

ANALYZING RESULTS AND YOUR DISCUSSION

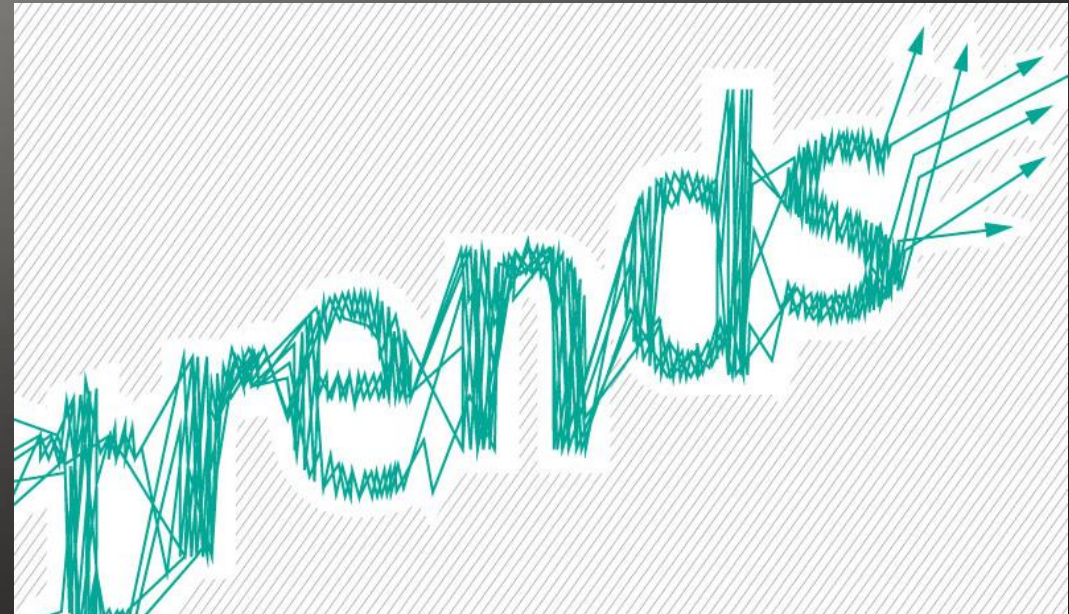


PROJECT TIMELINE

- Introduction
- Group formation + Outline Proposal
- Proposal Jigsaw
- Finish Proposal
- Start Your Experiment / Gather Data
- Analyze Data / Work on Poster and Presentation
- Final Presentations

WHAT DO I DO WITH ALL MY DATA?

- Look for patterns and trends!
 - Calculate important information (e.g averages)
 - Graph your data afterwards



