

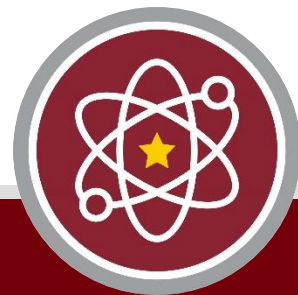


Oak Ridge Schools

Excellence in Education Since 1943

Oak Ridge Schools

A DEEPER LOOK AT PORTRAIT OF A GRADUATE





PORTRAIT OF A Graduate



Every student prepared for college, career, and life success

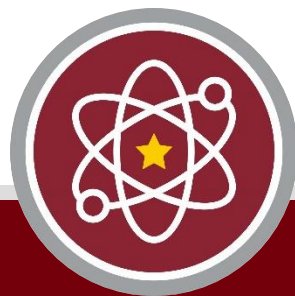
College & Career Ready	The 4 Cs	Career Options	Digital Citizen	Life Ready
Every student academically prepared for success.	Every student a critical thinker, communicator, collaborator, and creative.	Every student explores careers and graduates with career options.	Every student uses technology tools effectively and efficiently and exhibits digital citizenship.	Every student exhibits the citizenship traits of self-awareness, self-discipline, and empathy.



Oak Ridge
SCHOOLS

College & Career Ready

- 80% of ORHS Graduates attend college
 - Half attend 4-year college
 - Half attend 2-year college (20% attend RSCC)
- 20% of ORHS Graduates enter Careers or Military
- 29 AP Courses
- 3 Post AP Courses
- 17 Dual Enrollment/Dual Credit/SWDC Courses
- 9 CTE Academies
- AVID Program
- ACT Prep Program
- College Fair/Community College Day
- FAFSA Nights
- College Admissions Week





The 4Cs

- All Elementary, Middle, and High Schools are Cognia STEM Certified (Preschool will apply for Early Childhood STEM Certification next year)
- STEM Coaches and STEM Innovators at each school
- Annual STEM Nights at each school
- STEM KAP Survey administered annually to all students
- Development of 4Cs rubrics by grade band
- Project-Based Learning opportunities
- ORS STEM Committee (previously called ORS Advisory Board)
- Numerous Community Partnerships (see next slide)



