ANSWERS: Science Skills Revision – Drawing Bar Charts (Level 3A)
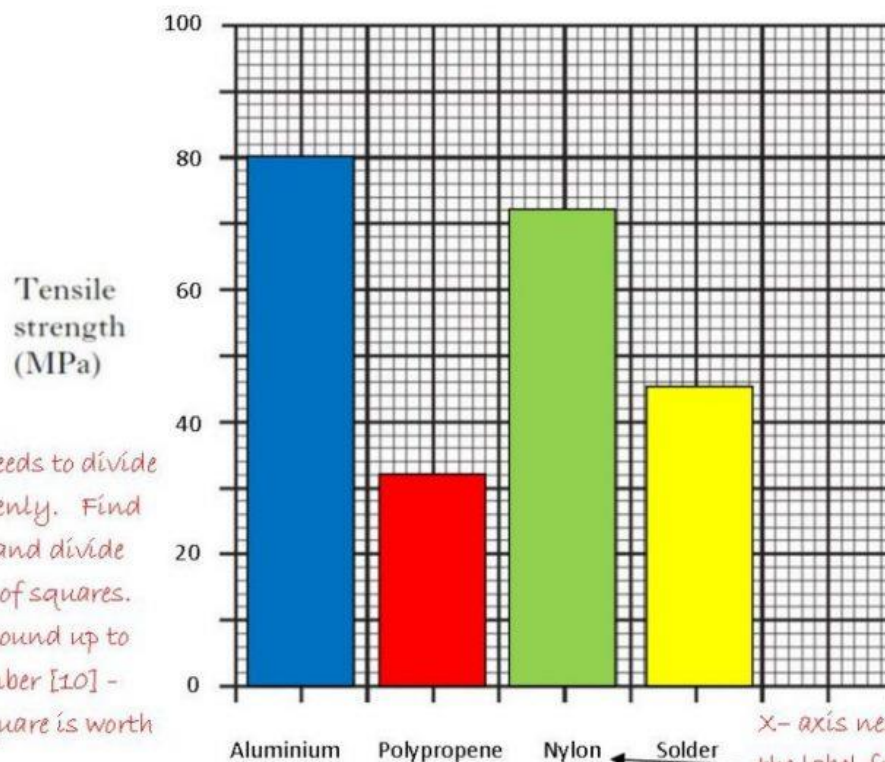
1.	

The table shows the tensile strength of four materials.

Material	Tensile strength (MPa)
Aluminium	80
Polypropene	36
Nylon	72
Solder	45

Present this information as a **bar graph**.

(Additional graph paper, if required, can be found on *Page twenty-four*).

y– axis scale needs to divide the graph up evenly. Find the maximum and divide by the number of squares. [80/10 = 8]. Round up to the easiest number [10] – scale is each square is worth 10

x– axis need to include both the label for each bar and the heading from the table for the data type.
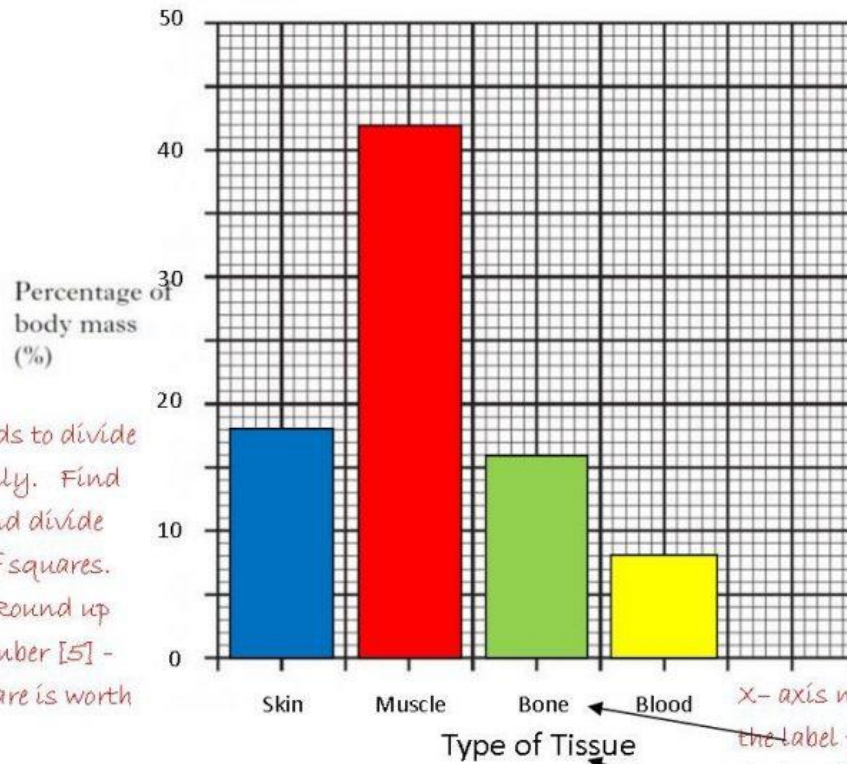
3

