

## Grade 9 Natural Sciences Worksheet

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### Drawing a graph

Nandi kept a record of her new baby's mass over the first 6 months of the baby's life.

#### *Nandi's baby's mass*

Month	Mass (kg)
birth	2.5
1	3.7
2	4.2
3	4.8
4	4.1
5	4.8
6	5.2

1. Plot this information in a line graph and then answer the questions. [14]
2. What is the independent variable? [1]
3. What is the unit for the dependent variable? [1]
4. Which variable goes on the x-axis? [1]
5. Do you draw the line first or plot the points? [1]
6. Nandi's baby became sick during the first six months. Can you tell from the graph how old the baby was when it became ill? Give reasons. [2]
7. Has the baby recovered? Give reasons. [2]

[22 marks]

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### Checklist for assessing a line graph

Criteria	Well performed [2 marks]	Acceptable [1 mark]	Poorly performed [0 marks]
<b>Heading</b>			
<b>Axes and variables correctly assigned</b>			
<b>Axes labelled with variable and units</b>			
<b>Axes appropriately scaled</b>			
<b>Points accurately plotted</b>			
<b>Line drawn smoothly</b>			
<b>No inappropriate extrapolation of line</b>			
<b>Total</b>			

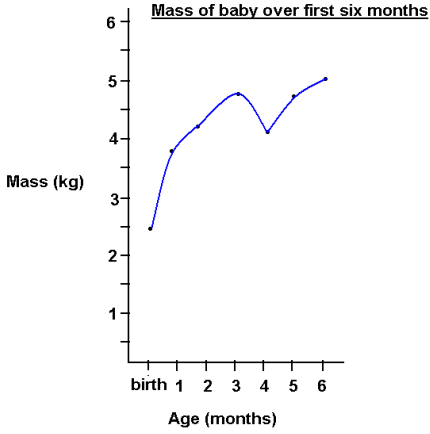
### How well are you doing?

The level indicator below will show you what you need to achieve in order to attain each level.

Level 4	Level 3	Level 2	Level 1
Learner is able to draw a line graph independently and accurately. [14 – 12 marks]	Learner is able to draw a line graph well. [10 – 8 marks]	Learner needs assistance to draw a line graph. [7 – 4 marks]	Learner unable to draw a line graph. [3 – 0 marks]
Learner can accurately interpret the graph in order to answer questions. [8 – 6 marks]	Learner can interpret the graph in order to answer questions. [5 – 4 marks]	Learner needs assistance to interpret the graph in order to answer questions. [3 – 2 marks]	Learner cannot interpret the graph in order to answer questions. [1 – 0 mark]

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### Suggested Solutions

Question number	Possible marks	Solution																
1	14 – See checklist below	 <p>Mass of baby over first six months</p> <table border="1"> <caption>Data points for the line graph</caption> <thead> <tr> <th>Age (months)</th> <th>Mass (kg)</th> </tr> </thead> <tbody> <tr> <td>birth</td> <td>2.5</td> </tr> <tr> <td>1</td> <td>4.0</td> </tr> <tr> <td>2</td> <td>4.5</td> </tr> <tr> <td>3</td> <td>4.8</td> </tr> <tr> <td>4</td> <td>4.2</td> </tr> <tr> <td>5</td> <td>5.0</td> </tr> <tr> <td>6</td> <td>5.2</td> </tr> </tbody> </table>	Age (months)	Mass (kg)	birth	2.5	1	4.0	2	4.5	3	4.8	4	4.2	5	5.0	6	5.2
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6	5.2																	
2	1	Age.																
3	1	Kilograms.																
4	1	Age – independent variable.																
5	1	Plot the points first.																
6	2	Baby became ill at about 4 months; the line drops showing a decrease in mass.																
7	2	Baby recovered; line shows increase in mass.																

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Points accurately plotted			
Line drawn smoothly			
No inappropriate extrapolation of line			
<b>Total</b>			

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