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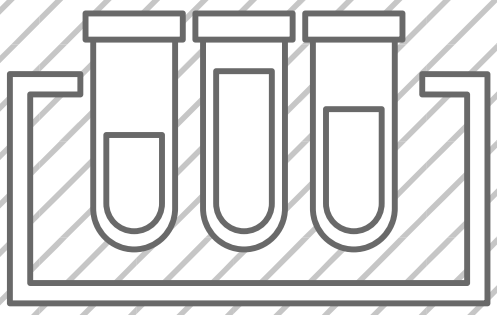
Bioscience Association of Maine Presents:

ME BIOSCIENCE DAY

November 16-20, 2026

#mebioscienceday

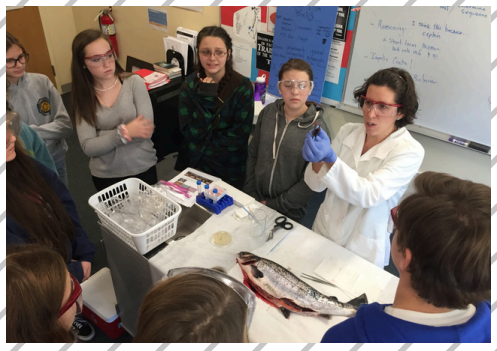












BIOME
Bioscience Association of Maine

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ME Bioscience Day 2026 Overview

Maine's bioscience industry is growing, creating exciting career opportunities for students across the state. From groundbreaking research and innovative medical technologies to advanced manufacturing and biotechnology, Maine is home to a diverse range of life science companies and organizations.

ME Bioscience Day was created to introduce students to these opportunities and connect classroom science with real-world careers. By bringing scientists and industry professionals into middle school classrooms, we hope to inspire the next generation of Maine's scientists, innovators, and problem-solvers.

What is ME Bioscience Day?

ME Bioscience Day is a statewide initiative that introduces middle school students to exciting careers in the life sciences and helps them discover how science connects to the world around them. Launched by the Bioscience Association of Maine (BioME) in 2016, the program connects students with scientists and industry professionals working across Maine.

Hybrid (In-Person & Virtual Formats)

In-Person: Scientists and life science professionals have volunteered to visit local middle school classrooms to talk with students about their career in science, their daily tasks, and the opportunities that are available in science-based careers.

Virtual Format & Video Series: We have partnered with numerous organizations to create a series of videos following 15 scientists. Speakers talk a bit about what life science is, the variety of jobs within the industry, their company, and what their day-to-day jobs look like.

Virtual Hands-on Activity: The pre-recorded videos will be followed by a separate hands-on activity including a lesson plan and materials for the activity.

https://biomaine.org/me-bioscience-day/

2026 Participating Schools

Brunswick Junior High School, Brunswick | Cape Elizabeth Middle School, Cape Elizabeth | Caribou Community School, Caribou | Caribou High School, Caribou | Day Mountain Regional Middle School, Strong | Frank H. Harrison Middle School, Yarmouth | Freeport Middle School, Freeport | Gorham Middle School, Gorham | Gray-New Gloucester Middle School, Gray | Greely Middle School, Cumberland | Greenville Consolidated School, Greenville | Helen S. Dunn School, Greenbush | James F. Doughty School, Bangor | Jordan-Small Middle School, Raymond | Medomak Middle School, Waldoboro | Middle School of the Kennebunks, Kennebunk | Lawrence Junior High School, Fairfield | Mill Pond School, Hodgdon | North Yarmouth Academy, Yarmouth | Philip W. Sugg Middle School, Lisbon | Rose M. Gaffney Elementary School, Machias | Saco Middle School, Saco | Sacopee Valley Middle School, Hiram | Sanford Middle School, Sanford | Scarborough Middle School, Scarborough | Skowhegan Area Middle School, Skowhegan | South Bristol School, South Bristol | South Portland Middle School, South Portland | Telstar Middle School, Bethel | Tremont Consolidated School, Bass Harbor | Tripp Middle School, Turner | Veazie Community School, Veazie | Westbrook Middle School, Westbrook | Windham Middle School, Windham | Winslow Elementary School, Winslow | Winslow Junior High School, Winslow | Winthrop Middle School, Winthrop | York Middle School, York

