

MSEF

Massachusetts Science
+ Engineering Fair

MIDDLE SCHOOL FAIR

WORCESTER TECHNICAL HIGH SCHOOL

MAY 11, 2024

POWERED BY

CABOT 

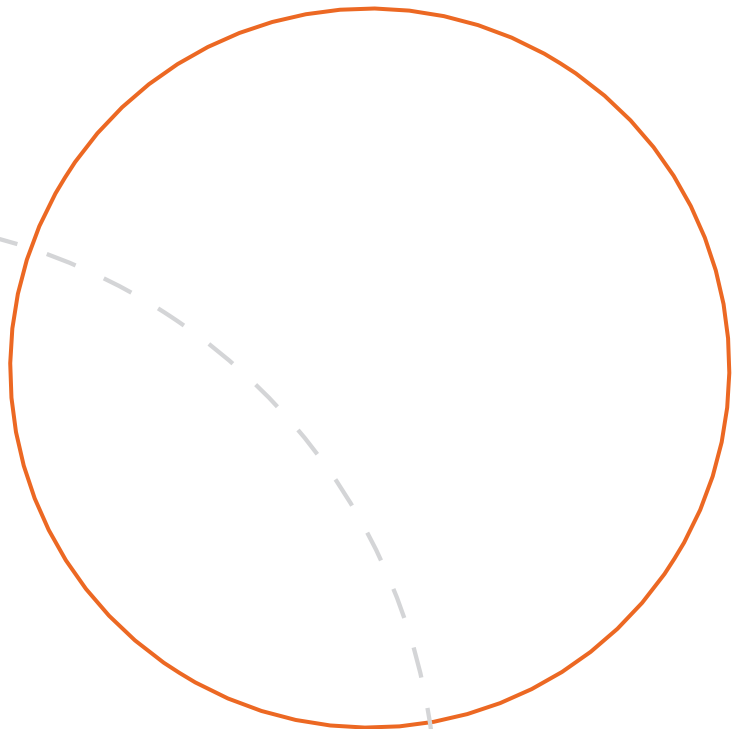


Official Program Book

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MSEF
Massachusetts Science
+ Engineering Fair
MIDDLE SCHOOL FAIR 2024
POWERED BY **CABOT**



CABOT 

Creating materials that improve daily life and enable a more sustainable future.

Cabot Corporation is a leading global specialty chemicals and performance materials company. As a market leader, we continually extend the boundaries of what is possible, leveraging our team's expertise and the latest technology to create materials that deliver new levels of performance and efficiency.

We are a proud supporter of the Massachusetts Science & Engineering Fair and future STEM leaders.

cabotcorp.com

Asking Hard Questions, Solving Challenging Problems

Since our inception 75 years ago, Massachusetts Science & Engineering Fair has remained steadfast in our commitment to encouraging scientific inquiry, nurturing curiosity, and honing the critical thinking skills of Massachusetts students. Our programming provides a platform for students to explore real-world STEM investigation through independent science research and engineering projects.

Participation in science fair equips students with a diverse array of skills, including verbal and written communication, problem-solving, teamwork, analytical reasoning, and attention to detail. Engaging in research promotes innovation by challenging students to apply these skills to ask hard questions and solve challenging problems—a necessity in today's rapidly evolving academic and professional landscapes.

Moreover, MSEF is dedicated to ensuring **equitable access to science fair opportunities** for all students. We firmly believe that every student deserves the chance to explore their world and deepen their understanding of science and engineering.

We are grateful for so many - judges who return year on year, regional chairs for whom science fair is their passion, sponsors who understand the importance of this work, and teachers who shepherd and support students through the ups and downs of independent work. Your generosity fuels our mission. We extend our heartfelt gratitude to all those who contribute their time, expertise, and resources to make MSEF a success year after year.

To all of this year's participants: congratulations on your remarkable achievements! Your dedication, curiosity, and passion for science are truly inspiring. As you showcase your projects and celebrate your hard work, remember that YOU are the future problem solvers and innovators who will shape our world for the better.

Welcome to the Middle School Massachusetts Science & Engineering Fair!

Sincerely,



Helen Rosenfeld
Executive Director



Dan Leibholz
Chair, Board of Directors

Regional Fair Network

The efforts of Regional Fair Directors, Regional Committees, Educators and Volunteers play a crucial role in nurturing the next generation of scientists and innovators.

Thank you for your commitment to science fair as a method for fostering curiosity, creativity, and critical thinking skills!

