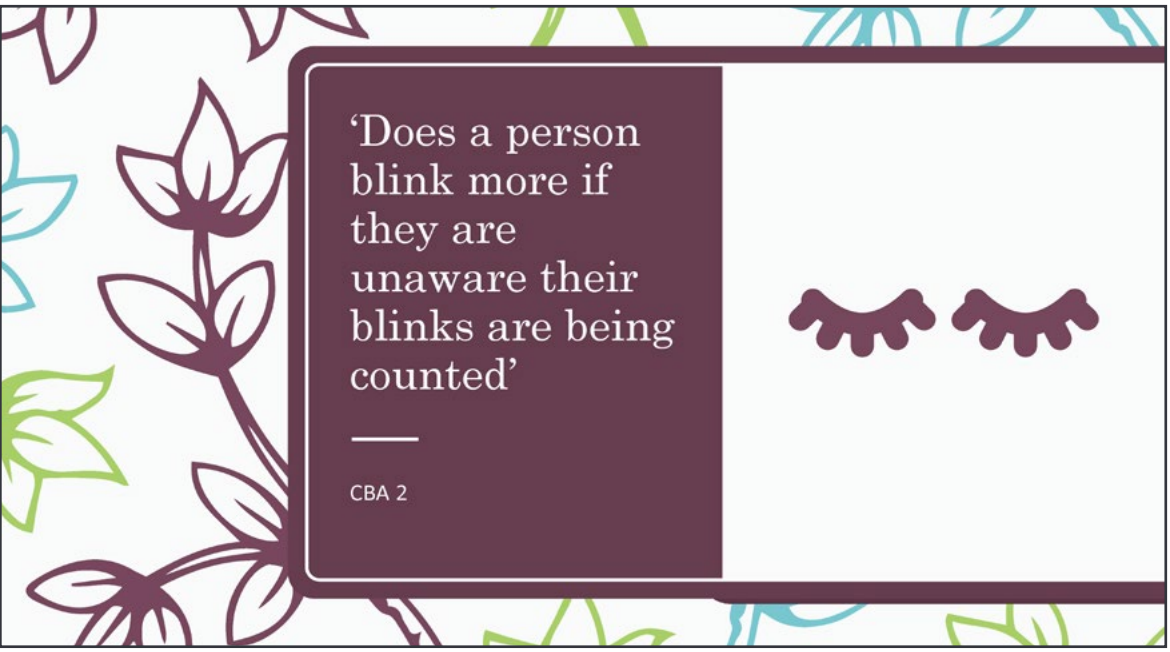
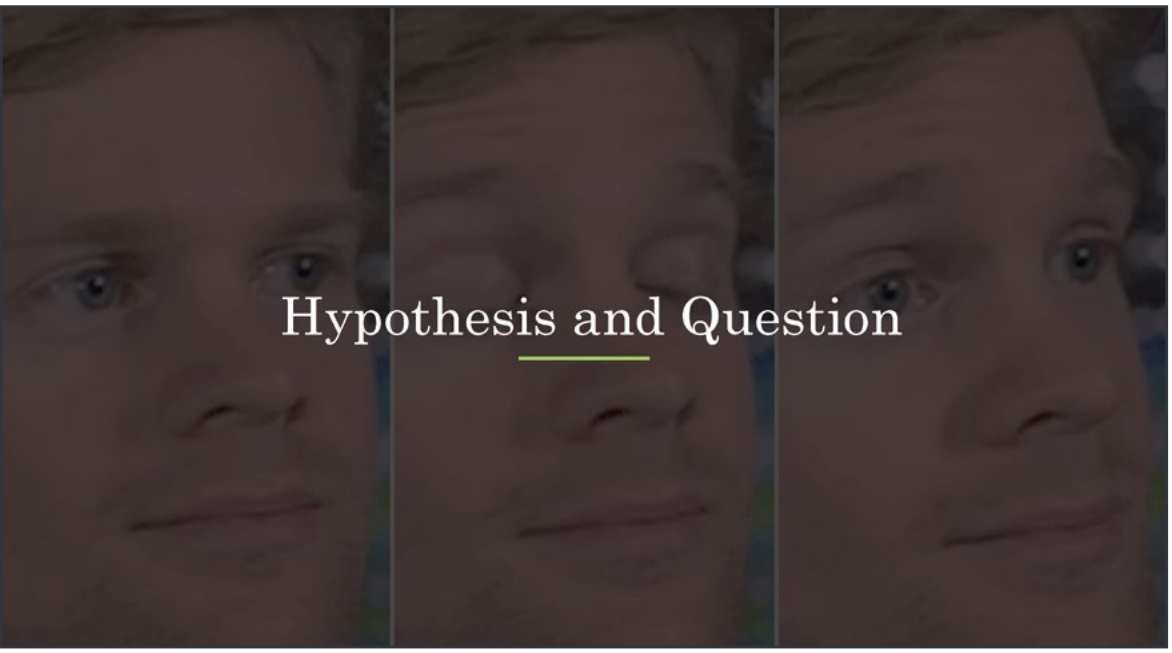
CBA2 Statistical Investigation: Counting Blinks





CBA2 Statistical Investigation: Counting Blinks

Producing the question

While producing the question we had few ideas that made sense. Our first question was :

- **How many times does a person blink while factorising.**

We decided not to use this question because it seemed too vague and we thought we would not be able to get enough information from it.

We decided to go with

- **Does a person blink more when they are unaware their blinks are being counted.**

We chose this because it gave us a clear route for the data we were looking for.

Poses a question that anticipates variability and seeks generalisation

Hypothesis

- **A person blinks less when they are aware their blinks are being counted**

We chose this as our hypothesis because this is what we thought the answer to our question would be

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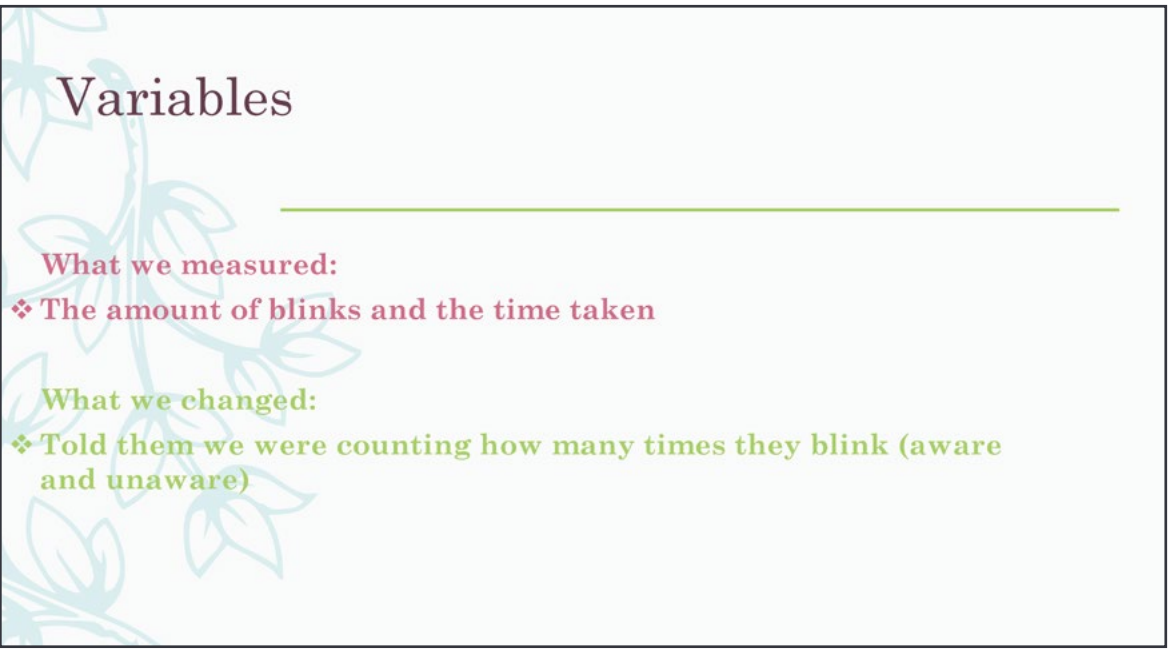

