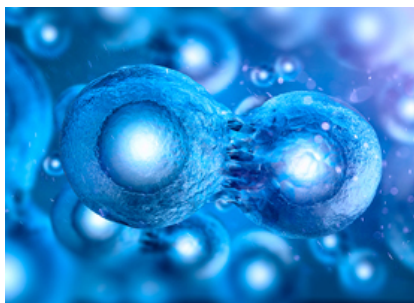




Science2Go is a digital learning solution that offers a new approach to laboratory education for middle and high school students. It allows students to engage in science and engineering practices in any learning environment without access to supplies or equipment. It can be used in-school as prelab work or in classrooms where complete hands-on labs are not possible. Because the lab solutions are online, they are ideal for remote learning. Science2Go combines videos focused on lab techniques and data collection with downloadable, editable worksheets intentionally designed to engage students in science and engineering practices. Students observe and refine experiments, identify design flaws, analyze data, and practice scientific reasoning while connecting science to natural phenomena.

Biology Overview



Biology includes ten labs:

- Mitosis
- Ecosystems
- Diffusion & Osmosis
- Photosynthesis
- Cellular Respiration
- Rate of Transpiration
- Fruit Fly Behavior
- Sordaria Genetics
- Artificial Selection
- Peroxidase Enzyme

The labs are aligned to the NGSS and other state science standards and can be used with any textbook curriculum. Labs can be accessed on any internet-capable device and can be completed in 30-45 minutes.



Mitosis

Performance Expectations

HS-LS1-1: Use a model to illustrate the role of cellular division (mitosis) and differentiation in producing and maintaining complex organisms.

Science and Engineering Practices

Asking questions and defining problems

Developing and using Models

Analyzing and Interpreting Data

Constructing Explanations

Crosscutting Concepts

Systems and System Models

Ecosystems

Performance Expectations

HS-LS2-6: Evaluate claims, evidence, and reasoning that the complex interactions in ecosystems maintain relatively consistent numbers and types of organisms in stable conditions but changing conditions may result in a new ecosystem.

Science and Engineering Practices

Analyzing and interpreting data

Using mathematics and computational thinking

Engaging in Argument from Evidence

Constructing Explanations

Crosscutting Concepts

Cause and Effects

Patterns

Stability and Change

Diffusion and Osmosis

Performance Expectations

HS-LS1-2: Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.

Science and Engineering Practices

Analyzing and Interpreting Data

Constructing Explanations

Developing and Using Models

Engaging in Argument from Evidence

Crosscutting Concepts

Systems and System Models



Photosynthesis

Performance Expectations

HS-LS1-5: Use a model to illustrate how photosynthesis transforms light energy into stored chemical energy.

Science and Engineering Practices

Asking questions and defining problems

Analyzing and interpreting data

Using mathematics and computational thinking

Crosscutting Concepts

Energy and Matter in Systems

Cellular Respiration

Performance Expectations

HS-LS1-7: Use a model to illustrate that cellular respiration is a chemical process whereby the bonds of food molecules and oxygen molecules are broken and the bonds in new compounds are formed, resulting in a net transfer of energy.

Science and Engineering Practices

Developing and using models

Asking questions and defining problems

Planning and carrying out investigations

Analyzing and interpreting data

Crosscutting Concepts

Energy and Matter in Systems

Rate of Transpiration

Performance Expectations

HS-LS1-3: Plan and conduct an investigation to provide evidence that feedback mechanisms maintain homeostasis.

Science and Engineering Practices

Analyzing and interpreting data

Using mathematics and computational thinking

Engaging in argument from evidence

Crosscutting concepts

Stability and Change of Systems



Fruit Fly Behavior

Performance Expectations

HS-LS2-8: Evaluate evidence for the role of group behavior on individual and species' chances to survive and reproduce.

Science and Engineering Practices

Analyzing and interpreting data

Obtaining, evaluating, and communicating information

Crosscutting Concepts

Cause and Effect

Sordaria Genetics

Performance Expectations

HS-LS3-3: Apply concepts of statistics and probability to explain the distribution of expressed traits in a population.

Science and Engineering Practices

Analyzing and interpreting data

Using mathematics and computational thinking

Obtaining, evaluating, and communicating information

Crosscutting Concepts

Scale, Proportion, and Quantity

Artificial Selection

Performance Expectations

HS-LS3-3: Apply concepts of statistics and probability to explain the variation and distribution of expressed traits in a population.

Science and Engineering Practices

Constructing Explanations

Engaging in argument from evidence

Crosscutting Concepts

Scale, Proportion, and Quantity



Peroxidase Enzyme

Performance Expectations

HS-LS1-2: Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.

Science and Engineering Practices

Developing and using models

Planning and carrying out investigations

Analyzing and interpreting data

Crosscutting Concepts

Systems and system models

Stability and Change of Systems