2.

The human body is made of different types of tissue.

The table shows the percentage of body mass made up of different types of tissue.

Type of tissue	Percentage of body mass (%)
Skin	18
Muscle	42
Bone	16
Blood	8

Present this information as a **bar graph**.
(Additional graph paper, if required, may be found on page 23.)

y– axis scale needs to divide the graph up evenly. Find the maximum and divide by the number of squares. [42/10 = 4.2]. Round up to the easiest number [5] – scale is each square is worth 5

x– axis need to include both the label for each bar and the heading from the table for the data type.

3.	

The table below shows the percentage of heat lost from different parts of a house. *Mar*

Part of house	Percentage of heat lost (%)
Roof	25
Walls and Floor	45
Windows	20
Door	10

(a) Present the information in the table as a **bar graph**.
(Additional graph paper, if required, can be found on Page 22)

Y-axis label— always the same as the column heading

Percentage of heat lost (%)

y- axis scale needs to divide the graph up evenly. Find the maximum and divide by the number of squares. [45/10 = 4.5]. Round up to the easiest number [5] - scale is each square is worth 5
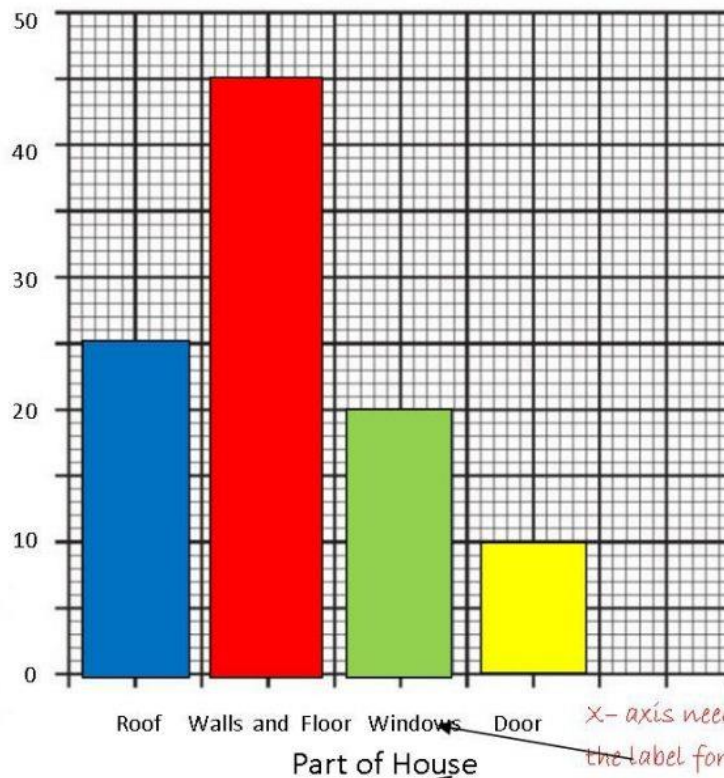
x- axis need to include both the label for each bar and the heading from the table for the data type.

b)	25% of 10,000 = 2,500 [10,000/100 X 25]

4.

The table below shows the mass of some ions found in a 1 litre sample of water.

| Ion	Mass/mg
chloride	10
sulphate	50
calcium	70
magnesium	15
potassium	4

Present the information as a bar chart.

