# Stanley Bay Census

## Room 7

Tena Koutou Katoa

And welcome to the first day of Summer.

This term Room 7 has been learning about statistics and how they can help us.

We really started this in February when we took part in the NZ Census in Schools.

Charlie C

## Introduction

In February and November we measured the school in lots of ways.

At the same time there was a NZ Census in Schools

We recorded the results and this forms our data set.

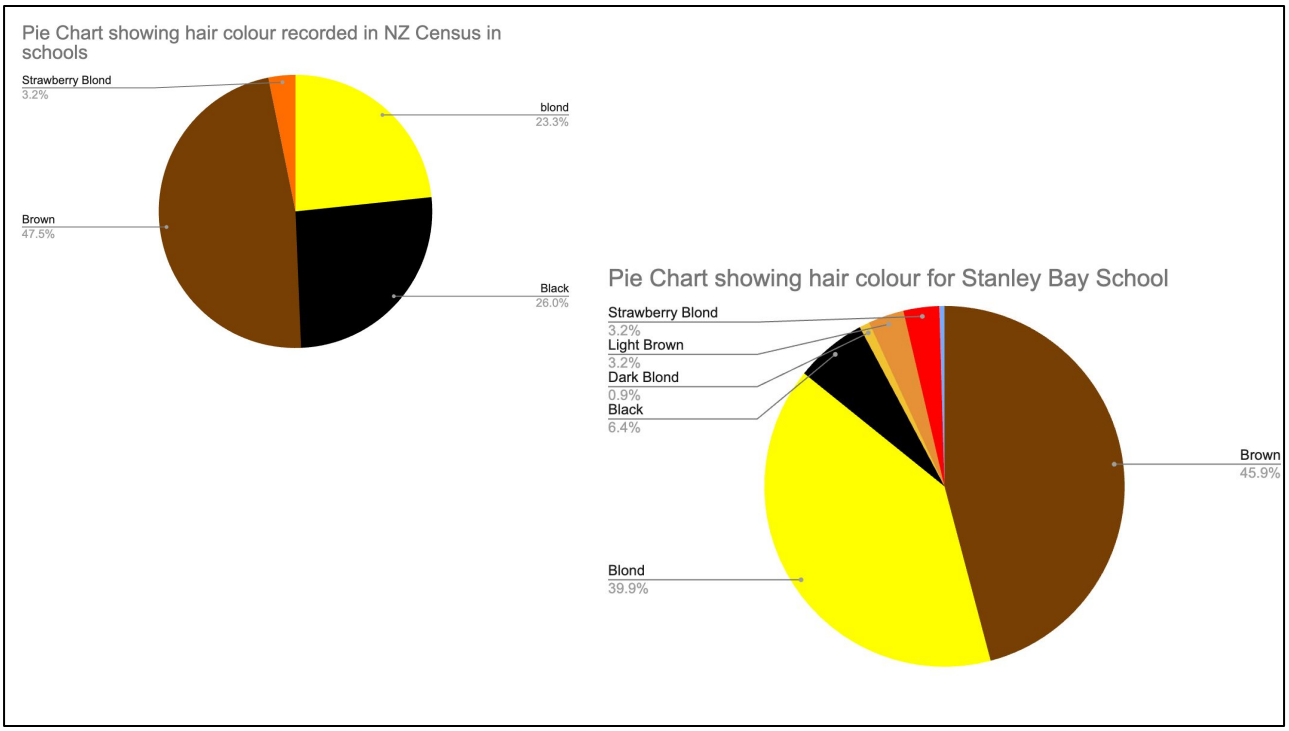
We then analysed the data from both.

We were one of about 500 schools in New Zealand which took a series of measurements and entered these into the NZ Census in Schools Database.

Room 7 also did the same measurements in November, last month, to see what has changed.

We can use this information, this data to make some statements about our school.

