

**Pennsylvania Junior
Academy of Science**

Region 1B

Montgomery County

at

Souderton Area High School

on

Saturday February 8, 2025

STUDENT SCHEDULE:

Students are requested to report at 7:45AM Schedule listed below reflects approximate times.

Student's Schedule: TIMES ARE APPROXIMATE

Students are encouraged to bring along a snack that they can have in the lobby while they are waiting!

7:45AM: Student/Teacher arrival

8:10AM: PJAS Director Address, Auditorium B119

8:30AM: Students to assigned rooms

Approximate dismissal time

11:30AM-12PM

JUDGE'S SCHEDULE:

Judges are requested to report between 7:30AM and 7:45AM. Schedule listed below reflects approximate times.

Judge's Schedule: TIMES ARE APPROXIMATE

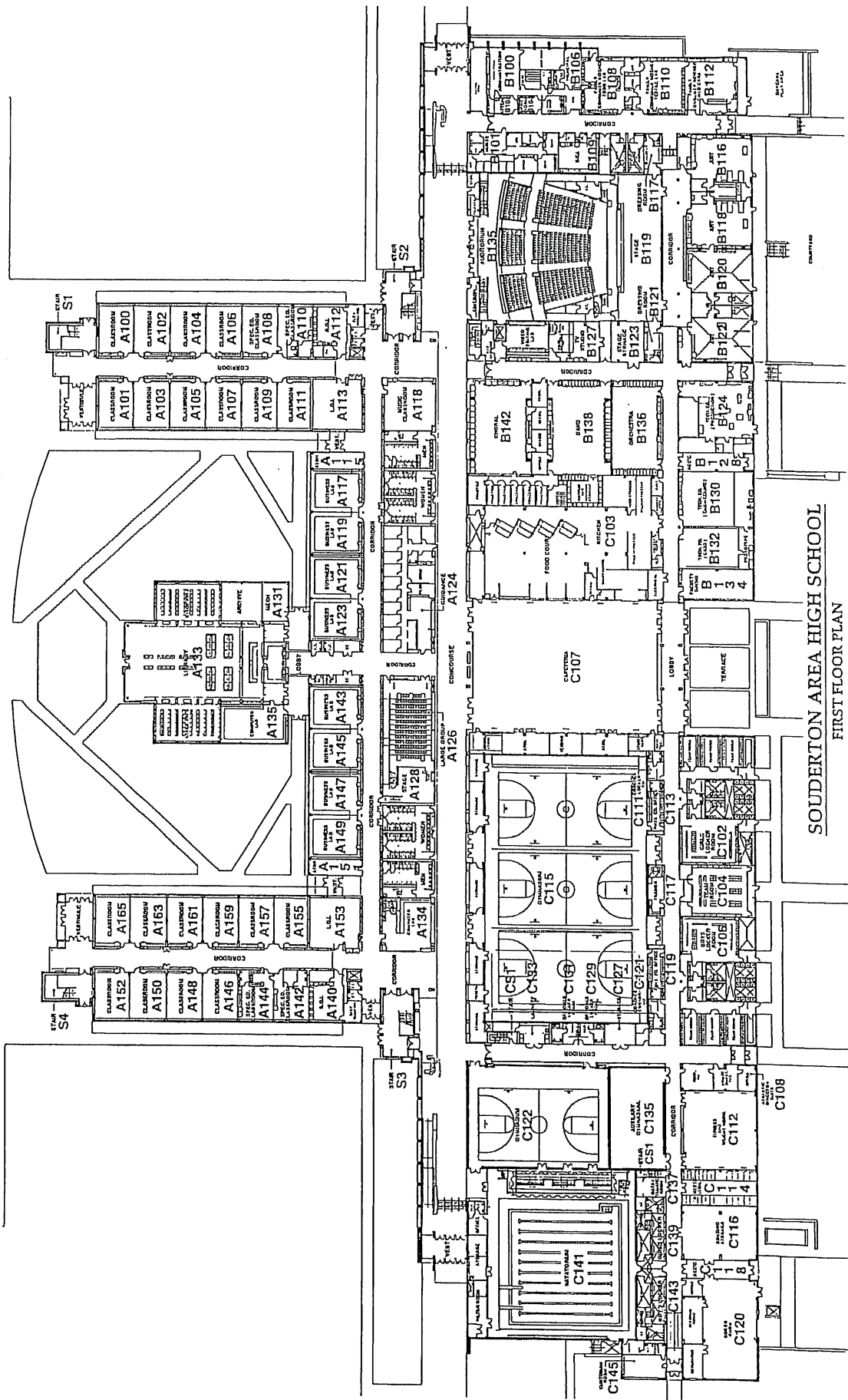
7:45AM: Judge Arrival and Check-in

8:00AM Breakfast PJAS Judge Coordinator Presentation of Judging Criteria and Rules

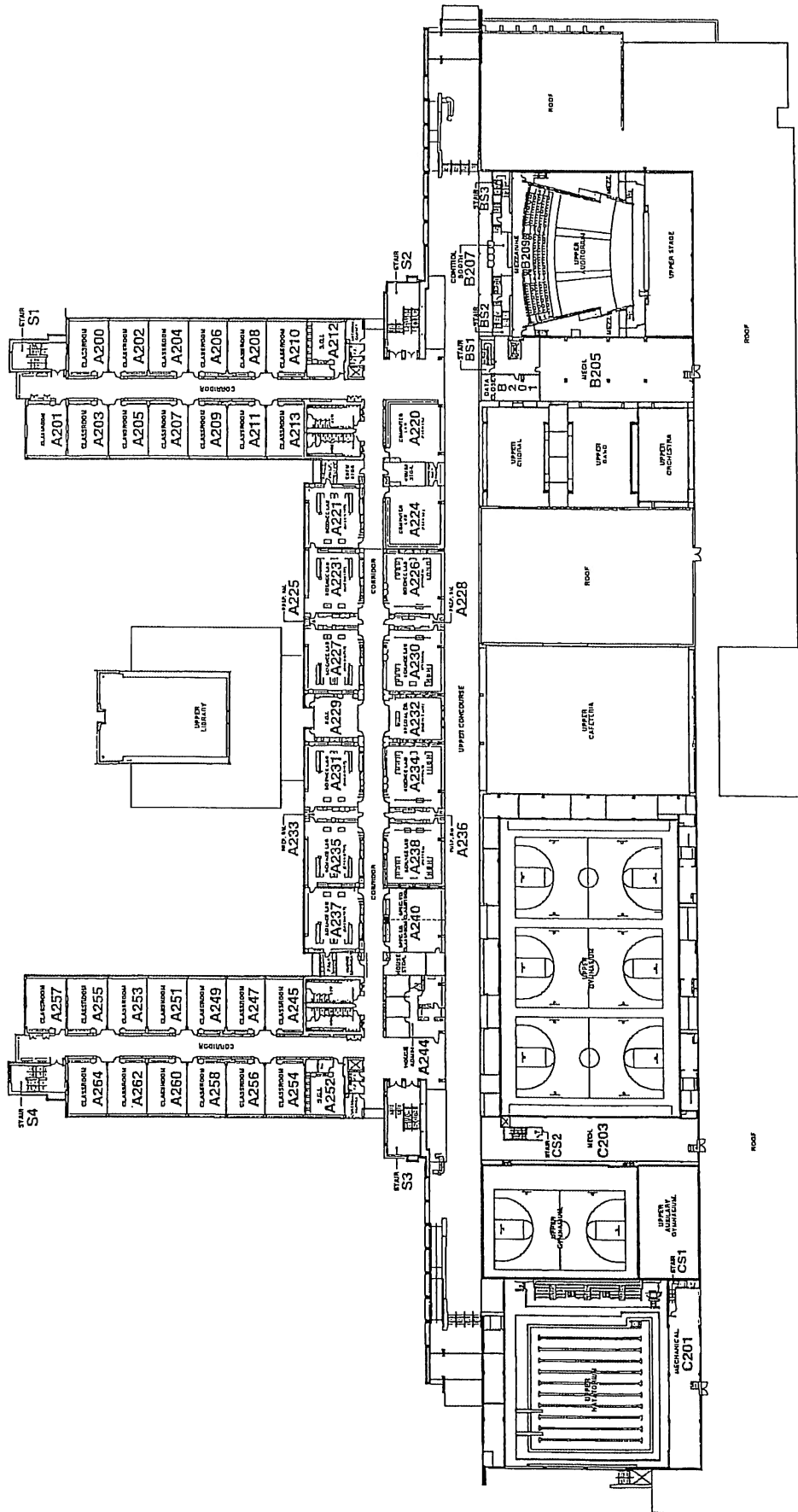
8:25AM: Judges report to assigned room.

