

Mathematics

Univariate and bivariate data

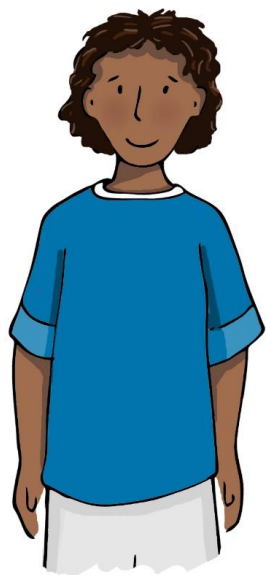
Mr Millar



Try this

Zaki and Cala have recorded height and weight data from 10 people.

What's the same or different about their data sets?



Heights recorded (m):

1.53, 1.59, 1.61, 1.63, 1.68,
1.70, 1.72, 1.75, 1.81, 1.86

Weights recorded (kg):

59.1, 60.7, 63.2, 67.0, 68.2,
73.5, 78.3, 80.4, 81.3, 86.8



| Participant | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|-------------|------|------|------|------|------|------|------|------|------|------|
| Height (m) | 1.68 | 1.86 | 1.59 | 1.72 | 1.61 | 1.53 | 1.75 | 1.81 | 1.70 | 1.63 |
| Weight (kg) | 68.2 | 86.8 | 63.2 | 73.5 | 59.1 | 60.7 | 78.3 | 81.3 | 80.4 | 67.0 |



Independent task

Describe in a sentence what each the results of these data tables would be able to show you.

| Journey duration (mins) | Frequency |
|-------------------------|-----------|
| 0-5 | |
| 6-10 | |
| 11-15 | |
| 16-20 | |
| 20+ | |

| Main mode of transport | Frequency |
|------------------------|-----------|
| Bus | |
| Walk | |
| Train | |
| Car | |
| Cycle | |

| | Frequency by mode of transport | | | | |
|-------------------------|--------------------------------|------|-------|-----|-------|
| Journey duration (mins) | Bus | Walk | Train | Car | Cycle |
| 0-5 | | | | | |
| 6-10 | | | | | |
| 11-15 | | | | | |
| 16-20 | | | | | |
| 20+ | | | | | |

| Student | Journey duration (mins) | Journey length (km) |
|------------|-------------------------|---------------------|
| Student #1 | | |
| Student #2 | | |
| Student #3 | | |
| Student #4 | | |
| ... | | |

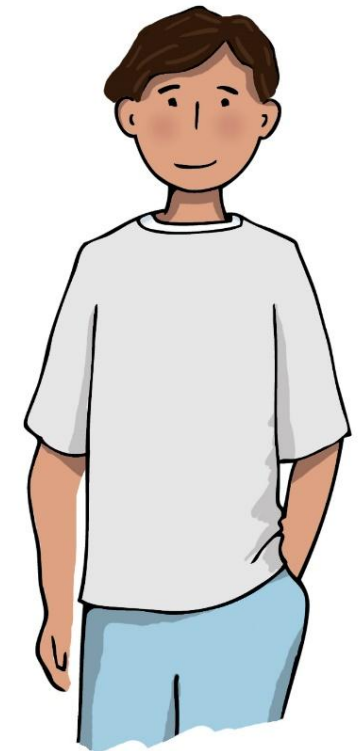
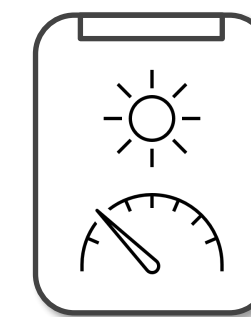
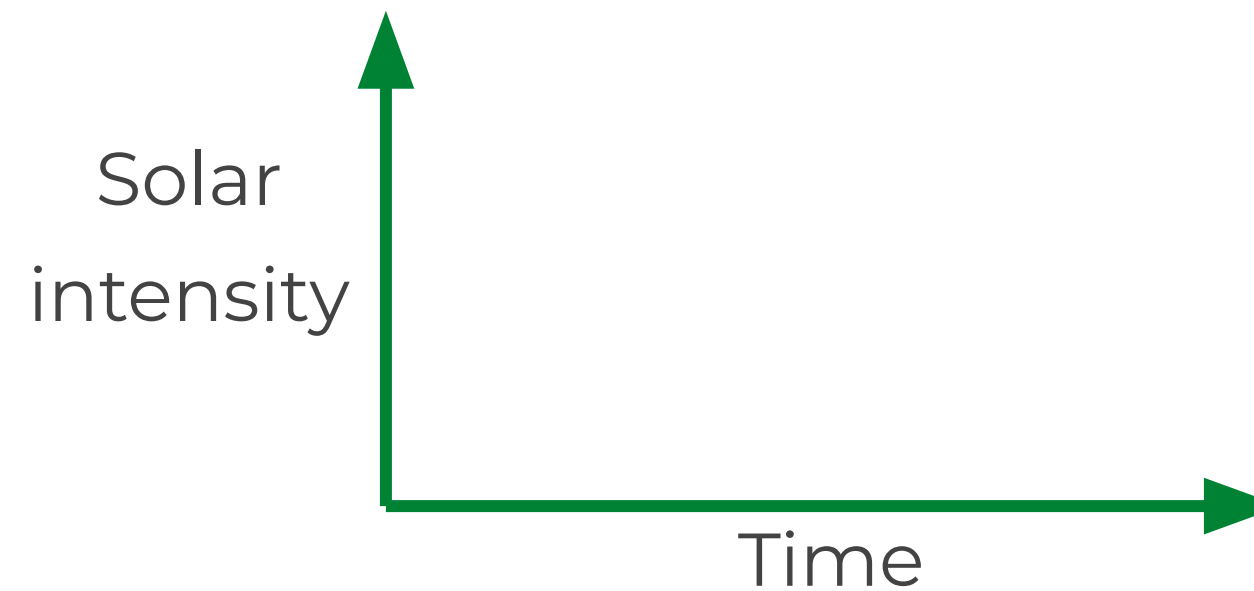