CALCULATING AN AVERAGE

1. Add up the results from each trial
2. Divide it by the number of trials

$$Avg = \frac{n_1 + n_2 + n_3 \dots}{Total\ n}$$

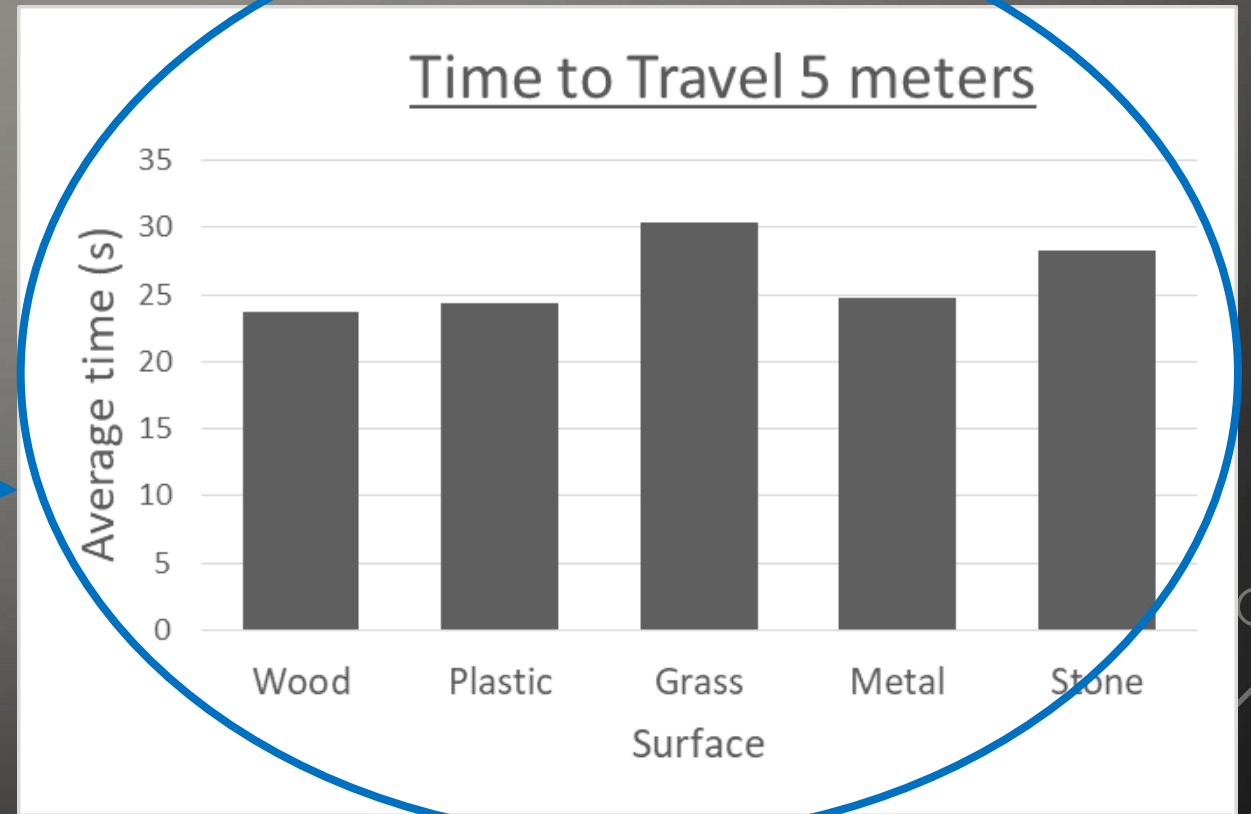
CALCULATING AN AVERAGE

Time to travel 5 meters (s)				
Surface Material	Trial 1	Trial 2	Trial 3	Average
Wood	23.2	23.9	24.2	23.8
Plastic	24.3	24.1	24.5	

$$\text{Average} = \frac{23.2 + 23.9 + 24.2}{3} = 23.8$$

CALCULATING AN AVERAGE → GRAPHING IT

	Time to travel 5 meters (s)			
Surface Material	Trial 1	Trial 2	Trial 3	Average
Wood	23.2	23.9	24.2	23.8
Plastic	24.3	24.1	24.5	24.3
Grass	30.4	29.7	31.1	30.4
Metal	24.6	25.2	24.3	24.7
Stone	28.7	27.9	28.4	28.3



LOOKING FOR PATTERNS – IODINE REACTIONS

	Colour changes to _____?		
Substance	Trial 1	Trial 2	Trial 3
Water	N/a	N/a	N/a
Apple juice	N/a	Blueish black	N/a
Mashed potatoes	Black	Black	Dark blue
Milk tea	N/a	N/a	N/a

- These results look okay
- There was probably a mistake here!

WHAT NEXT? – DISCUSSING YOUR RESULTS

- Use the information from your results (the patterns you found or the averages you've calculated) to explain what you think may be happening!
- “Because of [*average calculated / pattern*] it is likely that [*what you think*]”

“BECAUSE OF [*PATTERN*] IT IS LIKELY THAT [*WHAT YOU THINK*]”