Identifies variables and indicates how they will measure the independent and dependent variables

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How we collected the data

- 1.If we were to count the number of times a person blinked, we decided we wanted them to be completing a task e.g. reading a paragraph or solving some type of problem
- 2. We originally wanted a paragraph to be read, but we decided against it and went on theme with 2 maths problems to be solved in 2 minutes or under
- 3. We chose 2 quadratic equations to be factorised

$$9x^2+12x+4$$

$$5x^2+13x-6$$

Chosen measuring strategy will provide valid and reliable data

How we collected the data

- We started to ask our peers to take part in our experiment after finding out our idea.
- We asked them to take up the question and asked them to complete the task within only 2 minutes.
- Second, we told them we had their blinks counted and asked them to ask the next question.
- First, my partner and I worked together as we felt that we had lots of time to have more than 30 respondents.
- Later, we realized this wouldn't succeed and split up to do the testing.
- Fortunately, we were able to get 30 people in time
- Also due to the current Covid-19 situation we felt 30 was enough people

Data collection plan shows awareness of how variability affects validity and reliability

Sample size selected shows awareness of how variability affects reliability

Chosen measuring strategy will provide valid and reliable data

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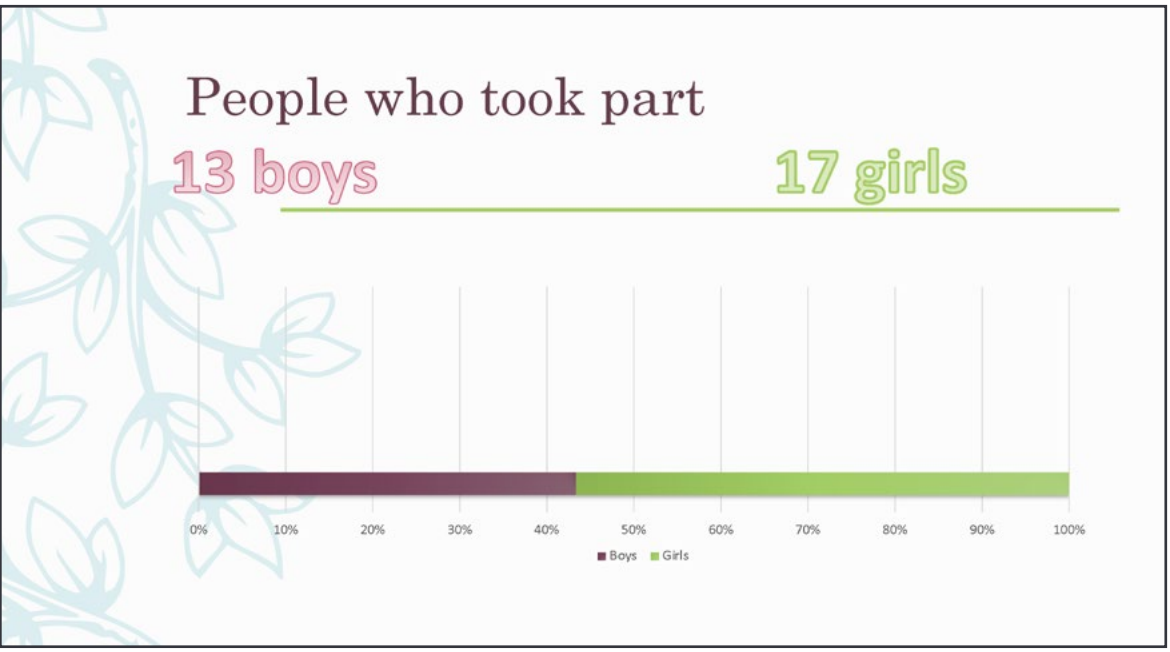
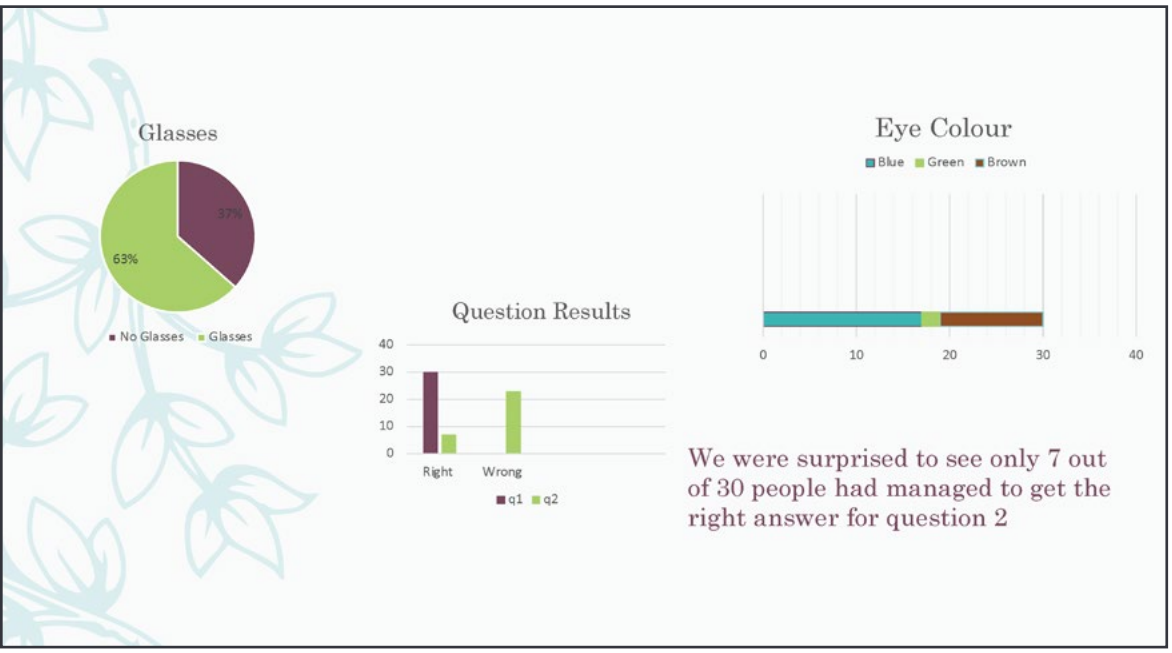