Explore

Antoni is interested in finding out how the sun's intensity varies over time. He has a solar meter which can measure how strong the sun is at any given moment.

He wants to take 20 recordings. What should he record?

What would you expect the findings to be?



Answers



Try this

Zaki and Cala have recorded height and weight data from 10 people.

Zaki has recorded height and weight separately whereas Cala has recorded them together, so she can investigate the relationship between the two of them

What's the same or different about their data sets?

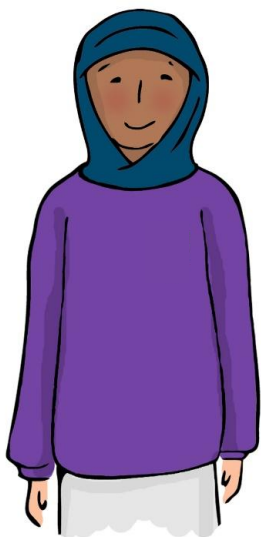


Heights recorded (m):

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Weights recorded (kg):

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| Participant | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|-------------|------|------|------|------|------|------|------|------|------|------|
| Height (m) | 1.68 | 1.86 | 1.59 | 1.72 | 1.61 | 1.53 | 1.75 | 1.81 | 1.70 | 1.63 |
| Weight (kg) | 68.2 | 86.8 | 63.2 | 73.5 | 59.1 | 60.7 | 78.3 | 81.3 | 80.4 | 67.0 |



Independent task

Describe in a sentence what each the results of these data tables would be able to show you.

| Journey duration (mins) | Frequency |
|-------------------------|-----------|
| 0-5 | |
| 6-10 | |
| 11-15 | |
| 16-20 | |
| 20+ | |

The most common / mean journey time

The most common mode of transport

| Main mode of transport | Frequency |
|------------------------|-----------|
| Bus | |
| Walk | |
| Train | |
| Car | |
| Cycle | |

Mean journey duration for different modes of transport

| | Frequency by mode of transport | | | | |
|-------------------------|--------------------------------|------|-------|-----|-------|
| Journey duration (mins) | Bus | Walk | Train | Car | Cycle |
| 0-5 | | | | | |
| 6-10 | | | | | |
| 11-15 | | | | | |
| 16-20 | | | | | |
| 20+ | | | | | |

| Student | Journey duration (mins) | Journey length (km) |
|------------|-------------------------|---------------------|
| Student #1 | | |
| Student #2 | | |
| Student #3 | | |
| Student #4 | | |
| ... | | |

The relationship between journey duration and length



Explore

Antoni is interested in finding out how the sun's intensity varies over time. He has a solar meter which can measure how strong the sun is at any given moment.

He wants to take 20 recordings. What should he record?

What would you expect the findings to be?

- Eg: Could record the intensity every hour (8am, 9am, 10am, etc to see when in the day the sun is strongest)
- Eg: Could record the intensity at the same time every month to see what month the sun is strongest

