



<u>Category</u>	<u>Place</u>	<u>Proj. No.</u>	<u>Name</u>	<u>School</u>
			<u>Project Title</u>	
4 BZ	25		<b>Landrum, Kailey</b>	
			Gerbil Generator	
			Westminster Christian Academy	
HM BZ	24		<b>Lin, Jerry</b>	
			Do Plants Like Music?	
			Hampton Cove Middle	
HM BZ	30		<b>Lovoy, Alexander</b>	
			What Do Deer Fear?	
			HOLY SPIRIT CATHOLIC REGIONAL SCHOOL	
HM BZ	28		<b>McKane, Selina</b>	
			Horse Sense	
			Holy Spirit Catholic Regional School	
HM BZ	21		<b>Rasco, Catherine</b>	
			Is Gray Water As Effective As Tap Water For Plant Growth?	
			Graham School	
HM BZ	20		<b>Sparks, Abram</b>	
			Don't Rap Your Worms	
			North Alabama Christian School	
HM BZ	27		<b>Thacker, Myranda</b>	
			Zoo Doo	
			R L Young Elementary	

## Chemistry

1 CH	40		<b>Athey, Skye</b>	
			The Great Fuel Race	
			Phillips Preparatory School	
2 CH	43		<b>Fletcher, John</b>	
			Fake or Real? Which Sugar Does Yeast Like Best?	
			Holy Spirit Catholic Regional School	
2 CH	47		<b>Lindquist, Ryan</b>	
			Color Shirt in Holography	
			Liberty Middle School	
3 CH	46		<b>Joseph, Brian</b>	
			The Effects of Temperature on Paint	
			The Altamont School	
3 CH	41		<b>Maguire, Eric</b>	
			To Eat or Not to Eat: The Energy Content of Food	
			Westminster Christian Academy	

**Category,**

<b><u>Place</u></b>	<b><u>Proj. No.</u></b>	<b><u>Name</u></b>	<b><u>School</u></b>
3 CH 42		<b>Royster, Philip</b> Rust Busters R.L. Young Elementary	
4 CH 44		<b>Till, Meghan</b> Ar'ray of Color: Analyzing Chromatography Our Lady of the Valley	
4 CH 45		<b>Triplett, Marina</b> Using Foods To Detect pH St. John's Catholic School	

**Engineering**

1 N 70		<b>Ford, Jordan</b> Directional Wireless Audio Transmission by Laser Liberty Middle School	
2 N 69		<b>Tinker, Joel</b> Heat Wave: A Study of Heat Radiators for Spacecraft and Earth-Based Systems Covenant Christian Academy	
3 N 67		<b>Kromann, Nicholas</b> Effects of Thrust Spread on a Rocket's Altitude Westminster Christian Academy	
4 N 61		<b>McKane, Maya</b> Optimal Configuration of Fixed Solar Panel Holy Spirit Catholic Regional School	
HM N 64		<b>Black, Sebastian</b> Anatomy of a Paper Plane: How Wing Design Affects Flight Distance and Duration Advent Episcopal School	
HM N 62		<b>French, George</b> Lights Out: Which Brand Will Last The Longest The Altamont School	
HM N 60		<b>Griffin, Anna</b> London Bridge Will Fall Down No More Phillips Preparatory School	
HM N 63		<b>Hadley, Carter</b> Which Bridge is Stronger R.L. Young	
HM N 66		<b>Leson, Nathaniel</b> Does Electricity Effect Corrosion? Holy Spirit Catholic Regional School	

**Category,**

	<b><u>Place</u></b>	<b><u>Proj. No.</u></b>	<b><u>Name</u></b>	<b><u>School</u></b>
<b>HM N</b>	68		<b>Parnell, Christopher</b>	
			Swoosh: Does the Release Position of the Basketball Affect the Probability of Making the	Glenwood School
<b>HM N</b>	65		<b>Wygoda, Sebastian</b>	
			Shake, Shake, Shake	Our Lady Of The Valley - OLV