○ ADFAC	○ Eagle Bend/MAGNA Manufacturing	○ Materials and Chemistry Laboratory, Inc.	○ OR Tool & Engineering	○ Starbucks
○ ADK Sorority	○ East TN Children's Hospital	○ Maurice's Clothing Store	○ OR Veterinary Hospital	○ TCAT-Harriman & Knoxville
○ Aisin	○ East TN Children's Safe Kids	○ McArthur Animal Hospital	○ OR Vision Center	○ Techmer PM
○ Altrusa International	○ East TN Economic Council	○ McGhee Tyson Air National Guard Base	○ ORNL Federal Credit Union	○ Tennessee Citizens for Wilderness Planning
○ AMSE	○ East TN Orthodontics	○ McLinc	○ ORUD	○ Tennessee Colleges of Applied Technology (Harriman & Knoxville)
○ Anderson County Chamber	○ East TN Spine & Sport	○ Mercedes-Benz of Knoxville	○ Paradox Indoor Skate Park	○ Tennessee Geographic Alliance
○ Answer Financial Knoxville	○ Eckert Chiropractic Center	○ Methodist Therapy Services	○ Pellissippi State Community College	○ Tennessee Tech University
○ Applebee's	○ Eye Center of Oak Ridge	○ Microsoft	○ Pierce Physical Therapy	○ Tennessee Tool & Engineering
○ ASAP	○ Family Clinic of Oak Ridge	○ MMC Wound Treatment Center	○ Pilot Club of OR	○ Tennessee Urology Associates
○ Baskin Robbins	○ Federally Employed Women	○ Munsey Pharmacy	○ Premier Dental/Dr. David Lee	○ The Other One
○ Bojangles	○ Food City	○ National Geographic Education	○ Pro2Serve	○ The Smoothie Patch
○ Boy Scouts of America	○ Friends of Literacy	○ National Martial Arts	○ Protomet	○ Thompson Cancer Center
○ Canberra	○ Greer Family Eye Care	○ Newell Rubbermaid	○ Qatar Foundation International	○ TJ Maxx
○ Centennial Golf Course	○ Home Depot	○ NOAA	○ Rack Room Shoes	○ TORCH
○ Centrus Energy	○ Humanities Tennessee	○ Oak Ridge National Laboratory	○ Results Physiotherapy	○ Tracy J. Larabee, CPA
○ Chick-fil-A	○ Hurt Orthodontics	○ Oak Ridge Public Schools	○ Robert Pryor, DDS	○ Travelers Insurance
○ Children's Clinic	○ I Heart Sushi	○ Education Foundation	○ Roane State Community College	○ UCOR
○ Children's Museum of OR	○ J&M Butcher Shop	○ Oak Ridge Tool	○ Rotary Clubs of OR	○ United Way
○ CH2MHill	○ Jackson Square Animal Clinic	○ Ole Ben Franklin Motors	○ RSI ENTech	○ University of Tennessee
○ Choices Resource Center	○ Jefferson Fountain	○ Oral Surgery Specialists of Tennessee (OSST)	○ Sassy Pants Sweets & Treats	○ Vascular Diagnostic Center of Oak Ridge
○ Clayton Homes	○ Jimmy Johns	○ Ortho Tennessee Therapy	○ Scot Land Improvements, Inc.	○ Volunteer Aerospace
○ Clinch River Environmental Studies Organization	○ John C. Pryor, Jr., DDS, PC	○ ORAU	○ Scottish Rite	○ Walgreens
○ CNS Y12	○ Karen's Jewelers	○ OR Arts Center	○ Second Harvest Food Bank	○ William Burgess, DDS
○ Consolidated Nuclear Security	○ Legal Aid of the Cumberland	○ OR Bowling Alley	○ Secret City Dodge/Jeep/Eagle	○ Woodman Life
○ Contact Care Line	○ Leidos	○ OR Chamber of Commerce	○ SL Tennessee	○ Y-12 Federal Credit Union
○ Contact Crisis Line	○ Local Motors	○ OR Comprehensive Breast Center	○ South College	○ YWCA
○ Covenant Health	○ Lockwood Enterprises	○ ORISE	○ Southern Bliss Boutique	○ 3-Dimension Design
○ Department of Energy	○ Lokar	○ OR Kiwanis Club		
○ Domino's Pizza	○ Lyndon Hurt, DDS	○ ORNL		
○ DOW Chemical	○ Marshall NASA Space Flight Center	○ OR Playhouse		
○ Dr. Jeff Thomson				
○ Doubletree Hotel				



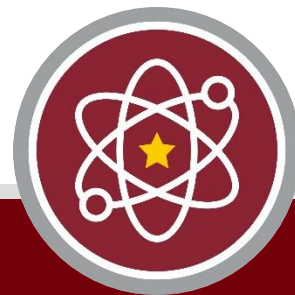
Career Options

High School

- Career Academies: Advanced Manufacturing, Arts & A/V Communications, Business, Early Childhood Education, Government and Public Administration, Health Science, Information Technology and Cyber Security, STEM, and Transportation
- YLDCIP/ Work-Based Learning/ Virtual Enterprises
- Naviance
- ASVAB Testing
- Career Interest Inventories
- CCTE Career Showcase Night
- # Industry Certifications

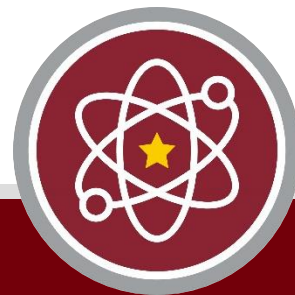
Elementary and Middle School

- Naviance (grades 3-8)
- Portrait of a Graduate Class (grades 5-8)
- Career Interest Inventories (K-4)
- College and Career Awareness Week with various activities (K-4)
- Get Hired with RSCC in 8th grade



