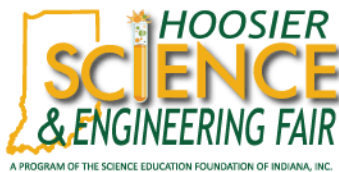




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- Animal Sciences
- Behavioral and Social Sciences
- Chemistry
- Earth and Environmental Sciences
- Energy: Physical and Chemical
- Engineering
- Mathematics
- Medicine and Health Sciences
- Microbiology and Molecular/Cellular Biology
- Physics and Astronomy
- Plant Sciences
- Robotics, Computers and Systems Software



Schedule of Events

Monday, March 8, 2021 – Friday, March 12, 2021

Judges review exhibitor e-portfolio submissions.

Saturday, March 13, 2021

8:00 AM – 8:30 AM Judges meeting in gather.town judges room

9:00 AM – 11:00 AM Judges interviews with students in gather.town virtual conference hall

Tuesday, March 16, 2021

Pre-recorded awards ceremony presentation released.

2021 OFFICIALS

Fair Director

Allison Grabert

Director

*SwISTEM Resource Center
University of Southern Indiana*

Assistant Fair Director

Paige Walling

SwISTEM Services Supervisor

*SwISTEM Resource Center
University of Southern Indiana*

Special Thanks to the Fair Sponsors and Contributors

The Tri-State Science and Engineering Fair would not be possible without the support of area individuals, businesses, foundations and schools. Special thanks to every individual listed in this program, including the students who have worked so hard to bring their projects to this fair.

Many support Tri-State Science and Engineering Fair financially while others volunteer time and services. The Tri-State Science and Engineering Fair would not be successful without each contribution. On behalf of all the students in this competition ***“Thank you!”***

We are always looking for ideas to enhance the science education experiences of area children. If you or your organization would like to help increase awareness and interest in STEM careers for a new generation of young scientists, please contact Allison Grabert (812-228-5019; afgrabert@usi.edu), Director, Tri-State Science and Engineering Fair, 8600 University Boulevard, Evansville, IN 47712. Your innovative ideas and involvement are encouraged.

Sponsors

Special thanks to our sponsors for providing major financial contributions and services to assure a well-organized Tri-State Science and Engineering Fair. Their generous support demonstrates a strong commitment to education and the future of our children and communities.



Awards

SENIOR DIVISION (GRADES 9 – 12) GRAND AWARDS AND HONORABLE MENTIONS

Three Senior Division Grand Award winners will receive trophies along and \$300.00.

Seven Senior Division Honorable Mention Award winners will receive trophies and \$150.00.

The three Senior Division Grand Award winners and the seven Senior Division Honorable Mention Award winners, along with their teacher or sponsor, are invited to participate in the Hoosier State Science and Engineering Fair. Eligible students will represent the Tri-State Science and Engineering Fair in a competitive state judging event with additional awards and prizes. The Hoosier State Science and Engineering Fair, sponsored by the Science Education Foundation of Indiana (SEFI), will be held virtually on Saturday, March 27, 2021.

In addition, SEFI sponsors a Hoosier Delegation to participate in the International Science and Engineering Fair (ISEF) which will also be virtual for 2021. The top ten Senior Division winners (Grand Award winners and Honorable Mention Award winners) have an opportunity to compete for Hoosier Delegation positions at the Hoosier Science

and Engineering Fair. ISEF paperwork must be completed and correct to be competitive at the Hoosier Science and Engineering Fair.

Up to three Senior Division students in the 12th grade will also receive one-year, non-renewable \$1500 scholarships to major in a science discipline, mathematics, engineering, or exercise science at the University of Southern Indiana.

JUNIOR GRAND AWARDS (GRADES 6 – 8) AND HONORABLE MENTIONS

Three Junior Grand Award winners from each grade level (grades 6 – 8) will receive a trophy and \$150.

Two Junior Division Honorable Mention Award winners from each grade level (grades 6 – 8) will receive trophies and \$75.00.

The nine Junior Division Grand Award winners and the six Junior Division Honorable Mention Award winners, along with their teacher or sponsor, are invited to participate in the Hoosier State Science and Engineering Fair. Eligible students will represent the Tri-State Science and Engineering Fair in a competitive state judging event with additional awards and prizes. The Hoosier State Science and Engineering Fair, sponsored by the Science Education Foundation of Indiana (SEFI), will be held virtually on Saturday, March 27, 2021.

ELEMENTARY GRAND AWARD WINNERS (GRADES K – 5)

One Grade 5 Grand Award winner will receive a trophy and \$75.