ME Bioscience Day 2026 Sponsors

mti Maine Technology Institute *Investing in Innovation*

The Jackson Laboratory

M&T Bank

CORNING

Maine Angels

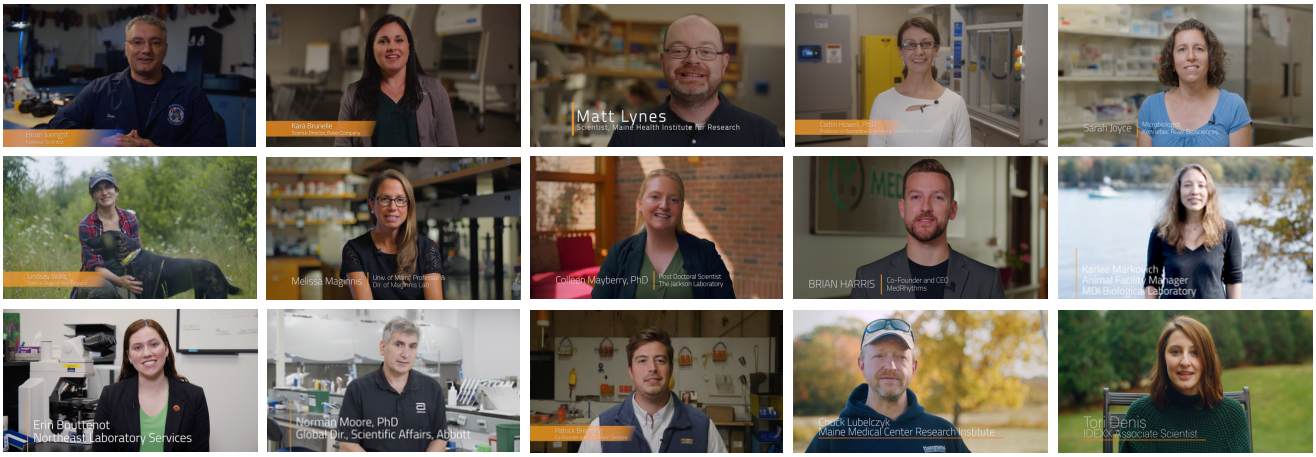
Teacher's Guide to ME Bioscience Day Videos

Video Presentations

In lieu of “live” presentations for ME Bioscience Day, we have produced 15 short video presentations with speakers from the following Maine life science institutions. Please feel free to watch whichever videos work best for your classroom.

- Brian Juengst, Forensic Scientist, Maine State Police Crime Laboratory
- Kara Brunelle, PhD, Science Director, Baker Company
- Matt Lynes, PhD, Faculty Scientist, MaineHealth Institute for Research
- Caitlin Howell, PhD, Professor of Biomedical Engineering, University of Maine
- Sarah Joyce, Microbiologist, Kennebec River Biosciences
- Lindsay Ware, Owner, Science Dogs of New England
- Melissa Maginnis, PhD, Professor & Director of Maginnis Lab, University of Maine
- Colleen Mayberry, PhD, Post Doctoral Scientist, The Jackson Laboratory
- Brian Harris, Co-Founder & CEO, MedRhythms
- Karlee Markovich, Animal Facility Manager, MDI Biological Laboratory
- Erin Bouttenot, Indoor Air Quality Tech. Manager, Northeast Laboratory Services
- Norman Moore, PhD, Global Director of Scientific Affairs, Abbott
- Patrick Breeding, Co-Founder and CEO, Marin Skincare
- Chuck Lubelczyk, Vector Ecologist, MaineHealth Institute for Research
- Tori Denis, Associate Scientist, IDEXX

Videos Link: *https://biomaine.org/me-bioscience-day-videos/*



Teacher's Guide to ME Bioscience Day Videos

Video Presentations: Optional Activities

Pre-watching activity
Tell the students that they will watch a video with professionals from 3 life science organizations in Maine. Have them perform a quick Google search to find these organizations and answer in 1 sentence (for each): "What does each of these organizations do?"

What to do with the presentation videos?
These videos are designed to be played in the classroom on a large screen or at home as a remote learning option. We recommend showing all 3 presentations. They can be shown all at once, or you can choose to pause in between and have students share their reflections on what they saw.