**Environmental**

<b>1 V</b>	87		<b>England, Rachel</b>	
			Do Different Wavelengths of the Electromagnetic Spectrum Affect Mold Growth?	Demopolis Middle School
<b>1 V</b>	90		<b>Peters, Stephen</b>	
			Operation Rubber Ducky Part II	The Brook Academy
<b>2 V</b>	82		<b>Calhoun, Ethan</b>	
			The Temperature in Your House Affected By Its Exterior Color?	Phenix City Intermediate School
<b>2 V</b>	89		<b>Duncan, Emily</b>	
			A+ for the Fountains of Education!	Horizon Elementary School
<b>3 V</b>	86		<b>Dey, Suranjana</b>	
			Soil From Which Environment Has a pH Closest to 6.5?	Phillips Preparatory School
<b>4 V</b>	84		<b>Easterwood, Gabby</b>	
			Ready Set Erode	Graham Elementary
<b>4 V</b>	85		<b>Hammonds, Nicholas</b>	
			Toxic Treat: Pollution Wrapped Up	Graham Elementary
<b>4 V</b>	81		<b>Pajaro-van de Stadt,</b>	
			Comparing Active and Passive Solar Water Heaters	The Altamont School
<b>HM V</b>	91		<b>Beall, Madison</b>	
			We All Need to Breathe	Advent Episcopal School
<b>HM V</b>	88		<b>Franzone, Nickolas</b>	
			Its Getting Hot In Here "Which Recycled Material Makes The Best Home Insulation For Heat	Causey Middle School

**Category,**

	<b><u>Place</u></b>	<b><u>Proj. No.</u></b>	<b><u>Name</u></b>	<b><u>School</u></b>
			<b><u>Project Title</u></b>	
<b>HM V</b>	80		<b>Hall, Joshua</b>	
			Tornadoes, Earth's Most Violent Storms	
			Raymond L. Young Elementary	
<b>HM V</b>	83		<b>Shumake, John</b>	
			Are You Smarter Than a Meteorologist?	
			Danville Middle School	

## **Math and Computers**

<b>1 X</b>	101		<b>Hawkins, Joshua</b>	
			Look, Mom! No Wires! A Study of Signal Strength with Parabolic Reflectors on a Wireless	
			Covenant Christian Academy	
<b>2 X</b>	100		<b>Leva, Sagar</b>	
			CD Burning and Its Memory	
			Excel High School	
<b>3 X</b>	103		<b>Edwards, Maegan</b>	
			In Search of the Sun: An Examination of the Accuracy of Early Astronomers	
			Westminster Christian Academy	
<b>HM X</b>	102		<b>Gifford, Justin</b>	
			Pedal Power for a Green Healthy World	
			Prattville Christian Academy	

## **Medicine & Health Sciences**

<b>1 ME</b>	118		<b>Laurendine, Chase</b>	
			The Puzzle of Migraines... Can You Predict When You Will Have One?	
			St. John's School	
<b>2 ME</b>	116		<b>Tinker, Jodie</b>	
			Of Mice and MSG: The Effect of Monosodium Glutamate on the Ability of Mus musculus to	
			Covenant Christian Academy	
<b>3 ME</b>	110		<b>Young, Halston</b>	
			Can Spices Prevent Bacteria Growth?	
			Glenwood School	
<b>4 ME</b>	119		<b>Davison, Carrie</b>	
			The Effects of Household Chemicals on the Heart Rate of the Aquatic Worm Lumbriculus.	
			Saint Joseph Regional Catholic School	
<b>HM ME</b>	117		<b>Bassett, Connor</b>	
			The Effects of Lead Shielding Configuration on the Measurement of X-Ray Scatter Radiation	
			Holy Spirit Catholic Regional School	
<b>HM ME</b>	111		<b>Gresham, Helen</b>	
			Got Germs?	
			GLENWOOD	

**Category,**

<b><u>Place</u></b>	<b><u>Proj. No.</u></b>	<b><u>Name</u></b>	<b><u>Project Title</u></b>	<b><u>School</u></b>
HM ME	113	<b>Hallmark, Hillari</b>	"More Than a Mouthful..."	R.L. Young Elementary School
HM ME	112	<b>Hallmark, Hillari</b>	"More Than a Mouthful..."	R.L. Young Elementary School
HM ME	114	<b>Hameed, Shilan</b>	Histology of Hotdogs	Islamic Academy of Alabama
HM ME	120	<b>Morris, McKenzie</b>	The Effect of Sugar on Tooth Decay	Summerdale School

