



# *New York State Testing Program*

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## **Educator Guide to the Regents Examination in Life Science: Biology**

New York State P-12 Science Learning Standards

June 2024



# Table of Contents

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Foreword ..... 1

**New York State Science Regents Examinations Testing Program..... 2**

    Purpose of State Testing ..... 2

    New York State Educators Involvement in Test Development ..... 2

    Required Investigations for the New York State Science Regents Examinations ..... 2

**The New York State P-12 Science Learning Standards ..... 3**

    Dimension 1: Science and Engineering Practices (SEP) ..... 3

    Dimension 2: Disciplinary Core Ideas (DCI) ..... 4

    Dimension 3: Crosscutting Concepts (CCC) ..... 4

**Test Specifications..... 5**

    Claims and Evidence..... 5

    Life Science: Biology Claims and Evidence ..... 5

    Performance Level Definitions ..... 9

    Performance Level Descriptions..... 9

**Test Design and Administration ..... 10**

    Test Blueprint..... 10

    Test Organization – Question Clusters ..... 10

    Stimuli..... 11

    Question Formats ..... 11

    Test Design ..... 11

    Testing Sessions..... 12

    Scoring Policies for the Life Science: Biology Test..... 12

    Life Science: Biology Calculator Policy..... 12

## Foreword

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The information contained in this Educator Guide is designed to raise educator awareness of the structure of the New York State Regents Examination in Life Science: Biology measuring the [New York State P-12 Science Learning Standards](http://www.nysed.gov/sites/default/files/programs/standards-instruction/p-12-science-learning-standards.pdf) ([www.nysed.gov/sites/default/files/programs/standards-instruction/p-12-science-learning-standards.pdf](http://www.nysed.gov/sites/default/files/programs/standards-instruction/p-12-science-learning-standards.pdf))

The guide provides educators with pertinent information about the test development process, the learning standards that the tests are designed to measure, the test specifications used to create the tests, and the test design, which includes what types of questions will be asked. Links to additional resources are provided to further enhance educators' understanding of the structure of this test. Educators are encouraged to review the guide prior to the test administration to gain familiarity with the test format. The information presented can also be used as a platform for educator discussion on how student assessment results can guide future instruction.

The Regents Examination testing schedule for the June 2025 administration can be found on the [New York State Education Department's website](https://www.nysed.gov/state-assessment/regents-examination-schedules) (<https://www.nysed.gov/state-assessment/regents-examination-schedules>). Questions regarding the New York State Testing Program and test design may be addressed to the Office of State Assessment at [emscassessinfo@nysed.gov](mailto:emscassessinfo@nysed.gov). Questions regarding the New York State Learning Standards may be addressed to the Office of Standards and Instruction at [P12standardsinstruction@nysed.gov](mailto:P12standardsinstruction@nysed.gov)



**The New York State P-**

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**Claim #2 (Matter and Energy in Organisms and Ecosystem):**

A student will be able to develop and use models to construct and revise explanations based on evidence for the cycling of matter and transfer of energy within ecosystems.

**Evidence:** *A student demonstrates an understanding of matter and energy in organisms and ecosystems by using science and engineering practices, core ideas, and crosscutting concepts related to developing and using models, constructing and revising explanations and using mathematical representations to support claims related to:*

- Identifying and describing the energy and matter components of a model [HS-LS1-5], [HS-LS1-7]
- Describing the relationships between energy and matter components of a model [HS-LS1-6], [HS-LS1-7]
- Explaining the transformation of energy and changes of matter in an ecosystem [HS-LS2-3], [HS-LS2-4], [HS-LS1-5]
- Using a variety of valid & reliable evidence [HS-LS1-6], [HS-LS2-3]
- Applying scientific ideas, principles, and/or evidence to explain how the components of matter can be rearranged and how energy changes within the system [HS-LS1-7], [HS-LS1-6]
- Revising the explanation based on new evidence [HS-LS1-6], [HS-LS2-3]
- Identifying and describing the components of the system [HS-LS2-5]
- Describing how energy flow and the cycling of matter can be expressed as a mathematical relationship [HS-LS2-4]
- Using the mathematical representations to support the claim [HS-LS2-4]
- Using evidence to identify the components of a system and their relative concentrations to develop and use a model [HS-LS1-5], [HS-LS2-5]

**Claim #3 (Interdependent Relationships in Ecosystems):**

Designing a solution to address environmental stability and biodiversity [HS-LS2-7], [HS-LS2-2]  
Evaluating potential solutions for maintaining stability, including a consideration of trade-offs in an ecosystem [HS-LS2-7]  
Evaluating and critiquing the evidence of the causes and effects of group behaviors within an ecosystem [HS-LS2-8]

**Claim #4 (Inheritance and Variation of Traits):**

A student will be able to ask questions and make and defend claims based on evidence about how hereditary information leads to variation in traits.