11AM: When done tally in café C107 and hand in at final talley room B134

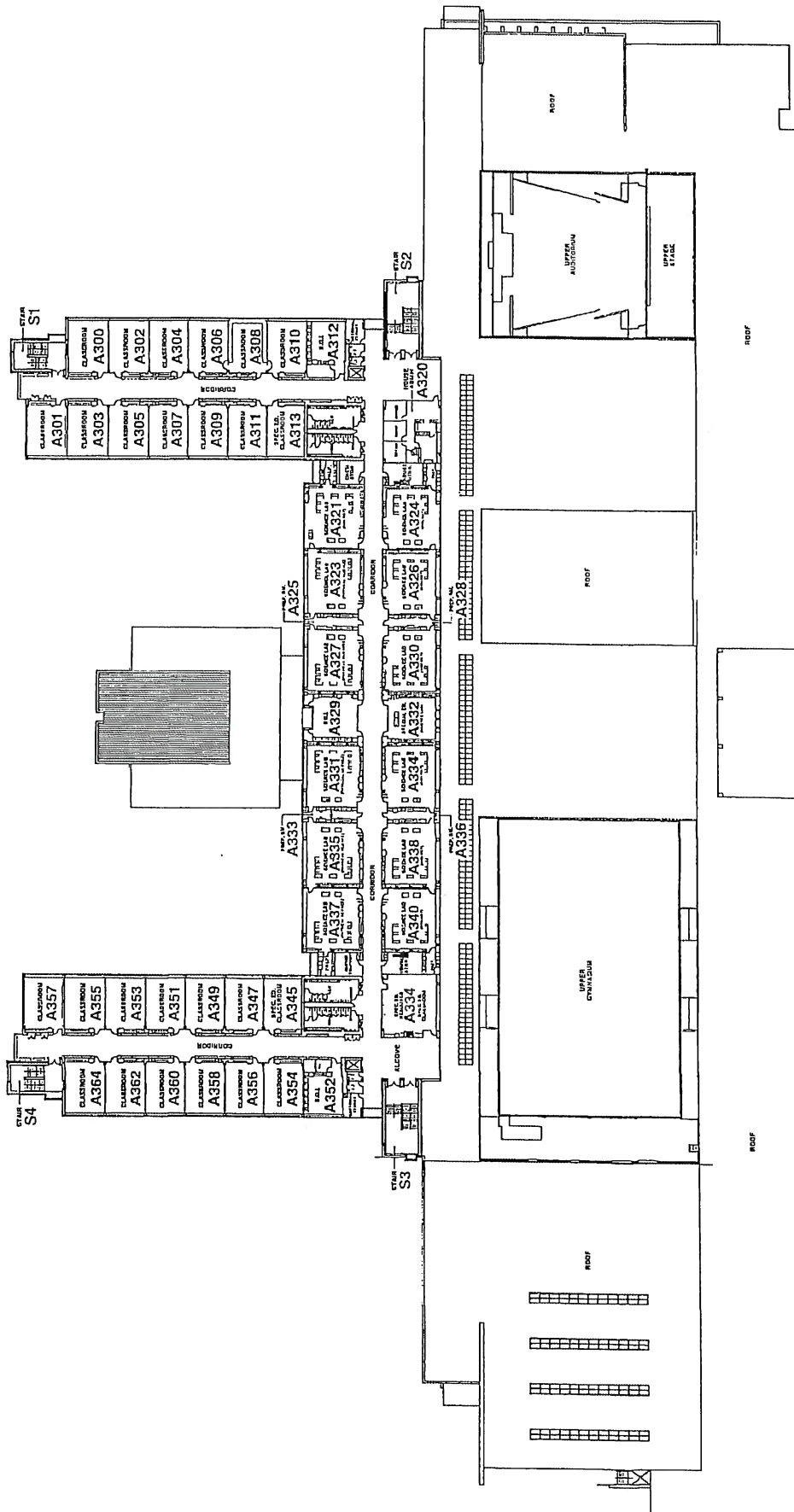
Lunch available



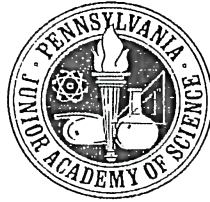
SOUDEKTON AREA HIGH SCHOOL
FIRST FLOOR PLAN



SOUDEKTON AREA HIGH SCHOOL
SECOND FLOOR PLAN



Souderton Area High School
 Third Floor Plan



Operating the presentation system at Souderton

Tips for using the laptops for presentation:

1. Open student presentation folder on the desktop/laptop (Dell Latitude 3310 with the USB-C port for docking the laptop to the TV in front of the room)
2. Find your presentation in your unit folder (**PJAS -25-Unit #**)
3. Double click on the file to open your presentation
4. Using the keyboard press both the **[CTRL]** and **[L]** keys simultaneously to make the **.PDF** full screen
5. Using the touch screen swipe up from the bottom or press the right arrow key on the keyboard **[→]** to advance the presentation
6. Using the touch screen swipe down from the top or press the left arrow key on the keyboard **[←]** to go back
7. Using the **[ESC]** key to minimize the presentation
8. Close Adobe Acrobat

A - Unit Technician

Judges: IF tech is a no show, send down someone to pick up folder & assign a new tech.

