on short student presentations of their individual and group understandings of the quality of their disability simulation and the differences in times under the three different classes. The teacher may wish to use these presentations as short assessable pieces and so should make clear the criteria used for students - for example, clarity of presentation and quality of group interactivity.</p> <p><b>10 mins</b></p>



**Assessment outcomes**

- All students will complete a 'sprint' style race of length up to 100m and will recognise that the rank order of classmates may not be the same when running as an athlete, an ambulant athlete with an amputee and a visually impaired athlete
- Most students will be able to identify the implications of their disability for Paralympic athletes in their sport.
- Some students will be able to make judgements about the validity of their disability simulation and how this has affected their running time.

### Stage 3 - Analysis of class times for Olympic versus Paralympic sports

Teaching sequence	Learning sequence
<p>The main objectives of this lesson are that students:</p> <ul style="list-style-type: none"> <li>• are able to group continuous data</li> <li>• are able to calculate frequency density and class width for grouped data</li> <li>• are able to draw a histogram</li> </ul> <p>The lesson begins with a starter activity which involves students acquiring some background knowledge about the nature of the disabilities involved in the Paralympic Games through Quiz 2 on the <i>abilityvsability</i> website.</p> <p>Again it will be useful for teachers to be able to access background information to support students. It will be useful to have access to the Fact Zone sheets available on the <i>abilityvsability</i> website.</p> <p>Students should suggest appropriate groups for the classes three times (athlete, ambulant athlete with amputee, visually impaired athlete). The teacher then fills in 'Frequency' column of each table by pupils raising their hands for the appropriate group. Pupils fill transfer this information to their resource booklets (work page 1-3).</p> <p>The teacher uses this information to teach histograms - lower ability students can use equal class widths. They are provided with correct columns on each table in the resources booklet (work pages 1-3).</p> <p>In the plenary, students explore how they think their histograms would compare to histograms from the real Olympic and Paralympics Games.</p>	<p><b>Starter</b></p> <p>Students access Quiz 2 from <i>abilityvsability</i> CD Rom or the website and complete as a collective activity. The quiz should be presented on an e-whiteboard for students to complete.</p> <p>The teacher will discuss some of the issues which arise from this quiz and use this as the basis for some of the main activity teaching points.</p> <p><b>10 mins</b></p> <p><b>Activities</b></p> <p>All students are provided with their resource booklet and should complete the information in the appropriate sections.</p> <p><b>40 mins</b></p> <p><b>Plenary</b></p> <p>The plenary will focus on short presentations by selected students on how they think their histograms would compare with those from both the Olympic and Paralympic Games.</p> <p>Again, if the teacher is assessing personal, learning and thinking skills in this plenary they should use appropriate criteria identified and explained in advance.</p> <p><b>10 mins</b></p>

**Assessment outcomes**

- All students will be able to group continuous data, calculate frequency density and class width for grouped data and draw a histogram
- Most students will be able to group continuous data, calculate frequency density and class width for grouped data and draw a histogram and compare their histograms with those from both the Olympic and Paralympic Games.
- Some students will be able to group continuous data, calculate frequency density and class width for grouped data and draw a histogram and compare and evaluate their histograms with those from both the Olympic and Paralympic Games.