Two Grades K – 3 Elementary Grand Award winners will receive a trophy and \$50.

One Grades K – 3 Elementary Honorable Mention Award winner will receive a trophy and \$25.

The Grade 5 Grand Award winner, along with their teacher or sponsor, are invited to participate in the Hoosier State Science and Engineering Fair. Eligible students will represent the Tri-State Science and Engineering Fair in a competitive state judging event with additional awards and prizes. The Hoosier State Science and Engineering Fair, sponsored by the Science Education Foundation of Indiana (SEFI), will be held virtually on Saturday, March 27, 2021.

TOYOTA EXCELLENCE IN TEACHING AWARD

Teachers and adult sponsors of those projects selected for Grand Awards will receive a plaque and a cash award of \$50.

National Awards and Recognition Contributors

American Meteorological Society

Two Certificates of Outstanding Achievement for Excellence in Atmospheric or Related Science Exhibit

American Psychological Association

Certificate of Award for Outstanding Research in Psychological Science

ASM Materials Education Foundation

Certificate for Most Outstanding Exhibit in Materials Science

Association for Women Geoscientists

Certificate of Merit for Outstanding Project in Geoscience by a Female Student

Broadcom MASTERS

Certificate of Merit of Outstanding Performance and Nomination to Compete as a BROADCOM Master

Mu Alpha Theta

Mu Alpha Theta Award Certificate of Merit for a challenging, original, thorough, and creative investigation of a problem involving mathematics

National Aeronautics and Space Administration

Earth System Science Award for Project Offering the Greatest Insight into Earth's Interconnected Systems

National Oceanic and Atmospheric Administration

Taking the Pulse of the Planet Award Certificate of Merit

Office of Naval Research (United States Navy & Marine Corps)

Three Naval Science Junior Division Award Certificates of Merit and Two \$50.00 Senior Division Awards

Ricoh Americas Corporation

Ricoh Sustainable Development Award Certificate for research that offers the greatest potential for Sustainable Development

Society for In Vitro Biology

Certificate of Merit for Ability and Creativity in In Vitro Biology for 11th Grade Students

Stockholm Junior Water Prize

Three Stockholm Junior Water Prize Certificates of Merit for Outstanding Water-Related Research

United States Agency for International Development (USAID)

Science Champion Award recognizing an exceptional project with the potential to make an impact on addressing international development challenges

United States Metric Association

Certificate of Merit for the Best Use of the International System of Units in a Science Fair Project

Yale Science and Engineering Association

Certificate of Merit for Most Outstanding 11th Grade Exhibit in Computer Science, Engineering, Physics or Chemistry

Local Awards and Recognition Contributors

American Chemical Society Indiana/Kentucky Border Section

\$175 Award for Best Senior Project & Certificate of Merit

\$75 Award for Best Junior Project & Certificate of Merit

Dr. and Mrs. Jonathan S. Lowrey

Two \$75 Awards for Best Projects in Biochemistry and Chemistry & Certificate of Merit

Mesker Park Zoo and Botanic Gardens

One Rhino Meet and Greet for Best Junior Division Project in Animal Sciences or Plant Sciences

One Rhino Meet and Greet for Best Senior Division Project in Animal Sciences or Plant Sciences

Purdue University School of Agriculture

\$50 Award for Best Senior Project in Food, Agriculture, or Natural Resources & Certificate of Merit

Certificate of Merit for Best Junior Project in Food, Agriculture, or Natural Resources

Certificate of Merit for Best Elementary Project in Food, Agriculture, or Natural Resources

University of Southern Indiana College Achievement Program

\$50 Award for Best Senior Behavioral Science Project & Certificate of Merit

University of Southern Indiana Pott College of Science, Education, and Engineering

Up to Three One Year, Non-Renewable \$1500 Scholarship for Students Majoring in Science, Engineering, Math, or Kinesiology at the University of Southern Indiana.

Volunteer Judges*

Special thanks to our generous volunteer judges for sharing their time and expertise with the Tri-State Science and Engineering Fair exhibitors!

Mrs. Patty Allen
Dr. Nicole Becklinger
Mr. Keith Carter
Mrs. Tina Closser
Dr. Mark Creager
Mrs. Jamie Curry
Dr. William Elliott
Dr. Brandon Field
Dr. Priya Hewavitharange
Dr. Rick Hudson
Dr. Paul Kuban

Mr. Ryan Loehrlein
Mr. Mitch Luman
Mr. Bryan Lynch
Mrs. Julie Mann
Dr. Tony Maria
Dr. Matt Merlo
Dr. Zane Mitchell
Dr. Misty Ostergaard
Mrs. Amy Pierce
Mr. Jeffrey Polak
Dr. Erin Reynolds

Ms. Katelyn Russell
Ms. Natalie Schimp
Ms. Kelly Sparks
Ms. Gracie Steele
Ms. Madelyn Sturgeon
Dr. Alice Sutton
Mrs. Paige Walling
Mrs. Gina Wagoner
Dr. Uditha Wijesuriya
Mrs. Carrie Wright

*Judges registered at time of print.

