1. At the end of each round of Predator, did evolution take place? How do you know? (Remember to use the definition of evolution we used in class.)

Yes.

Evolution is a change in allele frequencies. Dot color was controlled by alleles. Therefore if a color became more common or more rare, the allele frequency changed.

2. Was natural selection of the dots taking place? If so, explain the details of how it was occurring. (Remember to take into account the raw materials required for

YES.

We have raw materials:

1. Variation (dots of different colors)
2. Selection pressure (you guys! your eyes didn't allow you to clearly see all dots)

And it was your "predation" that caused dots that matched the background to be more fit

3. Using ONLY the rules and information above, do you think that it is possible that a new **species** of dot-like organisms could evolve? Explain your response.

NO → the only variation was color, and we said all dots are the same species

You can change how common the colors are - but nothing else...

4. TEST your ideas by playing a few more rounds of predator – try to accomplish the following:
    a) Target a particular color (not the one that matches the background) and try to cause that color to become "extinct".
    b) Target the dots of the background color and try to cause that color to become "extinct".

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    c) Try to keep the number of dots of all the different colors even.
    d) Try to create a new species of dot organisms.

Do these tests seem to support your answers to questions 1-3 above? Explain

5. If all the dots had been the same color to begin with, could natural selection or evolution had occurred? Why or why not?

NO: evolution is a change in allele frequencies. If we start & end with only 1 color, the allele frequency is always 100%

6. Where did the dots of different colors "come from"? In other words, imagine a time when there was only 1 color of dots and try to explain how dots of different colors may have appeared.

In the program, Bregar made the colors.

But... in real life, mutations can occur

1. Radiation can damage DNA (the sun)
2. DNA errors can occur

These mutations affect the offpring of an organism

Work with a partner:

- Find definition of "biological adaptation" & discuss
- Look into finding a cool/interesting adaptation for one organism
- Check out "Adaption Poster Example"
- Start the assignment "Adaption Poster"