



## **Biology 1**

# **Test Data Review Report 2023**

## Introduction

On October 24, 2023, Data Recognition Corporation (DRC) and the South Carolina Department of Education (SCDE) Office of Assessment and Standards (OAS) convened a panel of educators to review item data from the South Carolina End-of-Course Examination Program (EOCEP) Biology 1 Assessment. The panel discussed item-level data from the 2023 assessment. The panel recognized the hard work of South Carolina educators and offered these relevant and useful instructional suggestions as an addendum to those from previous years.

The Data Review Committee was also mindful that the South Carolina College- and Career-Ready Science Standards 2021 are being fully implemented during the 2023–2024 school year. These strategies reflect the higher rigor of the new standards.

## Instructional Recommendations and Strategies:

- Use phenomena-based passages and data in the classroom to increase students' reading stamina and experience in interacting with text and analyzing data.
  - Model strategies for breaking down passages.
  - Provide guided questioning to elicit desired skills.
  - Require the use of claim-evidence-reasoning strategies to help students support or refute claims.
  - Teach students to differentiate essential and non-essential information in text, complex models, and data sets.
- Require students to:
  - generate their own experimental designs,
  - reinforce independent/dependent variables and constants with the experimental design process,
  - collect data during the experimental process, and,
  - analyze and communicate experimental results using scientific conventions.
- Allow students to construct, analyze, and evaluate a variety of models during instructional time. Examples can include:
  - models that connect structure and function,
  - flowcharts for cellular respiration and photosynthesis, and
  - using a model to determine the next step in a process or sequence.
- Provide opportunities for students to use the correct terminology for scientific contexts.
- Use real-world examples to make instruction more meaningful (e.g., the connection between the cell cycle and cancer).

- Emphasize cause and effect:
  - Provide opportunities for students to construct and use models that explain relationships (e.g., graphs, data tables, chemical equations, mental models).
    - These could include sentences to explain the relationship between cause and effect represented by a model.
- Emphasize the differences between products and reactants and inputs and outputs.
- Ask students to compare the effects of different types of mutations on protein synthesis.
- Model how to make a prediction and support claims based on data and provide opportunities for students to practice these.
- Reinforce the connections between energy transfers and ecosystem dynamics.
  - Students could be required to develop models or chains of reasoning connecting the flow of energy and the cycling of matter through ecosystems.