REGION I: WESTERN MASSACHUSETTS

Western Mass Science & Engineering Fair

High School Fair Host:
Western New England University

High School Chair: Christian Salmon

Middle School Fair Hosts:
Massachusetts College of Liberal Arts
and Springfield Museums

Middle School Coordinators:
Ann Billetz and Rachel Quimby

REGION II: CENTRAL MASSACHUSETTS

Worcester Regional Science & Engineering Fair

High & Middle School Fair Host: Worcester
Polytechnic Institute

High School Chair: Taryn Surabian

Middle School Chairs: Lisa Greenwald
and Karin Lebeau

REGION III: SOUTHWESTERN MASSACHUSETTS

Bristol/Rensselaer Science & Engineering
High School Fair

High & Middle School Fair Host:
Bristol Community College, Fall River

High School & Middle School Chair:
Pallavi Naravane

REGION IV: NORTHEASTERN MASSACHUSETTS

Massachusetts Region IV Science Fair

High School Fair Host: Tufts University

High School Chair: Suzanne Stickley

Middle School Fair Host: UMass Lowell

Middle School Chair: Akshay Kokil

REGION V: SOUTHEASTERN MASSACHUSETTS

Massachusetts Region V Science & Engineering Fair

High School Fair Host: Bridgewater State University

High School Chair: Patricia Monteith

Middle School Fair Host: Regis College

Middle School Chair: Erin McQuaid

REGION VI: CITY OF BOSTON

Boston Public Schools STEM Fair

High & Middle School Fair Host:
Roxbury Community College

High School & Middle School Chairs:
Karissa Goff and Nicole Guttenberg

2024 Science Fair Judges

Thank you for so generously donating your time and talent to support our student scientists and engineers.

Your commitment to fairness, objectivity, and excellence ensures that our participants receive valuable feedback and recognition for their hard work and ingenuity. Your expertise and insight inspire and motivate our students to reach for the stars and pursue their scientific aspirations with confidence.

On behalf of the entire science fair community, we extend our sincerest thanks and appreciation for your unwavering commitment and support.

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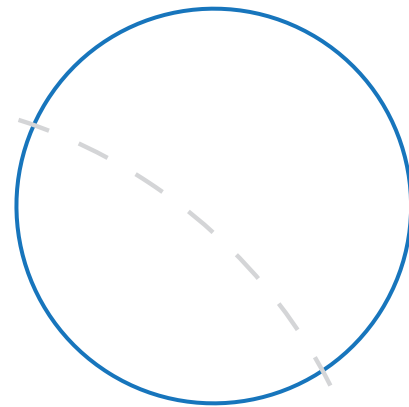
Regional Middle School Fairs

100+

Judges

40+

Companies, educational institutions and professional organizations represented by our judges.



Special Award for a 5th – 8th grade student who uses basic coding or computational thinking to solve a community problem they care about that aligns with the 17 Sustainable Development Goals of the United Nations! **Act locally and think globally!**

Find out about *Broadcom Coding with Commitment*® at >



Win a Raspberry Pi Pico & \$250 Gift Card!

Cooltest Projects, an annual online worldwide showcase, is a celebration of young digital creators and the amazing things they make with technology. We invite all students with science fair projects that use coding to enter! **For more information, visit:**

<https://broadcomfoundation.org/programs/cooltest-projects/>



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Support MSEF

Help us reach a future where every student is empowered through learning in science and engineering practices.



DONATE TODAY AND HELP US REACH MORE OF MASSACHUSETTS' YOUTH

Your contribution supports MSEF's efforts to engage more students in independent research across Massachusetts.



Our programming and student celebration and recognition is only possible because of financial support from like-minded individuals and organizations. Thank you!

MSEF is a non-profit 501(c)(3) organization.

MSEF's Board of Directors & Staff

MSEF is privileged to have the support of a talented, diverse, and enthusiastic Board of Directors. Your dedication to the success of MSEF is truly inspiring, and it is through your vision and guidance that we can empower young minds through transformative science fair programming.

Thank you for your invaluable contributions.