UNIT 1

Behavioral 7

A100

Sebastian Boglioli, Grade 7, **Rock and Roll...What's Reaction Time Got to Do with It?**, Cedarbrook MS, Beth Kenna, Sponsor
Iniya Kumar, Grade 7, **Does Your Opinion Affect Your Taste?**, Indian Valley MS, Amy Craig, Sponsor
Alsatia Malcolm Johnson, Grade 7, **When Group Work Turns Into Competitive Sport!**, Cedarbrook MS, Beth Kenna, Sponsor
Theo Jones, Grade 7, **Do Non-Computer Games Relieve Stress**, Indian Valley MS, Amy Craig, Sponsor
Eliana Irizarry, Grade 7, **I Can See It In Your Face! Facial Expressions & Emotions**, Cedarbrook MS, Beth Kenna, Sponsor
* Gabriella Bendas, Grade 7, **Kindle Light, Blue vs Warm**, Indian Valley MS, Amy Craig, Sponsor
Keemari Flowers, Grade 7, **Detecting Deceit: The Science Behind Truth**, Cedarbrook MS, Beth Kenna, Sponsor
Gabriel Little, Grade 7, **Are You Losing Your Magic?**, Cedarbrook MS, Beth Kenna, Sponsor

UNIT 2

Behavioral 8

A101

Keyton Wenrich, Grade 8, **Can Humans Tell the Difference Between AI Art and Human Art**, Indian Valley MS, Amy Craig, Sponsor
Macy Levin, Grade 8, **Examine the Correlation Between Personality and Memory**, Lower Moreland Middle School, Denise Meyers, Sponsor
Heidi Moyer, Grade 8, **What is the Most Effective Method to Memorize Information?**, Indian Valley MS, Amy Craig, Sponsor
Oluwatuminu Akingbade, Grade 8, **Does Music Affect Balance?**, Indian Valley MS, Lauren Douglass, Sponsor
Niklaus Druckenmiller, Grade 8, **Does the Color of a Drink Change the Perceived Flavor?**, Indian Valley MS, Amy Craig, Sponsor
Leo Gest, Grade 8, **Color Me This: How Does Color Affect Food Product Appeal?**, Cedarbrook MS, Beth Kenna, Sponsor
* Madison Truskowski, Grade 8, **How do Sports Affect Cognitive Functions in Athletes?**, Indian Valley MS, Amy Craig, Sponsor
Joshua Kennedy, Grade 8, **How Does Scent Affect Cognitive Ability?**, Indian Crest MS, Melissa Carnahan, Sponsor

UNIT 3

Behavioral 9

A103

Cayla Goh, Grade 9, **Athlete Motivations and Goals in Individual and Team Sports**, The Baldwin School, Graham Phillips, Sponsor
Dean Stephanos, Grade 9, **The Smell of Success!**, Souderton Area HS, Karen Wolfe, Sponsor
Jason Ma, Grade 9, **Effect of Font Type and Size on Reading Comprehension**, Germantown Acad, Sarah Kesten, Sponsor
* Lingxi Kong, Grade 9, **The Role of Punishment in Learning**, The Baldwin School, Graham Phillips, Sponsor
Vivek George, Grade 9, **Time Files When Your Having Fun?**, Souderton Area HS, Karen Wolfe, Sponsor
Zoe Brownstein, Grade 9, **What Images are Easiest to Identify as AI-Generated and How?**, Germantown Acad, Sarah Kesten, Sponsor
Leora Brodsky, Grade 9, **Circadian Rhythm as Predictors of Academic Performance**, Lower Moreland HS, Denise Meyers, Sponsor
Ellen Zhou, Grade 9, **Identifying the Artist: AI or Human**, Upper Dublin HS, Dawn Edelman, Sponsor
Sophia Li, Grade 9, **How Hours of Sleep Affect Stress and Heart Rate**, Germantown Acad, Sarah Kesten, Sponsor
Anya Jani, Grade 9, **The Effects of Mindfulness on Stress in Students**, The Baldwin School, Graham Phillips, Sponsor

UNIT 4

Behavioral 10

A104

Ari Baer, Grade 10, **How does the color of font and background affect memory?**, Germantown Acad, Sarah Kesten, Sponsor
Julia Cavallo, Grade 10, **Beyond the McGurk Effect: Can Realities be Created?**, Lower Moreland HS, Denise Meyers, Sponsor
Anna An, Grade 10, **hsKAJHSSkjahsiwsbjkdhjksahd**, The Baldwin School, Graham Phillips, Sponsor
Maya Herrlinger, Grade 10, **Factors that Influence Teen Decision-Making**, Souderton Area HS, Karen Wolfe, Sponsor
Khushi Patel, Grade 10, **How Peer Pressure Affects Ethical Decisions in Teens**, Souderton Area HS, Karen Wolfe, Sponsor
Grace Heuer, Grade 10, **Music's Affect on the Mental Health of Teenagers**, The Baldwin School, Graham Phillips, Sponsor
* Leandra Abo Elyamine, Grade 10, **How Well Do I Know You?**, Souderton Area HS, Karen Wolfe, Sponsor
Penelope Swindells, Grade 10, **Did You Hear That?**, Souderton Area HS, Karen Wolfe, Sponsor
Anna Ko, Grade 10, **The Effects of Distracting Sensory Stimulants on Learning**, The Baldwin School, Graham Phillips, Sponsor
Vivian Legate-Yang, Grade 10, **Learning Rules for Reading**, The Baldwin School, Graham Phillips, Sponsor
Amaya McCants, Grade 10, **Color or sound?:Is sound or color more important in a movie?**, Cheltenham HS, Russell Wolff, Sponsor
Sophia Ksenzenko, Grade 10, **If Changing Perception, can Likeability be Manipulated?**, Lower Moreland HS, Denise Meyers, Sponsor

UNIT 5

Behavioral 8, 11 & 12

A105

Jane Overberger, Grade 8, **How do different music types affect concentration?**, Lower Moreland Middle School, Denise Meyers, Sponsor
Jasmine Bilotti, Grade 8, **Milk vs Milk Substitutes**, Indian Valley MS, Amy Craig, Sponsor
Sofia Lugo, Grade 8, **What is effect of music genre on a person's mood?**, Indian Crest MS, Melissa Carnahan, Sponsor
Claire Kwon, Grade 8, **Piaget's Theory on Cognitive Development**, Arcola Int Sch, Sharon Branca, Sponsor
Janae Morales, Grade 8, **What is the effect of learning a new song on blood pressure?**, Indian Crest MS, Melissa Carnahan, Sponsor
Carmen Pinera, Grade 11, **Is stress contagious or can you control it?**, Perkiomen Sch, Benjamin Roig, Sponsor
Angelica Tang, Grade 11, **The Effect of Emotions and Color on Test Performance**, The Baldwin School, Graham Phillips, Sponsor
* Chelsea Kim, Grade 11, **The Effect of Product Descriptions on Consumer Preference**, Upper Dublin HS, Dawn Edelman, Sponsor
Elizabeth Hercek, Grade 12, **The Prevalence of Advertising on Social Media**, Souderton Area HS, Karen Wolfe, Sponsor
Neha Jonnalagadda, Grade 12, **Implementation of India's N.E.P 2020 in Indian Schools**, Germantown Acad, Sarah Kesten, Sponsor
Larry Zhan, Grade 12, **The Effects of Confidence and Competition on Perseverance**, Germantown Acad, Sarah Kesten, Sponsor
Aidan Gor, Grade 12, **Depressive Markers Predict Worse Outcome Post Spinal Surgery**, Germantown Acad, Sarah Kesten, Sponsor

Sponsor

UNIT 6

Biochemistry 7, 8 & 9

A106

- ★ Grace Rogers, Grade 7, **What Role Does Osmosis Play in the Human Body?** , Arcola Int Sch, Sharon Branca, Sponsor
- Eunsoo Kim, Grade 7, **Oxidizing C: Change the Color of Fruit/Vegetable Juice** , Cedarbrook MS, Beth Kenna, Sponsor
- Matias Fagnani, Grade 8, **That's Bananas! Light Intensity and Ripening** , Cedarbrook MS, Beth Kenna, Sponsor
- Grace Joseph, Grade 9, **How do various foods affect the pH of your saliva?** , Lower Moreland HS, Denise Meyers, Sponsor
- Maya Miller, Grade 9, **The Effects of Aquatic Plants on Nitrate Concentration** , Souderton Area HS, Karen Wolfe, Sponsor
- Mehtaab Singh, Grade 9, **Best Algae Type for Biofuel Production** , Lower Moreland HS, Denise Meyers, Sponsor
- Nia Mayrant, Grade 9, **So Smooth! Which Moisturizer Keeps the Skin's Hydration?** , Cheltenham HS, Russell Wolff, Sponsor
- Alexis Schmidt, Grade 9, **Effects of Different Cooking Methods on the pH of Foods** , Upper Dublin HS, Christopher Smith, Sponsor

