r, K lab

r, K lab:

small plate “pond”

bowl with goldfish “reservoir”

don’t eat the goldfish-you will need them later…

1. start with one fish
2. double number of fish each reproductive cycle
3. after each cycle, when one fish touches another, both “die” and are removed
4. graph total number of fish after each cycle and the tragic cracker fatalities
5. repeat until you see equilibrium

Random cards: repeat in each case

1. draw a line halfway across the plate, fish can only live on one side
2. a predator enters the pond, eating half of them
3. an invasive species enters, reducing the food supply
4. a disease reduces the birthrate for the fish, so that only every other fish has an offspring
5. a predator enters the pond, but eventually the fish develop an evasive tactic to hide from the predator
6. start with 10 fish instead of 1
7. when fish touch, remove three, not two
8. each cycle triple the number of fish

Questions:

1. what would happen if the reproductive cycle were much shorter?
2. where did you see overshoot and die-off?
3. what is the carrying capacity for the pond?
4. was this an equilibrium state?
5. what happened in the random card situations?
6. If the plate were 10x bigger, what would the graph look like?
7. label the r and the K part of the graph
8. When the fish touch, they are removed-what is this a metaphor of?

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