Use appropriate scales to fill most of the graph paper.

(Additional graph paper, if required, can be found on page 28.)

y– axis label— always the same as the column

Mass/ mg

y– axis scale needs to divide the graph up evenly. Find the maximum and divide by the number of squares. [70/10 = 7]. Round up to the easiest number [10] – scale is each square is worth 10

chloride   sulphate   calcium   magnesium   potassium

Ion
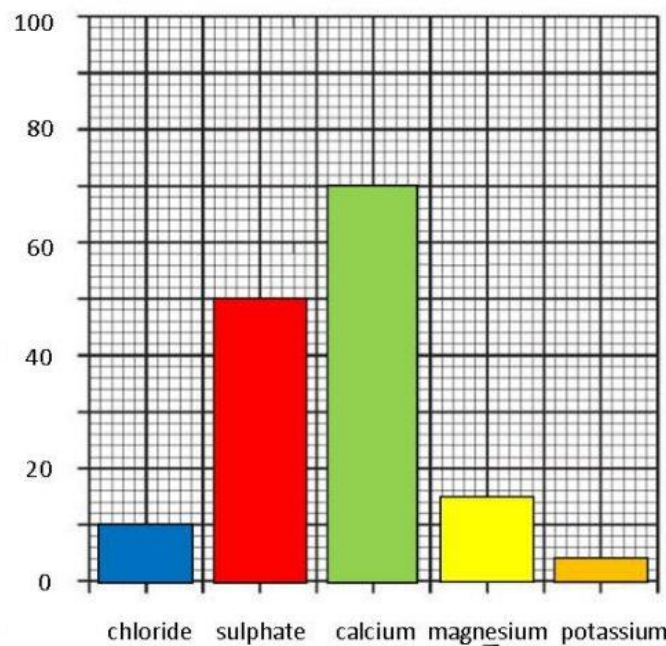
2

x– axis need to include both the label for each bar and the heading from the table for the data type.

5.

The table shows the mass of various pollutants produced by recycling aluminium.

Pollutant	Mass of pollutant produced per tonne of aluminium/kg
sulphur dioxide	1·0
dust	1·5
carbon monoxide	2·5
nitrogen oxides	7·0
hydrocarbons	5·0

Present the information as a bar chart.

Use appropriate scales to fill most of the graph paper.

(Additional graph paper, if required, can be found on page 28.)

y–axis label— always the same as the column

Mass of pollutant produced per tonne of aluminium/ kg

y–axis scale needs to divide the graph up evenly. Find the maximum and divide by the number of squares. [7.0/8 = 0.875]. Round up to the easiest number [1..0] – scale is each square is worth 1.0
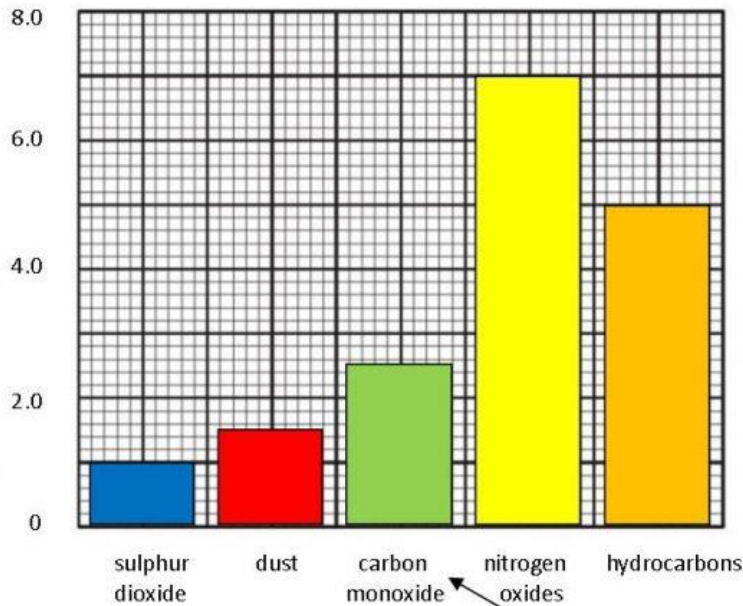
Pollutant

x–axis need to include both the label for each bar and the heading from the table for the data type.