Gathers and displays data

CBA2 Statistical Investigation: Counting Blinks

Name	Blinks Q1	Time (mins)	Blinks Q2	Time (mins)
	-none	37s	II	43s
	𝍸 III	1:46	𝍸 II	48s
	𝍸 𝍸 I	1:18	𝍸 𝍸 𝍸 III	2:00
	𝍸 IIII	1:54	II	56s
	𝍸 𝍸 𝍸 𝍸 𝍸 𝍸	2:00	𝍸 𝍸 𝍸 II	2:00
	𝍸 𝍸 I	1:35	IIII	49s
	IIII	1:59	II	1:03
	𝍸 𝍸 𝍸 𝍸	1:13	𝍸	2:00
	𝍸 IIII	1:25	𝍸 I	57s
	𝍸 𝍸 𝍸 𝍸 II	2:00	𝍸 II	1:07
	𝍸 I	1:10	IIII	59s
	𝍸 𝍸 𝍸	1:00	𝍸	1:18
	𝍸 𝍸 𝍸 𝍸 𝍸 I	1:52	II	1:27
	𝍸 𝍸 𝍸	1:37	𝍸 III	1:43
	II	39s	I	42s

Gathers and displays data

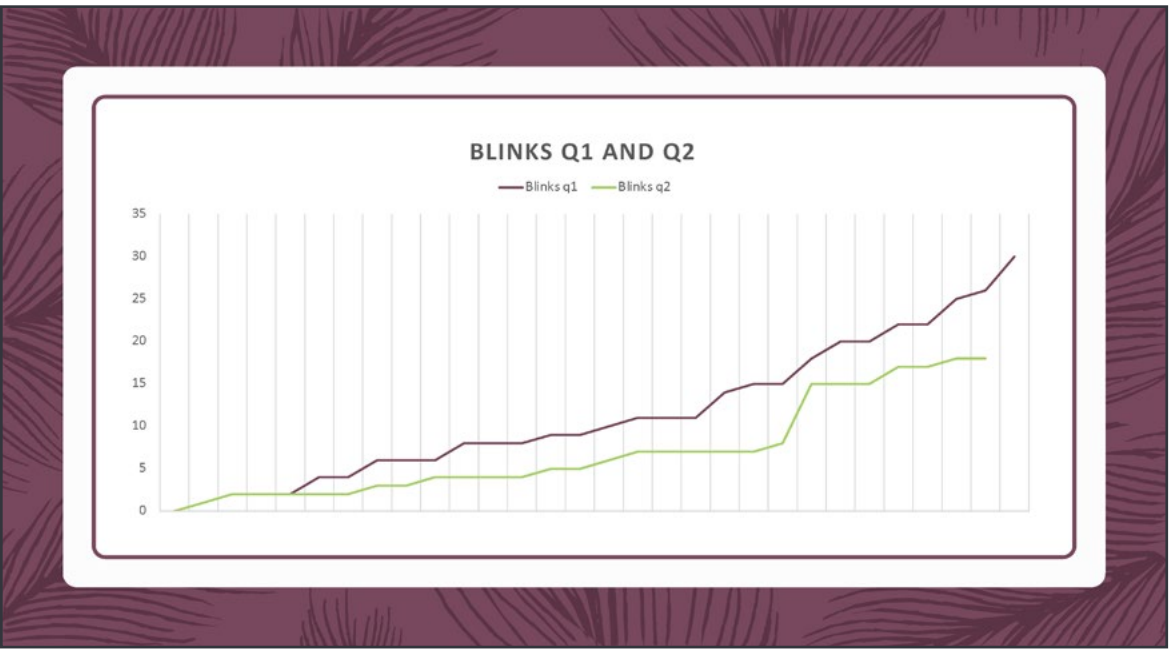
Name	Blinks Q1	Time (mins)	Blinks Q2	Time (mins)
	𝍸 𝍸 𝍸 𝍸	1:49	𝍸 II	2:00
	𝍸 𝍸 𝍸 𝍸 𝍸 𝍸	1:11	𝍸 𝍸 𝍸	2:00
	𝍸 I	44s	IIII	54s
	IIII	46s	II	1:04
	𝍸 𝍸 𝍸 𝍸 II	59s	𝍸 𝍸 𝍸	1:03
	𝍸 III	1:05	𝍸 𝍸 𝍸	52s
	I	49s	none	43s
	𝍸 𝍸	1:29	𝍸 II	47s
	𝍸 𝍸 𝍸 III	1:29	𝍸 II	53s
	𝍸 I	1:55	IIII	1:22
	𝍸 𝍸 IIII	1:42	𝍸 𝍸 𝍸 II	1:29
	II	1:00	𝍸 𝍸 𝍸 III	1:52
	𝍸 III	1:59	III	1:58
	𝍸 𝍸 I	1:20	II	56s
	II	1:05	III	51s

Gathers and displays data

CBA2 Statistical Investigation: Counting Blinks

Blinks Q2		Blinks Q1
8 7 7 7 7 7 6 5 5 4 4 4 4 3 3 2 2 2 2 2 2 1	0	0 1 2 2 2 4 4 6 6 6 8 8 8 9 9
8 8 7 7 5 5 5	1	1 1 1 4 5 5 8
	2	0 0 2 2 5 6
	3	0

