

## FREE STANDING MATHS QUALIFICATION

Making Sense of Data    Foundation level

### Body Mass Index

The table below gives some data collected by students.

#### Weight and height results

Weight		Height	
st	lbs	ft	ins
9		5	6
11	4	5	10
9	13	6	1
8	1	5	7
10	7	5	10
8	5	5	6
9	7	5	5
6	5	5	3
11	6	6	2
11	2	5	9
10	3	5	10
10	3	5	2
8		5	5
8	4	5	7
10	7	5	6
10	6	5	2
7	5	5	4
9	6	6	
9	2	5	8
8	7	5	6
10	7	5	9
7	7	5	10

Weight		Height	
st	lbs	ft	ins
12		5	10
11		6	
8	5	5	9
8	4	5	9
10	7	5	11
12	7	5	9
10	13	5	11
12		5	11.5
10		5	10
10	7	5	10
9	7	5	6
10		5	4
6	7	5	7
9		5	9
12		5	10
7	4	5	6
7	4	5	2
9	2	5	7
10	7	6	

Use a spreadsheet to help you complete the following:

- Convert the weights and heights into metric units.
- Find each student's BMI using the formula  $BMI = \frac{\text{weight in kilograms}}{(\text{height in metres})^2}$
- Calculate the mean BMI.
- Find the median BMI.
- Find the BMI range.
- Print a copy of the spreadsheet containing your calculations and also one showing the formulae that you have used.
- Produce suitable charts to illustrate the results.
- Comment on your charts.
- Check your work wherever possible.
- Write up your work, explaining what you have done and why.



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#### Teacher Notes

**Unit**    Foundation Level, Making sense of data

#### **Notes on the Activity**

The data in this activity was contributed by Margaret Pickersgill of Bradford College.

Margaret's students made measurements themselves and used them to help satisfy the following Coursework Portfolio requirements.

<b>What you need to produce:</b>	<b>You must:</b>
<p><b>1</b></p> <p>Two tables of data that you have drawn up arising from two different situations</p> <p>One of your tables should be drawn using a spreadsheet, the other by hand.</p>	<ul style="list-style-type: none"> <li>• select which data to put in your table</li> <li>• decide on the table headings to use</li> <li>• complete your table accurately using <i>all relevant</i> data</li> <li>• use methods of checking to make sure that you have included all data</li> </ul>
<p><b>2</b></p> <p>Two different types of statistical diagrams and two different statistical measures that illustrate data from up to two different situations.</p> <p>The data you use can be the result of your work towards <b>1</b> above, or can be taken from another source such as a newspaper article, book or the internet.</p> <p>At least one of your diagrams should be drawn and one of your measures should be calculated using a spreadsheet.</p>	<ul style="list-style-type: none"> <li>• use only diagrams that are relevant</li> <li>• present diagrams that are clear, accurate and fully labelled</li> <li>• show the calculations you carry out</li> <li>• include calculations you have carried out by hand</li> </ul>
<p><b>6</b></p> <p>Print outs from a spreadsheet that involves formulae that you have input yourself.</p> <p>You should include two print outs:</p> <p>(i) showing the results of your work;</p> <p>(ii) showing the formulae you have used.</p> <p>This work may be the result of your work towards <b>1</b>, <b>2</b> or <b>3</b> above.</p>	