## Stage 4 - Averages

Teaching sequence	Learning sequence
<p>The main objectives of this lesson are that students:</p> <ul style="list-style-type: none"> <li>• are able to calculate the midpoint of a group</li> <li>• are able to calculate the 'fx' column of a grouped frequency table</li> <li>• are able to draw a cumulative frequency curve</li> <li>• are able to use a cumulative frequency curve to calculate the median and quartiles of a set of data</li> <li>• are able to draw a box and whisker plot.</li> </ul> <p>The starter goes straight into the main activity focus looking at midpoint and fx, filling in the midpoint and fx columns in the work pages of their resource booklets.</p> <p>The teacher should ensure that all students are able to access this new learning. They may wish to direct students to the school's own virtual learning environment (VLE) or website or other support and revision sites - for example:  <a href="http://www.mathsrevision.net/gcse/pages.php?page=19">http://www.mathsrevision.net/gcse/pages.php?page=19</a></p> <p>The main activity in this lesson is teaching a range of approaches to the sorting of data including mean and mode averages, cumulative frequency curves, box and whisker plots and how to identify medians in grouped data and quartiles. The teacher will model each of these approaches in turn before asking students to use their own data to complete the tables in their resource booklets and draw graphs on supplied graph paper.</p>	<p><b>Starter</b></p> <p>Students complete the midpoint and fx tables in their resource booklets.</p> <p><b>10 mins</b></p> <p><b>Activities</b></p> <p>Students will complete the tables in their resource booklet, draw cumulative frequency curves drawn and box and whisker plots.</p> <p>Finally, they will calculate medians and quartiles.</p> <p>Students should not be working for longer than 15 minutes without some opportunity to review their progress collectively. Collaboration rather than individual work will ensure better progression and learning for all students.</p> <p>For homework, students will calculate the mean of the gold, silver and bronze medal Paralympic times for T13 and T46 from the last four Paralympic Games given in the resource booklet Data section.</p> <p><b>40 mins</b></p> <p><b>Plenary</b></p> <p>The plenary will focus students' own best ways to compare median and quartiles. As presentations these will focus on the skills learned, but if the teacher is assessing any personal, learning and thinking skills in this plenary - for example - <i>Independent enquirers</i> or <i>Reflective learners</i> - they should use appropriate criteria identified and explained in advance.</p>

The plenary will feature student presentations on their learning about median and quartiles.	10 mins
<b>Assessment outcomes</b>	<ul style="list-style-type: none"><li>• All students are able to calculate the midpoint of a group and the 'fx' column of a grouped frequency table. They will also be able to draw a cumulative frequency curve and a box and whisker plot.</li><li>• Most students will be able to calculate the midpoint of a group and the 'fx' column of a grouped frequency table. They will also be able to draw a cumulative frequency curve and a box and whisker plot and use a to use a cumulative frequency curve to calculate the median and quartiles of a set of data.</li><li>• Some students will be able to calculate the midpoint of a group and the 'fx' column of a grouped frequency table. They will also be able to draw a cumulative frequency curve and a box and whisker plot, use a to use a cumulative frequency curve to calculate the median and quartiles of a set of data and be able to discuss and explain how they have used all these elements to interpret a set of Olympic data.</li></ul>

## Stage 5 - Could we integrate the Olympic and Paralympic Games?

Teaching sequence	Learning sequence
<p>The main objectives of this lesson are that students:</p> <ul style="list-style-type: none"> <li>• have some understanding of the issues around the concept of an integrated Olympic and Paralympic Games</li> <li>• will be able to draw a scatter graph</li> <li>• will be able to recognise correlation, where it exists</li> <li>• will be able to discuss the dangers of extrapolation versus interpolation</li> <li>• will be able to calculate the equation of lines on graphs</li> <li>• will be able to calculate the point of intersection of two lines on a graph.</li> </ul> <p>The starter focuses on the issues of an integrated Olympic and Paralympic Games using the case study of Oscar Pistorius. Currently, Pistorius is unable to compete against able-bodied athletes. The teacher could raise the following questions as a starting point for student discussion:</p> <ul style="list-style-type: none"> <li>• Who would be disadvantaged?</li> <li>• Would the same entrants be disadvantaged for all events?</li> <li>• How could some prosthetic devices be better than being able bodied?</li> </ul> <p>For the main body of the lesson - and to stimulate further debate - students will look at a more detailed two part 10 minute video on Pistorius available in two parts on Youtube (E60 - Bladerunner):</p> <p><a href="http://www.youtube.com/watch?v=4oBmccev6V4&amp;feature=related">http://www.youtube.com/watch?v=4oBmccev6V4&amp;feature=related</a></p> <p>Students should watch the first part of the video and can use this information to</p>	<p><b>Starter</b></p> <p>Using a short video on Oscar Pistorius (Youtube 1:12), students should work in pairs to discuss the concept of an integrated Olympic and Paralympic Games. The teacher will discuss some of the issues which arise from this ABC news report and use this to generate extended interest in the issues and the maths which will emerge from the data analysis.</p> <p><b>10 mins</b></p> <p><b>Activities</b></p> <p>Students will engage in the debate about Oscar Pistorius and use the video extracts to develop an understanding of the debate around this Paralympic case study.</p> <p>Students will then draw a scatter graph of the average time for first, second and third place in the final from the 100m T13 and/or T46 entrants' (as worked out for homework) versus year.</p> <p>Then on the same graph, they will plot 100m Olympics records versus year. (Resource Book, Data section) before addressing some of the questions posed by the teacher left.</p> <p>For homework, students should explore the Special Olympics and the role of learning difficulties and competitive sport, looking at the evidence for why this category is currently suspended.</p> <p><b>40 mins</b></p>

develop their further thinking about these issues before viewing the second part which focuses on the tests undertaken on Pistorius' *Cheetah* prosthetic blades.

