

Date: \_\_\_\_\_

Your Name: \_\_\_\_\_



**NEW ENGLAND  
COMMON ASSESSMENT PROGRAM**

**Released Science Inquiry Task**

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**Fox and Rabbits**

**2011**

**Grade 8**

**Student Answer Booklet**

# SCIENCE

## Organizing and Presenting Your Data

### Directions:

You will work **on your own** to organize and present your data, analyze and use your results, and evaluate the investigation. You may use the Word Bank below during this session.

### Word Bank

|                   |  |
|-------------------|--|
| <b>Average</b>    | a typical number for a data set; a value that is found by dividing the sum of a set of terms by the number of terms<br><b>Example:</b> The average of 4, 5, and 9 is $\frac{4 + 5 + 9}{3} = 6$ . |
| <b>Ecosystem</b>  | a part of ecology consisting of the environment, its living parts, and the nonliving parts that affect it  |
| <b>Model</b>      | a simple version of something complex; a representation  |
| <b>Predator</b>   | an animal that kills other animals for food<br><b>Example:</b> the fox   |
| <b>Prediction</b> | what you think will happen based on prior knowledge and experience   |
| <b>Prey</b>       | animals that are caught and eaten by other animals for food<br><b>Example:</b> the rabbits   |
| <b>Shrub</b>      | a low woody plant usually with several stems<br><b>Example:</b> a thorny bush  |
| <b>Trial</b>      | each time you repeat the same experiment   |

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### Directions:

- Copy your data from the data table on page 5 of your Inquiry Booklet to the data table below. **Be sure to double-check that you copied the data correctly.**