Post-watching discussion (optional)
Discuss as a group or in small groups: Who has the coolest job and why? What are 3 new things you learned from these presentations?

ME Bioscience Day Hands-On Activity
Introduction: Understanding Diabetes and Glucose

Have you ever wondered what happens to the food you eat after you swallow it? Your body breaks down much of the food you eat into a type of sugar called **glucose**. Glucose is an important source of energy that gives your body the fuel it needs to think, move, play, and grow!

But how does glucose get from your blood into the cells where your body can use it? This is where a hormone called **insulin** comes in. Insulin is made by an organ called the pancreas. You can think of insulin as a key that helps glucose move from your blood into your body's cells, where it can be used for energy.

Diabetes is a condition that affects how the body controls the amount of glucose in the blood. In people with diabetes, the body either doesn't make enough insulin or can't use the insulin it makes properly. As a result, glucose can build up in the bloodstream instead of moving into the cells where it is needed.

Did you know? More than **40 million people in the United States have diabetes!** That's about 1 out of every 8 people. Diabetes affects people of all ages, including children and teenagers, which is one reason scientists and doctors work hard to understand it and find better ways to treat it. There are different types of diabetes, but they all affect how the body manages blood sugar.

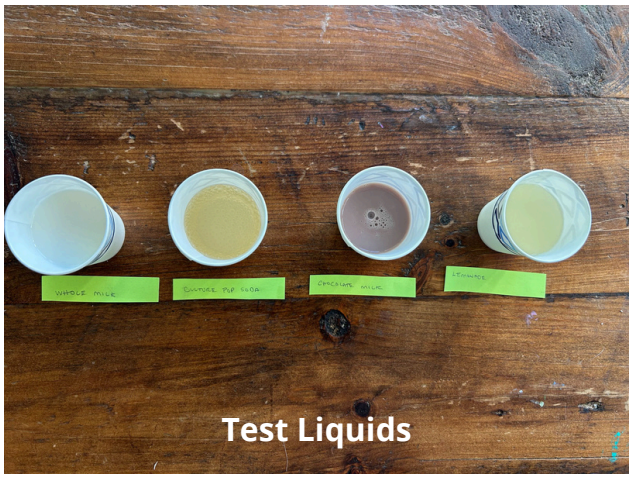
In today's experiment, you will become a scientist and investigate glucose! You'll use special test strips to test different samples and discover how scientists can detect glucose. As you experiment, think about how testing for glucose can help us understand what is happening inside the human body.

Glucose Test Challenge: Photos

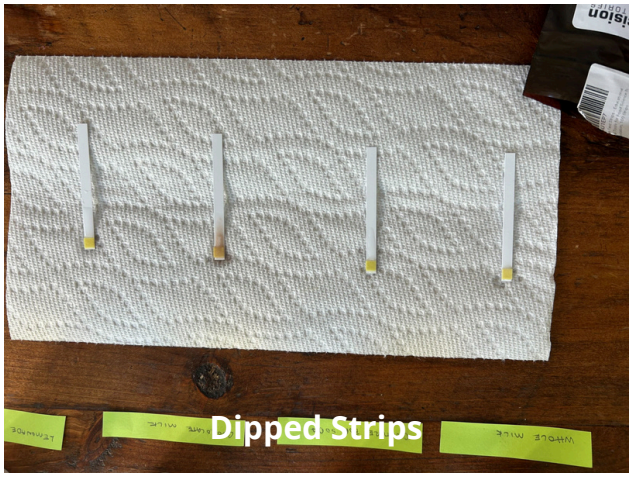
ME Bioscience Day Hands-On Activity



Control Test Strip



Test Liquids



Dipped Strips



3 Minutes



5 Minutes



Lemonade Results

Glucose Test Challenge: Objectives & Materials
ME Bioscience Day Hands-On Activity

Learning Objectives
In this activity, students will:
- Explain what glucose is and why it is important to the body.
- Make predictions and test five different liquids using glucose test strips.
- Record observations, interpret results, and draw conclusions based on evidence.
- Recognize that different types of sugar may produce different test results.