2

6.

The table shows the results of treating an infection in cows with various antibiotics.

Antibiotic treatment	Number of cows treated	Number of cows cured	Percentage of cows cured
no antibiotic	2011	1450	72
Amoxicillin	56	48	86
Cephapirin	18	16	89
Cloxacillin	33	25	76
Erythromycin	8	6	75
Penicillin	25	17	68

Use the information in the table to complete the bar chart to show the percentage of cows cured by:

1   labelling the vertical axis;   1

2   adding a scale to the vertical axis;   1

3   completing the bars.   1

(Additional graph paper, if required, will be found on page 27.)

y– axis label—always the same as the column

Percentage of cows cured

y– axis scale needs to be completed. The bar already present indicates the scale. The data shows the percentage of cows cured the first bar (no antibiotic is 72%). Sclae is therefore 1 box = 10

7.
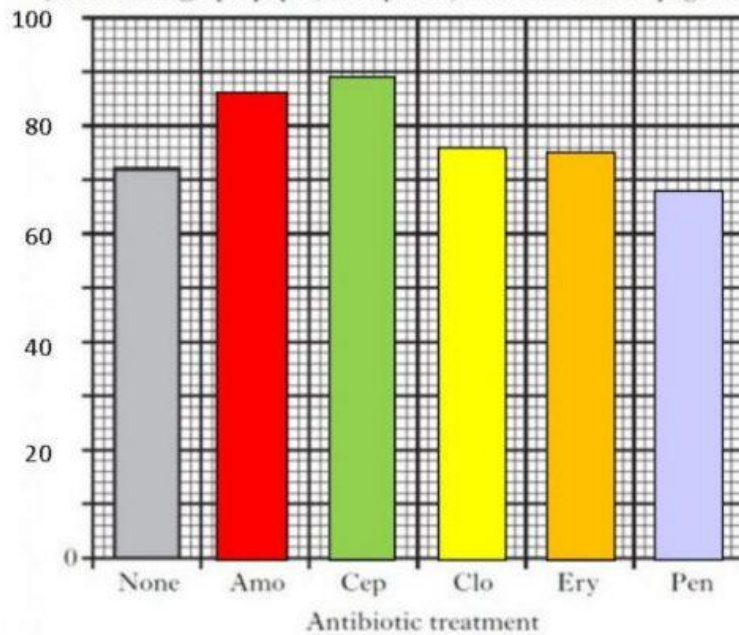
Five groups of pupils carried out an investigation into flour types. Dough was made by mixing flour, sugar, water and yeast. It was then rolled into a ball which was put into a glass container and its height measured. After 24 hours the height of the dough was remeasured.

initial height

final height

gas
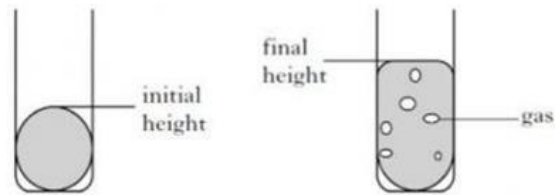
The table below shows the average results for the five groups.

Type of flour	Average increase in height of dough (%)
stoneground	34
self raising	76
wholemeal	68
plain	42
organic	56

(a) Use the results to complete the bar chart by:

(i) labelling the vertical axis; **1**

(ii) adding a suitable scale to the vertical axis; **1**

(iii) plotting the remaining bars. **1**

(An additional grid, if required, will be found on *Page twenty-six*.)

y– axis label— always the same as the column heading.