Digital Citizen

- Vertically Aligned digital learning standards
- EasyTech curriculum in K-8 (learning.com)
- Middle School Keyboarding and Coding class offerings
- Navigating Life in the Digital Age Presentation (Middle School Students & Parents)
- Digital Portion of Capstone Projects



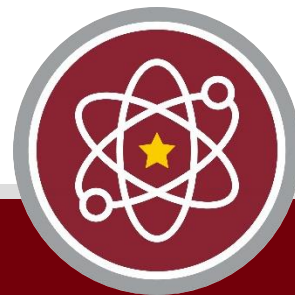


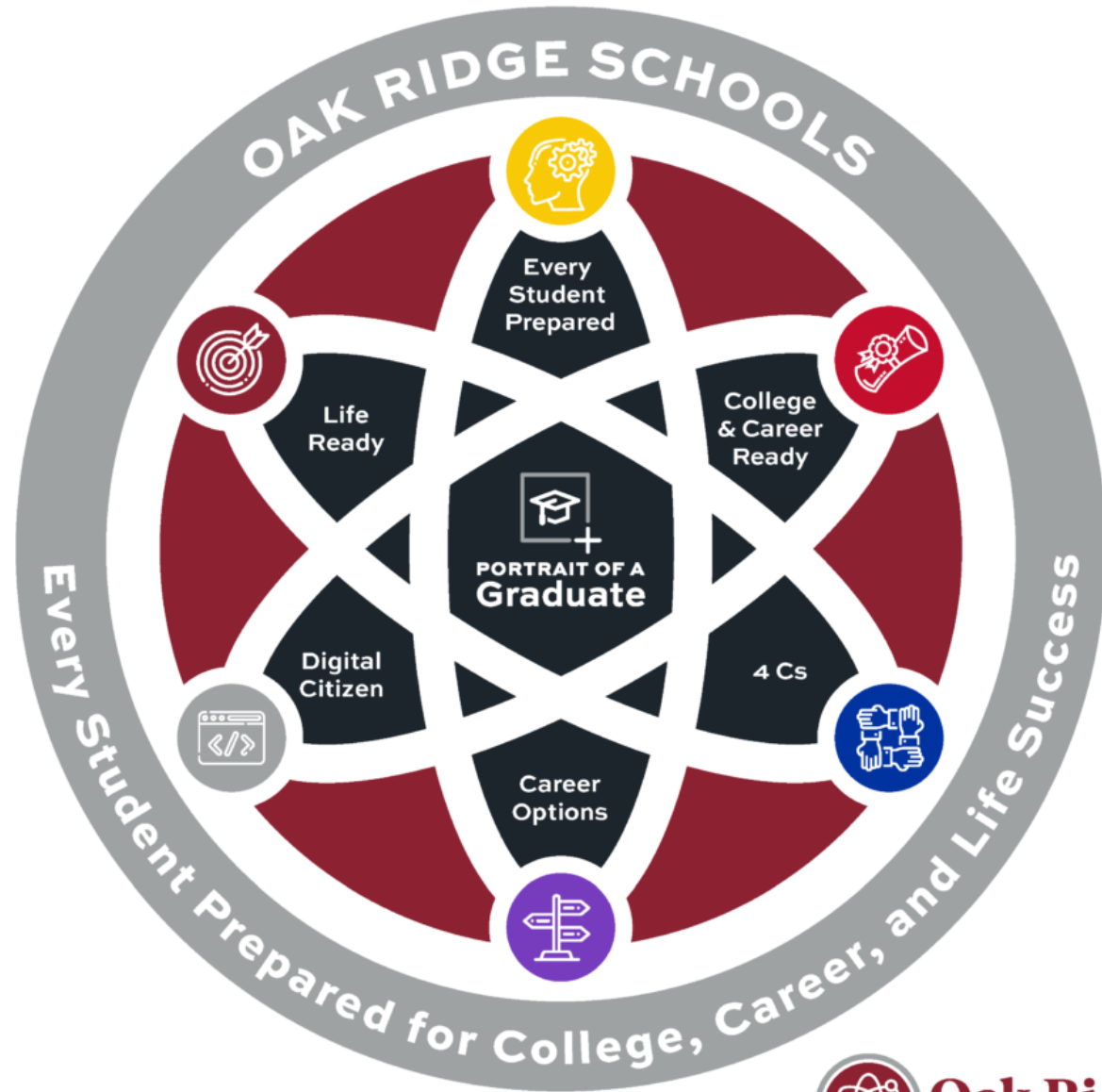
Life Ready

- Character Strong SEL Curriculum for grades 5-12
- PurposeFull People SEL Curriculum for grades PreK-4
- ECRA SEL Survey twice a year for students in grades 1-12
- Counselor-led Classroom Lessons and Small Groups
- 4Cs Rubrics
- Project-Based Learning Opportunities
- Community Service-Focused Clubs

School Scorecard: Academics

Glenwood Portrait of a Graduate:									
College and Career Ready Scorecard									
	Level 1 - Intervene	Level 2 - Concern	Level 3 - Midpoint	Level 4 - Progress	Level 5 - Vision	Target	18-'19	19-'20	20-'21
1. Reading	0 - 88%	89- 91%	92 - 94%	95 - 97%	98 - 100%				
2. ELA Success Rate	0 - 29%	30 - 43%	44 - 56%	57 - 69%	70 - 100%	62.46%	41.70%	NA	57.10%
3. Math Success Rate	0 - 29%	30 - 43%	44 - 56%	57 - 69%	70 - 100%	56.25%	47.70%	NA	50.00%





EVERY
STUDENT
PREPARED



Elementary and Secondary School Emergency Relief Fund (ESSER)

