# Statistics Introduction – PPDAC

## Task 1A - Scrambled Sentences

| Group Member 1 | Group Member 2 | Group Member 3 |
|---|---|---|
| 01 him was worried she always | 01 circles silver in she twirled | 01 steady me he for waited |
| 02 from Florida oranges temperature | 02 door grandmother the sunlight opened | 02 late road detours make drivers |
| 03 ball the throw toss silently | 03 pictures they landscape thinner painted | 03 sleeps often dog bowl the |
| 04 shoes give replace old the | 04 shines hair gray brush her | 04 stairs the entrance museum had |
| 05 he observes occasionally people watches | 05 lies nap dog my down | 05 wood old slightly houses lean |
| 06 be will sweat lonely they | 06 jam carefully jars white open | 06 be smell can dusty antiques |
| 07 sky the seamless gray is | 07 twice cake read recipes | 07 past elephants the gentle remember |
| 08 should now withdraw forgetful we | 08 mashed deliberate yummy potatoes are | 08 pages covers aged crack book |
| 09 us bingo sing play let | 09 dishes now dried slowly she | 09 success numbers declining chart mean |
| 10 sunlight makes temperature wrinkle raisins | 10 enjoy listen retired music people | 10 kernels peck spring chickens corn |

When you are done: This study isn't about what you think. What are the researchers really looking for?

## Task 1D – Implicit Association Test (IAT)

Use your finger to assign each name to the category to which it belongs by tapping either to the left or to the right of the word. Do it as quickly as you can. Don't skip over words. And don't worry if you make any mistakes.

Warm up

| Male | | Female |
|---|---|---|
| | John | |
| | Bob | |
| | Amy | |
| | Holly | |
| | Joan | |
| | Derek | |
| | Peggy | |
| | Jason | |
| | Lisa | |
| | Matt | |
| | Sarah | |

Work/Family IAT part 1

| Male or Career | | Female or Family |
|---|---|---|
| | Lisa | |
| | Matt | |
| | Laundry | |
| | Entrepreneur | |
| | John | |
| | Merchant | |
| | Bob | |
| | Capitalist | |
| | Holly | |
| | John | |
| | Home | |
| | Corporation | |
| | Siblings | |
| | Peggy | |
| | Jason | |
| | Kitchen | |
| | Housework | |
| | Parents | |
| | Sarah | |
| | Derek | |

Work/Family IAT part 2

| Male or Family | | Female or Career |
|---|---|---|
| | Babies | |
| | Sarah | |
| | Derek | |
| | Merchant | |
| | Employment | |
| | John | |
| | Bob | |
| | Holly | |
| | Domestic | |
| | Entrepreneur | |
| | Office | |
| | Joan | |
| | Peggy | |
| | Cousins | |
| | Grandparents | |
| | Jason | |
| | Home | |
| | Lisa | |
| | Corporation | |
| | Matt | |

Task 1B – Variables

Classify each as descriptive or causal. Identify the variables used in each.

Example 1: In 2017, the Peel District School board conducted a student survey to find out how much diversity was being used in examples in class. The results were released in 2018:

**Question 16: At my school, I feel people like me are reflected positively in:**

| Materials teachers use in class (e.g., books, videos) | 5% | 2% | 17% | 44% | 19% | 13% |
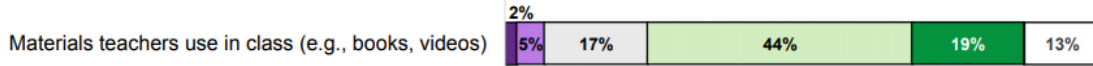
Example 2: In 1992, a Singapore-based diamond jewelry retailer placed an ad in the Straits Times advertising the prices for various diamonds.
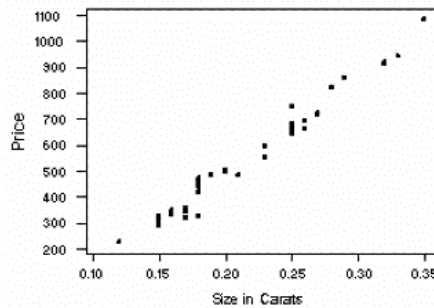