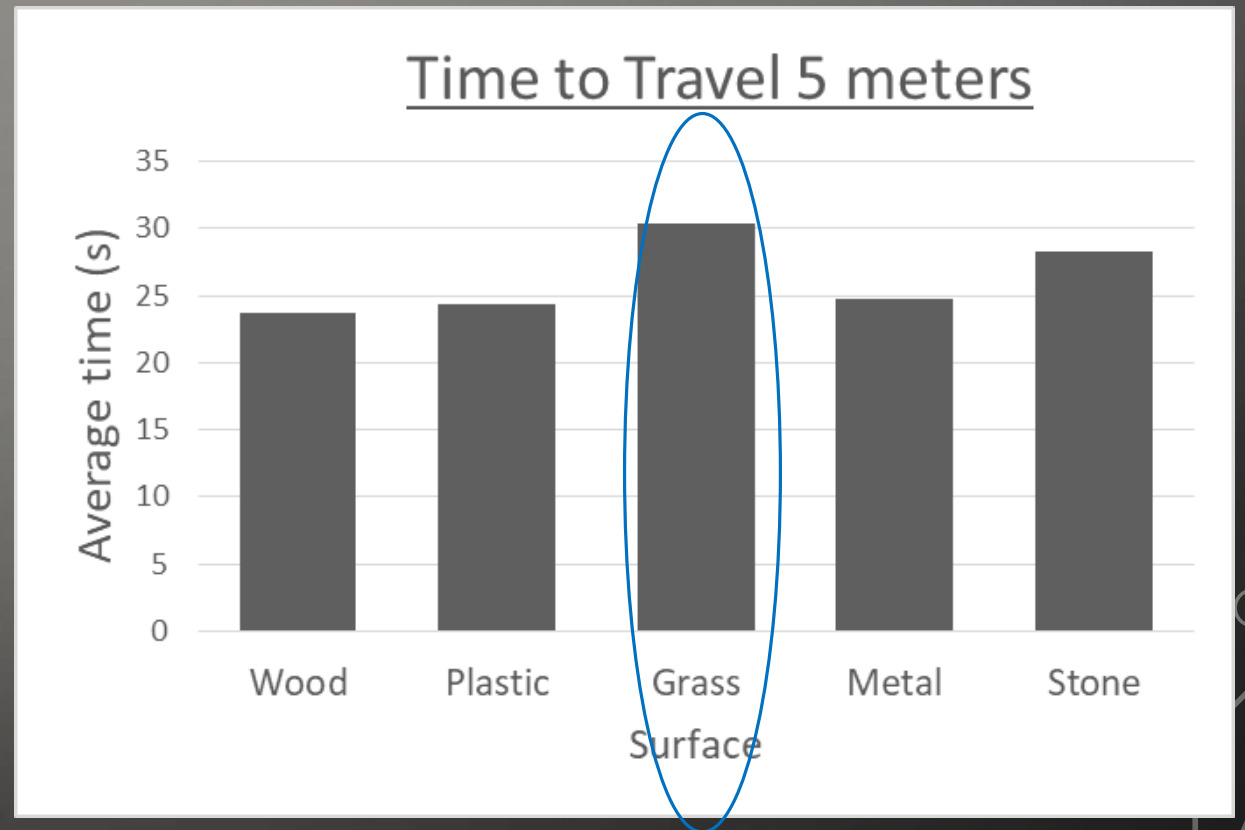
- For example...

- “Because [*the iodine test showed up negative for all three trials of milk tea*] it is likely that [*there is no starch in the water*].

	Colour changes to _____?		
Substance	Trial 1	Trial 2	Trial 3
Water	N/a	N/a	N/a
Apple juice	N/a	Blueish black	N/a
Mashed potatoes	Black	Black	Dark blue
Milk tea	N/a	N/a	N/a

“BECAUSE OF [*TRENDS IN DATA*] IT IS LIKELY THAT [*WHAT YOU THINK*]”

- For example...
 - “Because [*it takes the most time to travel on grass*] it is likely that [*grass has a higher coefficient of friction than the other surfaces*].



WHAT NEXT? – DISCUSSING YOUR RESULTS

- If there were any results that didn't make sense, make sure you address it here as well!

	Colour changes to _____?		
Substance	Trial 1	Trial 2	Trial 3
Water	N/a	N/a	N/a
Apple juice	N/a	Blueish black	N/a
Mashed potatoes	Black	Black	Dark blue
Milk tea	N/a	N/a	N/a

“BECAUSE OF [*PATTERN*] IT IS LIKELY THAT [*WHAT YOU THINK*]”


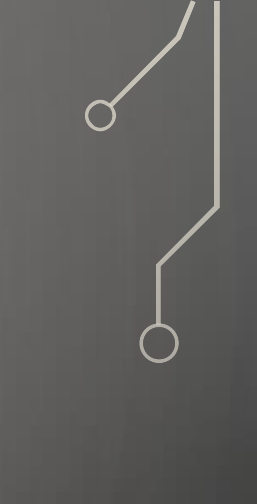
- For example...

- “Because [*only one trial out of three for apple juice showed a change*] it is likely that [*maybe the apple juice in trial 2 was contaminated*].

	Colour changes to _____?		
Substance	Trial 1	Trial 2	Trial 3
Water	N/a	N/a	N/a
Apple juice	N/a	Blueish black	N/a
Mashed potatoes	Black	Black	Dark blue
Milk tea	N/a	N/a	N/a



IN SUMMARY...

- Results
 - Calculate any averages (if you have numbers)
 - Graph your data to make it easier to see
 - Discussion
 - Using **patterns or trends (evidence!)** to explain what you think **happened in your experiment!**
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