**Science Skills**

**Bar Graphs Level 3
Book 1**

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

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

**Bar Graphs Layout**

When you draw a bar graph, you **must** include **all** of the following:

This is a **bar graph**. All the bars are separated from each other.

The bars must be **evenly spaced**.

The bars must be the **same width**.

This is the **Y axis**.
It has a **scale**.

The numbers should start at 0 at the bottom and go up **evenly** in 1s, 2s, 5s 10s etc.
This one goes up in **2s**.

The graph ***must*** have a **heading**.
The whole point of a graph is that you understand **instantly** what it is about.

The **Y** axis is where you put the ***aspect*** of the things you are comparing. Here it is the **storage life** of the batteries.

This is the **X axis**.
This is where you put the **things being compared**.

It must have a **title**. Here the title is ***Types of Battery***.

Each **bar** must have its **name** under it.

Both axes must have a **label.**

The label should explain what the numbers on the scale mean.

You must write the **units** used.
The units used here are **years**.

The bar graph should be **big** enough to more or less fill the size of the graph paper.

It should **not** be tiny and squeezed into a corner.

**Histograms**

A **histogram** is like a bar graph except that the bars are **not** **separated**.

Histograms are sometimes called bar graphs.

Histograms are easier to draw than bar graphs because you do not have to measure out the spaces between the bars.

**Drawing a Bar Graph Example**

|  |  |
| --- | --- |
| **Type of Battery** | **Storage Life** |
| Alkaline | 5 years |
| Silver oxide | 2 years |
| Zinc chloride | 2 years |
| Lithium | 10 years |

1. Decide on a **Title** for the graph by combining the headings in the table.
The aspect should be mentioned first in the title.
***“Storage Life of Batteries”***

2. Decide what is being compared. This goes in the X axis (along the bottom).
In bar graphs this is usually the data with **words**.
Four things are being compared. You will need **four bars** and **spaces** between them.
These have to be evenly spaced. Start with a space.

3. Write in the name under the bars.

4. Now look at the numbers in the other set of data. Look at the lowest and the highest to decide on the **scale**. Look for a pattern.
Decide what they should “go up in” in the Y axis. At Level 3 this will usually be 2s, 5s, 10s or 20s.
In the example below it “goes up in” 5s.

 15-

10-

 5-

0**-**

5. Fill in the scale on the Y axis. Make sure it goes up evenly spaced.

6. Look back at the data in the table. Draw the bars to the correct height according to the scale.

7. Label the X axis. (***Types of Battery***)

8. Label the Y axis. Remember to put in the units. (***Storage Life in Years***)

1. Some help has been given with this task.

Use the information in the table to complete a **bar graph** or a **histogram**.

|  |  |
| --- | --- |
| **Source of Noise** | **Noise Level (decibels)** |
| Disco loudspeaker | 100 |
| Busy traffic | 70 |
| Road drill | 110 |
| Aircraft taking off | 140 |

 Graph heading: “Noise Levels of Various Sources”
Type of graph: Bar graph
Scale on Y axis: Start at 0 at the bottom and go up in 20s.



2. Use the information in the table to complete a **bar graph** or a **histogram**.

|  |  |
| --- | --- |
| Source of Energy | Percentage of the World’s Energy (%) |
| Coal | 31 |
| Oil | 26 |
| Natural Gas | 19 |
| Renewable Energy | 20 |

Heading: Percentage of the World’s Energy from Various Sources
Scale on Y axis: Start at 0 at the bottom and go up in 5s.
Type of graph: Bar graph



3. Use the information in the table to complete a **bar graph** or a **histogram**.

|  |  |
| --- | --- |
| Mineral | Hardness on Moh’s Scale |
| Talc | 1 |
| Diamond | 10 |
| Glass | 5 |
| Quartz | 7 |

Heading: Hardness of Minerals
Scale on Y axis: Start at 0 at the bottom and go up in 1s.
Type of graph: Histogram



4. Use the information in the table to complete a **bar graph** or a **histogram**.

|  |  |
| --- | --- |
| Substances in Paint | Percentage of Substance (%) |
| Binder | 54 |
| Solvent | 16 |
| Pigment | 25 |
| Additive | 5 |

 Heading: Percentage of Substance in Paint
 Scale: Start at 0 at the bottom and go up in 5s
 Type of Graph: Histogram





5. Use the information in the table to complete a **bar graph**.

|  |  |
| --- | --- |
| Place | Summer Temperature (ºC) |
| Iceland | 10 |
| Shetland | 13 |
| Western Isles | 14 |
| Mainland Scotland | 15 |



6. Use the information in the table to complete a **histogram**.

|  |  |
| --- | --- |
| Part of the UK | Percentage who smoke (%)  |
| South of England | 25 |
| Scotland | 32 |
| North of England | 31 |
| Wales | 27 |



7 Use the information in the table to complete a **bar graph**.

|  |  |
| --- | --- |
| Electricity Supplier | Cost per Unit (p)  |
| Northpower | 17 |
| Southpower | 14 |
| Eastpower | 12 |
| Westpower | 10 |



8. The table shows the weight of tar in four different brands of cigarette.
 Use the information in the table to complete a **bar graph**.

|  |  |
| --- | --- |
| Brand of Cigarette | Weight of Tar (mg)  |
| Puffer | 16 |
| Queen’s | 10 |
| Rough | 11 |
| Soot’s | 14 |



9 This table gives the eye colours for a class of 30 pupils.
 Present this information as a bar graph.

|  |  |
| --- | --- |
| Number of Pupils | Eye Colour  |
| 12 | Blue |
| 9 | Brown |
| 3 | Grey |
| 6 | Green |



10. Use the information in the table to complete a **histogram**.

|  |  |
| --- | --- |
| Foods | Amount of sugar (spoonfuls)  |
| Tube of sweets | 5 |
| Sticky bun | 4 |
| Bag of nuts | 0 |
| Can of cola | 7 |