UNIT 7

Biochemistry 10, 11 & 12

A200

- Joshua Hong, Grade 10, **The Optimal Dosage for Whitening Stained Teeth** , Upper Dublin HS, Ben Breish, Sponsor
- Eli Xie, Grade 10, **Comparison of quantitative PCR and Targeted NGS platforms** , Germantown Acad, Sarah Kesten, Sponsor
- Gilbert Yang, Grade 10, **Cardiomyocyte Differentiation of Newly Reprogrammed iPSCs** , Methacton HS, Robert Helm, Sponsor
- Sarah Sorkin, Grade 10, **The effect of different pH levels on enzyme activity** , Lower Moreland HS, Denise Meyers, Sponsor
- Jeremy Evans, Grade 10, **Effect of Ocean Acidification on Sea Urchin Larvae** , Souderton Area HS, Karen Wolfe, Sponsor
- Isabelle Kwon, Grade 10, **Pill Dissolving Accelerator** , Methacton HS, Robert Helm, Sponsor
- ★ Rasika Sivakumar, Grade 11, **Leveraging AlfaFold3 to Predict Protein-Protein Interactions** , Methacton HS, Robert Helm, Sponsor
- Roma Reddy, Grade 12, **Development of novel inhibitors of BET1 protein with PROTAC** , Germantown Acad, Sarah Kesten, Sponsor
- Jianna Kim, Grade 12, **Tailored Treatments: Predicting Drug Efficacy in Beta-1** , Germantown Acad, Sarah Kesten, Sponsor

UNIT 8

Biology 7, 8 & 9

A201

- Ben Crino, Grade 7, **Does Atherosclerosis pump less blood than a healthy heart** , Indian Valley MS, Amy Craig, Sponsor
- Anika Dave, Grade 7, **Extracting Strawberry DNA** , Arcola Int Sch, Sharon Branca, Sponsor
- Shannon Strunk, Grade 7, **Do you inherit your family's fingerprints?** , Indian Valley MS, Lauren Douglass, Sponsor
- Rakshith Sivakumar, Grade 7, **Epidemiology of Obesity--A Population Analyses** , Arcola Int Sch, Sharon Branca, Sponsor
- Christopher Blouch, Grade 8, **Keeping it Fresh** , Lower Moreland Middle School, Denise Meyers, Sponsor
- Gabriella Sellecchia, Grade 9, **Which daily skin moisturizer works the best?** , Lower Moreland HS, Denise Meyers, Sponsor
- Simran Kamal-Bahl, Grade 9, **Effect of Diet, Exercise, and Sleep on Diabetes Control** , Germantown Acad, Sarah Kesten, Sponsor
- Luna Bianchimano, Grade 9, **Does HRT in Transgender Athletes Change Physical Performance** , Souderton Area HS, Karen Wolfe, Sponsor
- Likhitha Inampudi, Grade 9, **Lung Cancer Risk Factors and Certain Ethnicities** , Souderton Area HS, Karen Wolfe, Sponsor
- ★ Siddarth Sankar, Grade 9, **X** , Arcola Int Sch, Sharon Branca, Sponsor
- Thea Model, Grade 9, **The Effect Of Durotaxis On Slimemolds** , The Baldwin School, Graham Phillips, Sponsor
- Jessica Ma, Grade 9, **Effects of Covid-19 Vaccines on Teenager's Menstrual Cycles** , Germantown Acad, Sarah Kesten, Sponsor

UNIT 9

Biology 10, 11 & 12

A202

- Eleanor Lanpher, Grade 10, **How People's Self-reflection Changes After Determinism** , Souderton Area HS, Karen Wolfe, Sponsor
- Bryan Luo, Grade 10, **Change in PLDDT's Affect on Clinical Significance** , Upper Dublin HS, Brian Palme, Sponsor
- Bryan Luo, Grade 10, **Stability's Affect on Clinical Significance** , Upper Dublin HS, Brian Palme, Sponsor
- Dillon Potula, Grade 10, **Study of TP53 Polymorphisms in Lung Cancer** , Upper Dublin HS, Joanne Lilliendahl, Sponsor
- Andreas Szautner, Grade 11, **Analyzing the Cognitive Effects of Ashwagandha in Planaria** , Germantown Acad, Sarah Kesten, Sponsor
- ★ Victoria Puente, Grade 11, **COVID-19 Vaccination and Mortality: Impact of Demographics** , Souderton Area HS, Karen Wolfe, Sponsor
- Yobosa Idahosa, Grade 11, **Effect of Changing Pulse Oximeter Wavelengths on Skin Tones** , Germantown Acad, Sarah Kesten, Sponsor
- Ada Leeds, Grade 12, **The effect of AHA/BHA serums on exfoliation of facial skin** , Germantown Acad, Sarah Kesten, Sponsor
- Gurnoor Othie, Grade 12, **The Effects of Herb Supplements on Female Fly Fertility** , The Baldwin School, Graham Phillips, Sponsor
- Claudia Kim, Grade 12, **The Effects of H2O2 on Biofilm in Glucose vs. Sucrose** , The Baldwin School, Graham Phillips, Sponsor

UNIT 10

Botany 7, 8 & 9

A203

- Ava Thomas, Grade 7, **What Colored Light is Most Effective for Plant Growth?** , Lower Moreland Middle School, Denise Meyers, Sponsor
- Keira Timoney, Grade 7, **Characteristics Of Plant Growth In Different Light Climates** , Lower Moreland Middle School, Denise Meyers, Sponsor
- Aliyah Batts, Grade 7, **Brrr..It's Warm!How Do Different Temperatures Affect Plants?** , Cedarbrook MS, Beth Kenna, Sponsor
- Ayden Yang, Grade 7, **Using Pyrolysis to Create an Organic Fertilizer** , Sandy Run MS, Jeanie Kellock, Sponsor
- Raya Frazier, Grade 8, **Hydroponics, Aquaponics, and the Nitrogen Cycle** , Lower Moreland Middle School, Denise Meyers, Sponsor
- Evan Thomas, Grade 8, **The Effects of Different Fertilizers on Plant Growth** , Lower Moreland Middle School, Denise Meyers, Sponsor
- ★ Jennifer Jiang, Grade 9, **Blooming Success: Best Methods to Preserve a Flower's Beauty** , Methacton HS, Robert Helm, Sponsor
- Anushka Abraham, Grade 9, **The Effect of Nitrogen Fertilizer on Plant Growth.** , Souderton Area HS, Karen Wolfe, Sponsor

Grace Byard, Grade 9, **Magnetic Plants: Iron Magnetization and Electroculture Pla** , Cheltenham HS, Russell Wolff, Sponsor
Sriya Gorrepati, Grade 9, **Effect of Vitamins on Plant Growth** , Souderton Area HS, Karen Wolfe, Sponsor
Natalya Abraham, Grade 9, **How does Volcanic Ash impact Plants?** , Lower Moreland HS, Denise Meyers, Sponsor