Participating Teachers/Adult Sponsors

*Special thanks to Tri-State educators and parents
for serving as mentors to area students.*

Ann Lachmann	Holy Rosary School
Brian Hang	Castle North Middle School
Bryon Davis	Chandler Elementary School
Deepthi Nair	Signature School Inc
Elisa Peters	Heritage Hills High School
Elizabeth Mathew	Holy Rosary School
Gena Garrett	Evansville Day School
Georgina Wagoner	North Junior High School
Kelly Keown	Holy Rosary School
Kimberly Elpers	EVSC Virtual Academy
Maura Humphrey	Castle North Middle School
Patrick Carter	New Tech Institute
Paul Perry	Castle North Middle School
Sara Killebrew	Castle North Middle School
Shelbey Klenck	New Tech Institute
Thomas Walling	Perry Heights Middle School

ELEMENTARY DIVISION
(GRADES K – 5)

PLEASE NOTE: Student names and project titles are presented in the program as submitted by the students on their online registration forms.

ED001

Cool Crystals
Donald Engbers
Grade: 1
Holy Rosary School
e-portfolio link: <https://thecn.com/de305>

ED002

Evansville's Aquifer
Ella Clare Engbers
Grade: 4
Holy Rosary School
e-portfolio link: <https://thecn.com/ee348>

ED003

What is the most durable building structure.
Jonathan Davis
Grade: 5
Chandler Elementary School
e-portfolio link: <https://thecn.com/bd583>

JUNIOR DIVISION – GRADE 6

PLEASE NOTE: Student names and project titles are presented in the program as submitted by the students on their online registration forms.

JD601

Foaming Soap
Kenzie Brooks
Grade: 6
Evansville Day School
e-portfolio link: <https://thecn.com/kb1515>

JD602

Look Well. Feel Well. Be Well.
Reagan Engbers
Grade: 6
Holy Rosary School
e-portfolio link: <https://thecn.com/re201>

JD603

Texting and Driving
Andrew Foster
Grade: 6
Evansville Day School
e-portfolio link: <https://thecn.com/rf393>

JD604

The ideal ice cube
Iggy Galbreath
Grade: 6
Evansville Day School
e-portfolio link: <https://thecn.com/ig159>

JD605

Frozen or Not
Emma Griffin
Grade: 6
Evansville Day School
e-portfolio link: <https://thecn.com/eg650>

JD606

Games vs. Battery
Dylan Hartmayer-Oberg
Grade: 6
Evansville Day School
e-portfolio link: <https://thecn.com/dh783>

JD607

Phantom Words: What do you hear?
Angelique Jones
Grade: 6
Evansville Day School
e-portfolio link: <https://thecn.com/aj1005>

JD608

Comparing ph
Charlie Merida
Grade: 6
Evansville Day School
e-portfolio link: <https://thecn.com/cm1741>

JD609

Chorus of Glasses

Lex Miskimen

Grade: 6

Evansville Day School

e-portfolio link: <https://thecn.com/lm1172>

JD610

Plants and music

Andrew O'Bryan

Grade: 6

Evansville Day School

e-portfolio link: <https://thecn.com/ao492>

JD611

Testing Paper Mache.

Max Overby

Grade: 6

Evansville Day School

e-portfolio link: <https://thecn.com/mo531>

JD612

Rise Time of Bread

Lulu Rimawi

Grade: 6

Evansville Day School

e-portfolio link: <https://thecn.com/lr600>

JD613

Hot Pepper Relief

Aviva Rogel

Grade: 6

Evansville Day School

e-portfolio link: <https://thecn.com/ar1832>

JD614

Freezing Ice Cream with Sugar

Sacha Schuman

Grade: 6

Evansville Day School

e-portfolio link: <https://thecn.com/ss4113>

JD615

Height of Rockets

Max Vance

Grade: 6

Evansville Day School

e-portfolio link: <https://thecn.com/mv487>

JUNIOR DIVISION – GRADE 7

PLEASE NOTE: Student names and project titles are presented in the program as submitted by the students on their online registration forms.