<http://www.youtube.com/watch?v=dq026qIQVGU&NR=1>

The teacher will now focus on the mathematics and data implications of the differences between Olympic and Paralympic times for the male 100m, teaching the key principles of scatter graphs and asking students to extrapolate from this the answers to some key questions:

- If the trend set by the above graphs was would they intersect?
- If so, when?
- What are the dangers of extrapolating the data?
- Could you find the algebraic intersection point of the lines/curves of best fit?

### Plenary

The plenary will be selected student presentations on research using the criteria established by the teacher during the lesson. As always, the plenary should be entirely student focused.

10 mins

### Assessment outcomes

- All students will have some understanding of the issues around the concept of an integrated Olympic and Paralympic Games and will be able to draw a scatter graph, recognise correlation, where it exists and be able to calculate the equation of lines on graphs and be able to calculate the point of intersection of 2 lines on a graph.
- Most students will understand the issues around the concept of an integrated Olympic and Paralympic Games and be able to respond to key aspects of the debate. They will also be able to draw a scatter graph, recognise correlation, where it exists and be able to calculate the equation of lines on graphs and be able to calculate the point of intersection of 2 lines on a graph.
- Some students will have a detailed understanding of the issues around the concept of an integrated Olympic and Paralympic Games and be able to describe key aspects of the debate. They will be able to draw a scatter graph, recognise correlation, where it exists and be able to calculate the equation of lines on graphs and be able to calculate the point of intersection of two lines on a graph. They will also be able discuss the dangers of extrapolation versus interpolation.

## Stage 6- Comparing times from the male 100m Olympic and Paralympic Games

Teaching sequence	Learning sequence
<p>The main objectives of this lesson are that students:</p> <ul style="list-style-type: none"> <li>are able to produce an appropriate analysis of continuous data</li> <li>understand the processes involved in writing a data handling report</li> </ul> <p>The lesson begins with a starter quiz which summarises some of the work completed so far in the scheme. The teacher can choose to undertake this in a number of ways - for example, a matched pairs game in which two halves of a sentence have to be linked together, a picture quiz in which students identify some of the average structures they have been learning, an oral quiz based on trigger words.</p> <p>Students will now use this understanding to complete data handling investigation report. They will work in pairs to write a report on <i>The Male 100m event in the Olympic and Paralympic Games - a comparison over time</i>. The report will include information on the differences between Olympic and Paralympic times, the likely points of intersection of the times, how the profile of the Paralympics can be raised and will bring out the issues around athletes such as Oscar Pistorius. Students will be expected to incorporate appropriate use of histograms, cumulative frequency curves, box and whisker plots and scatter graphs in their work.</p> <p>The teacher will model the process of collecting, organising and using the data selected and - where appropriate - provide additional structural guidance material for students. This may include the provision of a writing frame, further graphics</p>	<p><b>Starter</b></p> <p>Students will work in pairs to match the statements about the concepts learners so far in the scheme.</p> <p><b>10 mins</b></p> <p><b>Activities</b></p> <p>Students will complete a data handling investigation report using criteria appropriate for their GCSE board. For example they will:</p> <p><i>communicate mathematically, with emphasis on the use of an increasing range of diagrams and related explanatory text, on the selection of their mathematical presentation, explaining its purpose and approach, and on the use of symbols to convey statistical meaning</i> [AQA GCSE mathematics syllabus]</p> <p>Teacher intervention will be focused on ensuring that the objectives are being met and that students are using appropriate structures and approaches. Any learning at this stage should be shared with other pairs.</p> <p>Homework can include any additional research required by individual students to support the completion of the report in a later lesson.</p> <p><b>40 mins</b></p> <p><b>Plenary</b></p> <p>The plenary will be an opportunity for pairs of students to share two key points from their report - one focused on data handling and one focused on the issues</p>

and photographs etc.