UNIT 11

Botany 10, 11 & 12

A204

Sophie Smith, Grade 10, **Banana Water as a Fertilizer for Plants** , The Baldwin School, Graham Phillips, Sponsor
Harrison Peet, Grade 10, **How Does Exposure to Different Music Influence Plant Growth?** , Germantown Acad, Sarah Kesten, Sponsor

Kyla Walker, Grade 10, **Variations in Plant Growth with Addition of Essential Oils** , The Baldwin School, Graham Phillips, Sponsor
Haley Duong, Grade 11, **The Effect of Different Liquids on Plant Growth** , The Baldwin School, Graham Phillips, Sponsor
Winston Sun, Grade 12, **Crop Growth's Effectiveness on Soil Degradation** , Germantown Acad, Sarah Kesten, Sponsor
Hannah Adams, Grade 12, **The Effect of Crop Residue on Soil Water Storage in Rice** , Upper Dublin HS, Leanne Jones, Sponsor
Nishank Rai, Grade 12, **Impact of Nutrient Concentrations on Photosynthesis and CO₂** , Germantown Acad, Sarah Kesten, Sponsor

UNIT 12

Chemistry 8

A205

Kassandra Wen, Grade 8, **How do cookies change if you remove an ingredient each time?** , Lower Moreland Middle School, Denise Meyers, Sponsor

Harrison James, Grade 8, **How Does Thermal Variation Affect Voltage Of A Battery?** , Indian Valley MS, Amy Craig, Sponsor
Aarya Varma, Grade 8, **What is the effect of different liquids on freezing time?** , Indian Crest MS, Melissa Carnahan, Sponsor
Abigail Hendricks, Grade 8, **What is effect of water bottle brand on duration of ice?** , Indian Crest MS, Melissa Carnahan, Sponsor
Rowan Wesch, Grade 8, **What Is the Effect of Shielding on Number of Particles Seen** , Indian Crest MS, Melissa Carnahan, Sponsor

Luca Savignano, Grade 8, **Which Egg Substitute is the Best?** , Indian Valley MS, Amy Craig, Sponsor

Wade Roat, Grade 8, **What is the effect of different salts on ice melting time?** , Indian Crest MS, Melissa Carnahan, Sponsor

Simon Chen, Grade 8, **Chilling Out:How Do Different Compounds Affect Melting Time?** , Cedarbrook MS, Beth Kenna, Sponsor

Daniel Meehan, Grade 8, **What is the Effect of Different Liquids on Calcium Corrosion** , Indian Crest MS, Melissa Carnahan, Sponsor

Simon Chen, Grade 8, **Chilling Out:How Do Different Compounds Affect Melting Time?** , Cedarbrook MS, Beth Kenna, Sponsor

Cindy Yang, Grade 8, **Which Product Cleans Clothes the Best?** , Lower Moreland Middle School, Denise Meyers, Sponsor

Sebastian Dubois, Grade 8, **Sustainable Synthesis of Ethylene Glycol** , Indian Valley MS, Amy Craig, Sponsor

UNIT 13

Chemistry 7 & 9

A206

Mikayla Mindlin, Grade 7, **Popping the Question: The Effects of Liquids on Popping Boba** , Cedarbrook MS, Beth Kenna, Sponsor

Parker Lauer, Grade 7, **Water Purity** , Sandy Run MS, Jeanie Kellock, Sponsor

Edward LaBarr, Grade 7, **What Happens When You Replace Baking Powder w/ Baking Soda?** , Cedarbrook MS, Beth Kenna, Sponsor

Camille Leggett, Grade 7, **The Science Behind Lip Balm** , Arcola Int Sch, Sharon Branca, Sponsor

Sophie Thomas, Grade 9, **Tarnish to Treasure** , Methacton HS, Robert Helm, Sponsor

Zafir Baksh, Grade 9, **How electricity changes the pH of salt solutions** , Cheltenham HS, Russell Wolff, Sponsor

Neve Schwarz, Grade 9, **Evaluating Olive Oil Quality with Colorimetric Tests** , Cheltenham HS, Russell Wolff, Sponsor

Frida Brodsky, Grade 9, **Fruity Face Masks: How Does Fruit Affect Face Mask pH?** , Cheltenham HS, Russell Wolff, Sponsor

Zoe Manoukis, Grade 9, **The Effect of Different Antacid Ingredients on Heartburn** , Souderton Area HS, Karen Wolfe, Sponsor

UNIT 14

Chemistry 10, 11 & 12

A207

Shae Tirmizi, Grade 10, **Study of Electrolysis** , Methacton HS, Robert Helm, Sponsor

Aimal Ahmad, Grade 10, **Hair Lighteners: Natural vs Chemical** , Souderton Area HS, Karen Wolfe, Sponsor

Samrithaa Vadivelan, Grade 10, **Mobiles Absent, Minds Present** , Methacton HS, Robert Helm, Sponsor

Shawn Dougherty, Grade 10, **The Misteaks of Steak** , Methacton HS, Robert Helm, Sponsor

Nare Safaryan, Grade 10, **Which Heat Protectant is Most Effective?** , Lower Moreland HS, Denise Meyers, Sponsor

Chelsea Lian, Grade 10, **Determination of Total Phenolic Content in Various Beverages** , Methacton HS, Robert Helm, Sponsor

Jillian Wexler, Grade 10, **The Effect of Different Cooking Methods on Vitamin C** , Souderton Area HS, Karen Wolfe, Sponsor

Avyukt Sharma, Grade 11, **Converting waste into a viable gasoline alternative** , Methacton HS, Robert Helm, Sponsor

Shivahn Becht, Grade 11, **Temperature's Effects on Alkaline vs. Rechargeable Batteries** , Souderton Area HS, Karen Wolfe, Sponsor

Nicholas Abraham, Grade 11, **Electrolyte Battle: Which Beverage Reigns Supreme?** , Cheltenham HS, Russell Wolff, Sponsor

Riya Mehta, Grade 11, **Enhanced Biodiesel Production: Optimizing Sodium Hydroxide** , Souderton Area HS, Karen Wolfe, Sponsor

Alan Jiang, Grade 11, **Novel dye-sensitized TiO₂-based Photocatalyst for H₂ product** , Upper Dublin HS, Leanne Jones, Sponsor

Elena Lin, Grade 12, **Comparing Electropolishing and CNC Machining** , Germantown Acad, Sarah Kesten, Sponsor

UNIT 15

Computer Science 7, 8 & 9

A208

Shubh Patel, Grade 7, **What is the Fastest Way to Decode a Caesar Cipher in Python?** , Indian Valley MS, Amy Craig, Sponsor

Andrew Gabriel, Grade 7, **Humans vs AI Which is Better at Video Games** , Indian Valley MS, Amy Craig, Sponsor

Ava Henry, Grade 7, **Machines with Mindsets: Does AI Align with the Real World?** , Cedarbrook MS, Beth Kenna, Sponsor

Ridhi Walia, Grade 8, **Color Detecting App** , Arcola Int Sch, Sharon Branca, Sponsor

Bryn Hamilton, Grade 8, **Does AI Have Gender Bias?** , Arcola Int Sch, Sharon Branca, Sponsor