Board of Directors

EXECUTIVE COMMITTEE

Chair: Daniel Leibholz, *Analog Devices*

Vice Chair: Pooja Shukla Devendran, *NovoLux*

Treasurer: Jeffrey Singer, *Corporate Director*

Secretary: Pooja Shukla Devendran, *NovoLux*

MEMBERS-AT-LARGE

Roopom Banerjee, *WhiteLeaf Advisors, LLC*

Nicole Barkley, *Merck*

Laurie Giandomenico, *MITRE*

Aaron Johnson, *Cabot Corporation*

Anne Ludes, *Massachusetts Academy of Math and Science*

Eddie Moreno, *CAMP4 Therapeutics Corp.*

MSEF Staff

Executive Director: Helen Rosenfeld

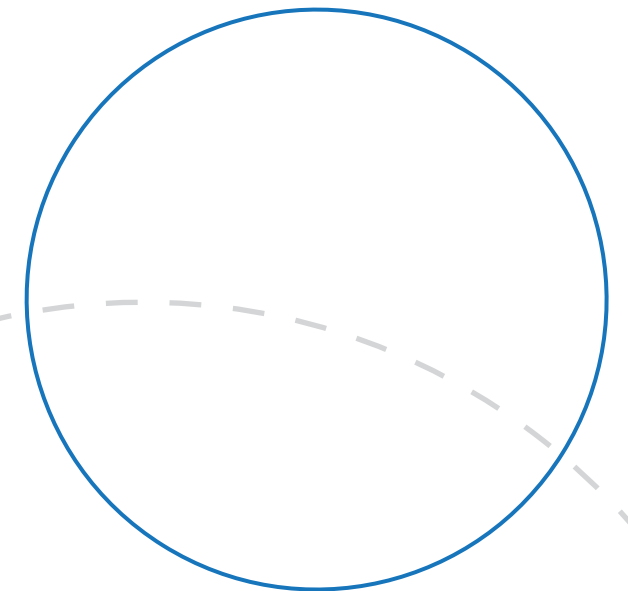
Program Director: Rebekah Stendahl

Senior Manager Of Administration: Elizabeth Kronberg

Events Manager: Karin Lebeau

Development Manager: Sarah Thomas

Student Programs Coordinator: Martha Johnson



Awards and Recognition

We extend our deepest appreciation to Cabot Corporation, our Title Sponsor, for being a steadfast partner to Massachusetts Science & Engineering Fair, and for continuing to support youth STEM education and the students of Massachusetts. Your unwavering dedication makes our year-round science fair programming possible. Your invaluable contribution enables us to nurture the curiosity and innovation of young minds, empowering them to explore, discover, and excel.

With your support, we can hold the Middle School State Fair, providing a platform for budding scientists and engineers to showcase their remarkable achievements and be recognized through the below awards.

Thank you to all our partners organizations for your continued support and belief in the power of independent STEM research. Together, we are inspiring the next generation of STEM leaders.

CABOT AWARDS



Grand Prize Award



First Place Spotlight Award

CATEGORY AWARDS

AMD Award for
Engineering Excellence

Entrada Therapeutics Award
for Bioscience Excellence

Cabot Award for
Chemistry Excellence

WM Award for Environmental
Science Excellence

Materion Award for
Computer Science/ Physics/
Mathematical Excellence

Eisenstadt Award for
Behavioral/Social
Science Excellence

Sanofi
Teacher Award

SPECIAL AWARDS

Broadcom Coding with
Commitment Award

Lemelson Early
Inventor Prize

MLSC
Trailblazer Award

Pauline J. LaMarche
Memorial Award GRIT
Award (Guts, Resilience,
Initiative, Tenacity)

Student Exhibitors

ABDELAAL, OMER

*Comparing a Commercial and
Self-Built Pulse Oximeter*
Al-Noor Academy

ABOU MAHMOUD, LEENA

*Does the Amount of Electricizer Added
in Bioplastic Affect the Bioplastic?*
Islamic Academy for Peace

ABOUSSABR, YASMINE

Hydrogen Fuel Cell
Pioneer Charter School of Science

ALI LAWAI, KHADIJAH

Oil Spills Affecting Marine Life
Al-Noor Academy

ALRASHID, SHAHED

Staining Teeth
Al-Noor Academy

AMARAL, OLIVIA

How Does Peer Pressure Influence Decision Making?
North Attleboro Middle School

ARUN, YAJNESH

Hydrogen Fuel Cell
Pioneer Charter School of Science

ASHLEY, CONNOR

*If the Size of the Wind Turbine Increases
Will the Energy Output Increase*
St. Francis Xavier School, Acushnet