In response to COVID-19, the US Congress passed several pieces of legislation that sent billions in relief funding to states. Tennessee received \$4.2 billion for K-12 funding to be spent before 2024.

Oak Ridge
Schools
ESSER
Allocations

ESSER 1.0
\$756,515

ESSER 2.0
\$3,120,709

ESSER 3.0
\$7,008,669

ESSER 1.0

\$756,639



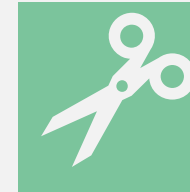
Academics

- 0.5 ELA Teacher
- Virtual Curriculum
- Stipends for ConnectOR Teachers



Health & Hygiene

- Health supplies



Quarantine Needs

- Substitutes needed for quarantine requirements



Technology

- K-1 iPads
- Professional Development for virtual teaching, new software, and new technology



Facilities & Routines

- Cleaning Supplies



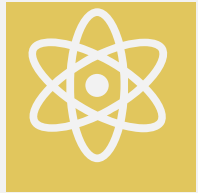
Other

- Required non-public share of funds



ESSER 2.0

\$3,120,709



Academic Technology

- Student devices in grades 5-12



Facilities

HVAC replacement for air quality improvement



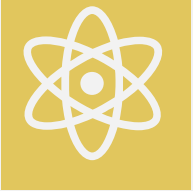
Classroom Technology

- Interactive flat-screen panels for K-8 classrooms



ESSER 3.0

\$7,008,669 | Funds available through 2024



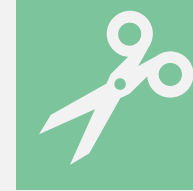
Academics

- Curriculum Software and Intervention tools for ELA and Math
- Professional Learning Community Coaches/Coordinator
- Graduation Coach
- ORHS STEM Teacher



After-School/Summer

- After-school tutoring sessions with transportation
- Summer programming with transportation