Materials
- Seven small, clear cups (one for each of the five samples and two controls)
- Water
- White sugar: 1 teaspoon mixed into ½ cup of warm water
- Glucose test strips designed for urine glucose testing
- Timer or stopwatch
- Paper towels and student data sheets

Pre-Lab Question
Glucose is a simple sugar the body uses for energy. Scientists use tests to investigate substances and collect evidence. Have students predict which liquids might contain detectable glucose.

Preparation
Label seven cups:
- Control 1: Plain water
- Control 2: Sugar water
- Samples 1–5: Five liquids chosen by the class

Prepare the sugar water by mixing 1 teaspoon of white sugar into ½ cup of warm water and stirring until dissolved. Place a small amount of each liquid into its labeled cup.
Test the controls and samples
For each liquid:
- Predict the result and record it on the data sheet.
- Use a fresh glucose test strip and follow the manufacturer's instructions.
- Wait the specified amount of time.
- Compare the strip's color with the package's chart.
- Record the observed color and result.

Test the plain water and sugar water controls first, followed by the five selected liquids (for example, apple juice, lemonade, milk, sports drinks, or soda).

Glucose Test Challenge: Important Teacher Notes
ME Bioscience Day Hands-On Activity

Sugar-water control: White table sugar is sucrose, not glucose. Standard glucose test strips may not detect sucrose directly, so the sugar-water sample is a comparison rather than a guaranteed positive control. If available, a verified glucose solution is preferable as a positive control.

Testing milk and lactose: Milk contains lactose, a naturally occurring sugar. Lactose is not picked up by standard glucose test strips because lactose is a disaccharide (a double sugar) made of bonded glucose and galactose, whereas glucose test strips are chemically designed to react only with free, unbound glucose. This is a useful opportunity to explain that different sugars can behave differently in a scientific test.

Safety and accuracy: Use urine glucose test strips, not blood glucose test strips. Follow the manufacturer's instructions, and explain that these strips are designed for clinical urine testing, so results with food and drink samples may be approximate or outside their validated use. Do not let students taste samples or test-strip solutions. Wash hands after the activity.

Key takeaway: Scientists make predictions, test ideas, record evidence, and consider the limitations of their tools. A test strip's result does not necessarily reveal the total amount of sugar in a liquid, and this classroom experiment cannot measure blood glucose or diagnose diabetes.

The procedure in this experiment "Glucose Test Challenge" is adapted from "Science Activity: Glucose Test Challenge" by Diabetes Research Connection.
https://diabetesresearchconnection.org/kids-science-activity-glucose-test-challenge/

Glucose Test Challenge: Procedure
ME Bioscience Day Hands-On Activity

Procedure

1. Divide students into groups of four. Students should work together to make predictions and discuss results. Suggested roles:
    - Materials manager
    - Test-strip technician
    - Timer and observer
    - Data recorder
2. Prepare the samples
    - Label seven cups. Prepare the sugar water by mixing 1 teaspoon of white sugar into ½ cup of warm water and stirring until dissolved. Place a small amount of each liquid into its labeled cup.
    - Control 1: Plain water
    - Control 2: Sugar water
    - Samples 1-5: Five liquids chosen by the class
3. Test the controls and samples (15-20 minutes)
    - Test the plain and sugar water controls first, followed by the five selected liquids.
    - Predict the result and record it on the data sheet.
    - Use a fresh glucose test strip and follow the manufacturer's instructions.
    - Wait the specified amount of time.
    - Compare the strip's color with the package's chart.
    - Record the observed color and result.
4. Discuss results
    - Bring the class together to discuss:
    - Which liquids showed detectable glucose?
    - Were any results different from students' predictions?
    - Why did the class test plain water?
    - Why might a glucose test strip not detect every type of sugar?
    - How could glucose testing help scientists study diabetes?

The procedure in this experiment "Glucose Test Challenge" is adapted from "Science Activity: Glucose Test Challenge" by Diabetes Research Connection.
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Glucose Test Challenge: Student Sheet
ME Bioscience Day Hands-On Activity

Research Team:

Materials manager (Name):

Test-strip technician (Name):

Timer and observer (Name):

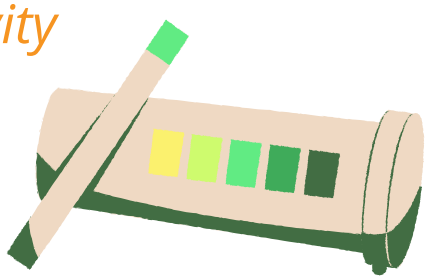
Data recorder (Name):

Team Predictions:
Which liquid will show the most glucose? Which will show the least? Explain your reasoning for each.