ASTORINO, SOPHIA

The Effect of Energy Drinks on Heart Rate
Hoosac Valley Middle High School

BALAJI, RISHI

*Project Optimus Time: An Optimal, Intelligent, and
Dynamic Scheduling Methodology to Reduce Stress-
Induced Burnout in Students*
Stanford OHS

BANEGAS GIL, NICHOLAS

*The Effects of the Common Reed on the
Belle Isle Marsh Reservation*
Boston Latin School

BANNER-GOODSPEED, SEREN

*Physical vs. Digital: How Reading Online
vs. on Paper Affects Your Memory*
Boston Latin School

BASKIN, KATE

Effect of Roundup on Daphnia
Dover-Sherborn Regional Middle School

BEARD, TAIJAH

*Is Transformed E-coli More Resistant
to Ampicillin than Non-Resistant E-coli?*
New Mission

BEEPATH, SHIVANI

*Please Don't Stop the Music!: The Effect
of Music on Blood Pressure and Heart Rate*
Boston Latin School

BEKHEIRNIA, MAYA

Effect of Age on Classical Music
Boston Latin School

BENELBAIDA, YASSMINE

*Life Span of Daphnia and Planaria
in Water Pollution*
Pioneer Charter School of Science II (PCSS-II)

BHAT, PRANAV

Self Irrigation System
Sarah W. Gibbons Middle School

BOISETTE, SERGINE

Seismograph
Pioneer Charter School of Science

BOLTON, MARLOWE

*Are People of Different Demographics Able to Tell
the Difference Between Human and AI Better?*
Eliot, John K-8

BONETTI, GIULIANA*Buzzing for Bees*

Dr. Arthur F. Sullivan Middle

BONTALA, DIVIJA*The Healthiest Way to Dissolve a Kidney Stones*

Oak Middle School

BONU, SATVIK*How Does Radiation Affect Us?*

North Attleboro Middle School

BOZTAS, ESMA*Does the Mandela Effect Vary Among**Different Brain Dominance*

Islamic Academy for Peace

BRITEL, HODA*How Do Different Colored Lights Affect Plant Growth?*

Pioneer Charter School of Science II (PCSS-II)

BROWN, BETHANY*Color Flower Theory*

Kiley Prep

BURTON, MYLES*What Hits the Ball Faster a Metal or a Wooden Bat*

Nantucket New School

BUSH, SUMMER-ROSE*How Long Does Blood Last Underwater?*

Hoosac Valley Middle High School

BUSHNELL, ROWAN*Aerodynamics of Cars*

Joseph Case Junior High School

CAHILL, BENNETT*A Study of the Effect of Temperature on**the Hatching of Artemia franciscana*

Littleton Middle School

CALLAHAN, EMMA*What Is the Effect of Using Different Heat Protectants**When Blow Drying the Hair on the Hairs Strength*

Millis Middle

CALOBRISI, JOHN*Which Fertilizer Works Best?*

Saint Michael School

CAVANAUGH, ALEXIS*Meal-worms Vs Super-worms*

St. Catherine of Siena Middle School

CHEN, ALINA*Balloon-Powered Car*

Warren/Prescott K-8

CHEN, RUOYU*Clean Fast, Have a Blast!*

Newton Country Day School

CHHEDA, SARA*How Does Color Affect Emotion**in Different Age Groups?*

Burncoat Middle School

CHOQUETTE, PEYTON*The Effect of Energy Drinks on Heart Rate*

Hoosac Valley Middle High School

CI, MIA*Effect of Roundup on Daphnia*

Dover-Sherborn Regional Middle School

CIMILDORO, ALEXANDRA*Osmosis*

St. Catherine of Siena Middle School

COISMAN, JOHAN*Lightning Walls (TM) – Using Bricks**to Create Hybrid Supercapacitors*

Weston Middle

COLVIN, ADDISON*Battery efficiency*

Hoosac Valley Middle High School

CONKLIN, CALOGERO*Color Dectection*

St. Catherine of Siena Middle School

CORPUZ, ANTHONY*Mini Hyperloop*

Pioneer Charter School of Science II (PCSS-II)

COWGILL, ELLIOT*Plantricity*

Worcester East Middle School

CRISCIONE, SAM*Turning Milk into Plastic*

Littleton Middle School

CRONIN, ROSIE*Water Filtration*

St. Catherine of Siena Middle School

CRONIN, STEPHEN*Solar Radiation Management and the Albedo Effect*

St. Catherine of Siena Middle School

CROUSE, COLBIE*Dreaming at Different Ages*

Hoosac Valley Middle High School

CROW, CALLIE*Is the Placebo Effect Affected by Gender?*

Saint Augustine School (Andover)

