

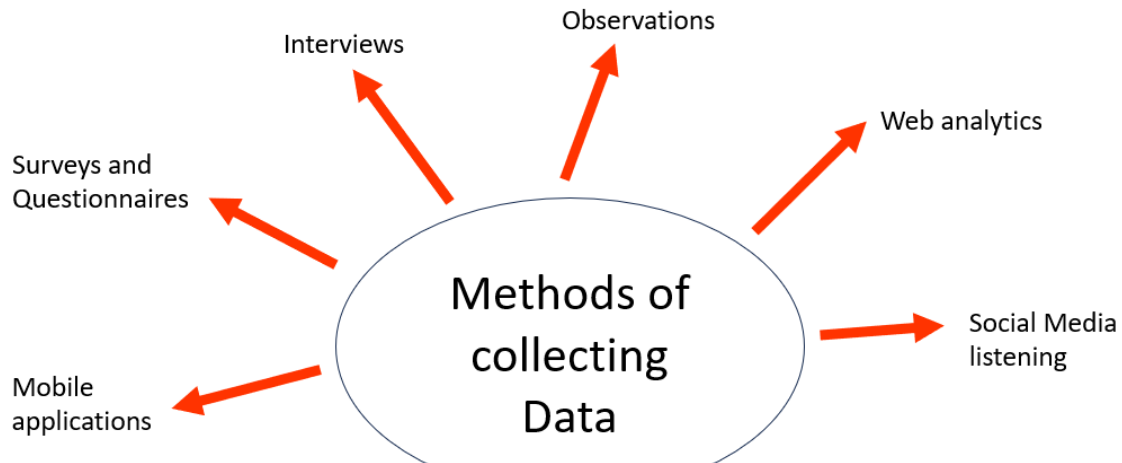
SHARP

Worksheet 18 Memorandum: Collect, Organise and Summarise Data

Grade 8 Mathematics

Collecting Data:

- 1) Create a mind map showing the different ways you can collect data.



- 2) State whether the following data is discrete or continuous:
- The number of tries scored by the different teams in the rugby world cup. **Discrete**
 - The times taken by different athletes to complete the Two Oceans Marathon. **Continuous**
 - The number of cars parked in a parking lot at a shopping centre. **Discrete**
 - The individual heights of all the students in your class. **Continuous**
- 3) The population would be all the students that attend your school, a sample would be 5 learners selected at random per grade in your school. The sample needs to reflect the population so that the data to is accurate.

Organising Data:

4)

Rating	Tally	Frequency
1		3
2		4
3		5
4		5
5		3
Total		20

4) Represent the following data as a back- to-back stem and leaf display.

Ages (Male)						Ages (Female)				
			8	6	1	6	7	9	9	9
8	7	3	2	1	2	0	3	5	9	
			8	8	3	0	3	6	8	
			6	4	4	0	2	5		
					5					
				3	6					

5) Represent the data of the females into class intervals. The first one has been done for you.

Class intervals	Frequency
16 - 20	6
21 - 25	2
26 - 30	2
31 - 35	1
36 - 40	3
41 - 45	2
Total	16

Summary of Data:

6) Organise the following words under the correct headings:

7)

a) Measure of central tendency

- Mean
- Mode
- Median

b) Measures of dispersion

- Range
- Extreme

8)

a) What was the average age for the males?

$$\begin{aligned} \text{Mean} &= \frac{\text{Sum of values}}{\text{number of values}} \\ &= \frac{517}{16} \\ &= 32,31 \end{aligned}$$

b) What is the range of females who played the online game?

$$\begin{aligned} &= 45 - 16 \\ &= 29 \end{aligned}$$

c) Write down any extreme with regards to the males ages.

63 is an extreme

d) Write down the mode for the females who played the online game.

19 is the mode.

e) Determine the median for the male online gamers.

15, 16, 18, 20, 21, 22, 23, 27, 28, 36, 38, 38, 42, 44, 46, 63

$$\frac{27 + 28}{2} = 27,5 \text{ is the median}$$

9) The annual earnings of 60 celebrities (in dollars) are represented as grouped data in the following table:

Class intervals (in millions of dollars)	Frequency (number of celebrities)	Midpoint	Mid × Frequency
$5 \leq x < 10$	16	7,5	120
$10 \leq x < 15$	12	12,5	150
$15 \leq x < 20$	6	17,5	105
$20 \leq x < 25$	4	22,5	90
$25 \leq x < 30$	8	27,5	220
$30 \leq x < 35$	5	32,5	162,5
$35 \leq x < 40$	2	37,5	75
$40 \leq x < 45$	7	42,5	297,5
Totals	60		1220

- a) Calculate the estimated mean for the data.

$$\begin{aligned} \text{Estimated Mean} &= \frac{1220}{60} \\ &= 20,3 \text{ million dollars is the estimated average.} \end{aligned}$$

- b) Determine the median class.

$$15 \leq x < 20$$

- c) Write down the modal class.

$$5 \leq x < 10$$