Charlie C

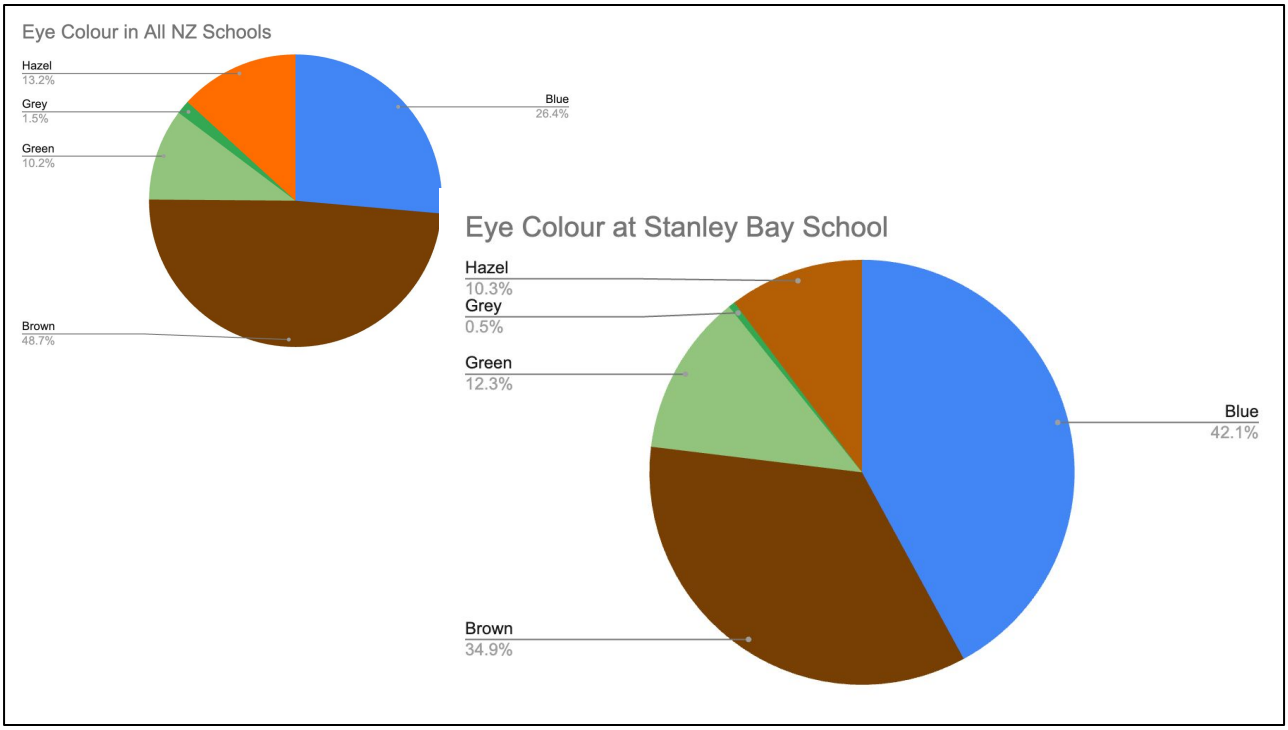



We found that in this school, we have ***far*** more children with blond hair then there are in other schools in New Zealand.

In Stanley Bay School 40% have blond hair, thats 40 out of every 100 children.

In the rest of the schools in New Zealand that number is  23 % or 23 out of 100 every children.

Janis H

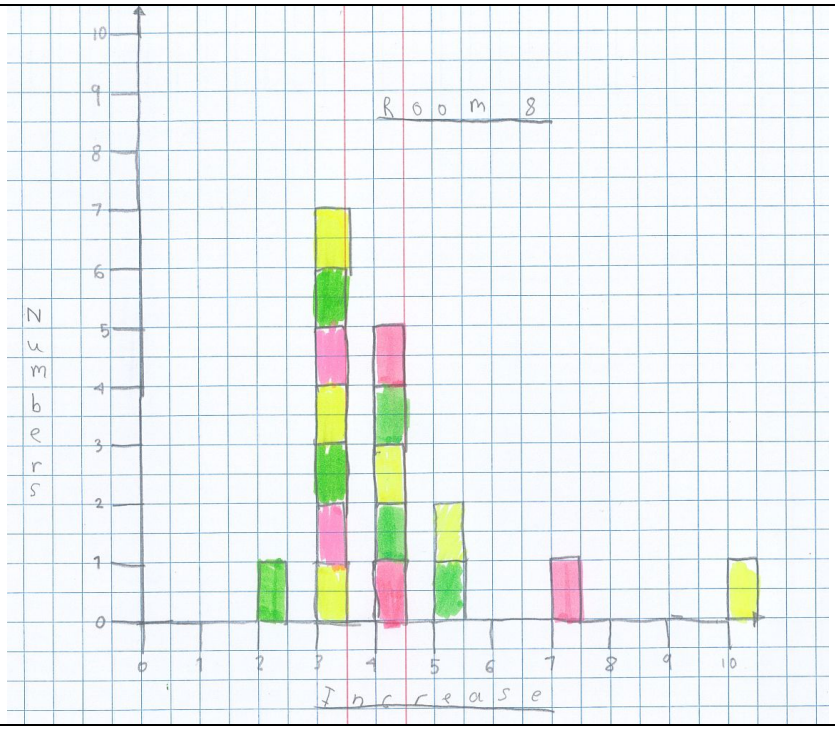



It is the same for eye colour where Stanley Bay has 42 percent of the students have blue eyes.

In the rest of the schools in New Zealand that number is 26 percent or 26 out of every 100 children.

Rodrigo H

# Bar Chart




We also learnt how to draw graphs. We drew bar graphs like these which show the amount grown between February and November for Room 8.

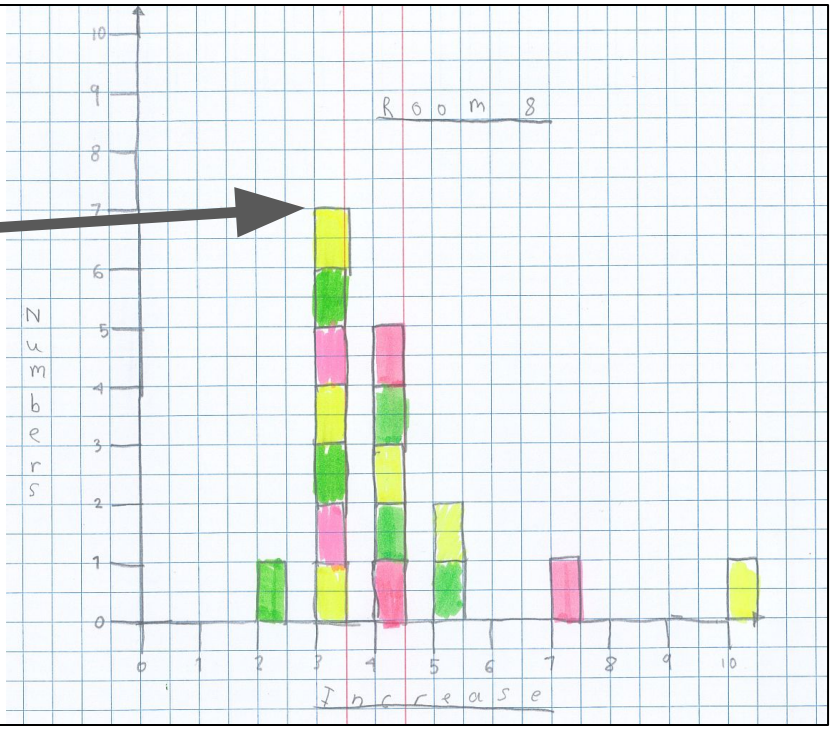
The x axis, the one across the bottom is how much they have grown in cm like 1, 2, 3, 4 and 5 Cm.