Example 3: In 2018, Black Canadians were more likely than any other racial group in Canada to be the victims of a hate crime, according to data reported by police. This data was collected by Statistics Canada using data from the Canadian Centre for Justice and Community Safety Statistics and their Incident-based Uniform Crime Reporting Survey.
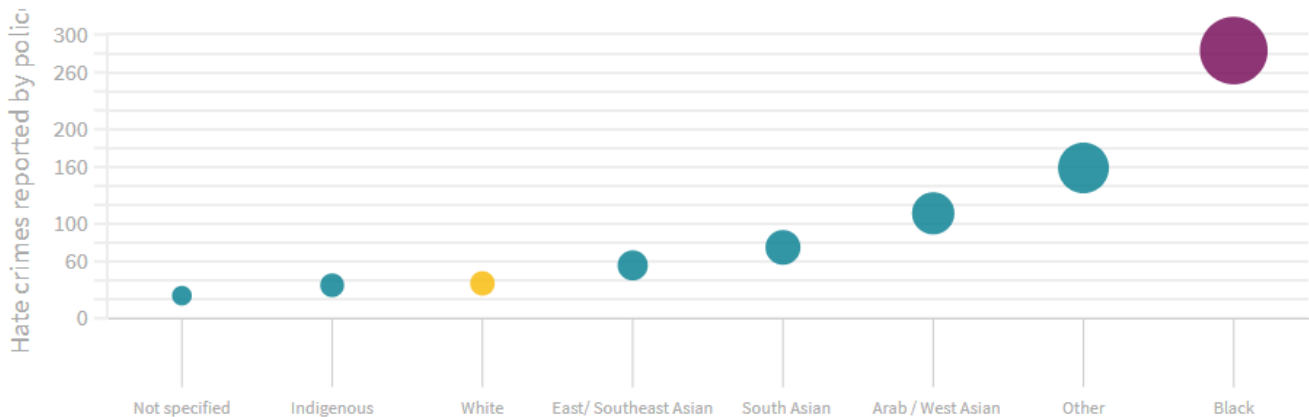


Example 4: In 2017, based on the 2016 census data of Canada, StatsCan released these numbers in its report "Does education pay? A comparison of earnings by level of education".

Table 1
Median annual earnings of women and men aged 25 to 64 who worked full time and full year as paid employees, by highest level of education and province or territory, 2015

| Highest certificate, diploma or degree | High school diploma | Apprenticeship certificate | College diploma | Bachelor's degree |
|---|---|---|---|---|
| | | dollars | | |
| Women | 43,254 | 38,230 | 48,599 | 68,342 |
| Men | 55,774 | 72,955 | 67,965 | 82,082 |