CURTI, MADDY*How Does Food Dye Affect Plant Growth?*

Saint Agnes Academy

DAGGUBATI, DHATRI*Reviving Hope for ESRD:**Early Detection of Kidney Disease*

Foxborough Regional Charter School (middle)

DAI, XINWEN*How Does the Amount of Stress A Person Receives**Affect How Often They Will Experience Deja Vu?*

Boston Latin School

DANISH, MOHAMMAD YAHYA*Hydrobotic Arm*

Al-Noor Academy

DELEO, ISABELLE*Sunscreen Pollution is No Solution!*

Newton Country Day School

DESAI, SOLEIL*Language of the Brain*

Eliot, John K-8

DIAZ, JONATHAN*Student Behavior*

Kiley Prep

DIGIOVANNI, ISABELLA*Therapeutic Materials*

Saint Augustine School (Andover)

DO, DARYN*Can Our Rain Gears Harvest Energy?*

Heath

DOLAN, ELLE*How Well Can ChatGPT Mimic Students' Writing?*

Burncoat Middle School

DOUFFIR, NADEEM*Can Humans Distinguish Between Human and AI Text*

Islamic Academy for Peace

DRAWEC, ELLA*How Long Does Blood Last Underwater?*

Hoosac Valley Middle High School

DUARTE, JOSHUA*How Does the Amount of Baking Powder Present**in Batter Affect the Height of a Cake?*

St. Francis Xavier School, Acushnet

EL HAMRI, MALAK*Noise Effects on Concentration*

Pioneer Charter School of Science

ERWIN, ROBERT*What Type of Comedy Makes People Laugh the Most?*

Saint Agnes Academy

FIELD, LAINEY*How do Different Types of Electrolytes Change**in Different Sports Drinks?*

Hoosac Valley Middle High School

FILIP, ETHAN*Optimal Number of Blades on a Wind Turbine*

Dover-Sherborn Regional Middle School

FOX, BRYCE-JAMESON*O.A.F.S Ocean.Acidification.Filtration.Systems*

Pioneer Charter School of Science

FULLER, TALITHA*What Is the Effect of Music with or without Words**on a Subject's Score on a Memory Test?*

Millis Middle

GANESAN, MAHIMA

Unraveling Glucose Release in Boiled White Rice Through Amylase Treatment
Amherst Regional Middle School

GARCIA, KAMILA

Noise Effects on Concentration
Pioneer Charter School of Science

GIRIDHAR, DIYA

Clean Fast, Have a Blast!
Newton Country Day School

GOSUKONDA, ANIKA

AlgaeBeGone
Littleton Middle School

GOWDA, SANCHITA

How Does Music Affect Your Heart Rate?
Littleton Middle School

GRAVE, DAPHNE

RAD Marigolds
Dover-Sherborn Regional Middle School

GROSZMANN, JOSH

The Chloroplast Biomachine
Lesley Ellis School

GUMMADALA, TEJAS

Can Robots Help Put Out Wildfires?
North Attleboro Middle School

GUPTA, ANISH

How Various Liquids Affect Plant Growth
Oak Middle School

GUPTA, PRATHAMESH

Making a New and Cleaner Form of Air Transportation
Ottoson Middle

GUTHRIE, LILY

Is the Placebo Effect Affected by Gender?
Saint Augustine School (Andover)

HAAS-TIMM, AUDREY

What Allows You to Retain Information Better: Writing or Typing?
Andover School of Montessori

HAFIANI, SHEMS

How do Grayscale Filters Affect Screentime?
Al-Noor Academy

HAKO, ALEX

Can a Solar-Powered Car Be Built?
Burncoat Middle School

HALBERSTADT, CALEB

What Is the Strength to Weight Ratio of Beam, Arch, and Truss Bridges, and How Do They Compare?
FAITH Co-op

HAMNER, MARIAH

Dreaming at Different Ages
Hoosac Valley Middle High School

HATCHER, BENJAMIN

What Type of Comedy Makes People Laugh the Most?
Saint Agnes Academy

HEJAZI, HOSSAM

How do Grayscale Filters Affect Screentime?
Al-Noor Academy

HENRIQUEZ, JAYLIN

The Impact of Hair Dye on Hair at the Microscopic Level
Dearborn STEM Academy 6-12

