**ELEMENT 4: STATISITICAL TOOLS AND DATA ANALYSIS**

**Learning Outcome 4: ACTIVITY 1**

Refer to the data below.

1. Construct a vertical multiple bar chart to show Chikelu’s monthly shop sales in 2014, 2015 and 2016.
2. How would you interpret the bar chart you have drawn?

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| --- | --- | --- | --- |
|  | 2014  $ | 2015  $ | 2016  $ |
| Jan | 700 | 1000 | 1500 |
| February | 900 | 1450 | 1800 |
| March | 1200 | 1700 | 2500 |
| April | 2000 | 2500 | 3200 |
| May | 2900 | 3700 | 5000 |
| June | 3800 | 4150 | 5800 |
| July | 3900 | 4300 | 6000 |
| August | 3900 | 4200 | 5700 |
| September | 3100 | 3900 | 4800 |
| October | 1700 | 2300 | 2900 |
| November | 1200 | 1700 | 2000 |
| December | 900 | 900 | 1200 |

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**ELEMENT 4: STATISITICAL TOOLS AND DATA ANALYSIS**

**Learning Outcome 4: ACTIVITY 2**

Refer to the data below and construct a component bar chart to compare the sales made by Chikelu in the summer months (April-September) over the three years 2014, 2015 and 2016.

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| --- | --- | --- | --- |
|  | 2014  $ | 2015  $ | 2016  $ |
| Jan | 700 | 1000 | 1500 |
| February | 900 | 1450 | 1800 |
| March | 1200 | 1700 | 2500 |
| April | 2000 | 2500 | 3200 |
| May | 2900 | 3700 | 5000 |
| June | 3800 | 4150 | 5800 |
| July | 3900 | 4300 | 6000 |
| August | 3900 | 4200 | 5700 |
| September | 3100 | 3900 | 4800 |
| October | 1700 | 2300 | 2900 |
| November | 1200 | 1700 | 2000 |
| December | 900 | 900 | 1200 |

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**ELEMENT 4: STATISITICAL TOOLS AND DATA ANALYSIS**

**Learning Outcome 4: ACTIVITY 3**

Chikelu has his maximum sales in July each year. He wants to break down the $6000 sales for July 2016 by flavor.

Vanilla $1100; Strawberry $800; Butterscotch $1200; Chocolate $1800; Raspberry $500; Coconut $600

1. Draw a pie chart to show the share of each flavour.
2. Describe how you would interpret the pie chart you have drawn.

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**ELEMENT 4: STATISITICAL TOOLS AND DATA ANALYSIS**

**Learning Outcome 4: ACTIVITY 4**

Mohammed, a human resource manager, asks 36 workers in the organisation how long it takes them to travel from home to office. He collects the following data:

0 to 10 minutes (5); 10 to 20 minutes (12); 20 to 30 minutes (7); 30 to 40 minutes (6); 40 to 50 minutes (4) and 50 to 60 minutes (2). Total 36.

Construct a **histogram** using this data.

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**ELEMENT 4: STATISITICAL TOOLS AND DATA ANALYSIS**

**Learning Outcome 4: ACTIVITY 5**

Mohammed, a human resource manager, asks 36 workers in the organisation how long it takes them to travel from home to office. He collects the following data:

0 to 10 minutes (5); 10 to 20 minutes (12); 20 to 30 minutes (7); 30 to 40 minutes (6); 40 to 50 minutes (4) and 50 to 60 minutes (2). Total 36.

Construct a **frequency polygon** using this data.

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**ELEMENT 4: STATISITICAL TOOLS AND DATA ANALYSIS**

**Learning Outcome 4: ACTIVITY 6**

Theiry uses her mobile phone a lot. She realises that her mobile phone bill has increased significantly. She records the call duration of her calls in the past one week. The data in minutes is:

4.6, 8.2, 7.5, 6.8, 4.5, 3.1, 9.3, 4.5, 5.2, 8.6, 6.8, 6.5, 9.7, 2.3, 1.5, 3.8, 5.5, 4.5, 1.8, 3.9

1. Draw a stem and leaf diagram to show the duration of calls made by Theiry.
2. Interpret the plot.

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**ELEMENT 4: STATISITICAL TOOLS AND DATA ANALYSIS**

**Learning Outcome 4: ACTIVITY 7**

Mohammed, a human resource manager, asks 36 workers in the organisation how long it takes them to travel from home to work. He collects the following data:

0 to 10 minutes (5); 10 to 20 minutes (12); 20 to 30 minutes (7); 30 to 40 minutes (6); 40 to 50 minutes (4) and 50 to 60 minutes (2).

Calculate the **mean, median and mode** for this data.

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**ELEMENT 4: STATISITICAL TOOLS AND DATA ANALYSIS**

**Learning Outcome 4: ACTIVITY 8**

Mohammed, a human resource manager, asks 36 workers in the organisation how long it takes them to travel from home to work. He collects the following data:

0 to 10 minutes (5); 10 to 20 minutes (12); 20 to 30 minutes (7); 30 to 40 minutes (6); 40 to 50 minutes (4) and 50 to 60 minutes (2).

Calculate the **standard deviation** of this data.

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