Example 5: Researchers looked at each date over between 1851 and 2013. They recorded the number of active storms on each day, by category. Then, they averaged them using the date.
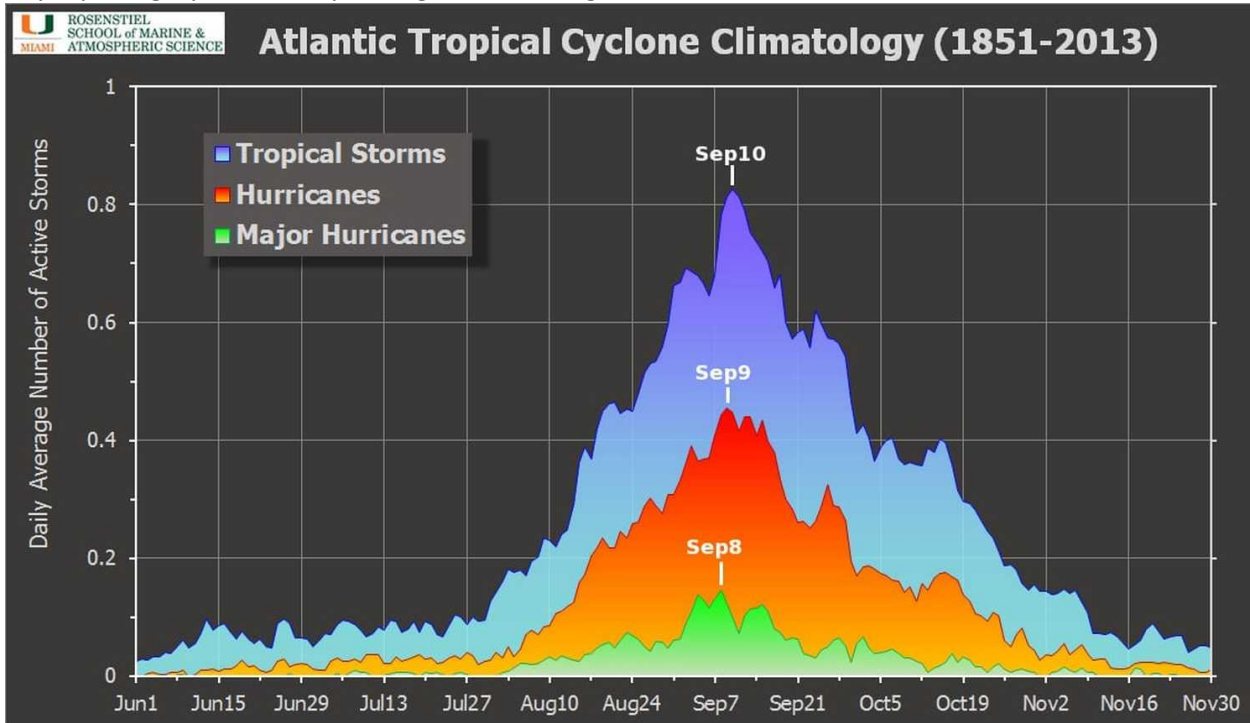


Task 1A – Scrambled Sentences Matching, Part 2

Put the tasks in order.

Assign each task a name from the list – they are not in order..

| Task Names (no order) | | Task (not in order) |
|---|---|---|
| Data | | *Task V:* Choose to research: "How does priming with words associated with old age affect the speed at which you walk?" Also, Choose Variables: (1) Entrance speed, (2) Exit speed (3) Primed with Old Age Words or Isn't |
| Conclusions | | *Task W:* Divide the data into two groups: Primed with old age words or not. Calculate the difference between entry and exit speeds. Average the difference for both groups. |
| Problem | | *Task X:* Decide to advertise to local people via social media ads. Plan that when people arrive, randomly assign them be primed with old age words or not. Figure out how to time their entrance into the room and their exit from the room. |
| Analysis | | *Task Y:* In the report, write that on average, the group who was primed with old age words walked more slowly down the hall to hand in their answers than those who weren't. Subconscious priming can impact walking speed. |
| Plan | | *Task Z:* For 52 participants, repeat the study and collect the results in a table: <table><tr><td>Participant</td><td>Time to Enter</td><td>Time to exit</td><td>Old Age Priming</td></tr><tr><td>1</td><td>3.2 sec</td><td>3.5 sec</td><td>N</td></tr><tr><td>2</td><td>3.4 sec</td><td>4.5 sec</td><td>Y</td></tr></table> |

Task 1C – Variables, Conclusions, Biases



Legend:
- Letters in Winning Word of Scripps National Spelling Bee
- Number of people killed by venomous spiders

Correlation: 81%    Sources: Scripps & CDC    tylervigen.com



Legend:
- Pedestrians killed in collision with railway train
- Precipitation in Howard County, MO

Correlation: 93%    Source: CDC    tylervigen.com