The Y axis, the one up the side, is how many people have grown by that amount.

For room 8, seven people have grown 3 cm and 5 people have grown 4 cm.

Martha D

## Mode Average




We also used these graphs to understand what an average is. An average is a way of summing up or describing what has happened to a group of numbers.

The mode average is the number most common, which is repeated the most, in the group.

We can use a graph for Room 8 to work out the average amount the class has grown by.

The Mode average is the amount grown by most of the class.

Most of the class, 7 pupils, have grown by 3 cm so the mode average is 3.

Harvey W

**Median Average**

2, 3, 3, 3, 3, 3, 3, 3, 4, 4, 4, 4, 4, 5, 5, 7, 9

Median Average

The median average is when you place all the numbers in order from lowest to highest and then find the middle number.

If we did that for room 8 we would have a list like this.

2, 3, 3, 3, 3, 3, 3, 3, 4, 4, 4, 4, 4, 5, 5, 7, 9,

The middle number is a 4 so the median average is 4

Bella S

## Mean Average

**2+3+3+3+3+3+3+3+4+4+4+4+4+5+5+7+9=69**

**69 divided by 17 = 4.01**

# The Mean Average is 4.01

The mean average is a bit more complicated.

To work out the mean you add up all the numbers and then divide by how many numbers there are….

Most of the time we let the computer do that for us!!!!

So for room 8 we have
2+3+3+3+3+3+3+3+4+4+4+4+4+5+5+7+9=69

69 divided by 17 (the number of samples we have) = 4.05cm
So the mean average is just a little over 4 cm.

Asa K

```
================================================================================================================
                                              iNZight Summary
----------------------------------------------------------------------------------------------------------------
   Primary variable of interest: Height (numeric)

                      Subset by: Year.numeric

   Total number of observations: 36130
================================================================================================================

----------------------------------------------------------------------------------------------------------------
Summary of Height, for Year.numeric = [3 - 6]:
------------------------------------------------

Estimates

   Min   25%   Median   75%   Max    Mean      SD   Sample Size
    91   135      141   147   220   140.9   11.05         10447

----------------------------------------------------------------------------------------------------------------
```

**Mean for Years 3 - 6 Stanley Bay School is 140.2**

**Min=104 25%=121 Median=13 75%=140 Max=158 Number = 124**

I know that all sounds very complicated but its a really good way for us to look at these numbers and make some sense of them!

For example the mean average height for all Stanley Bays Years 3 - 6 in February was 140.2.

The average for all the other schools in NZ for years 3-6 is 140.9 so we can say that this school is very similar to all other schools in height.

Asa K

Statistical Summary for the data.

```
================================================================================================
                                        iNZight Summary
------------------------------------------------------------------------------------------------
        Primary variable of interest: Standing.jump (numeric)

                            Subset by: Year.numeric

        Total number of observations: 36130
   Number omitted due to missingness: 1095 (1095 in Standing.jump)
   Total number of observations used: 35035
================================================================================================

------------------------------------------------------------------------------------------------
Summary of Standing.jump, for Year.numeric = [3 - 6]:
------------------------------------------------------

Estimates

   Min   25%   Median   75%   Max    Mean      SD   Sample Size
     0   102      131   152   500   123.1   51.66         10157

------------------------------------------------------------------------------------------------
```

**Stanley Bay Mean for Years 3-6 = 144**

**Min= 31  25% =117 Median 134  75%=145  Max=190  Sample size 101**

If we look at the standing long jump for years 3 to 6 we can also say some things.

Stanley Bay had a mean average for our long jump in February for Years 3-6 of 144 cm.

The average for all the other schools for standing long jump was 123 cm.

We can say that in February that on average, at years 3-6, we were better at the standing long jump than other schools around New Zealand.

Livvie K

Standing Long Jump Comparison

## For Stanley Bay School

The mean average in February was 135 cm.

The mean average in November was 130 cm.

I noticed that in February we allowed three jumps in the standing long jump and measured the best but in November we only did one jump and measured that.

I thought this may have made a difference to our scores.

