


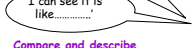
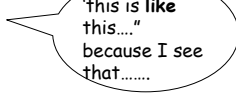
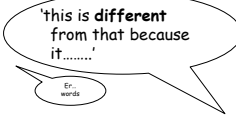

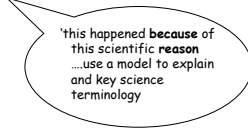
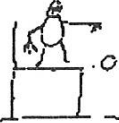





















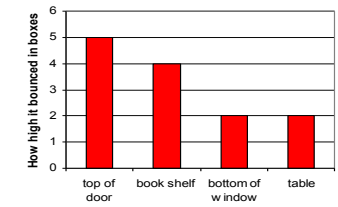
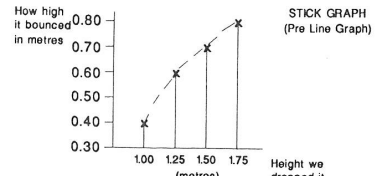
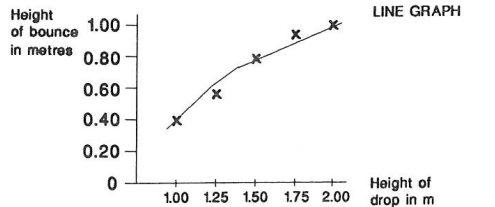
## The New NC Science Progression including Early years, and progression in Tables and graphs

Area	EYFS	Key stage 1	Lower Key stage 2	Upper Key Stage 2
<b>Big Picture progression from Introductions to Key stages</b>	<p>Playing and exploring, children <b>investigate, experience</b> things and have a go.</p> <p>Creating and thinking critically.</p> <p>Children <b>have and develop their own ideas</b></p> <p>Make links between ideas And <b>develop strategies</b> for doing things</p>	<ul style="list-style-type: none"> <li>• <b>Observe</b> Scientific phenomena</li> <li>• <b>Be curious and ask questions</b></li> <li>• <b>Develop understanding</b> of science ideas by different types of <b>scientific enquiry</b></li> <li>• <b>Use simple scientific language</b> to talk about what they have found and-</li> <li>• <b>Communicate ideas</b> to a range of audiences</li> <li>• Learn through <b>practical experience</b></li> </ul>	<ul style="list-style-type: none"> <li>• Broaden their Scientific view</li> <li>• <b>Exploring talking about testing and developing their ideas</b> about everyday phenomena</li> <li>• Develop ideas about <b>functions, relationships and interactions</b></li> <li>• <b>Ask their own questions</b></li> <li>• Make decisions <b>about type of scientific enquiry</b></li> <li>• Draw <b>Simple conclusions</b></li> <li>• Use <b>some simple scientific language</b> first to <b>talk</b>, later to <b>write</b>, about what they have found out</li> </ul>	<ul style="list-style-type: none"> <li>• Develop a <b>deeper understanding</b> of a wide range of scientific ideas</li> <li>• <b>Explore and talk about</b> their ideas</li> <li>• <b>Ask their own questions</b> about scientific phenomena</li> <li>• <b>Analyse functions relationships and interactions</b> systematically</li> <li>• <b>Use abstract ideas</b> to understand and predict how the world operates</li> <li>• Recognise that <b>Scientific ideas change</b> and develop over time</li> <li>• <b>Select</b> the most appropriate way to answer science questions using <b>different types of science enquiry</b></li> <li>• <b>Draw conclusions</b> based on their own data, use evidence to <b>justify their ideas</b></li> <li>• Use <b>scientific understanding to explain</b> their findings</li> </ul>
<b>Content</b>	Observe Answer 'how' and 'why' Own experience Talk about ideas	Observe Compare and sort using what see Identify and name Describe	Compare and group according to behaviour/properties, based on testing ; Relate; Cause and effect Comparative and superlative	Sort using evidence using a scientific reason Explain Use abstract ideas Justify their ideas
<b>Talk</b>	Early years says 	A year 1 says  <p style="text-align: center; color: purple;">Observe and Identify</p> A year 2 says  <p style="text-align: center; color: purple;">Compare and describe</p> 	A year 3 says  <p style="text-align: center; color: purple;">Compare and group; Cause and effect</p> A year 4 says  <p style="text-align: center; color: purple;">Generalisation, Comparative and superlative (Familiar examples)</p>	A year 5 says  <p style="text-align: center; color: purple;">Explain using scientific vocabulary Abstract, unfamiliar</p> A year 6 says  <p style="text-align: center; color: purple;">Explain and evidence, scientific vocabulary, and Models (Abstract, unfamiliar)</p>
<b>Units</b>	Non standard units	Progression from non standard units? mm; cm; m; ml; l; °C (Don't have to record just use the readings)	Simple <b>accurate</b> measurements (data loggers) Time minutes and secs 1Kg = 1L , °C	Accurate measurements.... <b>accuracy and precise</b> N;g; Kg; mm; cm; Mins; secs <b>cm<sup>2</sup></b> V; Km/hr;; M per sec; m/sec; Graphs:- pie; line; bar (year 6)