**Evidence:** *A student demonstrates an understanding of inheritance and variation of traits by using science and engineering practices, core ideas, and crosscutting concepts related to using models, asking questions to clarify relationships, asking and defending claims, and applying concepts of statistics and probability by:*

- Identifying relevant parts and processes of cellular systems [HS-LS1-4], [HS-LS3-1]
- Explaining the role of mitosis in the differentiation and development of a complex organism [HS-LS1-4]
- Formulating testable questions that arise from examining a model that addresses the structure of DNA and chromosomes [HS-LS3-1], [HS-LS3-2]
- Describing the cause-and-effect relationship between DNA sequences and their functions [HS-LS3-1], [HS-LS3-2]
- Using concepts of statistics to link the evidence and claim that changes in DNA can cause variation [HS-LS3-3]
- Use models to understand the structures and functions of the human reproductive systems [HS-LS1-8]

**Claim #5 (Natural Selection and Evolution):**

A student will be able to evaluate scientific evidence and communicate how biological evolution explains the unity and diversity among organisms.

**Evidence:** *A student demonstrates an understanding of natural selection and evolution by using science and engineering practices, core ideas, and crosscutting concepts related to communicating scientific information, constructing explanations, applying concepts of statistics and probability and evaluating*

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**Claim #6 (Earth's Systems):**

A student can develop models and investigations, analyze data and feedback mechanisms, and construct arguments based on evidence that demonstrate the coevolution of life with Earth's changing systems and

## Performance Level Definitions

For each subject area, students perform along a continuum of the knowledge and skills necessary to meet the demands of the Learning Standards for Science. There are students who meet the expectations of the standards with distinction, students who fully meet the expectations, students who minimally meet the expectations, students who partially meet the expectations, and students who do not demonstrate sufficient knowledge or skills required for any performance level. New York State assessments are designed to classify student performance into one of five levels based on the knowledge and skills the student has demonstrated.

These performance levels for the Science Regents Examinations Tests are defined as:

### NYS Level 5

Students performing at this level meet the expectations of the Science Learning Standards **with distinction** for Life Science: Biology.

### NYS Level 4

Students performing at this level **fully meet** the expectations of the Science Learning Standards for Life Science: Biology. They are likely prepared to succeed in the next level of coursework.

### NYS Level 3

Students performing at this level **minimally meet** the expectations of the Science Learning Standards for Life Science: Biology. They meet the content area requirements for a Regents diploma but may need additional support to succeed in the next level of coursework.

### NYS Level 2

Students performing at this level **partially meet** the expectations of the Science Learning Standards for Life Science: Biology. Students with disabilities performing at this level meet the content area requirements for a local diploma but may need additional support to succeed in the next level of coursework.

### NYS Level 1

Students performing at this level demonstrate knowledge, skills and practices embodied by the Science Learning Standards for Life Science: Biology below that of Level 2.

## Performance Level Descriptions

Performance Level Descriptions exemplify the knowledge and skills students at each performance level demonstrate and describe the progression of learning within a subject area. The Performance Level Descriptions play a central role in the test development process, specifically question writing and standard setting. For information about the New York State P-12 Science Learning Standards Performance Level Descriptions for Life Science: Biology, please visit [https://www.p12.nysed.gov/Linkf-0.004](#)

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# Test Design and Administration

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## Test Blueprint

Test Blueprint						

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## Testing Sessions

The Regents Examination in Life Science: Biology will be administered during the designated time determined by NYSED. Students are permitted three hours to complete the Regents Examination in Life Science: Biology. The tests must be administered under standard conditions and the directions must be followed carefully. The same test administration procedures must be used with all students so that valid inferences can be drawn from the test results.

NYSED devotes great attention to the security and integrity of the New York State Testing Program. School administrators and teachers involved in the administration of State assessments are responsible for understanding and adhering to the instructions set forth in the *School Administrator's Manual* and *Teacher's Directions* when released. For more detailed information about test administration, including proper procedures for proctoring, please refer to the *School Administrator's Manual* and the *Teacher's Directions*.

## Scoring Policies for the Life Science: Biology Test

The general procedures to be followed in scoring Regents Examinations are provided in the publications *Directions for Administering Regents Examinations* (DET 541) and the [School Administrator's Manual](#). Both of these documents will be available on the Department's [website](#) prior to the administration of the exam. For more information see the *Information Booklet for Scoring the Regents Examinations for Sciences*, the *Directions for Administering Regents Examinations*, the *Scoring Key* and *Rating Guides*.

## Life Science: Biology Calculator Policy

Each student must be provided with a four-function or scientific calculator for their exclusive use during the entire examination. Students are not permitted to use graphing calculators when taking this examination.