The procedure in this experiment "Glucose Test Challenge" is adapted from "Science Activity: Glucose Test Challenge" by Diabetes Research Connection.
https://diabetesresearchconnection.org/kids-science-activity-glucose-test-challenge/

Glucose Test Challenge: Data & Observations

ME Bioscience Day Hands-On Activity



Data

Respond to the prompts and color the strip appropriately where indicated.

Sample	Prediction	Observed strip color	Result from chart
Control: Plain water			
Control: Sugar water			
Sample 1:			
Sample 2:			
Sample 3:			
Sample 4:			
Sample 5:			

The procedure in this experiment "Glucose Test Challenge" is adapted from "Science Activity: Glucose Test Challenge" by Diabetes Research Connection.
https://diabetesresearchconnection.org/kids-science-activity-glucose-test-challenge/

ME Bioscience Day Hands-On Activity
Extension Activities (For the Teacher)

Use these optional activities after the main lesson to deepen students' understanding. Each one builds on the test-strip skills students practiced in the challenge.

Hands-On Lab Extensions

Lactase experiment: Test regular milk with a fresh glucose test strip. Then add a drop of over-the-counter lactase enzyme drops, let the mixture sit for several minutes, and test again with a new strip. Lactase breaks lactose into glucose and galactose, so the strip should now detect glucose.

- Have students also test lactose-free milk, which has already been treated with lactase.
- As a comparison, add lactase to sugar water to show that the enzyme does not act on sucrose.

Multiple sugars: Have students test solutions of table sugar, honey, glucose (dextrose) tablets, and a non-sugar sweetener, each mixed into the same amount of water. Have students predict which will contain free glucose before testing.

- Honey contains free glucose and fructose because bees break down the sucrose in flower nectar, while table sugar is sucrose. *Make sure to check sweetener ingredient lists; some packets contain dextrose as a filler, which makes an unexpected result a good discussion point.

Build a glucose color scale: Have students dissolve glucose tablets in measured amounts of water to make solutions of different strengths.

- Have students test each one, arrange the strips in order to build their own reference scale, and use it to estimate the glucose level of a mystery sample. *Include reference solutions both above and below the expected level of the unknown.

Mystery liquid: Give each group unlabeled samples, such as regular milk, lactose-free milk, and plain water. Have students use test-strip results and other evidence to identify each sample and defend their conclusions.

ME Bioscience Day Hands-On Activity
Extension Activities (For the Teacher)

Experimental Design

Student-designed investigation: Have student groups choose one variable to investigate, such as diluting juice, changing the sample temperature, or reading the strip too early or too late.

- Have students write a testable question and hypothesis; identify the independent, dependent, and controlled variables; run the test; and report their findings.

Pooled class data: Combine all groups' results into a class data table and bar graph. Discuss where groups agreed or disagreed and why repeated trials make results more reliable.

Literacy / Data Analysis

Nutrition label comparison: Have students compare the "Total Sugars" line on each drink's Nutrition Facts label with their strip results. Total Sugars includes all sugars, such as the natural sugar in milk and fruit, not just glucose. Ask students to write a short explanation of why a drink can be high in sugar but test low for glucose.

Claim–Evidence–Reasoning write-up: Have students respond to a prompt such as "Does a negative test-strip result mean a drink contains no sugar?" by stating a claim, citing evidence from their data, and explaining their reasoning.

Health and Real-World Connections

How the body manages glucose: Have students create a diagram showing how glucose moves from food into the blood and then into cells.

- Ensure they include insulin, which the pancreas releases when blood glucose rises, and glucagon, which it releases when blood glucose falls. Discuss what changes in diabetes.

Diabetes technology research: Have students research how continuous glucose monitors (CGMs) and insulin pumps work and present their findings. A CGM uses a tiny sensor under the skin to estimate glucose levels every few minutes.