The New NC Science Progression including Early years, and progression in Tables and graphs

Area	EYFS	Key stage 1	Lower Key stage 2	Upper Key Stage 2																																																					
Progression in drawing tables		<div style="display: flex; justify-content: space-around; align-items: center;">   </div> <p>This child has <b>observed and recorded</b> what happens when she dropped the ball from two different heights.</p> <div style="display: flex; justify-content: center; align-items: center; margin: 20px 0;"> <table border="1" style="border-collapse: collapse; text-align: center;"> <thead> <tr> <th style="padding: 5px;">Where we rolled it off</th> <th style="padding: 5px;">How high it bounced</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> </tr> <tr> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> </tr> <tr> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> </tr> </tbody> </table> </div> <p>This child has <b>completed</b> a table which has been <b>constructed mainly by the teacher</b>. She has carried out three tests and has put the <b>picture record of her results in the correct place</b>.</p>	Where we rolled it off	How high it bounced							<table border="1" style="border-collapse: collapse; width: 100%;"> <thead> <tr> <th style="padding: 5px;">Where did you drop it</th> <th style="padding: 5px;">How high it bounced</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;">Top of door</td> <td style="padding: 5px;">5 boxes</td> </tr> <tr> <td style="padding: 5px;">Bookshelf</td> <td style="padding: 5px;">4 boxes</td> </tr> <tr> <td style="padding: 5px;">Bottom of window</td> <td style="padding: 5px;">2 boxes</td> </tr> <tr> <td style="padding: 5px;">Table</td> <td style="padding: 5px;">2 boxes</td> </tr> <tr> <td style="padding: 5px;"> </td> <td style="padding: 5px;"> </td> </tr> </tbody> </table> <p>This child has completed a table which has been <b>constructed mainly by the teacher</b>. She has carried out three tests and has <b>put the picture record of her results in the correct place</b>.</p> <table border="1" style="border-collapse: collapse; width: 100%; margin-top: 20px;"> <thead> <tr> <th style="padding: 5px;">Height that we dropped it</th> <th style="padding: 5px;">How high it bounced</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;">1m</td> <td style="padding: 5px;">0.38m</td> </tr> <tr> <td style="padding: 5px;">1.25m</td> <td style="padding: 5px;">0.59m</td> </tr> <tr> <td style="padding: 5px;">1.5m</td> <td style="padding: 5px;">0.68m</td> </tr> <tr> <td style="padding: 5px;">1.75m</td> <td style="padding: 5px;">0.76m</td> </tr> </tbody> </table> <p>This child <b>constructed her own table</b> choosing her <b>own headings</b>, the number of tests to carry out and the heights from which she would drop the ball. The teacher <b>had suggested</b> that she should drop the ball from heights between 1m and 2m.</p>	Where did you drop it	How high it bounced	Top of door	5 boxes	Bookshelf	4 boxes	Bottom of window	2 boxes	Table	2 boxes			Height that we dropped it	How high it bounced	1m	0.38m	1.25m	0.59m	1.5m	0.68m	1.75m	0.76m	<table border="1" style="border-collapse: collapse; width: 100%; margin-bottom: 20px;"> <thead> <tr> <th rowspan="2" style="padding: 5px;">Height of drop</th> <th colspan="3" style="padding: 5px;">Height of bounce</th> <th rowspan="2" style="padding: 5px;">Average</th> </tr> <tr> <th style="padding: 5px;">1<sup>st</sup> go</th> <th style="padding: 5px;">2<sup>nd</sup> go</th> <th style="padding: 5px;">3<sup>rd</sup> go</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;">1m</td> <td style="padding: 5px;">0.39</td> <td style="padding: 5px;">0.40</td> <td style="padding: 5px;">0.5</td> <td style="padding: 5px;">0.38m</td> </tr> <tr> <td style="padding: 5px;">1.25m</td> <td style="padding: 5px;">0.58</td> <td style="padding: 5px;">0.64</td> <td style="padding: 5px;">0.55</td> <td style="padding: 5px;">0.59m</td> </tr> <tr> <td style="padding: 5px;">1.50m</td> <td style="padding: 5px;">0.68</td> <td style="padding: 5px;">0.79</td> <td style="padding: 5px;">0.80</td> <td style="padding: 5px;">0.76m</td> </tr> </tbody> </table> <p>This child <b>constructed this table on her own choosing the headings, the number of tests, the range of heights she would use and the intervals between them</b>. She also <b>chose to repeat</b> her tests and take an <b>average</b>. She knew the <b>type</b> of table she should use to show all her results.</p>	Height of drop	Height of bounce			Average	1 <sup>st</sup> go	2 <sup>nd</sup> go	3 <sup>rd</sup> go	1m	0.39	0.40	0.5	0.38m	1.25m	0.58	0.64	0.55	0.59m	1.50m	0.68	0.79	0.80	0.76m