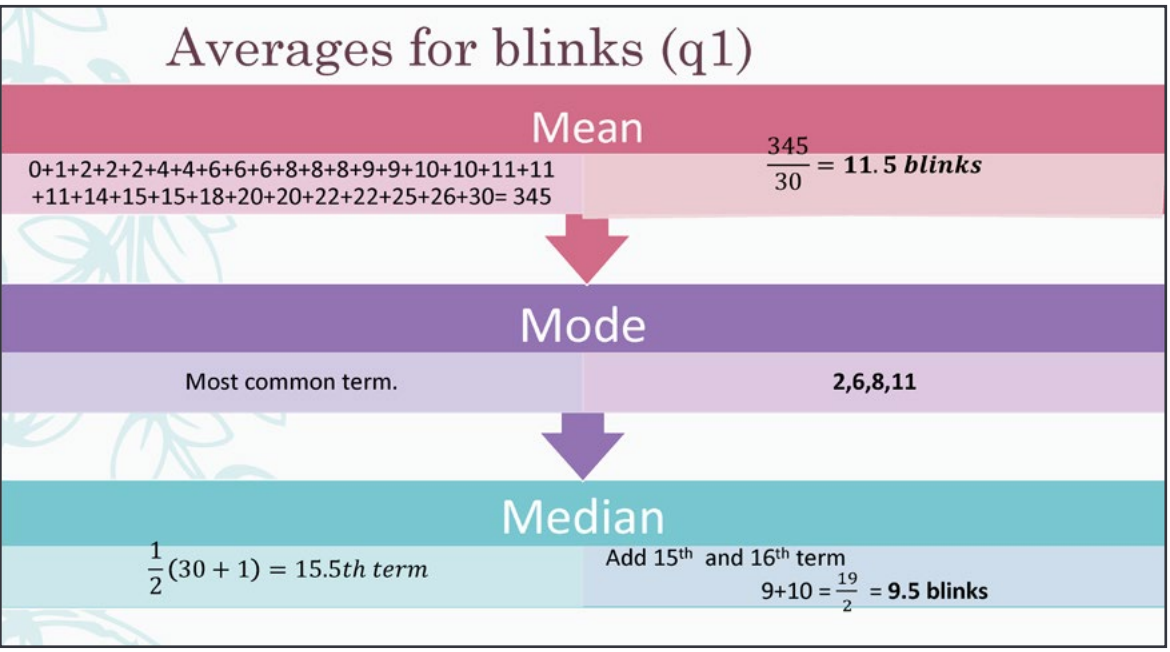
Key: 1 | 1 = 11 blinks



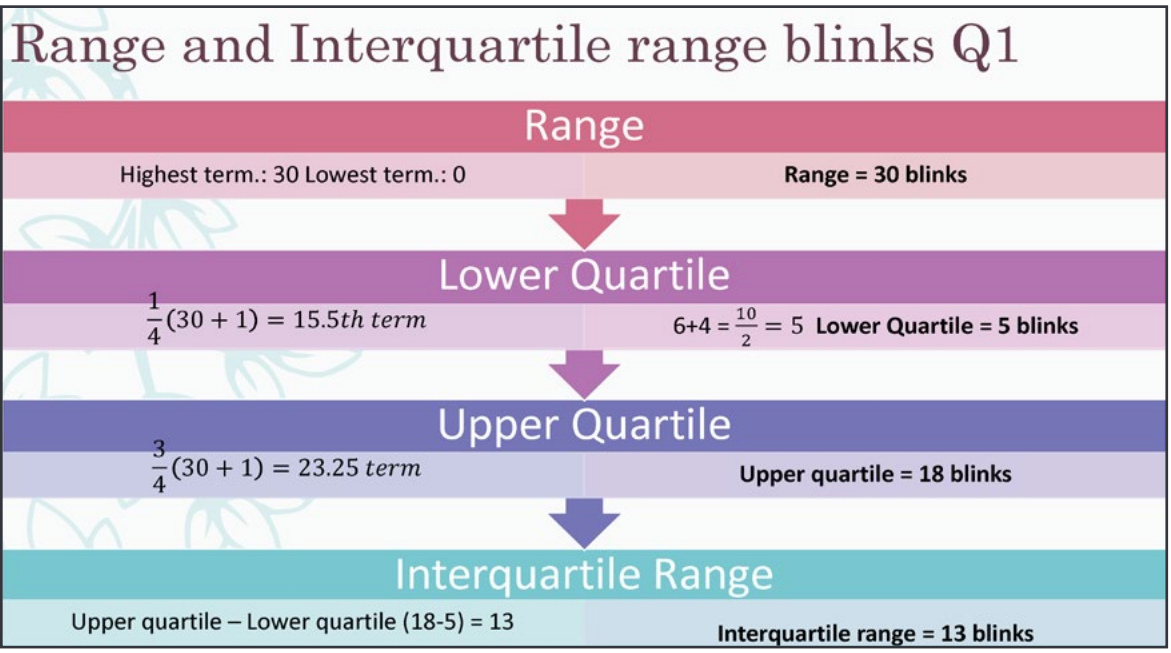
Displays data in a way that allows patterns to be identified

Displays data

CBA2 Statistical Investigation: Counting Blinks



Although measures of centre are calculated no attempt is made to use them to describe the data



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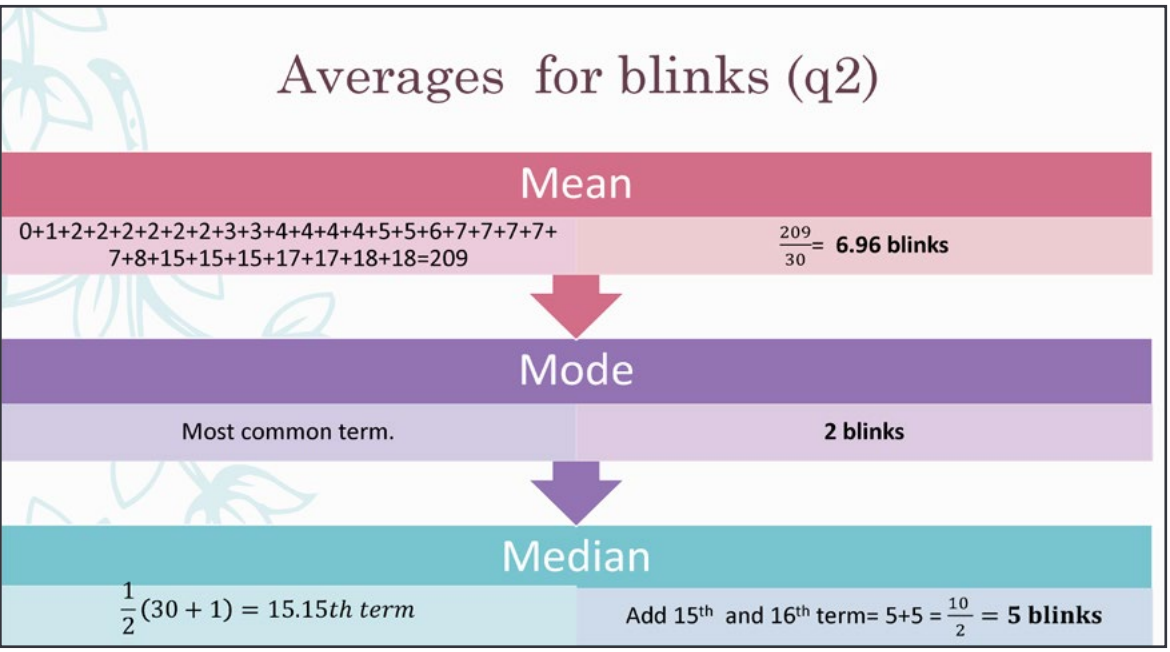