HERNANDEZ, GUADALUPE

How Plants React to Music
Saint Agnes Academy

HIRANANDANI, VIKRAM

Urban Farming
Sarah W. Gibbons Middle School

HOUNANE, HEBA

The Effect of Color on the Human Eye
Islamic Academy for Peace

HUNTER, JACK

What Hits the Ball Faster a Metal or a Wooden Bat
Nantucket New School

IYER, PRIYA

Multi-component Assistive Smart TrEmor Reducer (MASTER)
Ashland Middle School

JABBOUR, NICOLE

Rotor Blades and Wind Energy
Sarah W. Gibbons Middle School

JABRO, EMMELINE

Sunscreen Pollution is No Solution!
Newton Country Day School

JACOB, NYLA

Testing the Conductivity of Acidic Fruits and Starchy Vegetables
Littleton Middle School

JAIN, EKANSH

SmartSearch: Timesaving Automated Research Processes
Oak Middle School

JAIN, SANVI

Oil Sponge
Ashland Middle School

JASSEM, AHMED

Build a Circuit to Automatically Water your Plants
Islamic Academy for Peace

JAYASWAL, KRISHIV

Light Changing Photosynthesis
Grafton Middle School

JEAN-LOUIS, KENSLY

Hydrogen fuel cell
Pioneer Charter School of Science

JIANG, ADA

Light Pollution
Boston Latin School

JOHNSON, FIONA

Fastest Acting Medicine
St Mary School

JONNALAGADDA, BHAVYA

Good Night
Oak Middle School

JOSYULA, MEDHA

Testing Drinking Water for Particles and Find Out Whether Filters Make a Difference in Quality
Sharon Middle

JUO, ALEXANDER

Effects of Different Strengths of Voltage in Electric Currents on Plant Growth (Electroculture)
Dover-Sherborn Regional Middle School

KALUSKI, LUCA

Effect of Soda on Shell-less Eggs
Warren/Prescott K-8

KANAGAVEL CHITHRA, VINESH

Adaptive Wind Turbine
Grafton Middle School

KAPLAN, SENA

Which Has More Nutritional Value, Fresh, Frozen, or Organic Produce
Islamic Academy for Peace

KAPOOR, LASHIKA

Plantricity
Worcester East Middle School

KEARNEY, COLLEEN

Does the Presence of Plants Decrease Soil Erosion?
St. Francis Xavier School, Acushnet

KELLEY, PRESLEY

The Effect of Energy Drinks on Heart Rate
Hoosac Valley Middle High School

KHAN, AMMARAH

How a Lie Detector Works
P. Brent Trottier Middle School

KODRA, MASSIMO

Why Should You Never Trust an Atom
West Tatnuck Elementary

KONIECZNY, GWEN

Effect of Roundup on Daphnia
Dover-Sherborn Regional Middle School

KORKIN, DANIEL

Micro Hydroelectric Generator
Sarah W. Gibbons Middle School

KORRAPATI, ADITI

Predicting Produce Ripening Using Sensors and Machine Learning
Raymond J Grey Junior High

KRATZ, ZOE

Water Filtration: Homemade Versus Store-bought?
Hoosac Valley Middle High School

KRIKORIAN, AUDRIANNA

How The Blood Brain Barrier Is Affected Based on Exposure
Saint Augustine School (Andover)

KRISHNAN, RAJAT

Pantry Palate: The Best Way To Find Recipes
Oak Middle School

KSHIRSAGAR, MEGHNA

Plants Vs. Plastics: The Silent Struggle
Ashland Middle School

KULKARNI, AARUSH

Enhanced Tumor Biopsy Analysis with DLSSN: A Novel Semantic Segmentation Based Tool For Tumor Microenvironment Assessment Using A Deep-Learning Based U-Shaped Network Methodology
ExSciton

KULKARNI, JAY

Effects of Different Strengths of Voltage in Electric Currents on Plant Growth (Electroculture)
Dover-Sherborn Regional Middle School

KURDI, NOURA

Shaping the Power of the Wind
Al-Noor Academy

KUZDEBA, JAMES

What Type of Comedy Makes People Laugh the Most?
Saint Agnes Academy

LAGESS, GENEVIEVE

How Related are Fingerprints in Families?
Hoosac Valley Middle High School

LANDERS, EMILY

Do People with Brown Eyes Perceive Color Differently than People with Blue Eyes, in Different Lightings?
Saint Augustine School (Andover)