- ✦ Alex Shockley, Grade 8, **Does the Length and Complexity of Passwords affect Cracking?** , Indian Valley MS, Amy Craig, Sponsor
- Evan Johnson, Grade 8, **Mapping Political Bias in LLMs** , Perkiomen Sch, Benjamin Roig, Sponsor
- James Heridia, Grade 8, **Facial Recognition Vs Manual Measurements** , Perkiomen Sch, Benjamin Roig, Sponsor
- Nicholas Lieu, Grade 9, **Artificial Intelligence's Bias at the DMV** , Germantown Acad, Sarah Kesten, Sponsor
- Benjamin Sampson, Grade 9, **Silence: What can extract data from an air gapped computer?** , Cheltenham HS, Russell Wolff, Sponsor

UNIT 16 **Computer Science 10, 11 & 12** **A209**

- Patrick Xie, Grade 10, **Machine Learning Insights into Football Injury Patterns** , Lower Moreland HS, Denise Meyers, Sponsor
- Rushil Reddy, Grade 10, **Optimizing Machine Learning Models for Lung Tumor Detection** , Germantown Acad, Sarah Kesten, Sponsor
- Jacob Peng, Grade 10, **Predicting Thyroid Cancer Recurrence with Machine Learning** , Upper Dublin HS, Dawn Edelman, Sponsor
- Yi Luo, Grade 11, **Multi-Agent System: Smooth The Path For Creativity** , The Baldwin School, Graham Phillips, Sponsor
- Ella Esplin, Grade 11, **s AI-Generated Imagery Reinforce or Fight Gender Stereotypes** , The Baldwin School, Graham Phillips, Sponsor
- Nathan George, Grade 11, **Developing a Solution to Inaccessibility of Training Data** , Germantown Acad, Sarah Kesten, Sponsor
- Tyler Tang, Grade 11, **Usage of VSLAM in Real-time Room Mapping** , Germantown Acad, Sarah Kesten, Sponsor
- Katie Young, Grade 12, **Detecting Breast Cancer Cells** , Methacton HS, Robert Helm, Sponsor
- ✦ Luke Hu, Grade 12, **Predict Diabetes Using Deep Learning and Health Data** , Germantown Acad, Sarah Kesten, Sponsor
- Arjun Sood, Grade 12, **CLAM: Chaining LLM PEFT, Quantization, and Pruning Methods** , Germantown Acad, Sarah Kesten, Sponsor

UNIT 17 **Earth and Space 7, 9, 10, 11 & 12** **A211**

- Samuel Liberman, Grade 7, **How Accurate are Weather Predictions?** , Lower Moreland Middle School, Denise Meyers, Sponsor
- Reid Blamey, Grade 9, **Using AI to Predict Flooding** , Methacton HS, Robert Helm, Sponsor
- Pranav Vedula, Grade 9, **Living Among the Stars:From Biosignatures to Icy Depths** , Bensalem HS, Lisa Tokmajian, Sponsor
- Haasini Matta, Grade 10, **Rust and Resilience** , Souderton Area HS, Karen Wolfe, Sponsor
- Rahul Bhatt, Grade 10, **Exploring the Time Dilation of Black Holes from Interstellar** , Germantown Acad, Sarah Kesten, Sponsor
- ✦ Carter Rembert, Grade 11, **Galactic Evolution Under Black Hole Feedback Loop Dynamics** , Methacton HS, Robert Helm, Sponsor
- Navya Vysyaraju, Grade 11, **Preventing Saltwater Infiltration in Ice Shelves** , Souderton Area HS, Karen Wolfe, Sponsor
- Eileen Wang, Grade 12, **Observing and predicting orbital paths of celestial objects** , Germantown Acad, Sarah Kesten, Sponsor
- Roy Zhao, Grade 12, **An improved spatio-temporal drought forecasting framework** , Germantown Acad, Sarah Kesten, Sponsor

UNIT 18 **Ecology 7 & 8** **A213**

- Emmett Moyer, Grade 7, **Does Braid Test Line Hold Up Better Than Monofilament Line?** , Indian Valley MS, Amy Craig, Sponsor
- Aarna Sharda, Grade 7, **What is the Best Natural Way to Purify Water?** , Lower Moreland Middle School, Denise Meyers, Sponsor
- Hunter Lincow, Grade 7, **What attracts more fish in a freshwater pond, bait or lures?** , Lower Moreland Middle School, Denise Meyers, Sponsor
- Shaivi Karmani, Grade 7, **Filtering Water, Saving Lives** , Indian Valley MS, Amy Craig, Sponsor
- Siri Matta, Grade 8, **Chemical vs Physical Oil Spill Cleanup Methods** , Indian Valley MS, Amy Craig, Sponsor
- Maura Aldredge, Grade 8, **Effect of wastewater effluent on Artemia shrimp's body mass.** , Indian Crest MS, Melissa Carnahan, Sponsor
- ✦ Zoe Mamzic, Grade 8, **Green Lane Reservoir's Affect on Water Cleanliness** , Indian Valley MS, Amy Craig, Sponsor
- Eli Kozielc, Grade 8, **Do water filters or purifying tablets purify water better?** , Indian Valley MS, Amy Craig, Sponsor

UNIT 19 **Ecology 10, 11 & 12** **A300**

- Niyathi Jonnalagadda, Grade 10, **Effect of Compost vs Biochar on Carbon Sequestration** , Germantown Acad, Sarah Kesten, Sponsor
- Aryan Ardeshna, Grade 10, **Microbial Fuel Cells** , Methacton HS, Robert Helm, Sponsor
- Liam Connolly, Grade 10, **Natural Acids' Effect on Plant Growth Under Greywater Stress** , Souderton Area HS, Karen Wolfe, Sponsor
- Parker Westover, Grade 10, **Drinking Water** , Germantown Acad, Sarah Kesten, Sponsor
- Samahn Lolley, Grade 10, **Comparing energy output from solar, wind, and hydro sources** , Cheltenham HS, Russell Wolff, Sponsor
- Ronit Banga, Grade 10, **Effect of Filtration on the Presence of E. coli in Water** , Germantown Acad, Sarah Kesten, Sponsor
- Yuktha Bungatavula, Grade 11, **The Effects of Soil Conservation Methods on Soil Erosion** , Souderton Area HS, Karen Wolfe, Sponsor
- Adele Strelitsky, Grade 11, **Next Generation Carbon Dioxide Mitigation** , Lower Moreland HS, Denise Meyers, Sponsor
- ✦ Nathaniel Gao, Grade 11, **Potential Impacts of Hydraulic Fracturing on Public Health** , Methacton HS, Robert Helm, Sponsor
- Pranati Jammalamadaka, Grade 11, **Evaluating Various Methods for Microplastic Removal** , Souderton Area HS, Karen Wolfe, Sponsor
- Alycia Steck, Grade 12, **Remediation of GBH Dysbiosis in Microbiome using Biostim** , Germantown Acad, Sarah Kesten, Sponsor

UNIT 20 **Engineering 7, 8 & 9** **A301**

- David Melnikov, Grade 7, **Flying is Key** , Lower Moreland Middle School, Denise Meyers, Sponsor
- Aidan Zvenigorodsky, Grade 7, **Evaluating and Comparing 3D Printer Filaments** , Lower Moreland Middle School, Denise Meyers, Sponsor