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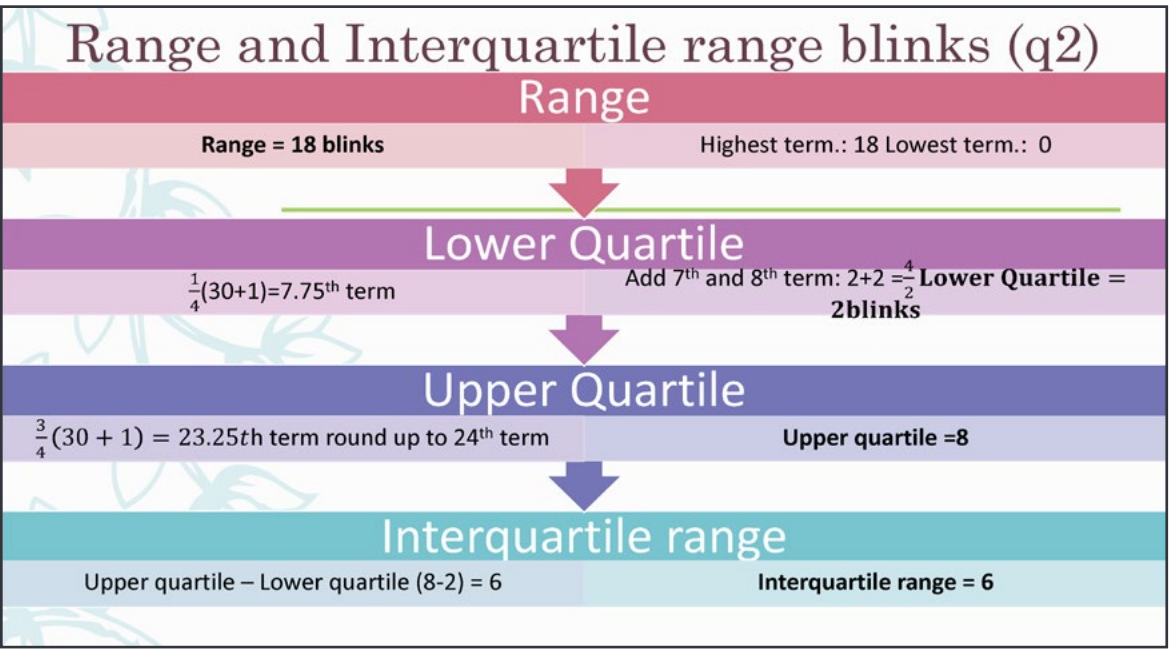

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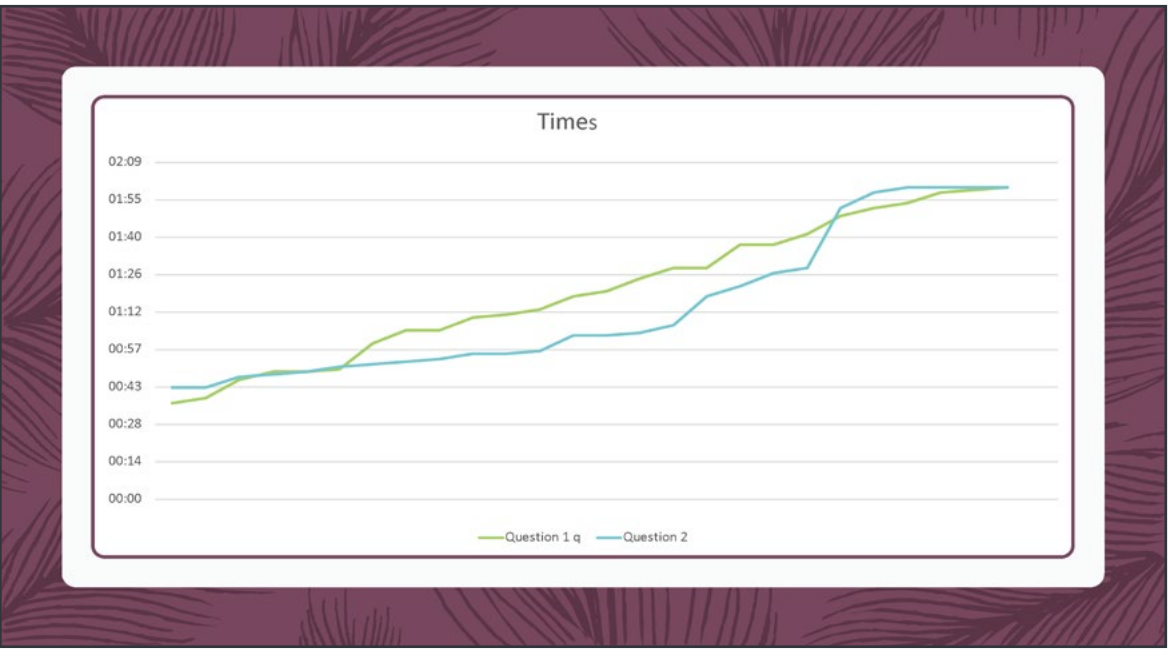
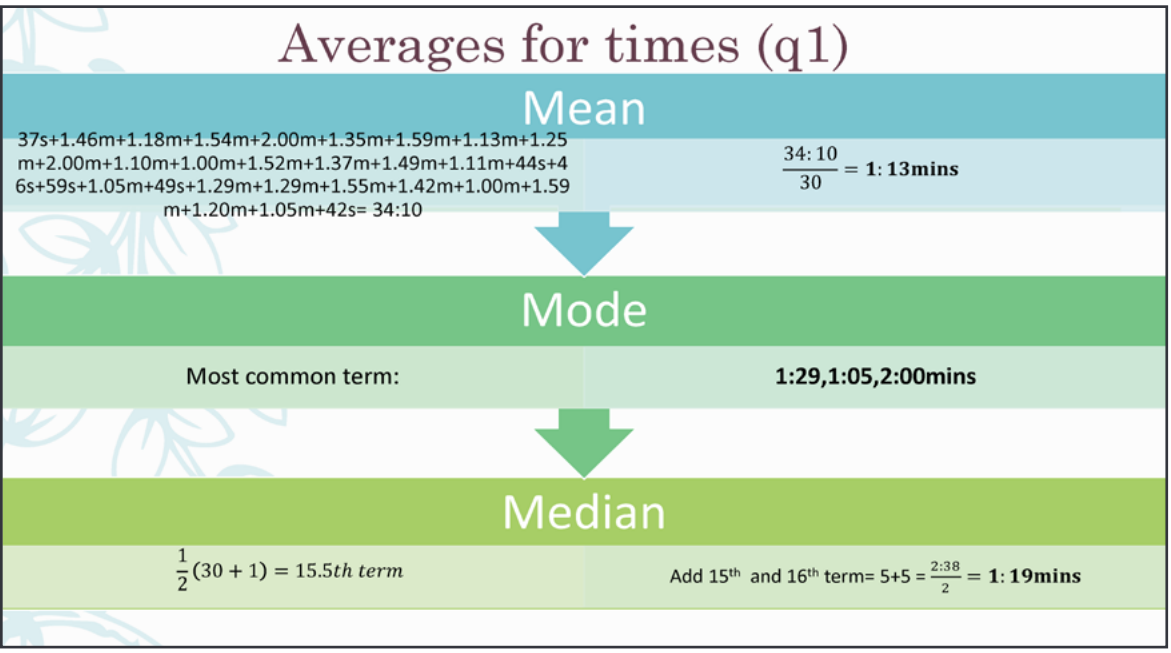
CBA2 Statistical Investigation: Counting Blinks