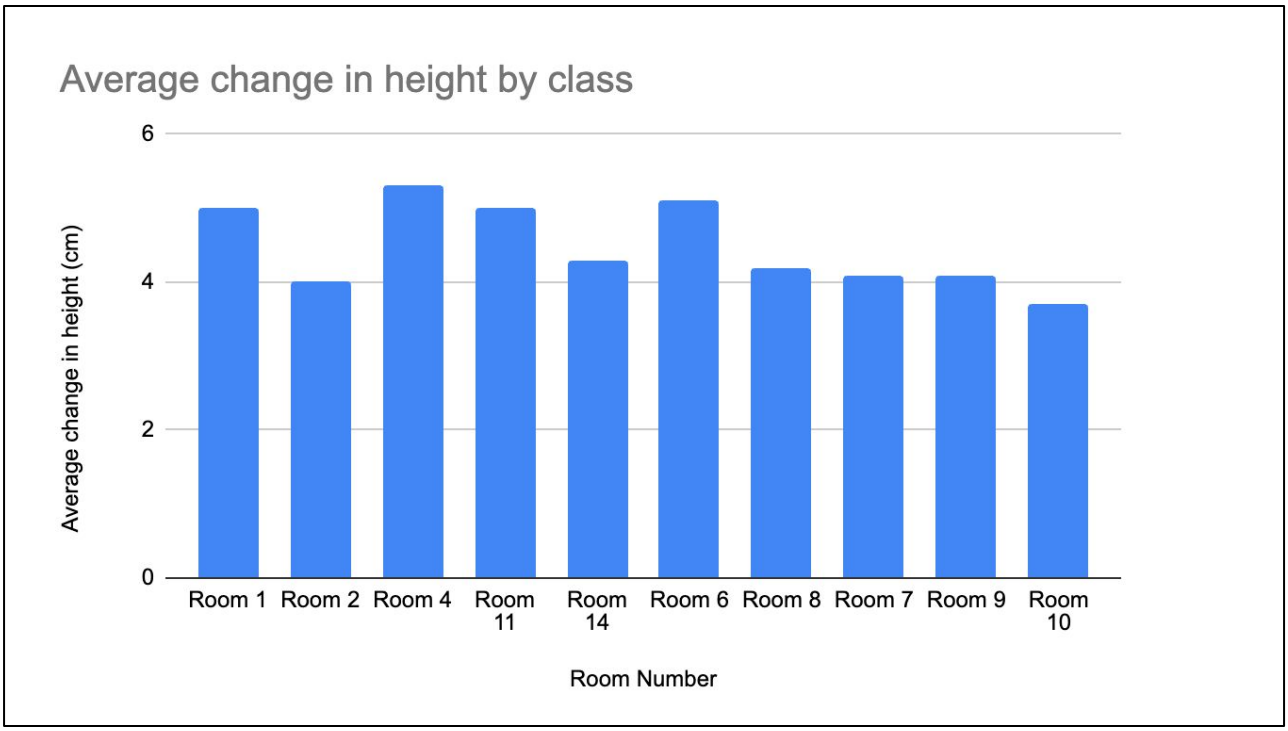
The average in February was 135 cm.

The average in November was 130 cm.

So I was right and we scored lower because we had less goes at it.

Next time we will have to make sure that we test the same way both times!

Fin

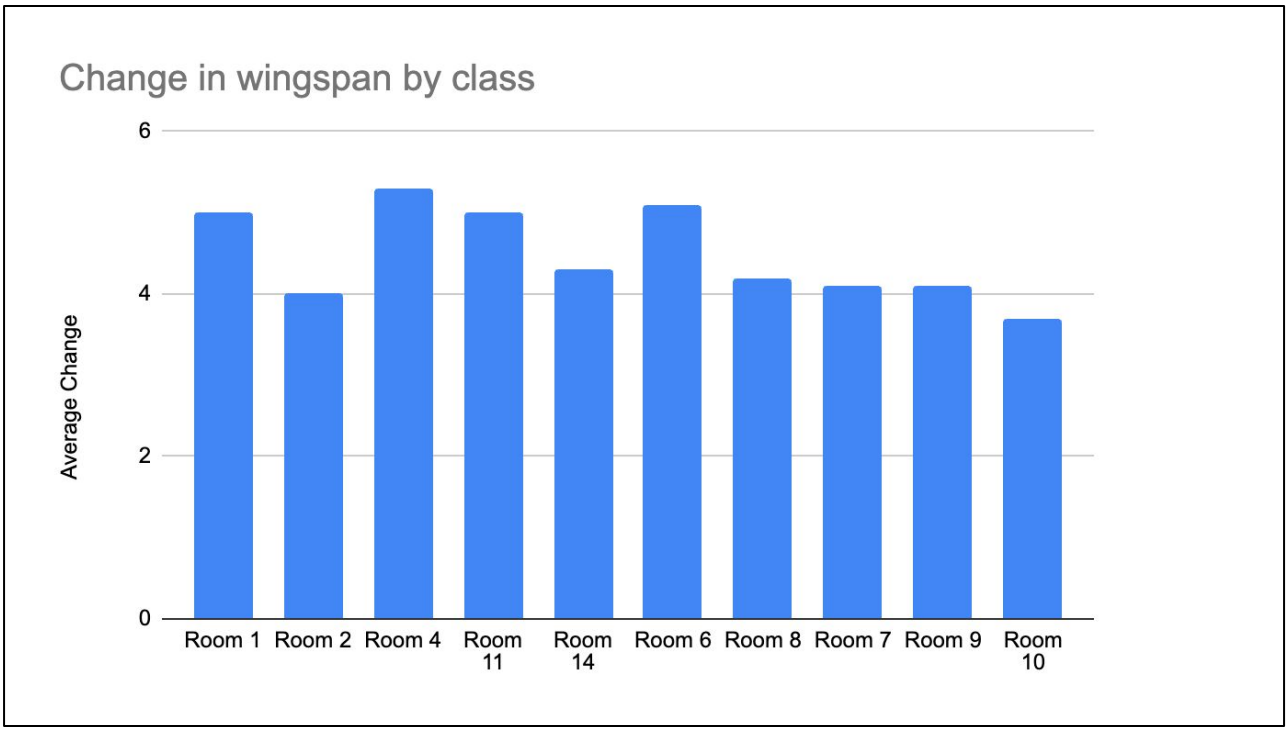



We looked at the average growth for each room.

Room 1 grew an average of 5cm
Room 2, 4 cm
Room 4, 5 and a bit cm
Room 11, 5 cm
Room 14 Just over 4cm
Room 6 about 5 cm
Room 8 about 4 cm
Room 7 about 4 cm
Room 9 about 4cm
And room 10 3 and a bit cm

We found there was a little bit of difference from room to room but really we all grew about 4 and a half cm between February and November.