Emma Frank, Grade 7, **Water You Waiting For? How Water Filters Affect Dirty Water** , Cedarbrook MS, Beth Kenna, Sponsor
 Landen Finkel, Grade 8, **Transporting The Future!** , Lower Moreland Middle School, Denise Meyers, Sponsor
 Christian Wilhelm, Grade 8, **For the Record: What Material Makes the Best Phonograph?** , Cedarbrook MS, Beth Kenna, Sponsor
 Dujin Park, Grade 8, **Testing materials for effective stormwater management** , Lower Moreland Middle School, Denise Meyers, Sponsor
 Jacob Leatherman, Grade 8, **Testing Different Materials Heat Conductivity** , Indian Valley MS, Amy Craig, Sponsor
 Olivia Yoon, Grade 9, **Switching for Comfort** , Methacton HS, Robert Helm, Sponsor
 Selena Zhang, Grade 9, **The Optimization and Performance of Structural Joints** , Souderton Area HS, Karen Wolfe, Sponsor
 Andrew Tucker, Grade 9, **How will the Degree of a Right Triangle Affect its Strength** , Methacton HS, Robert Helm, Sponsor
 Deanna Daniel, Grade 9, **Filter It Out!** , Lower Moreland HS, Denise Meyers, Sponsor
 ★ Jeffrey Qin, Grade 9, **How Build Quality Affects Build Strength** , Methacton HS, Robert Helm, Sponsor
 Jeffrey Fan, Grade 9, **People Power: Harnessing Piezoelectric Human Activity** , Methacton HS, Robert Helm, Sponsor

UNIT 21 **Engineering 10 & 11** **A302**

Tarini Saravanan, Grade 10, **From Scraps to Solutions!** , Methacton HS, Robert Helm, Sponsor
 Ryan Weber, Grade 10, **The Fascination of Insulation** , Methacton HS, Robert Helm, Sponsor
 Bhavi Patel, Grade 10, **Which design of a desalination system is the most efficient?** , Methacton HS, Robert Helm, Sponsor
 Aiden Han, Grade 10, **Affects of Electrolysis of Saltwater on Energy Production** , Methacton HS, Robert Helm, Sponsor
 Huanyan Li, Grade 10, **Eco-Friendly Packaging for Sustainable Protection** , The Baldwin School, Graham Phillips, Sponsor
 Mathew Gabriel, Grade 10, **Benefits and Effectiveness of Thermoelectric Generators** , Souderton Area HS, Karen Wolfe, Sponsor
 Alex Wang, Grade 11, **Exploring Concrete 3D Building through a Robotic Arm** , Germantown Acad, Sarah Kesten, Sponsor
 Maximilian Kopp, Grade 11, **Printable Nanomaterial Electromagnetic Field Sensors** , Germantown Acad, Sarah Kesten, Sponsor
 Aarav Kevadia, Grade 11, **Exoskeleton Hand for People with Arthritis** , Germantown Acad, Sarah Kesten, Sponsor
 ★ Praneel Jammalamadaka, Grade 11, **Exploring Cost Effective Micro Hydro Power Solutions** , Souderton Area HS, Karen Wolfe, Sponsor

UNIT 22 **Mathematics 9, 10, 11 & 12** **A303**

Cameron Fisher, Grade 9, **Do PFAS Have a Long-Term Health Effect on Humans?** , Lower Moreland HS, Denise Meyers, Sponsor
 Colin Lu, Grade 9, **The Influence of External Events on the Stock Market** , Methacton HS, Robert Helm, Sponsor
 Eliza Yu, Grade 9, **Evolving Survival Equity: Role of Emerging Cancer Therapies** , Germantown Acad, Sarah Kesten, Sponsor
 Dylan Wu, Grade 9, **Prisoner's Dilemma Dilemma** , Souderton Area HS, Karen Wolfe, Sponsor
 Sophie Sun, Grade 9, **Effect of Age and Race on Incidence and Survival Rates** , Germantown Acad, Sarah Kesten, Sponsor
 Alicia Lu, Grade 9, **Logarithms in the Real World** , The Baldwin School, Graham Phillips, Sponsor
 Felix Du, Grade 10, **Mathematically Determining the Perfect Basketball Shot** , Methacton HS, Robert Helm, Sponsor
 Noah Utain, Grade 11, **Predicting NBA Game Winners** , Souderton Area HS, Karen Wolfe, Sponsor
 Audrey Yu, Grade 11, **MultiOmic Model for Personalized Cancer Prognosis Prediction** , Germantown Acad, Sarah Kesten, Sponsor
 Sophie Dubois, Grade 11, **The Effectiveness of a PAYT System** , Souderton Area HS, Karen Wolfe, Sponsor
 ★ Dylan Wen, Grade 12, **Optimizing Tennis Shot Placement** , Methacton HS, Robert Helm, Sponsor

UNIT 23 **Microbiology 8** **A304**

Ryon Markazi, Grade 8, **Microbes: Evaluating phone cleaners using bacterial cultures** , Lower Moreland Middle School, Denise Meyers, Sponsor
 Catherine Schindele, Grade 8, **What dish soap gets rid of the most bacteria?** , Indian Valley MS, Amy Craig, Sponsor
 Andrew Liu, Grade 8, **Adaptation of E. Coli Under Various Durations of UVC Light** , Sandy Run MS, Jeanie Kellock, Sponsor
 Erin Wood, Grade 8, **Allopathic vs. Naturopathic Treatment Options for E. Coli** , Lower Moreland Middle School, Denise Meyers, Sponsor
 Sam Stratton, Grade 8, **What is the Best Method to Disinfect a Wrestling Mat?** , Indian Valley MS, Amy Craig, Sponsor
 Medha Chitrala, Grade 8, **How Often Should You Clean Your Water Bottle?** , Lower Moreland Middle School, Denise Meyers, Sponsor
 Arianna Chau, Grade 8, **Which Herb Exhibits the Highest Antibacterial Properties?** , Indian Valley MS, Amy Craig, Sponsor
 ★ Jake Bano, Grade 8, **Comparing Water Purity of Boiling to Solar Distillation** , Indian Valley MS, Amy Craig, Sponsor

UNIT 24 **Microbiology 7 & 9** **A305**

Valentin Chaly, Grade 7, **How do Types of Bread and Conditions Affect Mold Growth?** , Lower Moreland Middle School, Denise Meyers, Sponsor
 Izabelle Taylor, Grade 9, **Slobber Solutions** , Souderton Area HS, Karen Wolfe, Sponsor
 Nicholas Abraham, Grade 9, **What Household Disinfectants Kill Bacteria Most Efficiently?** , Souderton Area HS, Karen Wolfe, Sponsor
 Cassandra Shurtz, Grade 9, **Different Carbohydrates Affect on Lactic Acid Fermentaton** , Souderton Area HS, Karen Wolfe, Sponsor
 Noriana Huynh, Grade 9, **Cloudy to Clear: Testing Water Purification Methods** , Cheltenham HS, Russell Wolff, Sponsor
 Sydney Kao, Grade 9, **The Effect of Disinfectant Dilutions on Bacteria** , Souderton Area HS, Karen Wolfe, Sponsor
 ★ Taruni Pasumarthi, Grade 9, **Microbe v.s. Metal: The Prevention Match** , Methacton HS, Robert Helm, Sponsor
 Waverly Badour, Grade 9, **Bacterial Growth Inside vs. Outside** , Lower Moreland HS, Denise Meyers, Sponsor

UNIT 25 **Microbiology 10, 11 & 12** **A306**

Rehan Rana, Grade 10, **The Effects of Natural Remedies on Bacteriophage Infections** , Lower Moreland HS, Denise Meyers, Sponsor