LE, LEONA

Seismograph
Pioneer Charter School of Science

LGDAR, BILAL

Nutritional Differentials in Milk
Islamic Academy for Peace

LI, HANNAH

Turning Milk into Plastic
Littleton Middle School

LOPEZ, ZELENA

Making Products For Curly Hair
Burncoat Middle School

LUNA, DIEGO

The Best Way to End Police Chases
Hoosac Valley Middle High School

LUO, JINGYUAN

Bloomed and Withered: A Scientific Survey at Rose and Carnation Lifespan
P. Brent Trottier Middle School

LYNCH, JACKSON

Dueling Solutes
FAITH Co-op

MACLEAN, BRIDGET

Storm Drains
St. Catherine of Siena Middle School

MAHFUDH, MANAL

The Robot Nurse Helper: A Technological Leap Towards Patient Care
Pioneer Charter School of Science II (PCSS-II)

MAI, AMI

The Possible Effects of Cross Compatible Pollen on Peppers
Boston Latin School

MAJI, TORSHA

Oil Sponge
Ashland Middle School

MAKARAM, SHRINIVASA

Noxious Fumes
Robert E Melican Middle School

MALCOLM, VIOLET

Making a Controllable Lego Boat
Lesley Ellis School

MALHOTRA, SAPNA

Superbugs: Rise of the Resistance. An Assessment of Antibiotic Resistance Over the Past 30 Years
Eliot, John K-8

MARRI, TANVI

Assessing the Achievability of Etched Aluminum as a CO2 Capture Method
Wm Diamond Middle

MARTEL, CONNOR

How do the Shape of the Fins of a Model Rocket affect the Altitude?
St. Francis Xavier School, Acushnet

MARTIN, FRANCESCA

How does Sodium Lauryl Sulfate Affect The Strength Of A Curly Weave?
Boston Latin School

MASTIS, JIN

Chill Out
Worcester East Middle School

MAYBORN, ISAAC

How Low Will it Go?
FAITH Co-op

MAZUMDAR, SHREYAN

Demonstrating Quantum Supremacy: Benchmarking Quantum Algorithms against Classical Methods for Solving Diverse Constraint Satisfaction Problems
ExSciton

MENDOZA, PATRICK

How COVID-19's Time of Diagnosis Affects Its Severity
Boston Latin School

MERHEB, ANTHONY

Which Fertilizer Works Best?
Saint Michael School

MICHAEL, MADISON

Brand Name vs Generic Antacids: Which Is Better?
Hoosac Valley Middle High School

MILANE, MIRABELLA

Sparkly Disease
Eliot, John K-8

MILONE, MADELEINE

Caffeinated Caterpillars
Newton Country Day School

MINGLE, CAROLINE

Zip It Up!
Newton Country Day School

MOLLAEIAN, ARINA

Rotor Blades and Wind Energy
Sarah W. Gibbons Middle School

MONTAGUE, RUARI

Sunscreen Pollution is No Solution!
Newton Country Day School

MORT, ETHAN

Urban Farming
Sarah W. Gibbons Middle School

MOTT, ASHLEY

Plant Growth with Various Liquids
Hoosac Valley Middle High School

MUNIZ RAMIREZ, AURORALIZ

Color Flower Theory
Kiley Prep

MURALI, SHOUBHIT

How Do Companies Make Apps Addictive and What Can We Do To Escape Their Grasp?
Oak Middle School

MURPHY, ADDISYN

RAD Marigolds
Dover-Sherborn Regional Middle School

NAFEE, AYAN

Nutritional Differentials in Milk
Islamic Academy for Peace

NANDGIRI, RISHI

Self Irrigation System
Sarah W. Gibbons Middle School

NGO, VIVIAN

Feel The Heat
McCormack, John W. Middle

NGUYEN, LANA

Physical vs. Digital: How Reading Online vs. on Paper Affects Your Memory
Boston Latin School

NGUYEN, WILLIAM

What the Was Biodiversity Like After the Permian Extinction?
Boston Latin School

NGUYEN-CHAU, SELINA

Which Moisturizer Works Best?
Dr. Arthur F. Sullivan Middle

NIKUMBH, ANOUSHKA

Multi-component Assistive Smart TrEmor Reducer (MASTER)
Ashland Middle School

NNANNA, NELSON

Flashcards vs Videogames: Which Is Better for Studying
Pioneer Charter School of Science II (PCSS-II)