Displays data



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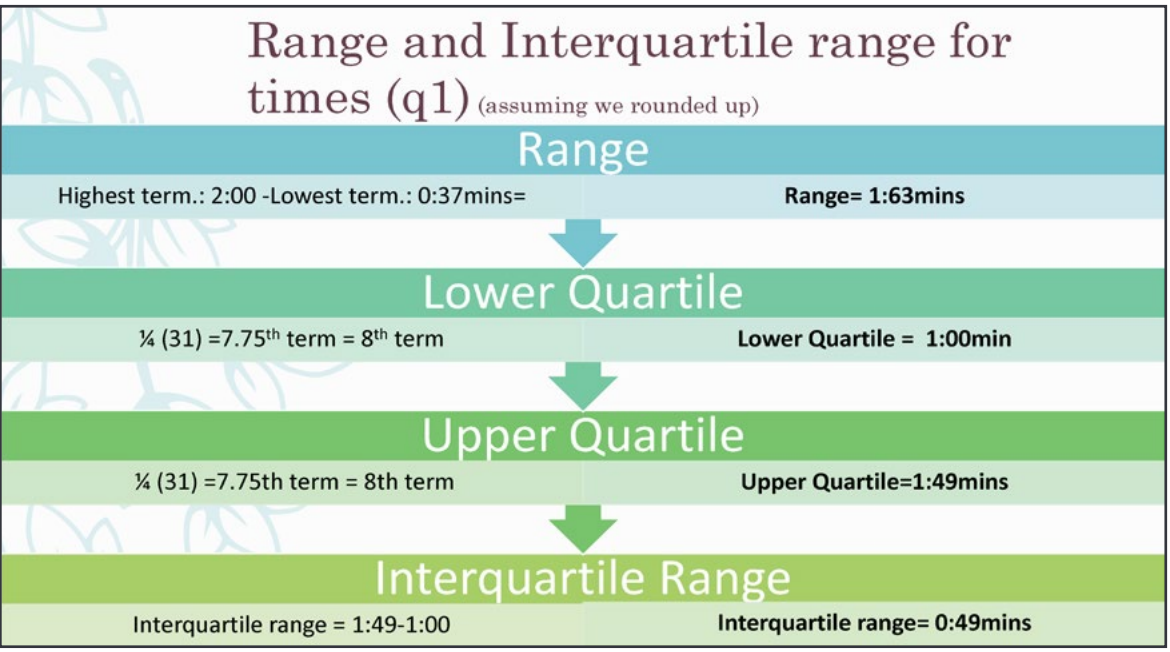

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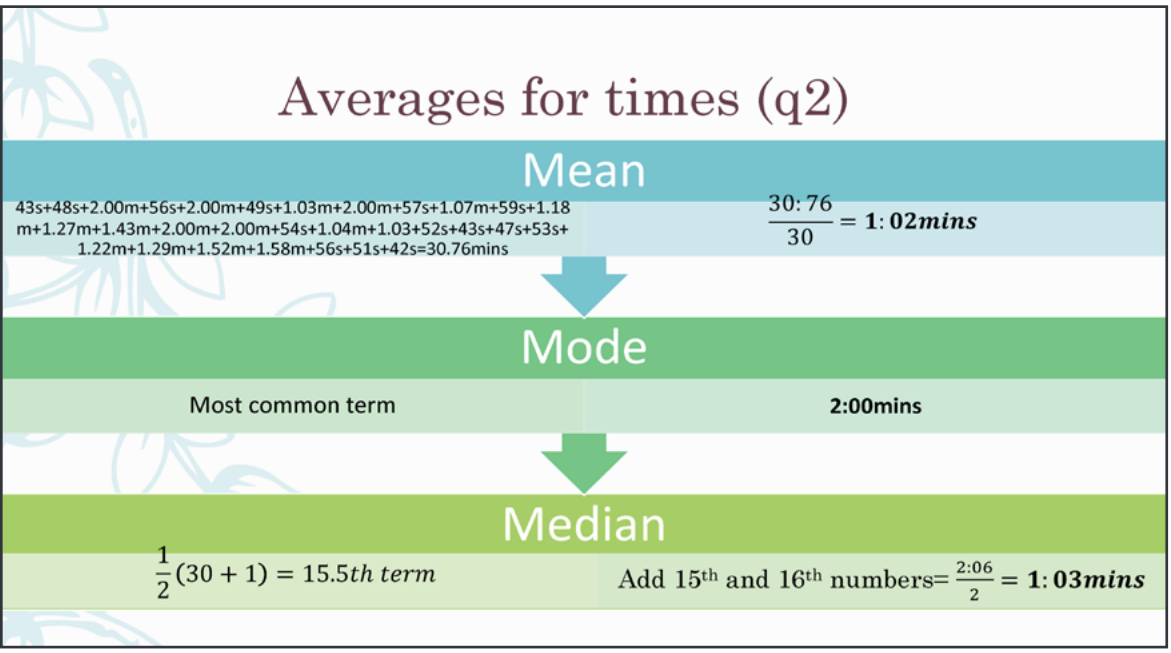

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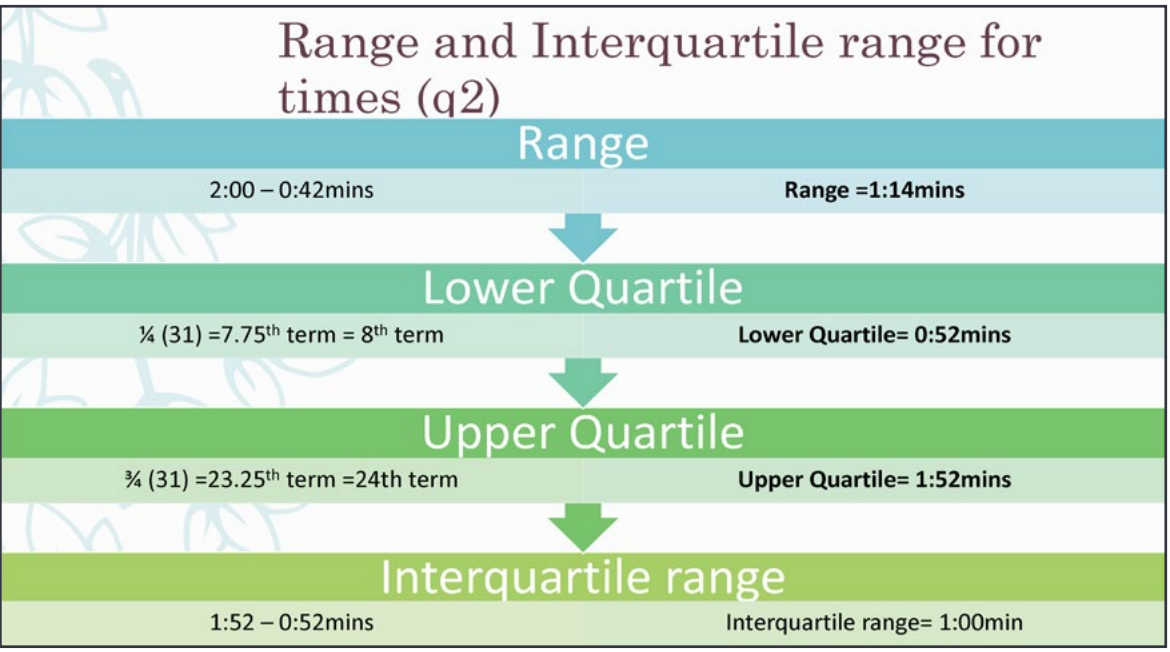