JD701

Filtration of Water

Taylor Ahlbrand

Grade: 7

Castle North Middle School

e-portfolio link: <https://thecn.com/ta832>

JD702

Rad Radish Growth

Norah Ahmed

Grade: 7

Evansville Day School

e-portfolio link: <https://thecn.com/na1914>

JD703

A.B.L.E(Automated Bridge Launching Equipment)

Akhil Alapati

Grade: 7

Castle North Middle School

e-portfolio link: <https://thecn.com/aa2949>

JD704

How Do Size and Angle Affect a Car's Speed Down a Ramp?

Maria Barajas

Grade: 7

Castle North Middle School

e-portfolio link: <https://thecn.com/mb2488>

JD705

Does price matter

Tyler Bargeloh

Grade: 7

Castle North Middle School

e-portfolio link: <https://thecn.com/tb913>

JD706

Eggs Vs. Pop-Tarts: Blood Sugar Impact

Madelyn Beier

Grade: 7

Castle North Middle School

e-portfolio link: <https://thecn.com/mb2489>

JD707

What Cleaner is The Best?

Suyash Bhagwat

Grade: 7

Castle North Middle School

e-portfolio link: <https://thecn.com/sb2130>

JD708

Magnetic Linear Accelerator

Carter Bobe

Grade: 7

Castle North Middle School

e-portfolio link: <https://thecn.com/cb1630>

JD709

Brine Shrimp and Salinity

Ingrid Braden

Grade: 7

Evansville Day School

e-portfolio link: <https://thecn.com/ib287>

JD710

Raft powered by surface tension

Logan Bryant

Grade: 7

Castle North Middle School

e-portfolio link: <https://thecn.com/lb1005>

JD711

water hardness in different waters

Nathan Bryant

Grade: 7

Castle North Middle School

e-portfolio link: <https://thecn.com/nb1224>

JD712

UVs and Beads

Addison Butterfield

Grade: 7

Castle North Middle School

e-portfolio link: <https://thecn.com/ab2555>

JD713

How Effective Is Your Sunscreen?

Sydney Byrley

Grade: 7

Castle North Middle School

e-portfolio link: <https://thecn.com/sb2133>

JD714

Fruits Vs. Fabrics

Kyra Champa

Grade: 7

Evansville Day School

e-portfolio link: <https://thecn.com/kc1519>

JD715

How Does Music and Lighting Affect Memory?

Isabella Chandler

Grade: 7

Castle North Middle School

e-portfolio link: <https://thecn.com/ic246>

JD716

A Dog's Colorful Carrots

Kiera Cook & Abigail Wright

Grade: 7

Castle North Middle School

e-portfolio link: <https://thecn.com/kc1515>

JD717

Self-Esteem Issues on Math Ability

Olivia Cooper & Kaiya Stratman

Grade: 7

North Junior High School

e-portfolio link: <https://thecn.com/oc175>

JD718

Same Static Electricity?

Lily Craig

Grade: 7

Castle North Middle School

e-portfolio link: <https://thecn.com/lc1122>

JD719

Musical Cress

Alexa Craney

Grade: 7

Evansville Day School

e-portfolio link: <https://thecn.com/ac2156>

JD720

Effects of Blue-light on the sleep cycle

Christopher Dalton

Grade: 7

Castle North Middle School

e-portfolio link: <https://thecn.com/cd1073>

JD721

Grounding Mats: Their Effects on Sleep

John Dalton

Grade: 7

Castle North Middle School

e-portfolio link: <https://thecn.com/jd1002>

JD722

Buoyancy... Salt Style!

Nicole Diab

Grade: 7

Castle North Middle School

e-portfolio link: <https://thecn.com/nd733>

JD723

The Truth about Lying

Quinn Franklin

Grade: 7

Castle North Middle School

e-portfolio link: <https://thecn.com/qf30>

JD724

Helium vs. Air

Gavin Glackman & Jensen Greenley

Grade: 7

Castle North Middle School

e-portfolio link: <https://thecn.com/gg437>

JD725

Detergent vs. Stain

Ellen Greenwell

Grade: 7

Castle North Middle School

e-portfolio link: <https://thecn.com/eg648>

JD726

Composting and Water

Ashley Gresham

Grade: 7

Castle North Middle School

e-portfolio link: <https://thecn.com/ag1696>

JD727

WiFi: What really affects you?

Callie Hannah

Grade: 7

Castle North Middle School

e-portfolio link: <https://thecn.com/ch1730>

JD728

The Greenhouse Effect

Emma Heim

Grade: 7

Castle North Middle School

e-portfolio link: <https://thecn.com/eh705>

JD729

Doggone Good?