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Progression in drawing graphs		<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid red; padding: 5px; border-radius: 10px;">                         Standing on a chair                     </div> <div style="border: 1px solid red; padding: 5px; border-radius: 10px;">                         Standing on the floor                     </div> </div> <p style="text-align: center;"> <span style="margin-right: 100px;">Big bounce</span> <span>Little bounce</span> </p> <p>Independent and dependent variable are both described in words so no graph can be drawn</p> <div style="display: flex; align-items: center;"> <div style="margin-right: 20px;"> <p>How high it bounced</p> <table border="1" style="border-collapse: collapse; text-align: center;"> <tr><td>4</td><td colspan="2">[Hand]</td></tr> <tr><td>3</td><td colspan="2">[Hand]</td></tr> <tr><td>2</td><td>[Hand]</td><td>[Hand]</td></tr> <tr><td>1</td><td>[Hand]</td><td>[Hand]</td></tr> </table> </div> <div> <p>PICTOGRAM (Bar Chart)</p> </div> </div> <div style="display: flex; align-items: center; margin-top: 10px;"> <div style="margin-right: 20px;"> <table border="1" style="border-collapse: collapse; text-align: center;"> <tr><td>Table</td><td>Chair</td><td>Box</td></tr> </table> </div> <div> <p>Where we dropped it</p> </div> </div>	4	[Hand]		3	[Hand]		2	[Hand]	[Hand]	1	[Hand]	[Hand]	Table	Chair	Box	<p><b>Bar Chart</b></p>  <table border="1" style="margin-top: 10px;"> <caption>Where did you drop it?</caption> <thead> <tr> <th>Where did you drop it?</th> <th>How high it bounced in boxes</th> </tr> </thead> <tbody> <tr><td>top of door</td><td>5</td></tr> <tr><td>book shelf</td><td>4</td></tr> <tr><td>bottom of window</td><td>2</td></tr> <tr><td>table</td><td>2</td></tr> </tbody> </table> <p>This child has completed a bar chart where the labelling of the axes with the independent and dependent variable had been <b>prepared by the teacher</b>, along with the numbers on the vertical axis. The <b>child filled in the different drop heights</b> on the horizontal axis and coloured in the correct number of boxes in each column</p> <p><b>Stick graph (pre line graph)</b></p>  <table border="1" style="margin-top: 10px;"> <caption>Stick Graph (Pre Line Graph)</caption> <thead> <tr> <th>Height we dropped it (metres)</th> <th>How high it bounced in metres</th> </tr> </thead> <tbody> <tr><td>1.00</td><td>0.40</td></tr> <tr><td>1.25</td><td>0.60</td></tr> <tr><td>1.50</td><td>0.70</td></tr> <tr><td>1.75</td><td>0.80</td></tr> </tbody> </table> <p>In this example the <b>teacher helped the child to decide on the scale</b> that should be used on both the vertical and horizontal axes. The <b>child labelled both axes</b> with the independent and dependent variables. <b>The child drew the sticks to the correct length</b> for each value of the independent variable using the scale on the vertical axes correctly. [N.B. If the child had joined up the crosses on the top of the sticks, it would lead into the line graph.]</p>	Where did you drop it?	How high it bounced in boxes	top of door	5	book shelf	4	bottom of window	2	table	2	Height we dropped it (metres)	How high it bounced in metres	1.00	0.40	1.25	0.60	1.50	0.70	1.75	0.80	<p><b>LINE GRAPH</b></p>  <table border="1" style="margin-top: 10px;"> <caption>Line Graph</caption> <thead> <tr> <th>Height of drop in m</th> <th>Height of bounce in metres</th> </tr> </thead> <tbody> <tr><td>1.00</td><td>0.40</td></tr> <tr><td>1.25</td><td>0.60</td></tr> <tr><td>1.50</td><td>0.70</td></tr> <tr><td>1.75</td><td>0.80</td></tr> <tr><td>2.00</td><td>0.90</td></tr> </tbody> </table> <p>This child has <b>completed the line graph on her own, labelling the axes, deciding on the scales</b> for both axes and correctly marking the crosses according to the measurements recorded on her table of results. She has <b>drawn a line of best fit</b> and she could use this to help her predict the height of bounce for any drop within her range of values.</p>	Height of drop in m	Height of bounce in metres	1.00	0.40	1.25	0.60	1.50	0.70	1.75	0.80	2.00	0.90
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