Sofia Huang, Grade 10, **Amount of Bacteria on Store-Bought Vs Home-Grown Chives** , Souderton Area HS, Karen Wolfe, Sponsor

Morohkaut Thach, Grade 10, **Comparing Time/Cost Effective Methods Used to Purify Water** , Cheltenham HS, Russell Wolff, Sponsor

Anh Tran, Grade 10, **Which Hand Sanitizer Brand is the Most Effective?** , Lower Moreland HS, Denise Meyers, Sponsor

Adhara Reddy, Grade 10, **Surface Secrets: Bacteria Growth on Surfaces** , Methacton HS, Robert Helm, Sponsor

Elizabeth Schindele, Grade 10, **The Effect of Dishwasher Cleaning Cycles on Bacterial Growth** , Souderton Area HS, Karen Wolfe, Sponsor

Ian Thomas, Grade 10, **Bacterial Infection Mitigation via Natural QS Inhibitors** , Lower Moreland HS, Denise Meyers, Sponsor

Nathaniel Chau, Grade 10, **Effects of Storage Conditions on Bacteriophage Efficiency** , Souderton Area HS, Karen Wolfe, Sponsor

Andrew Kang, Grade 10, **Effects of Turmeric and Curcumin on Amyloid Beta Generation** , Methacton HS, Robert Helm, Sponsor

Nicholas Loza, Grade 10, **The Effects of Edible Bacterial Inhibitors on B. Cereus** , Upper Dublin HS, Joanne Lilliendahl, Sponsor

Leila Meadows, Grade 11, **Algae Battery** , Perkiomen Sch, Benjamin Roig, Sponsor

Kevin Lim, Grade 11, **Bacteriocin Candidates for Porcine Neonatal Diarrhea** , Upper Dublin HS, Joanne Lilliendahl, Sponsor

Srija Chaudhuri, Grade 12, **Estimating Risk of Cancer with DNA Methylation Analysis** , Upper Dublin HS, Joanne Lilliendahl, Sponsor

UNIT 26

Physics 8

A307

Caden Zhang, Grade 8, **Extracting Lithium From Artificial Seawater** , Arcola Int Sch, Sharon Branca, Sponsor

Aubrey Odhner, Grade 8, **How do design factors affect the strength of electromagnets?** , Lower Moreland Middle School, Denise Meyers, Sponsor

Benjamin Rogers, Grade 8, **What Angle of Release Throws an MLB Baseball the Furthest?** , Indian Valley MS, Amy Craig, Sponsor

Michael Khrizman, Grade 8, **Fly High!** , Lower Moreland Middle School, Denise Meyers, Sponsor

Rehanul Haq, Grade 8, **Does Electricity Affect Distance Covered with Electromagnets** , Indian Valley MS, Amy Craig, Sponsor

Ryan Libin, Grade 8, **What makes planes fly farther?** , Lower Moreland Middle School, Denise Meyers, Sponsor

Karan Yelike, Grade 8, **The Power of Frequencies** , Arcola Int Sch, Sharon Branca, Sponsor

Anthony Kennedy, Grade 8, **The Effect of Electronic Devices on AntennaTV** , Sandy Run MS, Jeanie Kellock, Sponsor

Adan Ahmad, Grade 8, **Dimples and Distance** , Indian Valley MS, Amy Craig, Sponsor

Daniel May, Grade 8, **Which Parachute Material Has The Slowest Falling Speed?** , Indian Valley MS, Amy Craig, Sponsor

Juliana Landis, Grade 8, **What is effect of type of surface on the volume of tap shoes** , Indian Crest MS, Melissa Carnahan, Sponsor

Isaac Weng, Grade 8, **Does the amount of water in a bottle affect its fall speed?** , Lower Moreland Middle School, Denise Meyers, Sponsor

UNIT 27

Physics 7 & 9

A309

Emily Bieryla, Grade 7, **Bring Down the Heat? Color vs Heat Absorption & Emission** , Cedarbrook MS, Beth Kenna, Sponsor

Margo Chepy, Grade 7, **Rainbow in a jar** , Lower Moreland Middle School, Denise Meyers, Sponsor

Grady Fisher, Grade 7, **How does the viscosity of liquids effect how fast you swim?** , Lower Moreland Middle School, Denise Meyers, Sponsor

Ayu Nijinsky, Grade 7, **Sound: Something Blockable With The Right Material** , Arcola Int Sch, Sharon Branca, Sponsor

Umaiza Ameen, Grade 7, **Manipulating Magnets:How Various Materials Affect Magnetism?** , Cedarbrook MS, Beth Kenna, Sponsor

Elaina Stumpp, Grade 7, **Buoyancy Boat Test** , Sandy Run MS, Jeanie Kellock, Sponsor

Arwa Muneeruddin, Grade 9, **Stealthy Shapes: How to Make an Aircraft Invisible to Radar** , Lower Moreland HS, Denise Meyers, Sponsor

UNIT 28

Physics 10 & 11

A311

Matthew Resnick, Grade 10, **Does the length of a string affect a pendulums run time?** , Lower Moreland HS, Denise Meyers, Sponsor

Jeremy Wang, Grade 10, **Deducting Decibels via Decoupling** , Methacton HS, Robert Helm, Sponsor

Brooklyn Diener, Grade 10, **Dance Floor Absorption** , Germantown Acad, Sarah Kesten, Sponsor

Porter McElhaugh, Grade 10, **How Different Fins Change a Rocket's Accuracy** , Germantown Acad, Sarah Kesten, Sponsor

Adelina Cutrona, Grade 11, **The Perfect Curve: Arch Bridges Rise-to-Span Ratio** , Souderton Area HS, Karen Wolfe, Sponsor

Gabe Meinstein, Grade 11, **RespiGuard | Solar-Powered Ventilation and Smoke Safety** , Germantown Acad, Sarah Kesten, Sponsor

UNIT 29

Zoology 7, 9, 10, 11 & 12

A313

Matthew Bianchimano, Grade 7, **To sense or not to sense: Senses in insects** , Indian Valley MS, Amy Craig, Sponsor

Skylar Gonzalez, Grade 7, **Which One's the Ball?** , Cedarbrook MS, Beth Kenna, Sponsor

Josiah Thottukadavil, Grade 9, **High dishes, hungry geckos? linking elevation to appetite** , Lower Moreland HS, Denise Meyers, Sponsor

Daniel Dashko, Grade 9, **The Effect of Different Amounts of Radiation on Duck Embryos** , Germantown Acad, Sarah Kesten, Sponsor

Anshul Shah, Grade 9, **Effects of Herbal Remedies on Cell Renewal of Lumbriculus** , Germantown Acad, Sarah Kesten, Sponsor

Sara Geschwindt, Grade 10, **Which Animal Manure Will Provide the Most Benefit to Plants?** , Souderton Area HS, Karen Wolfe, Sponsor

Niharika Inampudi, Grade 11, **Acid-Induced Neurotoxicity in Drosophila Melanogaster** , Souderton Area HS, Karen Wolfe, Sponsor

* Sean Bagley, Grade 11, Ammonium Thioglycolate v Development of Prions in *Drosophila* , Souderton Area HS, Karen Wolfe, Sponsor
Delaney Steiner, Grade 12, BCO2-I Gene Expression on *Renibacterium salmonarium* , Methacton HS, Robert Helm, Sponsor