Vija Jansons

Grade: 7

Castle North Middle School

e-portfolio link: <https://thecn.com/vj188>

JD730

Which Fruit is Most Acidic?

Sara Kroeger

Grade: 7

Castle North Middle School

e-portfolio link: <https://thecn.com/sk1865>

JD731

Which shampoo works best on hair?

Valerie Kulikov

Grade: 7

Evansville Day School

e-portfolio link: <https://thecn.com/vk331>

JD732

Games and Guises

Madeleine Long

Grade: 7

Castle North Middle School

e-portfolio link: <https://thecn.com/ml1357>

JD733

Emulsification Demystification

Mahika Malkani

Grade: 7

EVSC Virtual Academy

e-portfolio link: <https://thecn.com/mm3581>

JD734

*Do Natural Cleaners Clean Dog's Urine
Better Than Chemical Cleaners?*

William Mangum

Grade: 7

Castle North Middle School

e-portfolio link: <https://thecn.com/wm298>

JD735

Can you trick a solar panel with a fake sun?

Abdul Mohammed

Grade: 7

Castle North Middle School

e-portfolio link: <https://thecn.com/am3227>

JD736

The Affects of Different Pollutants on Pansies

Lily Newman

Grade: 7

Castle North Middle School

e-portfolio link: <https://thecn.com/ln504>

JD737

The Flight of Air

Samuel Oberst

Grade: 7

Castle North Middle School

e-portfolio link: <https://thecn.com/so468>

JD738

Growing Mold

Stephanie Panayides

Grade: 7

Castle North Middle School

e-portfolio link: <https://thecn.com/sp1977>

JD739

*Mediating Environmental CO₂ in the
Atmosphere: Adsorption vs. Absorption*

Samuel Pfender

Grade: 7

Castle North Middle School

e-portfolio link: <https://thecn.com/sp1979>

JD740

Does Color Affect Memory

Gabbi Saunders

Grade: 7

Evansville Day School

e-portfolio link: <https://thecn.com/gs611>

JD741

Unmasking the Effectiveness of Face Coverings in Screening Out Vapor and Bacteria.

Aurora Schlaerth

Grade: 7

Castle North Middle School

e-portfolio link: <https://thecn.com/as3921>

JD742

Would you like a drink? Evaluating Water in the Tri-State Area

Joseph Schlaerth

Grade: 7

Castle North Middle School

e-portfolio link: <https://thecn.com/js2513>

JD743

Does the height of a LEGO structure affect the structure's stability?

Evan Schmelz

Grade: 7

Castle North Middle School

e-portfolio link: <https://thecn.com/es1115>

JD744

The Probability of a Force Attraction Between Like Colors

Kelley Schneider & Taylor Morgan

Grade: 7

North Junior High School

e-portfolio link: <https://thecn.com/ks2302>

JD745

Maple Syrup Candy-How Does Temperature Affect It?

Samantha Scurry

Grade: 7

Evansville Day School

e-portfolio link: <https://thecn.com/ss4114>

JD746

Adding Substances to Playdough

Vrinda Sheel

Grade: 7

Castle North Middle School

e-portfolio link: <https://thecn.com/vs604>

JD747

Do Household Cleaners Rid B. cereus

Bennett Slade

Grade: 7

Castle North Middle School

e-portfolio link: <https://thecn.com/bs1154>

JD748

Which SPF is most effective?

Kennedy Tevault

Grade: 7

Castle North Middle School

e-portfolio link: <https://thecn.com/kt1017>

JD749

Hit the ground solving; how wakeup time affects alertness

Orly Troffkin

Grade: 7

Castle North Middle School

e-portfolio link: <https://thecn.com/ot120>

JD750

Sleep Cycle of a Hermit Crab

Kaitlin Turpen & Kennedy Tymchak

Grade: 7

Castle North Middle School

e-portfolio link: <https://thecn.com/kt1018>

JD751

The Effect of Anxiety on Math Test Scores

Christian Wells

Grade: 7

Castle North Middle School

e-portfolio link: <https://thecn.com/cw1185>

JD752

Onions Are Nothing To Cry About

Alison West

Grade: 7

Castle North Middle School

e-portfolio link: <https://thecn.com/aw1366>

JD753

How Music Affects Reading Speed

Kiersten Williams

Grade: 7

Castle North Middle School

e-portfolio link: <https://thecn.com/kw1139>

JD754

The Effect of Musical Genre on Math Ability

Kirsten Wink, Macie Moore, & Annabel Jutzi

Grade: 7

North Junior High School

e-portfolio link: <https://thecn.com/kw1142>

JD755

The Writing War

Evelyn Wu

Grade: 7

Castle North Middle School

e-portfolio link: <https://thecn.com/ew608>

JUNIOR DIVISION – GRADE 8

PLEASE NOTE: Student names and project titles are presented in the program as submitted by the students on their online registration forms.