Average increase in height of dough (%)

y– axis scale needs to be completed. The bar already present indicates the scale. The data shows the percentage increase in dough for stoneground is 34%. This means that 1 large box = 10%, each small box = 2%

Type of flour

8.	
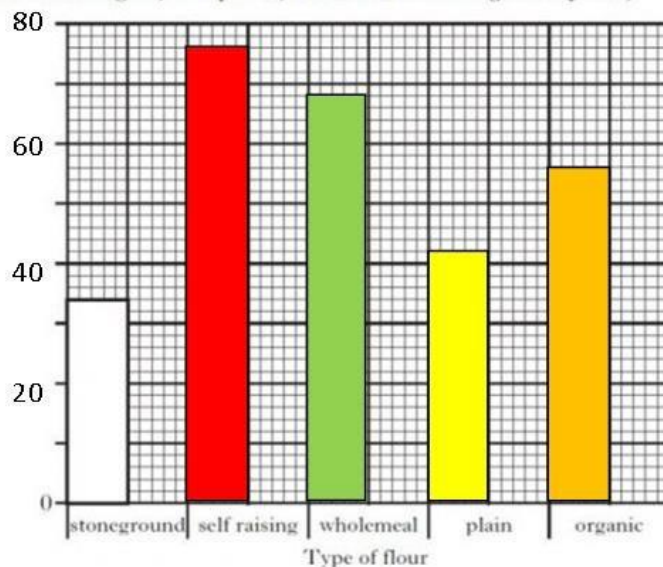
In an investigation into the effectiveness of different detergents, six pieces of cloth were washed. Each of the cloths had identical stains and all variables other than the detergent were kept the same. After washing, the percentage of the stain which had been removed was calculated.

The results are shown in the table.

| Name of detergent	Type of detergent	Stain removed (%)
Whizzo	Non-biological	50
Spotless	Non-biological	40
Purity	Biological	75
Cleano	Biological	80
Energise	Non-biological	65
Purgit	Biological	95

(i) Use the information from the table to complete the bar chart showing the detergents and their percentage of stain removed by:

A adding a scale to the vertical axis; 1

B adding a label to the vertical axis; 1

C completing the bars. 1

(Additional graph paper, if required, can be found on *Page twenty-eight*.)
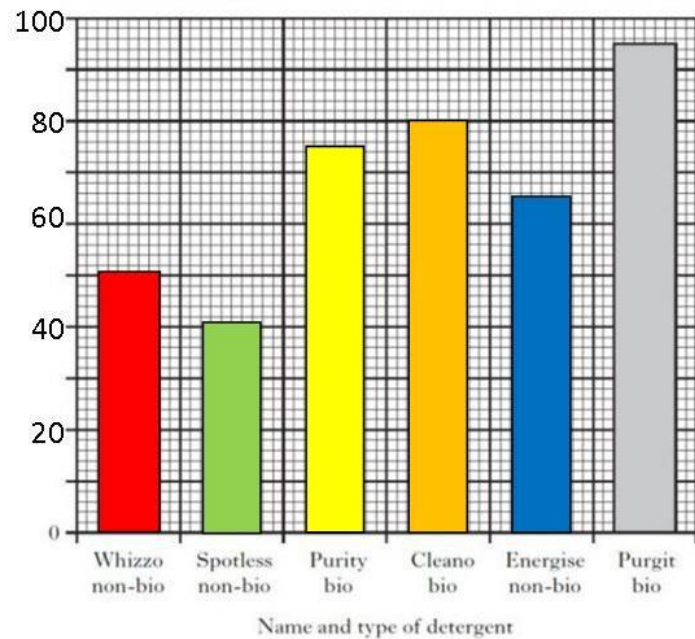
y– axis label— always the same as the column heading.

Stain Removed

(%)

y– axis scale needs to be completed. The bar already present indicates the scale. The data shows the percentage stain removed for purgit is 95%. This means that 1 large box = 10%, each small box = 2%. To get an odd percentage (e.g. 75%, half boxes need to be shaded.

Name and type of detergent

9.

The following table gives information about tissue damage among athletes.

Tissue	Injuries (%)
skin	8
muscle	33
tendon	5
ligament	50
cartilage	2
bone	2

Use the information to complete the bar chart below by:

(i) labelling the vertical axis;   1

(ii) adding a scale to the vertical axis;   1
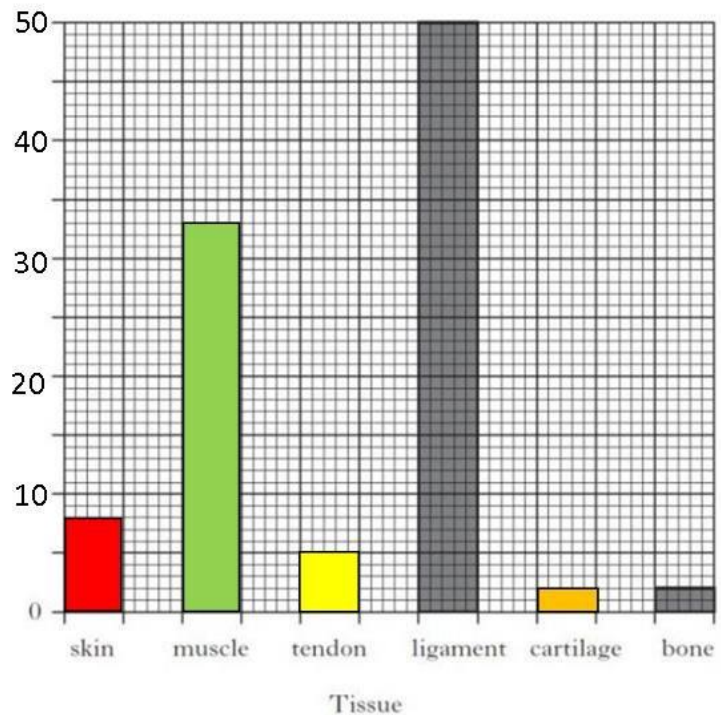
(iii) completing the missing bars.   1

(An additional grid, if required, will be found on *Page twenty-nine*.)

y– axis label— always the same as the column heading.

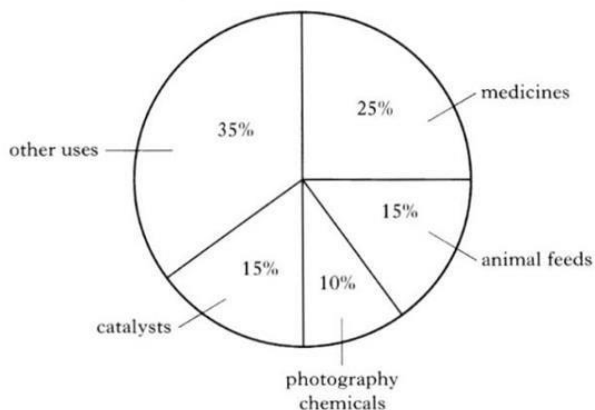Injuries

(%)

y– axis scale needs to be completed. The bar already present indicates the scale. The data shows the percentage injuries for ligaments is 50%. This means that 1 large box = 5%, each small box = 1%.

10.	

Chlorine and iodine are both members of the same group in the Periodic Table.

) The pie chart shows the percentages of iodine used to make other substances.

Present the information as a bar chart.

Use appropriate scales to fill most of the graph paper.

y– axis label—
already completed

y– axis scale needs to be completed. The largest value = 35%. There are 10 boxes, which would make each box worth 3.5. This would be difficult, so best scale would be 1 box = 5. 1 small box then equals 1
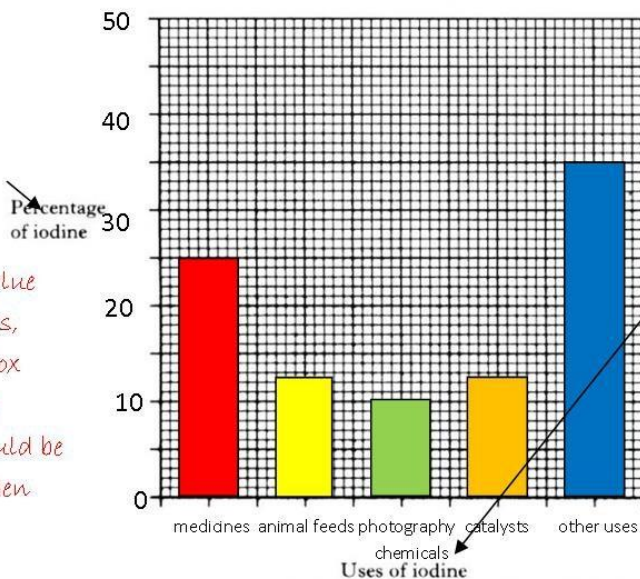
x– axis label is already completed.

However, the names for each bar need to be added.