The teacher will ensure that all necessary materials are available to complete the report which may be produced on paper or electronically (as a report or a PowerPoint) as desired. They will also ensure that if the report is not completed during the course of the lesson that each individual student has a specific task or focus for their homework which will support the completion of the report in a later lesson.

Plenary comments can all be collated by the teacher as they are being made and then distributed as guidance for the further completion of the report.

they have covered in their selection of data.

**10 mins**

**Assessment outcomes**

- All students are able to produce an appropriate analysis of continuous data and understand the processes involved in writing a data handling report.
- Most students are able to produce an effective analysis of continuous data and be able to understand and describe the processes involved in writing a data handling report.
- Some students are able to produce an effective analysis of continuous data and produce a comprehensive data handling report which uses a full range of data handling concepts linked to aspects of the Paralympic sports agenda.

## Stage 7 - Integrating the Olympic and Paralympic Games - a debate

Teaching sequence	Learning sequence
<p>The main objectives of this lesson are that students:</p> <ul style="list-style-type: none"> <li>will be able to recognise other students' viewpoints</li> <li>produce a coherent argument, backed up with appropriate mathematical data, as to why or why not they believe the Olympic and Paralympic Games should be combined.</li> </ul> <p>This final lesson brings together the ideas and concepts discussed and explored throughout the scheme</p> <p>The teacher will need to be familiar with the background and issues surrounding the Olympic, Paralympic and Special Games and their integration. More information can be found on these websites:</p> <p><a href="http://www.paralympics.org.uk/default.asp">http://www.paralympics.org.uk/default.asp</a></p> <p><a href="http://en.wikipedia.org/wiki/Oscar_Pistorius">http://en.wikipedia.org/wiki/Oscar_Pistorius</a></p> <p>Some of this information could be presented to students to help them prepare for the class debate. Teachers might like to use the public forum format to precede the debate - the structure for this is presented in the <i>Working in groups</i> support guidance on the <i>abilityvsability</i> website. In the forum, students represent up to six special interest groups - for example, Olympic athletes, Paralympic athletes with an amputation, Paralympic ambulant athletes with a visual impairment, Paralympic wheelchair athletes, media personnel and the International Olympic committee. Students work in their groups to create a 10 minute presentation using any ICT support (for example, PowerPoint) they wish.</p>	<p><b>Starter</b></p> <p>As a warm up activity, students are presented with the images of three athletes side by side (available on the website), and asked to think about the difference between the three athletes and the opportunities for each to display their talents.</p> <p>After five minutes, students come together to discuss this more widely in the larger group. The opinions developed here will contribute to the main activity and the plenary.</p> <p><b>10 mins</b></p> <p><b>Activities</b></p> <p>Students prepare material for a whole class debate using the formal structure identified in the teaching sequence information. This will be carefully structured to ensure that initial opinion forming, group discussion and the whole class debate is focused and designed to ensure maximum participation from all students. There are various formats that teachers can use to ensure this - some new guidance is provided in the <i>Working in groups</i> support guidance on the <i>abilityvsability</i> website.</p> <p><b>40 mins</b></p> <p><b>Plenary</b></p> <p>The plenary will be entirely student focused, with individual students asked to</p>

Once the interest groups have made their presentation, the debate can begin.

The plenary will be an opportunity for students to share the research in the format they have selected, making comments about the content, what they have learned and the format in which they have chosen to present their research.

The plenary presentations (and others) can be displayed around the classroom and may be revised and extended as a homework or extension activity.

share their personal opinions rather than that of the constituted group. Each student is invited to give a summary statement of their view as a caption or slogan - a punchy statement which summarises their personal opinion about the issue of an inclusive Olympic Games. They write these up as quotes using a quotation mark strip proforma (see below) which is then displayed around the classroom. Alternatively, they can be recorded as audio statements and be presented on the school website.

“ student text goes here ”

10 mins

**Assessment outcomes**

- All students will recognise other students' viewpoints and provide an opinion, backed up with appropriate mathematical data, as to why or why not they believe the Olympic and Paralympic Games should be combined.
- Most students will recognise others' viewpoints and provide an evidence base for their views, backed up with appropriate mathematical data, as to why or why not they believe the Olympic and Paralympic Games should be combined.
- Some students will be able to recognise others' viewpoints and provide coherent arguments, backed up with appropriate mathematical data, as to why or why not they believe the Olympic and Paralympic Games should be combined. They will also be able to put these arguments into the wider context of disability rights and inclusion in society.