Interactions of Populations and the Environement 1

Name: _____ **Date:** _____

1. Environmentalists are hoping to protect endangered organisms by calling for a reduction in the use of pesticides, because loss of these organisms would

   A. increase the mutation rate in plants

   B. cause pesticides to become more toxic to insects

   C. reduce biodiversity in various ecosystems

   D. decrease the space and resources available to other organisms

2. Which group would most likely have the greatest survival success during a long period of environmental changes?

   A. a small population of rabbits living in a field of grass

   B. a large population of red ants living in a forest

   C. an endangered population of polar bears living near an iceberg

   D. one species of bird that nests only in sugar maple trees

3. An earthworm lives and reproduces in the soil. It aerates the soil and adds organic material to it. The earthworm is a source of food for other organisms. All of these statements together best describe

   A. a habitat

   B. autotrophic nutrition

   C. an ecological niche

   D. competition

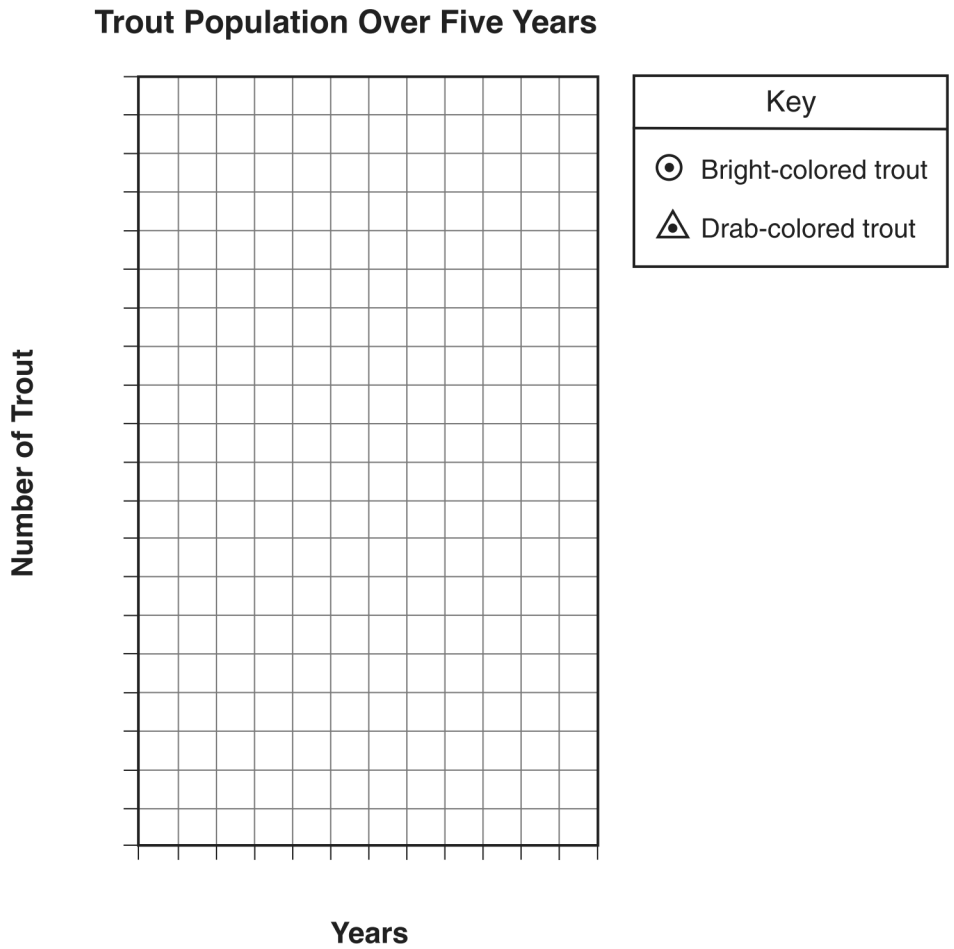
4. Base your answer(s) to the following question(s) on the information and data table below and on your knowledge of biology.

An investigation was carried out over a five-year period to measure the effect of color on the survival of trout in a stream. The stream contained many brightly colored stones and food was plentiful. At the start of the investigation (year 0), 100 bright-colored trout and 100 drab-colored trout were placed into a section of the stream that had been blocked with netting. Investigators monitored the trout populations for five years and recorded the water condition each time a count was done. The data collected are shown in the table below.

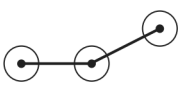
Trout Population Over Five Years

Year	Bright-Colored Trout	Drab-Colored Trout	Condition of Water
0	100	100	clear
1	64	36	clear
2	86	25	clear
3	25	77	cloudy
4	14	86	cloudy
5	90	9	clear

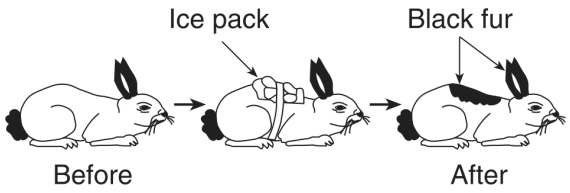
Directions: Using the information in the data table, construct a line graph on the grid provided, following the directions below.



Plot the data for the bright-colored trout on the grid. Surround each point with a small circle and connect the points.

Example: 

5. Which statement best explains the change shown in the diagram below?



A. Gene expression in an organism can be modified by interactions with the environment.

B. Certain rabbits produce mutations that affect genes in specific areas of the body.

C. Sorting and recombination of genes can be influenced by very cold temperatures.

D. Molecular arrangement in existing proteins can be altered by environmental factors.

1.
Answer: C

2.
Answer: B

3.
Answer: C

4.
Answer: Allow credit for correctly plotting the data for the bright-colored trout, surrounding each poin with a small circle, and connecting the points.

5.
Answer: A