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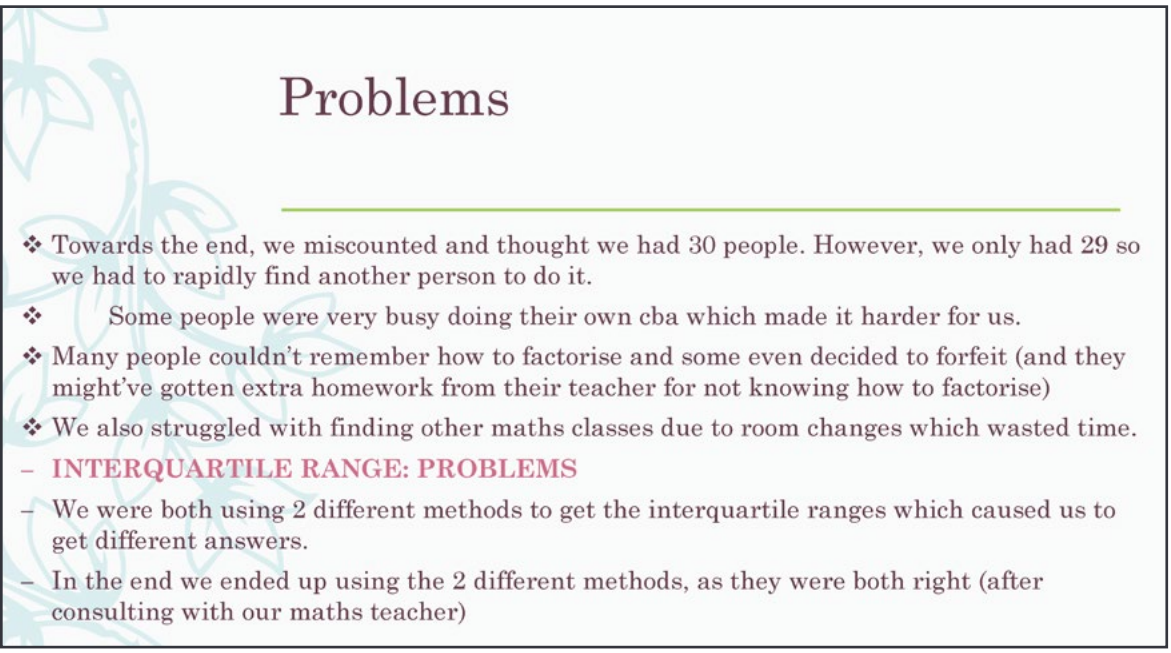


CBA2 Statistical Investigation: Counting Blinks

What we could have done better

- • We agree that more people should have been involved (50 +) to do this experiment/investigation
- The margin of error would have been smaller and the experiment more precise. We believe this would be possible if we split up for the first few days to compile the data.
- • We should have also made our working neater as we found it difficult to find things
- • Additional math.

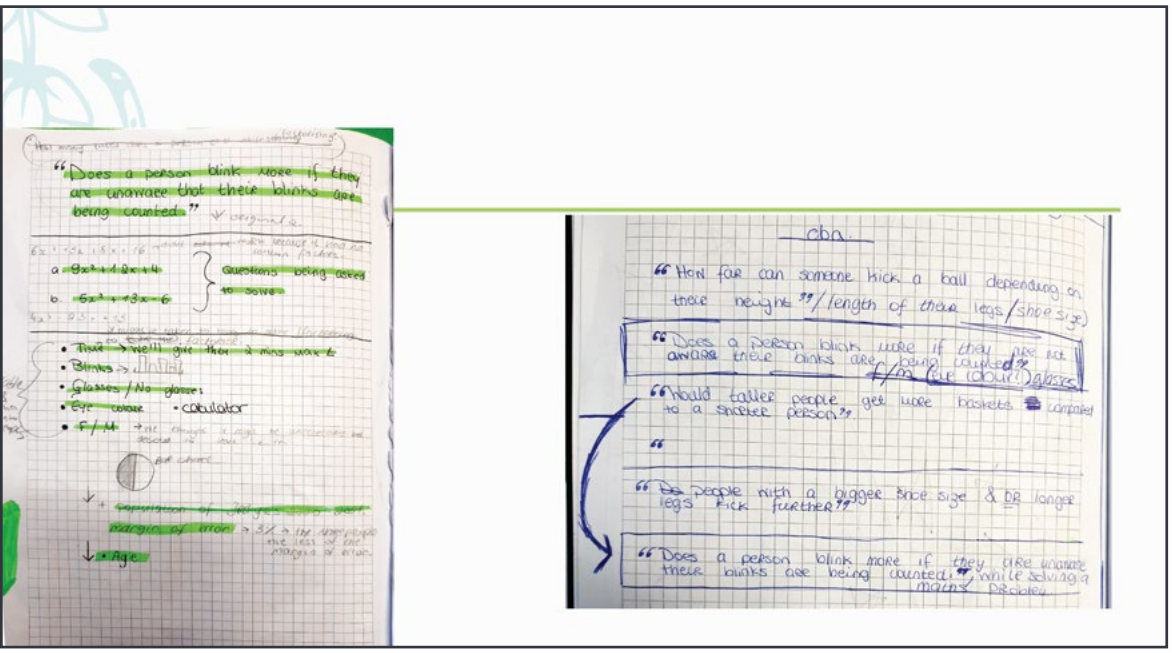
Conclusion

- 83% of people blinked less during the 2nd question.
- In conclusion, people do blink less when they are aware and blink more when they are UNAWARE.
- We proved our hypothesis