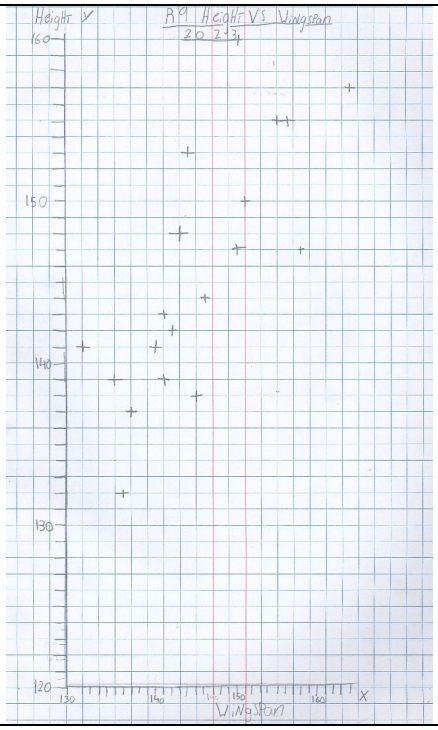
Pippa




It was the same for Wingspan where we all grew just over 4 cm over that time.

Room 1 grew an average of 5cm
Room 2, Just on 4 cm
Room 4, 5 and a bit cm
Room 11, 5 cm
Room 14, Just over 4cm
Room 6, about 5 cm
Room 8, about 4 cm
Room 7, about 4 cm
Room 9, about 4cm
And room 10, 3 and a bit cm

William




We had a lot of interest in finding out if there was a relationship between our measurements like does our wingspan increase at the same speed as our height or if you are tall do you have a good standing long jump?

To try and answer these questions we learnt how to plot a scatter graph like this.  This is a scatter chart showing wingspan plotted against height for Room 9.

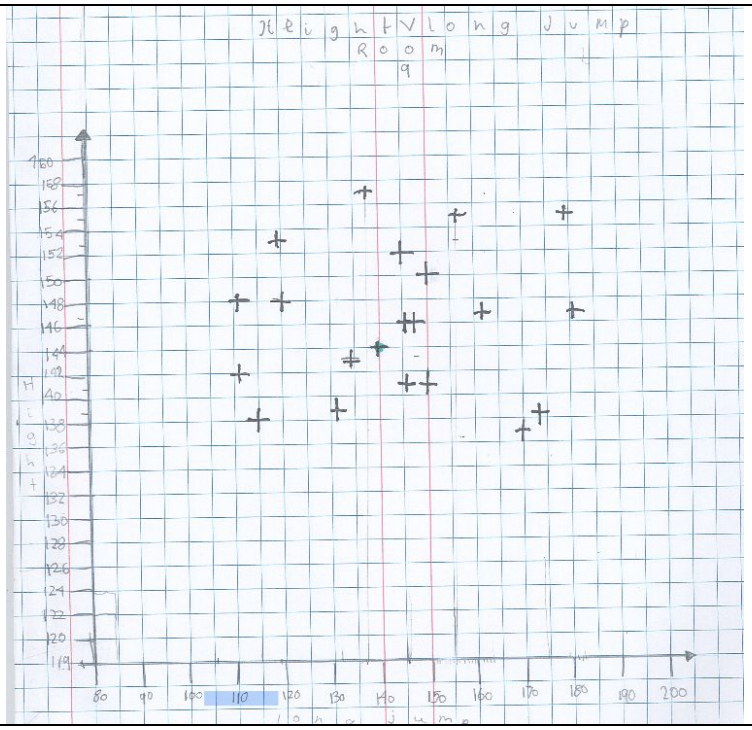
The wingspan is across the bottom on the x axis.

The height is up the side on the y axis.

We are looking for a pattern and for this one we are looking to see if the height increases, does the wingspan increase at the same time?

I think there is a bit of a line of plots and there is a pattern to them which means there may be a relationship between them.