O'DAY, KYLIE

How Do Different Music Genres Affect a Child's Memory
Saint Augustine School (Andover)

OHASHI, EMERSON

The Possible Effects of Cross Compatible Pollen on Peppers
Boston Latin School

ORR-SALSBURY, UMARI

Student Behavior
Kiley Prep

ORTIZ, LEOMAR

Saldine Algorithmic Sheet Music Generator
Burncoat Middle School

ORTIZ GONZALEZ, CASANDRA

Clean Fast, Have a Blast!
Newton Country Day School

OSTROWSKI, ALIVIA

Water Filtration: Homemade Versus Store-bought?
Hoosac Valley Middle High School

PAI, PRATHAM

Toxic Takeout: Forever Chemical, PFAS in U.S Food Packaging
Oak Middle School

PANAMAKURI, AKSHAYA

Why Are Evergreen Leaves Green?
Foxborough Regional Charter School (middle)

PARK, ELEANOR

The Possible Effects of Cross Compatible Pollen on Peppers
Boston Latin School

PEDDIGARI, SHREYAS

Urban Farming
Sarah W. Gibbons Middle School

PERURI, SIDDHARTH

Using AI to Predict Acute Myeloid Leukemia in Its Early Stages
North Attleboro Middle School

PETERSEN, KARSTEN

Optimal Number of Blades on a Wind Turbine
Dover-Sherborn Regional Middle School

PETROSILLO, JACOB

Which Fertilizer Works Best?
Saint Michael School

PIRATLA, SRIVIBHU

Rain or Shine
Sharon Middle

PLASA, ARDENA

Green Plastic Battle: Finding the Fastest Dissolver
Burncoat Middle School

PLUMER, ROWAN

Inheritance of Fingerprints
St Mary School

POLLARD, MADDEN

How High Can a Robot Jump?
Holmes Elementary School

PRABHAKAR, SHRIYA

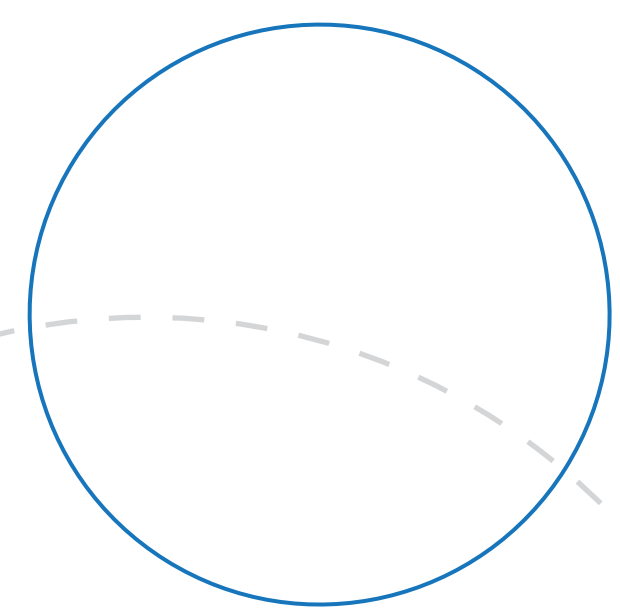
Promoting the Productivity of Daily Activities using Different Colored Lights
Sarah W. Gibbons Middle School

PRADHAN, ANSHIKA

Rotor Blades and Wind Energy
Sarah W. Gibbons Middle School

PRAKATHEESH, SHIBANI

How Does Music Affect Your Heart Rate?
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PRAVEEN, AISIRI*Effect of Age on Reaction Time*

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RODRIGUEZ, KARELIZ*The Impact of Hair Dye on Hair**at the Microscopic Level*

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ZHANG, EMMA

How Does Exercise Intensity Influence Memory Recall?
Andover School of Montessori

ZHAO, BELLA

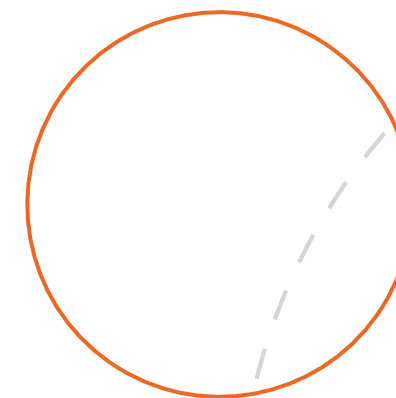
Preventing Apples from Browning
Boston Latin School

ZHAO, MIA

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ZIEMINKI, EMMA

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