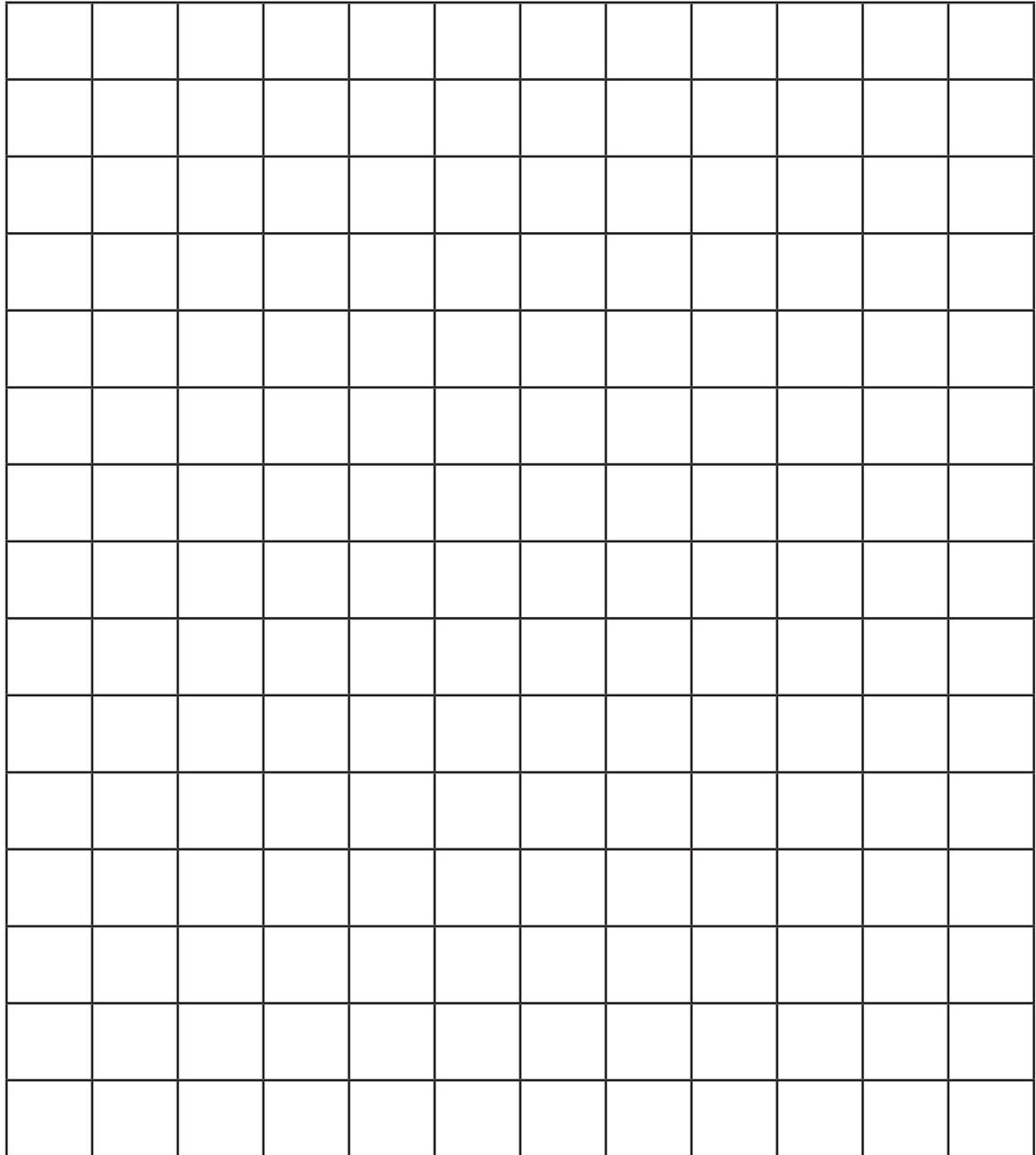
**Data Table: Rabbits Caught by Fox**

| <b>Rabbits Caught by Fox</b>                   | <b>No Shrubs</b> | <b>Small Shrubs</b> | <b>Medium Shrubs</b> | <b>Large Shrubs</b> |
|--|------------------|---------------------|----------------------|---------------------|
| <b>Trial 1</b>                                 |                  |                     |                      |                     |
| <b>Trial 2</b>                                 |                  |                     |                      |                     |
| <b>Trial 3</b>                                 |                  |                     |                      |                     |
| <b>Average (round to nearest whole number)</b> |                  |                     |                      |                     |

- Answer questions 1 through 7.

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1. Use your calculated **averages** from the data table on page 2 to graph the relationship between shrub size (including no shrubs) and number of rabbits caught by the fox. Include a title and all other required elements of a graph.



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## Analyzing and Using Your Results

2. Copy your prediction from page 3 of your Inquiry Booklet. Do your data and observations support your prediction? Use specific data from the investigation to explain your answer.

3. Explain why it was important to conduct multiple trials during the investigation.

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4. In this investigation, you used a model of an ecosystem. Describe **two** ways the real ecosystem was correctly represented by this model.

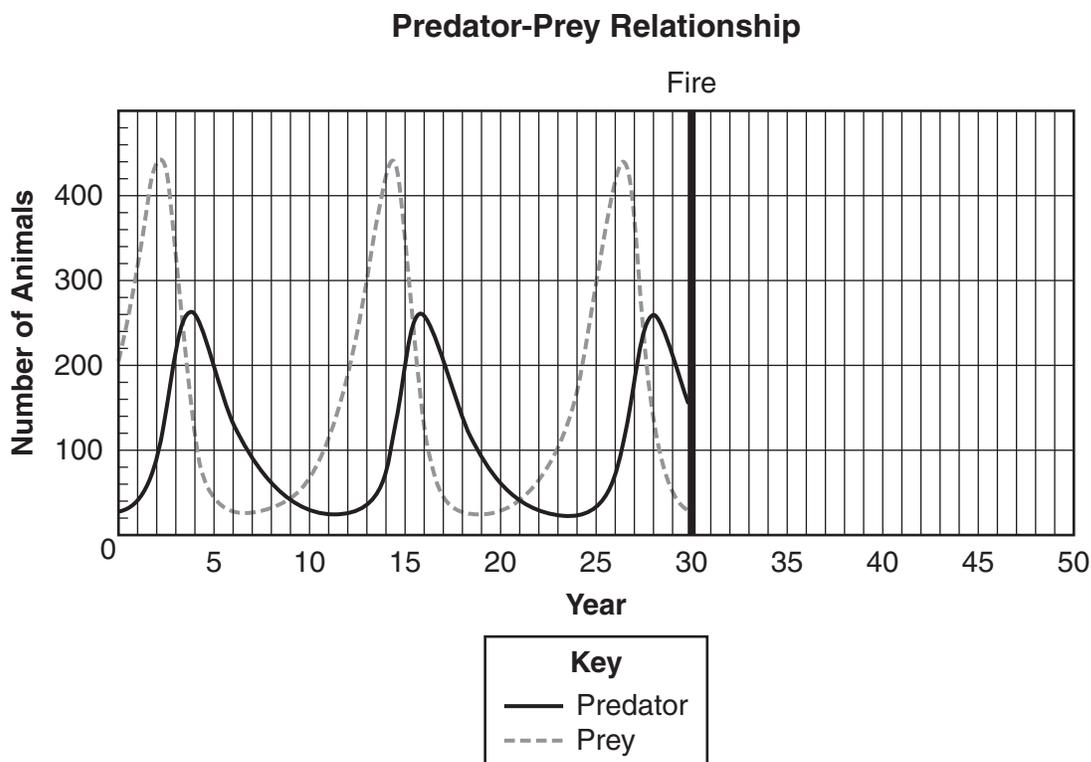
### Evaluating the Investigation

5. Identify **one** factor (type of organism or physical characteristic) that may be found or introduced in a **real** ecosystem that is not found in the model ecosystem. Explain why changing your model to include this factor would make your model work more like a real ecosystem.

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Use the information and graph below to answer questions 6 and 7.

The graph below represents a generalized relationship between predators, such as the fox, and prey, such as the rabbits. It represents the predator and prey populations over time in an ecosystem with large shrubs.



6. Describe the relationship between the predator and prey populations from Year 0 through Year 15. Use specific data from the graph in your description.

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7. A fire occurred in the ecosystem represented in the graph on page 6 at Year 30, destroying the large shrubs. Only small shrubs grew back over the next 15 years. Based on what you learned in your investigation and the graph on page 6, explain how the graph for the prey population from Years 30 to 45 would compare to the years before the fire. Use data from your investigation to support your reasoning.