Henry

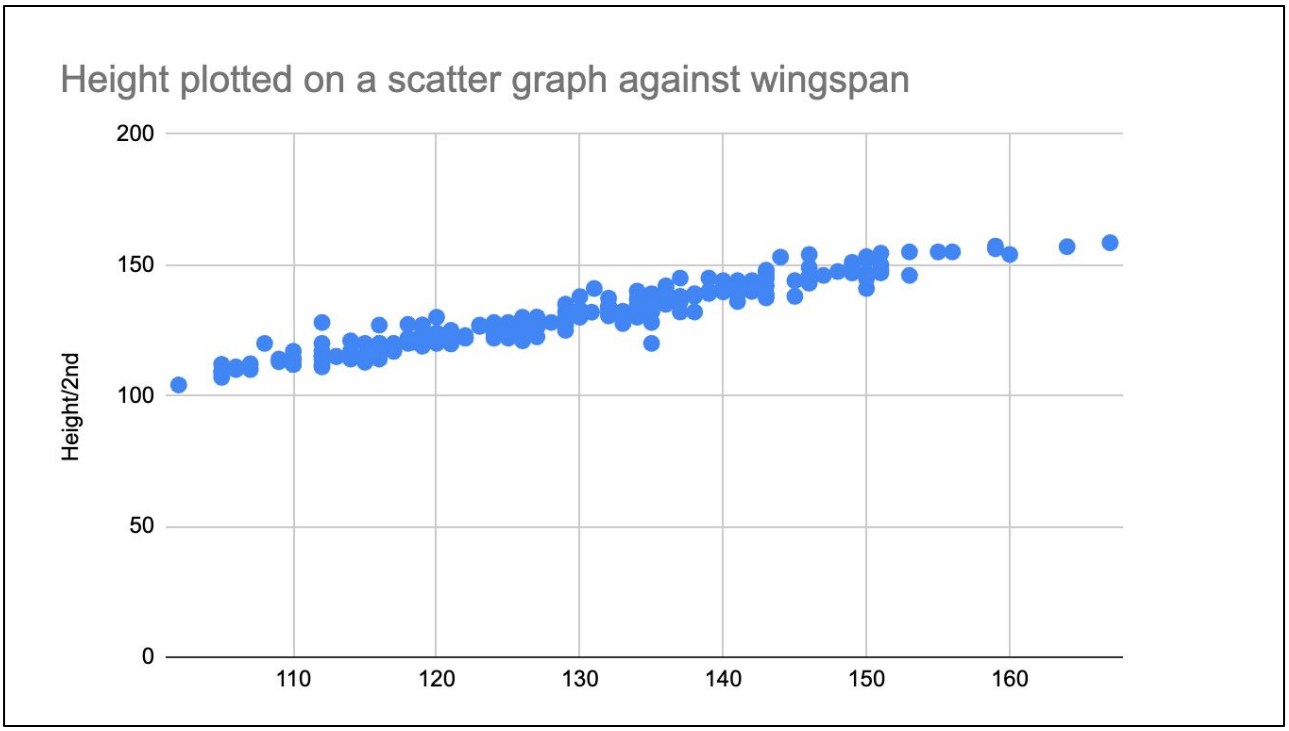



Here is one showing long jump against height.

I dont think there is any pattern here as the dots of each bit of data are spread all over the graph with no pattern

Of course the computer does this a lot better and with lots more data than we can manage!

Elyse H




This is a scatter chart showing wingspan plotted against height for the entire school.

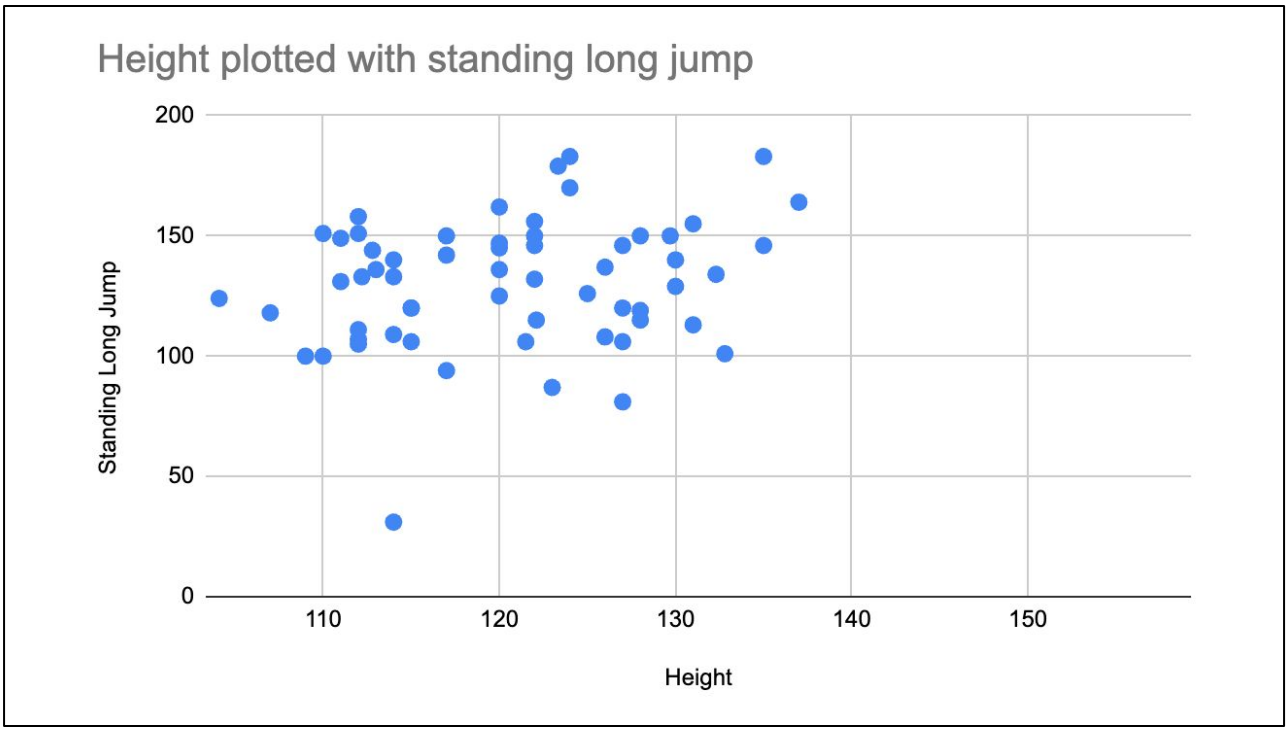
The height is across the bottom on the x axis.

The wingspan is up the side on the y axis.

There is a clear pattern that as height increases so does our wingspan. For example if you are 150 cm tall, you are likely to have a wingspan of close to 150

Based on this chart I can state that height is related to wingspan and that if you are tall you are going to have a long wingspan.