Reports the findings and the conclusion refers to the original question

CBA2 Statistical Investigation: Counting Blinks

Appendix



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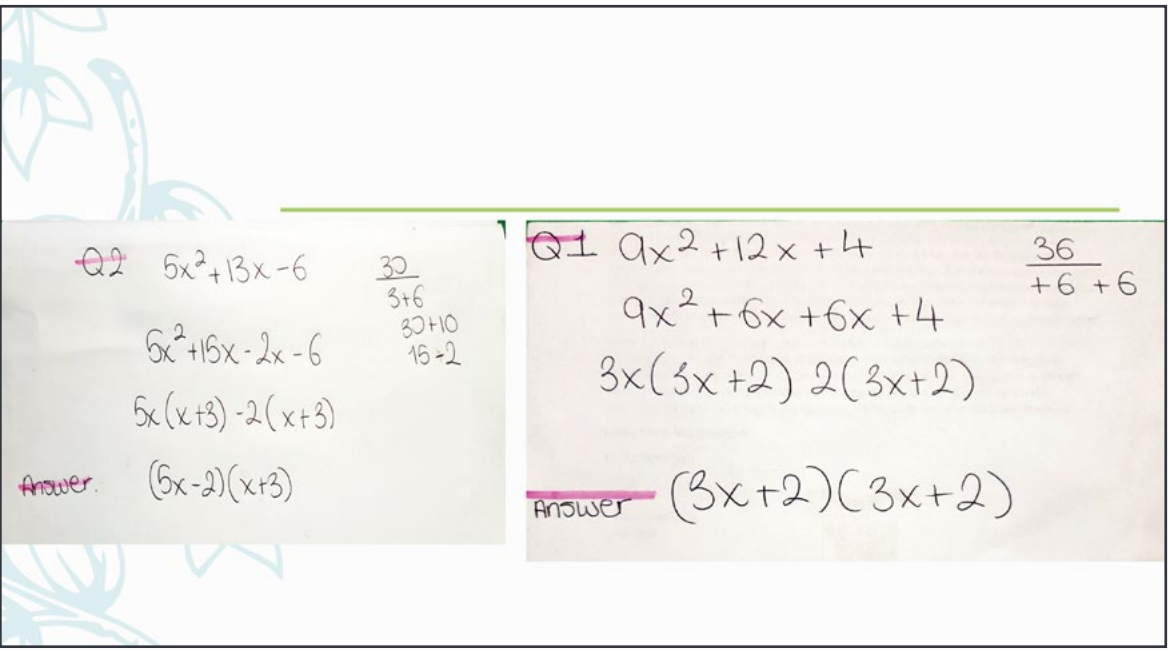

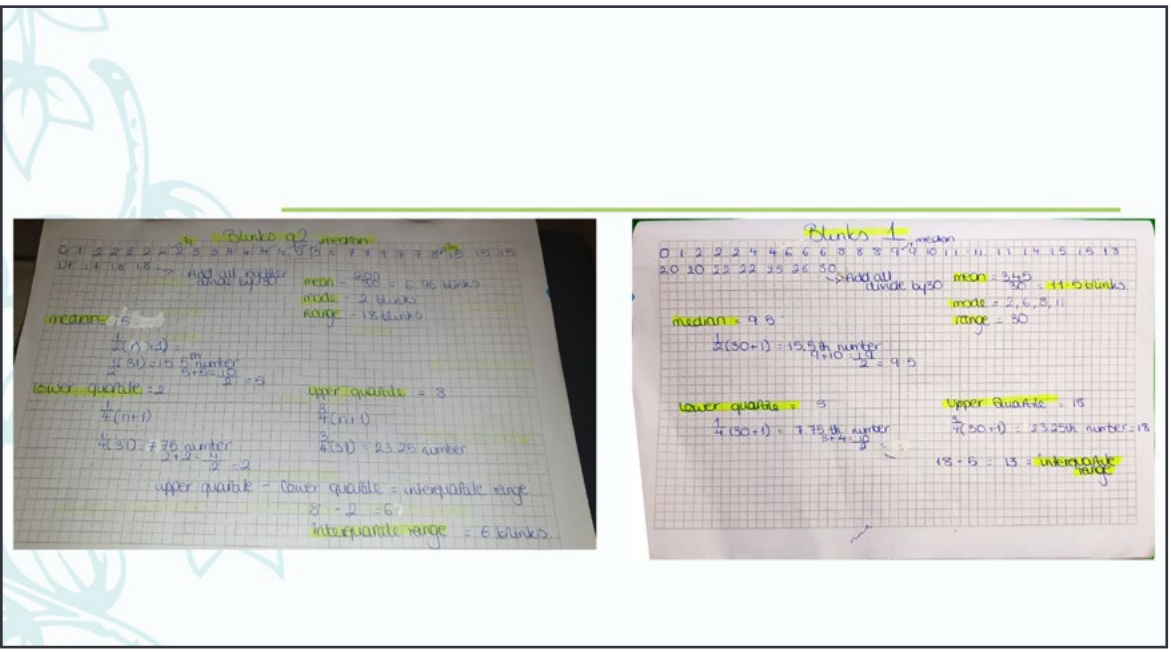

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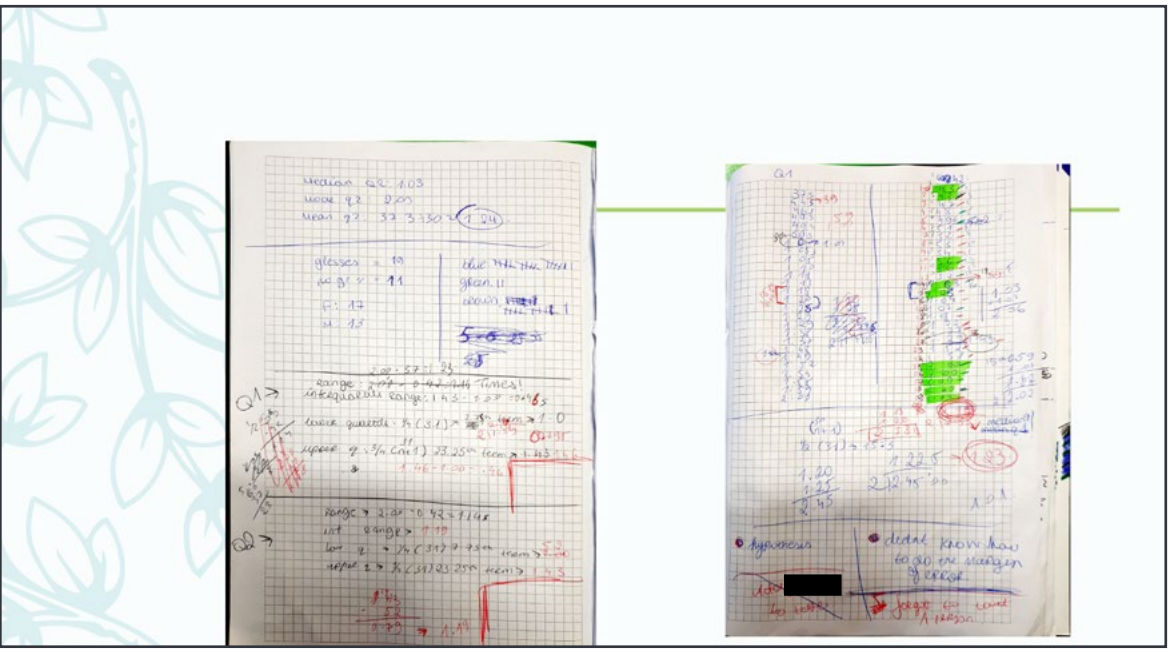

Overall judgement: In line with expectations

Exceptional | Above expectations | In line with expectations | Yet to meet expectations