### Physical Science

1 Z	136	<b>Schutzbach, Heidi</b>	Car Air Resistance	Liberty Middle School
2 Z	135	<b>Smith, Emily</b>	Helmet Aerodynamics	Phillips Preparatory
3 Z	132	<b>Cochrun, Steven</b>	"CUT THAT MUSIC DOWN OR ELSE! Don't Hate...Attenuate"; Which Materials Reduce Sound	ADVENT EPISCOPAL SCHOOL
3 Z	131	<b>Donahoe, James</b>	Shear Stress: The Physics of Earthquakes	Holy Spirit Catholic Regional High School
3 Z	130	<b>Nelson, Benjamin</b>	Shedding Some Light on Light	Liberty Middle School
4 Z	133	<b>Moll, Steven</b>	Cannons and Ballistic Balls: A Study of Projectile Motion	St. John's Catholic School
HM Z	134	<b>Lofts, David</b>	Harvesting More Sunlight Via Holograms: A Multivariable Study	Covenant Christian Academy

Category,

Place

Proj. No.

Name

School

Project Title

**Senior Division  
Animal Science**

- 1 AS 150 McCormick, Lydia**  
The Effect of Honeybee Pathogens on Hydrogen Peroxide (H<sub>2</sub>O<sub>2</sub>) Content and Glucose  
Jefferson County International Baccalaureate
- 2 AS 155 Calderon, Lucia**  
Rivalry in Hunting Spiders  
Murphy High School
- 3 AS 151 Andrews, Carley**  
Mosquito Missile-Toe: Can Mistletoe Berry Extract Be Used as an Effective Pesticide Against  
Deshler High School
- 3 AS 153 Faulkner, Hannah**  
The Viability of The Water Vascular System  
Brooks High School
- 3 AS 154 Filhiol, William**  
Can Mice Count? A Quantitative Study on Animal Behavior  
Wetumpka High School
- HM AS 152 Williams, Susan**  
My Dog's Favorite Dog Treats  
Pell City High School

**Behavioral & Social Sciences**

- 1 BE 175 Sullivan, Zachary**  
ReACTION: Testing What Affects Our Reaction Time  
Westminster Christian Academy
- 2 BE 177 Langhinrichsen-**  
Making Judgments Based on First Impressions  
Murphy High School
- 3 BE 173 Adam, Lauren**  
Sugar and Spice and Everything Nice: A Study of Gender Identity in Preschoolers  
Wetumpka High School
- 3 BE 179 Christl, Robert**  
What Are You Speaking About?  
Catholic High

Category,

<u>Place</u>	<u>Proj. No.</u>	<u>Name</u>	<u>Project Title</u>	<u>School</u>
4 BE 170		<b>Clayton, Sarah</b>	The Impact of Musical Literacy on Linguistic Acuity	Jefferson County International Baccalaureate School
4 BE 172		<b>Dawsey, Margaret</b>	Are Blondes Really Dumb?	Deshler High School
4 BE 174		<b>Napier, Brooke</b>	Musical Memories!	Glenwood School
HM BE 171		<b>Jennert, Andrew</b>	Cell Phones And Stop Signs	Pell City High School

### Biochemistry

- 1 BC 191 **Glosemeyer, Katie**  
Orange You Dehydrated?  
Catholic High School
- 2 BC 190 **Holden, Rebecca**  
Does pH Affect Digestion of Proteins?  
Brooks High School
- 3 BC 274 **Williams, James**  
What Solution Makes the Most Powerful Potato Battery?  
Oakwood Adventist Academy

### Chemistry

- 1 CH 215 **Finney, Bryant**  
To Build a Better Motor: The Continued Analysis of Propellant Additives and Their Effects on  
Covenant Christian Academy
- 2 CH 251 **Tuteja, Shawn**  
Mazimizing Ethanol's Heat Production  
Altamont School
- 3 CH 210 **Norris, Chelsea**  
A Pill By Any Other Name May Not Be The Best Pill  
Mary G. Montgomery
- 3 CH 214 **Thielman, Jonathan**  
Does Tyrosinase Oxidize Poison Ivy Urushiol?  
Jefferson County International Baccalaureate
- 4 CH 216 **Hubbard, Shay**  
Nutrient Identification in Foods.  
Wetumpka High School