Elyse H

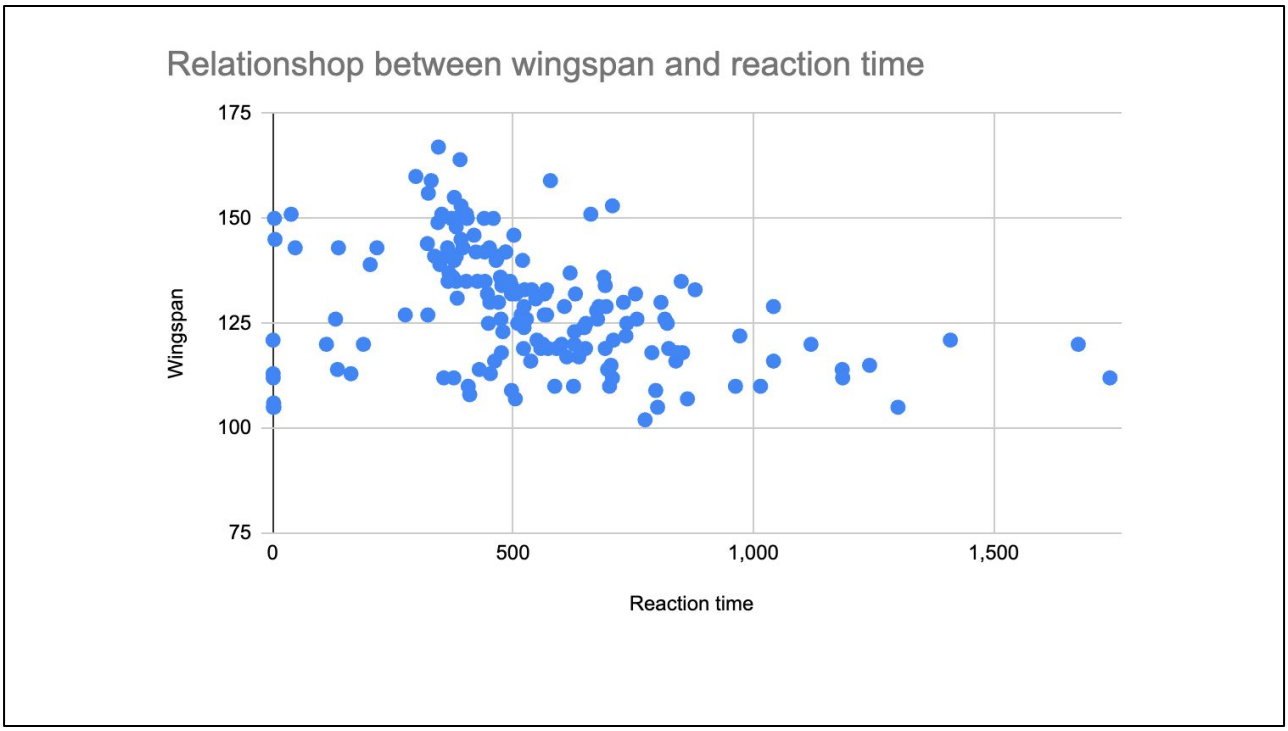



This scatter chart shows standing long jump across up the side on the Y axis and height along the bottom on the X axis.

For example someone with a height of 100 jumped about 100 cm and someone else of the same height jumped over 150 cm.

I dont think I can see much of a pattern here,  so I think this shows there is not a good relationship between them.  I think that just because you are tall, you might not have a long standing long jump.

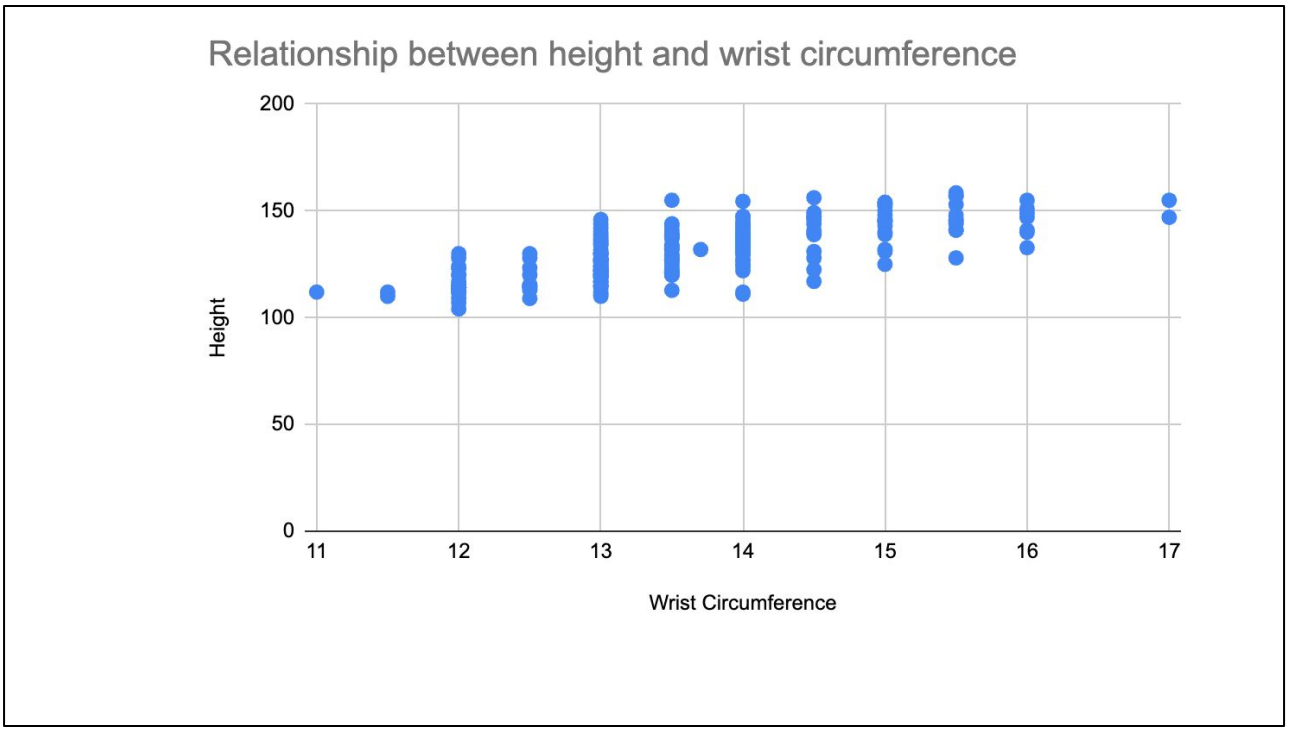
Poppy




Here is a scatter graph showing wingspan against reaction time. Do those with a larger wingspan have a slower reaction time?

I cant see any pattern here so I think I can make the statement that there is no relationship between wingspan and reaction time. So a larger wingspan does not mean you have a slower reaction time.