JD801

A Dose of Glucose

Zara Ahmed

Grade: 8

Castle North Middle School

e-portfolio link: <https://thecn.com/za281>

JD802

When Life Gives You Lemons, Make Acid Rain!

Maram Alashi

Grade: 8

Castle North Middle School

e-portfolio link: <https://thecn.com/ma2550>

JD803

Ball Flight

Joseph Baker

Grade: 8

Castle North Middle School

e-portfolio link: <https://thecn.com/jb1835>

JD804

Taking Flight

Elijah Barnard

Grade: 8

Castle North Middle School

e-portfolio link: <https://thecn.com/eb915>

JD805

Tick Tock... Deerâ€™s Internal Clock

Mariella Barsumian

Grade: 8

Castle North Middle School

e-portfolio link: <https://thecn.com/mb2483>

JD806

The Covid Conundrum

Noah Boyd

Grade: 8

Castle North Middle School

e-portfolio link: <https://thecn.com/nb1222>

JD807

Li-Fi, not Wi-Fi

Pranav Chandar

Grade: 8

Castle North Middle School

e-portfolio link: <https://thecn.com/pc749>

JD808

Separating Water

Carson Cook

Grade: 8

Castle North Middle School

e-portfolio link: <https://thecn.com/cc2183>

JD809

Do you inherit fingerprints

Kowen Cook

Grade: 8

Castle North Middle School

e-portfolio link: <https://thecn.com/kc1525>

JD810

Does Color Affect Blood Pressure?

Claire Deardorff

Grade: 8

Castle North Middle School

e-portfolio link: <https://thecn.com/cd1069>

JD811

'Does Gender Have An Effect On Memory'

Drayden DeMaree

Grade: 8

Castle North Middle School

e-portfolio link: <https://thecn.com/dd852>

JD812

How do different types of flour affect the height of a cupcake?

Macy Downey

Grade: 8

Castle North Middle School

e-portfolio link: <https://thecn.com/md1390>

JD813

Dog's Drinking Decisions

Sydney Eckert

Grade: 8

Castle North Middle School

e-portfolio link: <https://thecn.com/se538>

JD814

How Permanent Is My Marker

Chloe Epperson

Grade: 8

Castle North Middle School

e-portfolio link: <https://thecn.com/ce390>

JD815

How does the Number of Coils on an Electromagnet Affect its Strength

Isaac Fankhouser

Grade: 8

Castle North Middle School

e-portfolio link: <https://thecn.com/if127>

JD816

What Color of Ink Writes the Longest on a Glass Ink Dip Pen?

Jade Fei

Grade: 8

Castle North Middle School

e-portfolio link: <https://thecn.com/jf792>

JD817

What liquid makes a flower last the longest

Ava Greer

Grade: 8

Castle North Middle School

e-portfolio link: <https://thecn.com/ag1693>

JD818

Peeling it Easy

Caleb Hasenour

Grade: 8

Castle North Middle School

e-portfolio link: <https://thecn.com/ch1728>

JD819

Hot on the Trail

Graham Heisel

Grade: 8

Castle North Middle School

e-portfolio link: <https://thecn.com/gh368>

JD820

The Music in My Blood

Jaclyn Hohne

Grade: 8

Castle North Middle School

e-portfolio link: <https://thecn.com/jh1589>

JD821

The Effects of Varying Concentrations of Caffeine On The Movement of Pill Bugs

Khloe Kahle

Grade: 8

Castle North Middle School

e-portfolio link: <https://thecn.com/kk1334>

JD822

School: virtual vs. in person

Ashley Kirkland

Grade: 8

Castle North Middle School

e-portfolio link: <https://thecn.com/ak1753>

JD823

What PSI Makes a Football go the Furthest

Mitchell Lene & Martin Bourgeois

Grade: 8

Castle North Middle School

e-portfolio link: <https://thecn.com/ml1352>

JD824

Masking a Problem

Logan Lynch

Grade: 8

Castle North Middle School

e-portfolio link: <https://thecn.com/ll1045>

JD825

A Minty Reflex

Charitha Reddy Mandha

Grade: 8

Castle North Middle School

e-portfolio link: <https://thecn.com/cm1732>

JD826

Mask Filtration

Patrick Mardis

Grade: 8

Castle North Middle School

e-portfolio link: <https://thecn.com/pm833>

JD827

Which Amount is Faster?

