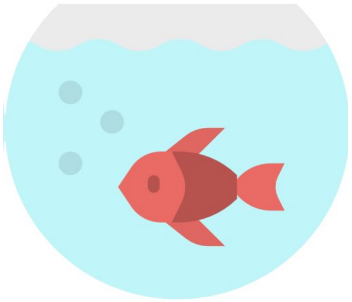
SCIENCE CLUB!

WELCOME BACK!



What will we do today?

1. Finish interacting with the simulation!
2. New Evidence!
3. Review criteria list
4. Review all the evidence & revise the model
5. Prepare models for gallery walk next week

FRESH Perspectives
FReshwater EcoSystem Habitat Organization

From the Desk of A.L. Rao

Greetings Scientists!

We are extremely pleased with the progress you are making!
Based on your requests from last week we have a few updates:

- We checked with our experts regarding turtles and they confirm that none of the ponds have any turtles in them. The only animal that eats the algae in these ponds are the fish.
- We included several new reports from our scientists about: the amount of sunlight in each pond, water circulation, and fountains in ponds. There is also an update to the evidence about water samples from the ponds (Evidence 14). That is now available for your review in MEME.
- When working with the simulation please note each time what was the cause of death for the fish.

Next week we will have a “gallery walk” so you can offer feedback on your teammates’ models and they will offer feedback on yours. Make sure to get ready!

Evidence

Let’s look at evidence in MEME!

Fountain and Dissolved Oxygen in an Artificial Pond

A common feature of ponds are fountains and bubblers (underwater fountains).

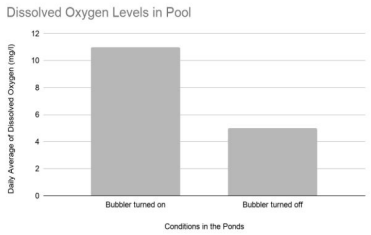
The FRESH Org team was curious whether a bubbler had any effect on the quality of the water in a pond. They found this report written by scientists who investigated this question.

Report by Drs. Gray, Xavier, Logan, and Munroe on Fountains and Dissolved Oxygen

We set up a large above-ground pool that was similar to a real pond and installed a bubbler in the middle of this large pool.

We turned the bubbler on for three days and measured the dissolved oxygen in the pool on each day. Then we calculated an average of these measurements to show the daily average of dissolved oxygen in the pool when the bubbler was working.

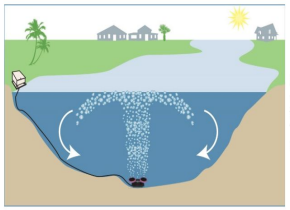
We then repeated the experiment for three days but this time with the bubbler turned off. The graph below shows the daily average of dissolved oxygen in the pool in both conditions (bubbler on and bubbler off).



Water Circulation

The FRESH Org team wanted to better understand what happens to water flow in a pond when there is a working bubbler. Bubblers are like small underwater fountains that push up a stream of air bubbles and water.

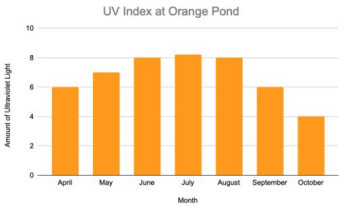
Scientists used special equipment to measure the movement of water above and below the surface of their pond with the bubbler.
The diagram below shows their results. It illustrates how the water moves in the pond when the bubbler is on.

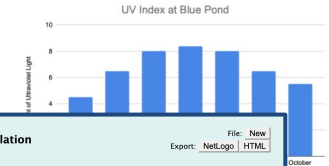


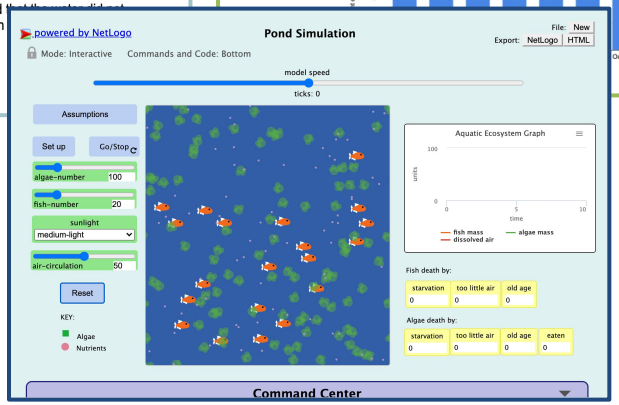
Scientists also measured the water movement when the bubbler was turned off.
They found

Report on Sunlight at Both Ponds

FRESH Org hired scientists to study why more fish died at Orange Pond than in Blue Pond. They measured the amount of sunlight at Orange Pond and compared it to the amount of sunlight at Blue Pond. In particular, scientists measured the amount of ultraviolet light, which tells them how intense (or strong) the sunlight is. The graphs show the average amount of ultraviolet light per month from April until October. Many fish died in Orange pond in July, August, and September. Some fish died in Blue Pond in July and August.