**Category,**

	<b><u>Place</u></b>	<b><u>Proj. No.</u></b>	<b><u>Name</u></b>	<b><u>School</u></b>
			<b><u>Project Title</u></b>	
<b>4</b>	CH	211	<b>Nichols, Nona</b>	
			Sunscreen SPF: Real or Marketing Ploy?	
			Murphy High School	
<b>4</b>	CH	212	<b>Tidmore, Mary</b>	
			Is it Crunked Up?	
			John T. Morgan Academy	
<b>HM</b>	CH	213	<b>Gilbreath, Aaron</b>	
			What Effects Do Storm Surges Have on Materials?	
			The Alabama School for the Blind	

### **Computer Science**

- 1** CS 232 **Christensen, Nicholas**  
Do You 'ear Wha' I 'ear? Redigitizing Voice Signals into Lower Frequencies to Revolutionize  
Wetumpka High School
- 2** CS 230 **Stone, Joshua**  
PAXstats  
W. P. Davidson High School
- 3** CS 233 **Bane, Kendall**  
Solving Soccer Season Scheduling  
Catholic High School
- 4** CS 231 **Eichelkraut, Adam**  
Simulating Swarm Intelligence Using Video Game Technology  
Catholic High School

### **Earth & Planetary Science**

- 1** EA 241 **England, Rebecca**  
Operation E.A.G.L.E. "Enhanced Alabama Gravitational Lunar Effect"  
Demopolis High School
- 2** EA 240 **Leahy, Keith**  
Safer Building Design-Mathematical Modeling of Drag Coefficients for Model Structures in a  
Catholic High School, Huntsville, AL
- 3** EA 242 **Tovar, James**  
Water Erosion With and Without Baffles  
Westminster Christian Academy

### **Energy & Transportation**

- 1** ET 255 **Tinker, Nathan**  
A Solar Stirling Power System Utilizing a Thin-Film Concentrator for Lunar Applications  
Covenant Christian Academy

**Category,**

	<b><u>Place</u></b>	<b><u>Proj. No.</u></b>	<b><u>Name</u></b>	<b><u>School</u></b>
			<b><u>Project Title</u></b>	
2	ET	250	<b>Barber, Christopher</b>	
			Wave GoodBye to the Energy Crisis	
			Wetumpka High School	
2	ET	178	<b>Burkhardt, Sophia</b>	
			How Do Size, Angle, and Number of Blades Impact the Electrical Output of a Windmill	
			Catholic High School	
3	ET	252	<b>Buckalew, Louis</b>	
			Modeled Prototypes for Enhanced Efficiency in Tomorrow's Automobiles: A Hybrid 3 Engine.	
			W. P. Davidson High School	
3	ET	256	<b>Owens, Clay</b>	
			A Vehicle Betrayed	
			Jefferson County International Baccalaurette School	
4	ET	253	<b>Etikala, Deepa</b>	
			Using Photovoltaic and Fuel Cells to Produce Hydrogen From Water: A Zero Emission	
			Bob Jones High School	
4	ET	254	<b>Snow, Melissa</b>	
			Effects of Renewable Gasoline Extenders on the Burst Pressure of Flexible Fuel Line	
			Patrician Academy	

**Engineering: Electrical & Mechanical**

1	EE	271	<b>Whitney, William</b>	
			WiFiCam: A Scaleable Visualization of Wireless Network Signals	
			Mountain Brook High School	
2	EE	273	<b>Kellogg, Keith</b>	
			The Power of the Sun	
			Catholic High School	
3	EE	272	<b>Christianson, Matthew</b>	
			Glass Water: Homemade Laminar Flow Water Nozzle	
			Altamont School	
4	EE	270	<b>Ayres, Robert</b>	
			Shields On! Deflection Of Space Debris Using Sound Waves	
			Brooks High School	

**Engineering: Materials & Bioengineering**

1	EN	297	<b>Nidermeyer, Harper-</b>	
			Carbon Fiber Makes A Pointe Part Deux	
			Catholic High School	
2	EN	295	<b>Evans, Carly</b>	
			Paper Under Pressure	
			East Memorial Christian Academy	