Allison Melms

Grade: 8

Castle North Middle School

e-portfolio link: <https://thecn.com/am3222>

JD828

Under Pressure

Ahmed Nassr

Grade: 8

Castle North Middle School

e-portfolio link: <https://thecn.com/an1136>

JD829

Water Substitutes for Nourishing Garden Cress

Morgan Ott

Grade: 8

Castle North Middle School

e-portfolio link: <https://thecn.com/mo527>

JD830

The Color of Your Heart

Sarah Porter

Grade: 8

Castle North Middle School

e-portfolio link: <https://thecn.com/sp1974>

JD831

Fruit Shoot: Does Temperature Affect

Penetrability

Reece Russell

Grade: 8

Castle North Middle School

e-portfolio link: <https://thecn.com/rr847>

JD832

The Fastest Programming Language

Hannah Smith

Grade: 8

Castle North Middle School

e-portfolio link: <https://thecn.com/hs1205>

JD833

The Influence of Perceived Sales on Consumer Goods

Olivia Sommerville

Grade: 8

Castle North Middle School

e-portfolio link: <https://thecn.com/os270>

JD834

Structure of Gelatin

Evelyn Stallings

Grade: 8

Castle North Middle School

e-portfolio link: <https://thecn.com/es1111>

JD835

Watts Your Angle

Isaac Stallings

Grade: 8

Castle North Middle School

e-portfolio link: <https://thecn.com/is438>

JD836

Volleyball Brands Matter Or Not

Lorelei Taylor & Isabelle Vickers

Grade: 8

Castle North Middle School

e-portfolio link: <https://thecn.com/lt827>

JD837

Incongruent vs Congruent Stimuli

Tanay Thakore

Grade: 8

Castle North Middle School

e-portfolio link: <https://thecn.com/tt2408>

JD838

Car Safety Alarm

Suprita Vavilala

Grade: 8

Castle North Middle School

e-portfolio link: <https://thecn.com/sv539>

JD839

Battle of the Brains

Olivia Vote & Ella Glackman

Grade: 8

Castle North Middle School

e-portfolio link: <https://thecn.com/ov66>

JD840

All Bets are Off

David Walling

Grade: 8

Perry Heights Middle School

e-portfolio link: <https://thecn.com/dw613>

JD841

Finding the Correlation between Cerebral Aptitude and Motivational Stimuli

Ava Warnock

Grade: 8

Castle North Middle School

e-portfolio link: <https://thecn.com/aw1360>

JD842

What changes a pendulum's motion

John Webb

Grade: 8

Castle North Middle School

e-portfolio link: <https://thecn.com/jw1324>

JD843

What liquid can best remove stains from a carpet?

Dalton Westfall

Grade: 8

Castle North Middle School

e-portfolio link: <https://thecn.com/dw612>

JD844

How does Temperature Affect the Strength of Magnets

Lilyan Whitecotton

Grade: 8

Castle North Middle School

e-portfolio link: <https://thecn.com/lw775>

JD845

Are Fingerprints Inherited

Sadie Winsett

Grade: 8

Castle North Middle School

e-portfolio link: <https://thecn.com/sw1241>

JD846

Which Filter Cleans the Best

Andrew Xu

Grade: 8

Castle North Middle School

e-portfolio link: <https://thecn.com/ax65>

JD847

In Bloom

Lila Yaeger & Kaley Barmes

Grade: 8

Castle North Middle School

e-portfolio link: <https://thecn.com/ly457>

JD848

The Impact of Salinity to Plants

Kai Zou

Grade: 8

Castle North Middle School

e-portfolio link: <https://thecn.com/kz223>

SENIOR DIVISION (GRADES 9 – 12)

PLEASE NOTE: Student names and project titles are presented in the program as submitted by the students on their online registration forms.

