Class: 1-100 Name: セリエン Number: ∞

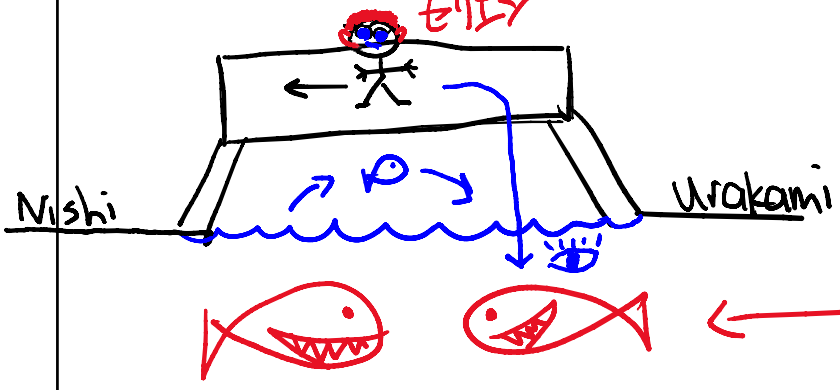
The Scientific Method

Please listen to Serrien and fill in the blanks while he explains.

Introduction

① Make an observation

かんさつ



- small fish jump from the water.

ほしょくしゃ

Predators!

② Ask a research question

- Why, what, how, which, where...
- Why do small fish jump from the water??

③ Get more information

- Make more observations, search books/internet
- I go back to bridge and I see predators in the water!

④ Set the Hypothesis ★★★★★

- A statement, not a question!
- Must be measurable! そくていがのうだよ!
- "If... A..., then... B" statement

Good :)

- If there are predators nearby, then small fish will jump more from the water.

can measure

Bad :(

- Fish act strange in the water.

can't measure

Class: _____ Name: _____ Number: _____

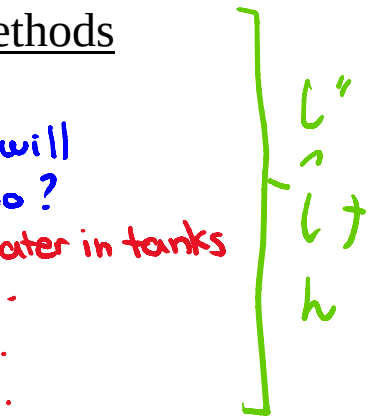
⑤ Materials and Methods

what will you need?

- small fish
- Predators
- 2 fish tanks
- water...

what will you do?

1) Put water in tanks
2) ....
3) ....
4) ....



Measure: How many times small fish jump in tank A and tank B

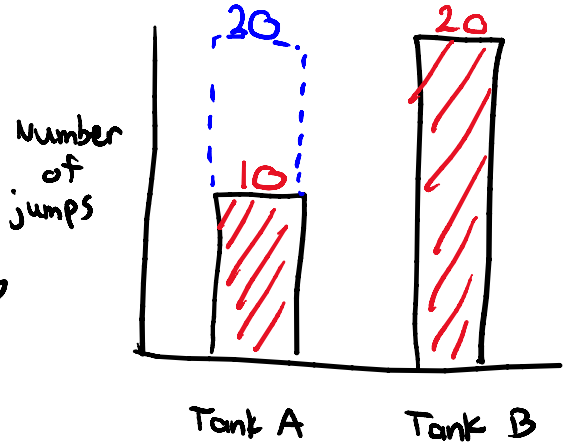
* Control for other factors
  ↳ size of tanks, amount of water, temperature, number of fish....

⑥ Results

what did you get?

- Show DATA
  - Graphs
  - Tables

	#1	#2	#3
A			
B			
C			
D			



* If hypothesis is FALSE (X), then go back and write a new hypothesis!!

* Maybe fish jump to eat/breathe, or because water is too cold/hot/dirty

⑦ Discussion

what do the results mean??

1. Summary
   - Fish jumped 10x in tank A and 20x in tank B
2. Conclusions
   Fish that jump when predators are nearby live longer
3. Future Studies
   - study if fish also jump to eat/breathe