**Category,**

	<b><u>Place</u></b>	<b><u>Proj. No.</u></b>	<b><u>Name</u></b>	<b><u>School</u></b>
			<b><u>Project Title</u></b>	
3	EN	294	<b>Romanczuk,</b>	
			Synthesis and Characterization of Magnetic Nanoparticles for Hyperthermia Treatment of	
			Randolph School	
4	EN	293	<b>LeCroy, Kathryn</b>	
			The Kudzu Question: A Useful, Renewable Resource?	
			Jefferson County International Baccalaureate School	
HM	EN	290	<b>Brown, Jonathan</b>	
			The Affects of Length, Weight and Diameter on the Frequency of a Vibrating Object	
			Glenwood School	
HM	EN	291	<b>Christian, Caleb</b>	
			CAN It Be Improved?	
			Murphy High School	
HM	EN	292	<b>Coleman, Justin</b>	
			The Leaning Tower of Pasta	
			Brooks High School	
HM	EN	296	<b>Murphy, Aerial</b>	
			The Effects of Different Films on Hydrostatic Bearings	
			Wetumpka High School	

### **Environmental Management**

2	EM	310	<b>Daniels, Rebecca</b>	
			Phytoremediation of Simulated Wastewater Using Lemnaceae	
			Brooks High School	
2	EM	311	<b>Woods, Kristin</b>	
			Global Warming: Are There Other Major Causes Besides Greenhouse Gases?	
			Oakwood Adventist Academy	

### **Environmental Sciences**

1	EV	326	<b>Lynn, Elliott</b>	
			More or Less? -- Analysis of the Impact of Drought on River Pollution Levels	
			Glenwood School	
2	EV	325	<b>McLaughlin, Katie</b>	
			A Study and Comparison of Water Quality in a Lake and River During a Drought	
			Wetumpka High School	
3	EV	320	<b>Polska, Caroline</b>	
			Ammonia Nitrogen in Pool Water	
			S. S. Murphy High School	
4	EV	322	<b>Cartner, Samuel</b>	
			Which Plants Best Reduce Global Warming	
			Jefferson County International Baccalaureate School	

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<b><u>Place</u></b>	<b><u>Proj. No.</u></b>	<b><u>Name</u></b>	<b><u>School</u></b>
		<b><u>Project Title</u></b>	
HM EV 321		<b>Floyd, Carmen</b>	
		Does Polluted Surface Water Affect the Growth of Rye Grass?	
		Deshler High School	
HM EV 324		<b>Griffies, Presley</b>	
		How's the Weather?	
		Talladega High School	
HM EV 323		<b>Russell, Sarah</b>	
		How Do Different Types Of Contaminants Affect Aquatic Life?	
		Deshler High School	

### **Mathematical Sciences**

- 1 MA 341 **Eichelkraut, Joel**  
Numerical Analysis of the Commodity Market Using Econophysics  
Catholic High School
- 2 MA 342 **Carter, Alex**  
Concentration  
Murphy High School
- 3 MA 340 **Hussong, Matthew**  
Markov's Game  
Murphy High School
- 4 MA 343 **Swinea, Jessica**  
Exploring Fractals  
Brooks High School

### **Medicine & Health Sciences**

- 1 ME 354 **Gamlin, Clare**  
The Effects of PIP2 on Intracellular pH Regulation  
Jefferson County International Baccalaureate
  - 2 ME 355 **Mulekar, Sujata**  
Turn Up the Heat  
Murphy High School
  - 3 ME 350 **Lynn, Kelly**  
The Silver Lining: A Study of Silver as an Antimicrobial Agent  
Wetumpka High School
  - 4 ME 353 **Wyatt, Elizabeth**  
You Are What You Eat!  
Holy Spirit Catholic Regional School
- HM ME 351 **Aguilar, Michael**  
The Sense on Scents  
The Alabama School for the Blind