SD101

Biodome

Emily Allen

Grade: 11

New Tech Institute

e-portfolio link: <https://thecn.com/ea600>

SD102

Breeding Herber

Seth Barr

Grade: 9

New Tech Institute

e-portfolio link: <https://thecn.com/sb2138>

SD103

The Effect of Caffeine Consumption on Teenagers's™ Physiological Values

Shaleah Bengé

Grade: 12

Heritage Hills High School

e-portfolio link: <https://thecn.com/sb2127>

SD104

Layer heights affects on layer adhesion

Ahren Block

Grade: 10

New Tech Institute

e-portfolio link: <https://thecn.com/ab2552>

SD105

Fabric vs Fade

Olivia Burklow

Grade: 9

New Tech Institute

e-portfolio link: <https://thecn.com/ob164>

SD106

How Powders Reduce Friction

Alex Chapman

Grade: 10

New Tech Institute

e-portfolio link: <https://thecn.com/ac2158>

SD107

Extending Milk Expiration

Zachary Conlon

Grade: 10

New Tech Institute

e-portfolio link: <https://thecn.com/zc248>

SD108

Cotton Conundrum

Reese Doran

Grade: 9

New Tech Institute

e-portfolio link: <https://thecn.com/rd611>

SD109

Flicker Rate and Smooth Videos

Ron Fisher

Grade: 11

New Tech Institute

e-portfolio link: <https://thecn.com/rf392>

SD110

Impact of Music on Anxiety

Alyssa Foltz & Elizabeth Mehling

Grade: 12

Heritage Hills High School

e-portfolio link: <https://thecn.com/af1043>

SD111

Medical Mask Impact on Basketball Player's Saturated Oxygen Levels

Rebekah Gordon & Nevah Barnett

Grade: 12

Heritage Hills High School

e-portfolio link: <https://thecn.com/rg633>

SD112

Effectiveness of Disinfectant on E-Coli K12 When Cleaning Desks

Bailey Huffman

Grade: 12

Heritage Hills High School

e-portfolio link: <https://thecn.com/bh725>

SD113

Birth Order's Impact on Personality Type

Kyndall Jordan

Grade: 12

Heritage Hills High School

e-portfolio link: <https://thecn.com/kj659>

SD114

CO2 and O2 Levels in the Classroom

Za'Marques King

Grade: 11

New Tech Institute

e-portfolio link: <https://thecn.com/zk155>

SD115

Nitrogen, Phosphorous, and Potassium drainage after simulated rainfall on different farming practices and respective fields

Lillian Kolley

Grade: 12

Heritage Hills High School

e-portfolio link: <https://thecn.com/lk633>

SD116

The Basil- The affect of garbage on plants

Lorelei Long

Grade: 9

New Tech Institute

e-portfolio link: <https://thecn.com/ll1052>

SD117

production of Cellobiose dehydrogenase (CDH) in plants and bacteria

Lalitha Nair

Grade: 11

Signature School Inc

e-portfolio link: <https://thecn.com/ln503>

SD118

Factors Affecting the Strength of Welds

Lillyann Osborne

Grade: 11

New Tech Institute

e-portfolio link: <https://thecn.com/lo222>

SD119

Vinegar and Curl

Jillian Palmore

Grade: 9

New Tech Institute

e-portfolio link: <https://thecn.com/jp1281>

SD120

Medicine from Trees

Bhavi Patel

Grade: 9

New Tech Institute

e-portfolio link: <https://thecn.com/bp576>

SD121

Effectiveness of Natural Preservatives on Organic Berries

Emily Patmore & Sarah Mangan

Grade: 12

Heritage Hills High School

e-portfolio link: <https://thecn.com/ep520>

SD122

Thermal Imaging

Olivia Polk

Grade: 11

New Tech Institute

e-portfolio link: <https://thecn.com/op143>

SD123

Color Perception and Culture

Yesinia Rangel

Grade: 10

New Tech Institute

e-portfolio link: <https://thecn.com/yr144>

SD124

Rainy Hydraulics!

Emily Rudolf

Grade: 9

New Tech Institute

e-portfolio link: <https://thecn.com/er580>

SD125

The Effect of Masking on Spread of Bacteria

Abigail Ruxer & Kenley Mulzer

Grade: 12

Heritage Hills High School

e-portfolio link: <https://thecn.com/ar1823>

SD126

Creating Damage Resistant Fabric

Ewan Schauss

Grade: 9

New Tech Institute

e-portfolio link: <https://thecn.com/es1119>

SD127

Investigating Prime Numbers

Gaege Smith

Grade: 11

New Tech Institute

e-portfolio link: <https://thecn.com/gs609>

SD128

Hot vs Cold (flex tape style)

Quintin Victor

Grade: 9

New Tech Institute

e-portfolio link: <https://thecn.com/qv29>

SD129

A Metal Disinfectant: Will the Nanometer Size of Silver Affect its Ability to Inhibit Bacterial Growth?

Elizabeth Williams

Grade: 12

Heritage Hills High School

e-portfolio link: <https://thecn.com/ew606>

SD130

Charger Wrapped in Foil

Cayden Wolf

Grade: 9

New Tech Institute

e-portfolio link: <https://thecn.com/cw1188>