Poppy

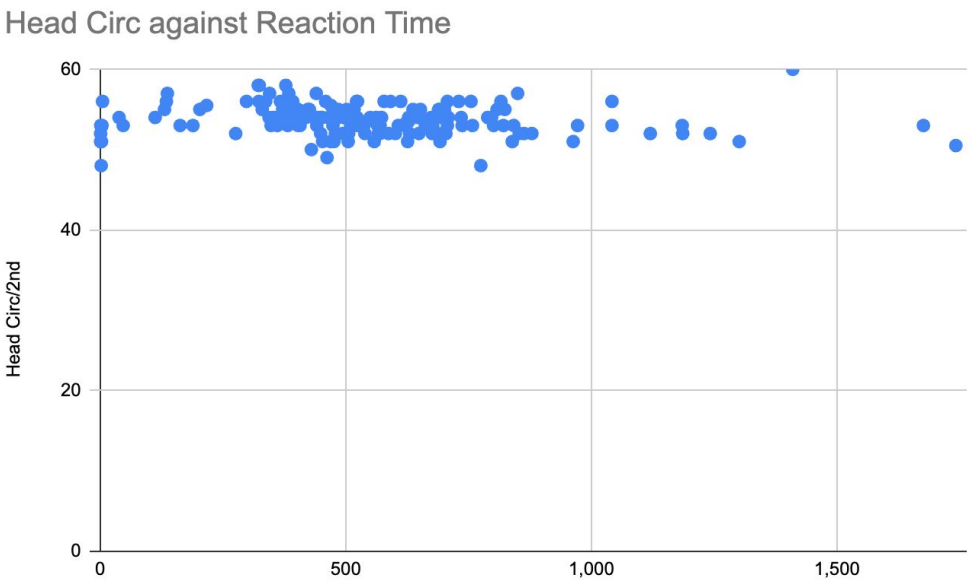



Here is a scatter graph showing wrist circumference and height.

I think there is a pattern here that as your wrist  circumference increases, so does your height.

I think we can state that as you get taller, your head circumference gets bigger.

Joannie

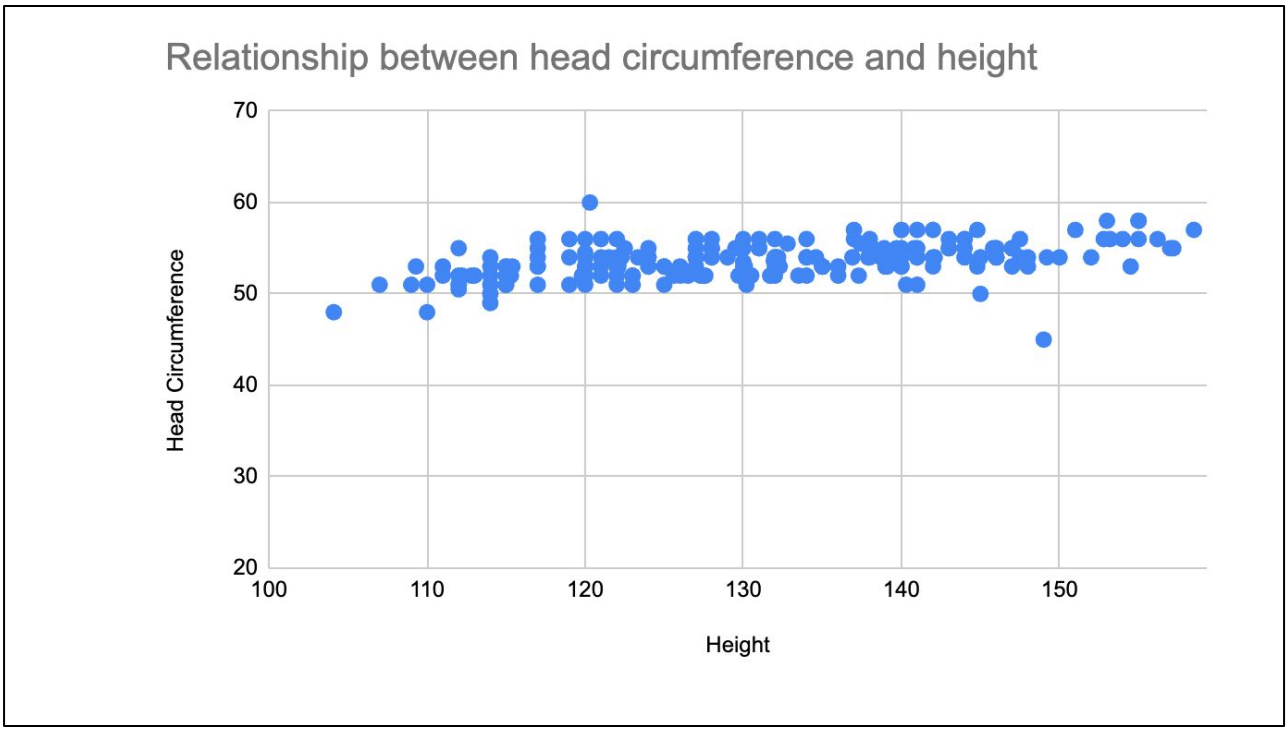



Here is a scatter graph showing head circumference and reaction time.

If I had a head circumference of 55 my reaction time could be anywhere between 200 and 1500.

I can't see any pattern here so I don't think there is a relationship between head circumference and reaction time.  Just because your head circumference is large it doesnt mean I have a faster reaction time.

Joannie




This is a graph showing height plotted against head circumference.

I think there is a pattern here but its not that clear so if you have a large head you **may** be taller.

Charli N

# Thank You

We have lots more questions to find out answers for, we are sorry we have had to rush through this presentation but there is so much we have done and so much more we are going to do!  Thank you for listening!

Charli N