**Category,**

<b><u>Place</u></b>	<b><u>Proj. No.</u></b>	<b><u>Name</u></b>	<b><u>School</u></b>
<b>HM ME 356</b>		<b>Armster, Jarrel</b>	
		"Soda Lovers Beware": What Affect Does Soda Have on Tooth Decay?	
		Oakwood Adventist Academy	
<b>HM ME 357</b>		<b>Cope, Elizabeth</b>	
		Going Green?	
		Glenwood School	
<b>HM ME 352</b>		<b>Johnson, Bethany</b>	
		a Myth: The Celiac Conundrum, Part III	
		Life Christian Academy	

### **Microbiology**

- 1 MI 370 Pastukh, Ganna**  
Spices: Not Just a Seasoning  
Murphy High School
- 2 MI 371 Stahl, Sarah**  
Quest for Affordable Bio-Diesel: Characterizing Microbes for Conversion of the Bio-Diesel By-  
Huntsville High School
- 3 MI 373 Bailey, Will**  
Bacteria and Rust?  
RL Young elementary
- 4 MI 374 Farrar, Ellie**  
Holy Cow! Bacteria Makes Good Cheese?  
Glenwood High School
- 4 MI 372 Morris, Miesha**  
Do Different Types of Alcohol Effect the Heart Rate of Daphnia?  
Deshler High School

### **Physics & Astronomy**

- 1 PH 380 Stewart, William**  
A Comparison of the Values of the Acceleration Due to Gravity as Derived from a Simple  
McGill-Toolen Catholic High
- 2 PH 385 Price, Ellen**  
Hidden Sounds  
Jefferson County International Baccalaureate
- 3 PH 382 Granone, Jessi**  
Beam Bending  
Catholic High School
- 4 PH 384 Meherg, Judson**  
Sounding the Bass  
East Memorial Christian Adacemy

**Category,**

	<b><u>Place</u></b>	<b><u>Proj. No.</u></b>	<b><u>Name</u></b>	<b><u>School</u></b>
			<b><u>Project Title</u></b>	
<b>4</b>	PH	381	<b>Powell, Joshua</b>	
			Gone - With The Wind	
			Prattville Christian Academy	
<b>HM</b>	PH	383	<b>Ference, Edward</b>	
			Sound Reduction 2	
			Catholic High School	

**Plant Sciences**

<b>1</b>	PS	401	<b>Kovalcik, Claire</b>	
			Brugmansia Plant Rooting Techniques	
			Catholic High School	
<b>2</b>	PS	400	<b>Sullivan, Devin</b>	
			The Plant Heroes	
			Westminster Christian Academy	
<b>3</b>	PS	403	<b>Greising, Amelia</b>	
			How pH Affects Bean Growth	
			Westminster Christian Academy	
<b>3</b>	PS	404	<b>Montgomery, Tyler</b>	
			How pH Effects Seed Germination	
			Talladega High School	
<b>4</b>	PS	402	<b>Collins, Sidney</b>	
			The Drought Buster	
			Sumter Academy	
<b>HM</b>	PS	405	<b>Graben, Justin</b>	
			If you Plant Them They Will Grow	
			The Alabama School for the Blind	

**Teams**

<b>1</b>	TE	420	<b>Rigby, Jacob</b>	Nathan Arce
			eXtremely underDeveloped Language	
			Bob Jones High School	
<b>2</b>	TE	428	<b>Jones, Zac</b>	C.J. Hobbs
			Mobile Automated Retrieval System	
			Wetumpka High School	
<b>3</b>	TE	423	<b>Lashley, Michael</b>	Ryann Headley
			The Effects of Cigarette Smoke on Invertabrates	
			Wetumpka High School	

**Category,**

<b><u>Place</u></b>	<b><u>Proj. No.</u></b>	<b><u>Name</u></b>	<b><u>School</u></b>
<b><u>Project Title</u></b>			
3 TE 425		<b>Latham, Kyle</b> Trebuchet vs. Onager Wesminster Christian Academy	Benjamin Daniel Click
3 TE 426		<b>Ogutveren, Nursen</b> To Be or Not To Be Digested? Alabama School of Fine Arts	Judi Hakim
4 TE 421		<b>Subramani, Lakshmi</b> Isolating the Elements of Photosynthesis Heritage Elementary	Morgan Claire Price
4 TE 422		<b>Williams, Ethan</b> Light, Color, and Photosynthesis Horizon Elementary	Allen Potts