

|  |  | Score and Description->   | 0 (includes blank)   | 1  | 2   | 3  |
|--|--|---|--|--|---|--|
| <p><b>GRADE 10 Q4 ASSESSMENT KEY</b></p> <p>1 A NSES 10.c.1<br/>2 B NSES 10.c.5<br/>3 C d29<br/>4 D d27<br/>5 B d43<br/>6 C d44<br/>7 D d42<br/>8 D d34<br/>9 B DINQ5<br/>10 C DINQ6</p> <p><b>GRADE 10 Q4 OPEN ENDED QUESTIONS SCORING RUBRIC</b></p> | <b>Question</b>  | <b>CT State Standard</b>  | <p>The response, although may be on topic, is an unsatisfactory answer to the question. It may fail to address the question, or it may address the question in a very limited way.</p> <p>There may be no evidence of elaboration, extension, higher-order thinking, or relevant prior knowledge.</p> <p>There may be evidence of serious misconceptions</p> | <p>This response is a marginal answer to the question. While it may contain some elements of a proficient response, it is inaccurate, incomplete, and/or inappropriate. There is little if any evidence of elaboration, extension, higher-order thinking or relevant prior knowledge. There may be evidence of significant misconceptions.</p> | <p>This response is a proficient answer to the question. It is generally correct, complete, and appropriate although minor inaccuracies may appear. There may be limited evidence of elaboration, extension, higher-order thinking, and relevant prior knowledge, or there may be significant evidence of these traits but other flaws (e.g., inaccuracies, omissions, and inappropriateness) may be more than minor.</p> | <p>This response is an excellent answer to the question. It is correct, complete, and appropriate and contains elaboration, extension, and/or evidence of higher-order thinking and relevant prior knowledge. There is no evidence of misconceptions. Minor errors will not necessarily lower the score.</p>   |
| 61   | Explain how natural selection might cause the rabbit population to change over time. | DINQ 10 Communicate about science in different formats, using relevant science vocabulary, supporting evidence and clear logic. | <i>The response fails to explain how natural selection will cause the rabbit population to change over time. Misconceptions may be present.</i>  | <i>The response partially explains how natural selection will cause the rabbit population to change over time. It contains limited elaboration. Misconceptions may be present.</i>   | <i>The response explains how natural selection will cause the rabbit population to change over time. It is less elaborated than the Score 3 responses. It may be incomplete or contain inaccuracies.</i>  | <i>The response explains how natural selection will cause the rabbit population to change over time. It is correct, complete and well elaborated.</i><br>“Slight genotypic and phenotypic variations occur within a species. As these variations within a population are passed on to future generations, they are incorporated with other variations that may result in an increased adaptation of the organisms to the prevailing environment. These organisms are better adapted to survive changes that may occur within their environments. Natural selection is nature’s way of allowing only those organisms best adapted to survive and reproduce, thus passing on the traits necessary for future generations to survive. A change in species over time is a slow process.” |

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| 62. | Using the axes below, construct a graph showing the number of each species of <i>Paramecium</i> the student found each day. Be sure to label the axes   | DINQ8 Use mathematical operations to analyze and interpret data, and present relationships between variables in appropriate forms. | <i>Student fails to plot data for either S or T correctly or produces an illogical graph.</i> | <i>Student scales and plots either S or T correctly or scales and plots S and T combined (for example, adds data for each into one data point). No labels on graph.</i> | <i>Student scales and plots S and T correctly; one or both axis labels or plot labels are missing (or incorrect).</i>  | <i>Student scales, plots, and labels the graph correctly (days on x, populations on y, 2 sets of data)</i>  |
| 63  | What are the variables that should have been controlled or kept constant in the experiment? Explain why it is important to control variables in an experiment.  | DINQ5. Identify independent and dependent variables, including those that are kept constant and those used as controls.            | <i>States no constants needed, or all variables incorrect.</i>                                | <i>Misidentifies one of the variables. Only some constant properties correctly identified, or no explanation as to the reason for controlling variables.</i>            | <i>Identifies both variables: Independent variable: species, but should have kept Lists some important properties to keep constant., amount of food, light, temperature, some explanation of need for constants</i>                    | <i>Lists most properties to keep constant:... Discusses reason for controlling variables as knowing the cause for the effect, referring to making a valid conclusion</i>  |
| 64  | The student then decided to test to see whether different amounts of light would affect Species S.<br><br>Write a step-by-step procedure you could use to collect reliable data related to your question. Include enough detail so that someone else could conduct the same experiment and get similar results. | DINQ4 Design and conduct appropriate types of scientific investigations to answer different questions.                             | <i>Describes an experiment without mentioning different amounts of light.</i>                 | <i>Describes an experiment with independent variable of light, may not mention conditions, and may generally describe method to measure some effect on populations.</i> | <i>Describes an experiment with independent variable of different amounts of light and same type of organisms, and food, etc., and describes method to measure population as dependent. May not address any other design concerns.</i> | <i>Describes an experiment with independent variable of different amounts of light using same organisms, food, temperature, and describes method to measure population as dependent. Describes some of controlling variables, multiple trials, control group.</i> |