





St. Francis Xavier's College

The relationship between <u>the</u> water flow rate and <u>the density</u> of the large stream snails **(**) Group 1: Alfred Lee Brandon Tsang Eric Chu Kent Chu Paco Chan

### Selected species - Large Stream Snail



### Independent variable - Water Flow Rate

#### \* Water flow rate:

- Measured by water flow meter
- \* 3 times, record the data
- Take the average of the 3 water flow rate
- 3 locations with different water flow rate were selected for analysis



### Dependent variable - Density of Large Stream Snail

- \* Density of Large Stream Snail
  - \* 50cm x 50cm quadrat
  - Look for the number of large stream snails
  - Pick up some rocks from
    bottom of the river (area that we have the investigation)





### Dependent variable - Density of Large Stream Snail

- Use the brush pen to separate the large stream snails and the rock
- \* Release all of them to the river(to enjoy their life!!!?)



# Controlled variables - Many! ?

- Nature of substrate(should be stony)
- Light intensity by using light meter(should be similar - around 72000-73000LUX)
- Depth of water(should be similar
  around one and a half hand)
- Temperature by using digital thermometer(should be similar around 25 Celsius)







# Results

Site (water flow rate)	Site 1 (0.15m/s)	Site 2 <u>(0m/s)</u>	Site 3 (0.42m/s)
Large stream snail	13	30	11
Mayfly nymph	1	0	0
Small long-armed shrimp	0	1	0
Sucker belly loach	3	6	1
Water skater	2	0	0
Broken-band Hillstream loach	3	6	0
Total species count	5	4	2
Total individual count	22	43	12





### \* Consider <u>site 1</u>



- Which has a relatively slow water flow
- We have found a total of 13 large stream snails in that area





Total no. of the large stream snails





#### \* Consider <u>site 3</u>



- Which has a relatively fast water flow
- We have found a total of 11 large stream snails in that area

## Conclusion

- We could find that there are more large stream snails <u>in</u> <u>an area of no water current</u>
- \* As we used <u>the same quadrat</u> to have investigation, the area of the three sites are the same
- \* The density of the large stream snails will increase with the increase of number of large stream snails
- \* An area with **less** water flow rate (Site 2) has a **higher** density of the large stream snails.