Evidence

Criteria List

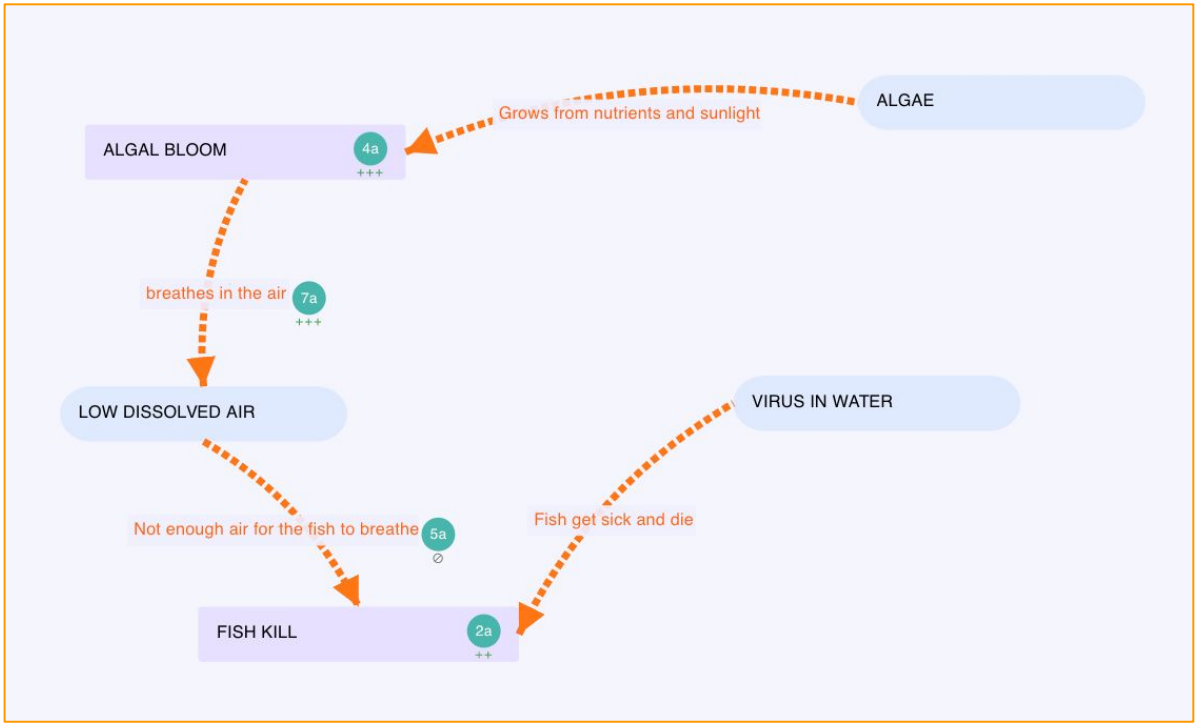
Our list:

a. Supported by evidence
b. Shows all steps in process
c. Understandable
d. Consistent

Please review your models and make sure they meet the criteria. To show support by evidence link the evidence to the relevant part in the model. Be sure to look at all the evidence you have.

Shark Findustries Model

Let’s critique Shark Findustries model!



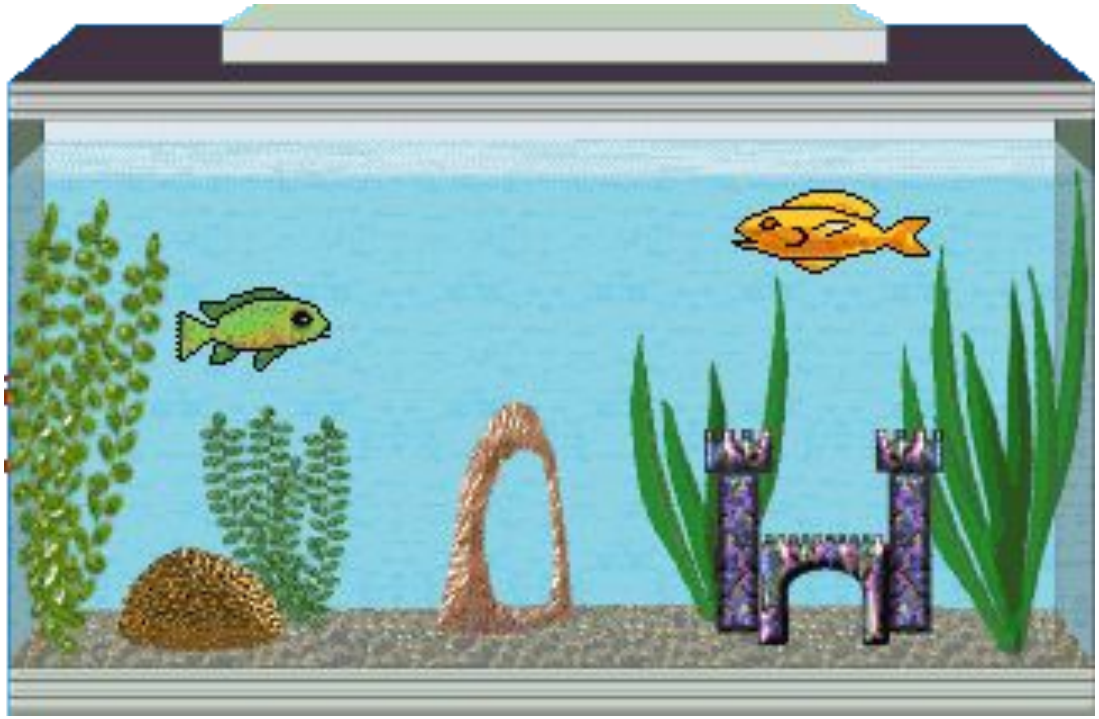
Gallery Walk Preparation

Next week, we will do a gallery walk!

Hopefully our models are well prepared!

Discussion

- After seeing the Shark Findustries model, is there anything you want to change in your model? (you will have a chance to do so next week)
- What else do you think we need to know?
- Is there any evidence you still want to see?



See you next week!