**Science Skills**

**Reading Bar Graphs**

**Level 3**

I can work collaboratively, making appropriate use of technology, to source information presented in a range of ways, interpret what it conveys and discuss whether I believe the information to be robust, vague or misleading.

**MNU 3-20a**

**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Class: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Bar Graphs**

**Bar graphs** are used to **compare** things, concentrating on **one aspect** of them.

**Example**:
A bar graph was made from the data in the table below.

|  |  |  |
| --- | --- | --- |
| **Type of Battery** | **Storage Life** | **Uses** |
| Alkaline | 5 years | cassette players |
| Silver oxide | 2 years | calculators |
| Zinc chloride | 2 years | torches |
| Lithium | 10 years | computers |

The table gives information about the **storage life** and the **uses** of various types of battery.

Can you see that in the bar graph, the ***aspect*** of the batteries being compared is their **storage life**?

**Comparisons**
Study the bar graph. Can you see from the bar graph that…

a) Lithium batteries have the **longest** storage life (10 years)?

b) Silver oxide and zinc chloride batteries have the **shortest** storage life, and have the
 **same** storage life **as** each other (2 years)?

c) The storage life of zinc chloride and silver oxide batteries is **three** years **shorter than** the
 storage life of alkaline batteries?
 Working: Alkaline – 5; Silver Oxide – 2 5 – 2 = **3**

b) The storage life of lithium batteries is **five** times **longer than** the storage life of both
 silver oxide and zinc chloride batteries?
 Working: Lithium – 10; SO & ZC – 2 10 ÷ 2 = **5**

c) Alkaline batteries last **half as long** **as** lithium batteries?
 Working: Lithium – 10; Alkaline – 5 5 years is half as long as 10 years.
 Lithium batteries last **twice as long as** alkaline batteries?
 Working: Alkaline – 5; Lithium – 10 10 years is twice as long as 5 years.

1. Students were asked how much physical exercise they took in a week.

The results are in the graph below.

a) How many students did less than 30 minutes exercise per week?

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_

b) How many students did between one hour and three hours exercise per week?

 Working:

Answer: \_\_\_\_\_\_\_\_\_\_\_\_\_\_

c) How many students were asked in the survey?

 Working:

Answer: \_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. In a survey for the school canteen, 30 students in S6 were asked which vegetables they like and dislike.
The results are in the chart below.

 like dislike

a) How many students like kale? \_\_\_\_\_\_\_\_\_\_\_

b) How many students dislike spinach? \_\_\_\_\_\_\_\_\_\_\_

c) How many more students dislike sprouts than like sprouts?

Working: Answer: \_\_\_\_\_\_\_\_\_\_

d) Which vegetable was the least popular?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

e) Which vegetable do you think should be on offer in the school canteen?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. This bar graph shows the number of TV wildlife programmes watched by S4 pupils
 on five TV Channels in one year.

a) How many programmes on *Dave* were watched? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

b) Write down the number of programmes watched on each channel.

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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c) How many programmes were watched altogether?

Working: Answer: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

d) How many fewer programmes were watched on *BBC 2* than *Channel 5*?

Working: Answer: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

e) If you had a new TV programme aimed at teenagers, on which channel would
 you **not** want your programme to be broadcast? Why?

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
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4. This chart shows the number of birds caught and tagged in park land in the four
 weeks in November 2012.

a) How many blackbirds were tagged in the first week? \_\_\_\_\_\_\_\_\_\_\_\_\_

b) How many finches were tagged altogether?

 Working: Answer: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

c) Which was the most common bird tagged? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

d) How many more starlings than robins were tagged?

 Working: Answer: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

e) Suggest a reason why this tagging exercise was carried out in November.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
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5.

6. Nichrome wire is a wire made up of other metals.
 The bar graph below shows the percentage of each metal present in nichrome wire.



1. What percentage of nichrome wire is manganese? \_\_\_\_\_\_\_\_\_\_\_\_\_%

2. Which metal makes up 12% of nichrome wire? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. A reel of nichrome weighs 100 grams. How many grams of nickel does the
 reel contain?

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

7.

a) What type of tissue was treated 34 times? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

b) What is the **total number** of muscle and tendon injuries treated?

*(****Add up*** *the number of muscle, skin, ligament and tendon injuries treated)*

 Working:

Answer: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

8.



9.

10.

a) What mass of carbohydrate is in this pizza? \_\_\_\_\_\_\_\_\_\_\_\_\_\_ grams

b) How much more protein than fibre does the pizza contain?

Working: Answer: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ grams

11. The graph below shows the percentage of men of different age groups who
 are smokers.



a) What percentage of 25 – 34 year old men smoke? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_%

b) Which age group of men smoke least? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

12. The bar graph shows the daily energy requirements of four male students.





13. The bar chart shows the relationship between cigarette smoking and annual deaths
 from heart disease in males.





14. The bar graph shows the percentage of the population with blood groups A, B,
 AB and O.





15.

a) Highlight the line (Line A, B, C or D) in the table below which correctly shows the washing
 powder that worked best at each temperature.