Social Emotional Learning

- Student Success Coordinator
- SEL Curriculum
- Student SEL survey tools



Technology

- Student devices
- Classroom technology ORHS
- Instructional Technology Coach



Facilities & Routines

- HVAC repair/replacement



Special Populations

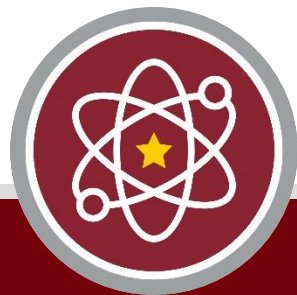
- 3 Teaching Assistants (JMS, RMS, SCA)



RMS Upgrades

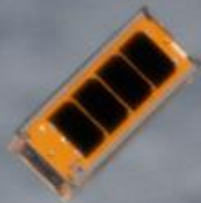








RAMSAT

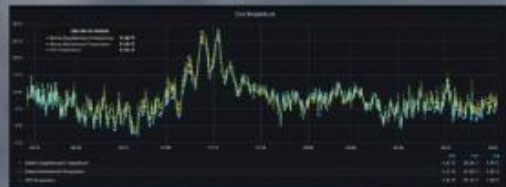


The RamSat mission began at Robertsville Middle School in 2015 as a simple class project: design and give a presentation on Cube Satellites. The administrative staff were astounded by the level of work and sophistication the students displayed. Patrick Hull, other NASA scientists, and mentors from Oak Ridge National Labs helped make the project a reality. On June 14th, 2021, RamSat was deployed from the International Space Station.

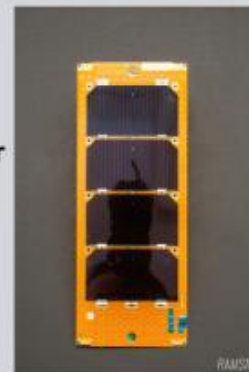
RamSat's objective is to monitor the regrowth of the Gatlinburg forests after the devastating wildfires of 2016. Students, teachers, and mentors have been working hard analyzing the data and monitoring the satellite. On July 11th, we began experiencing abnormally high core temperatures and began questioning the cause.



The QR code on the left links to the RamSat website. On the website you can find a link to our virtual poster as well as other information about the satellite.

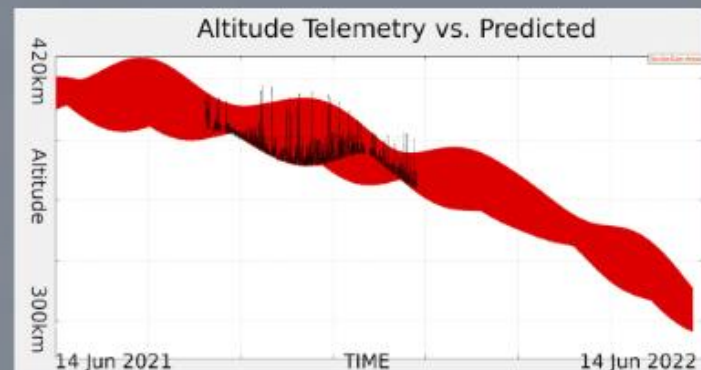
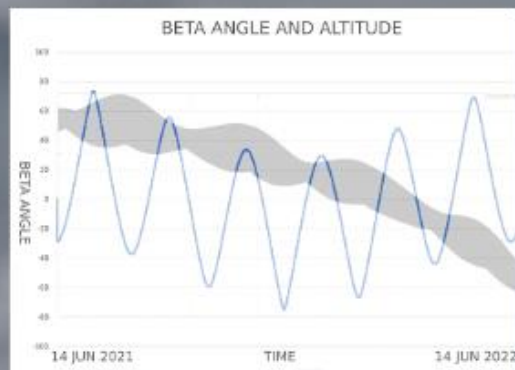


RamSat is a 2U satellite (20 cm x 10 cm x 10 cm). The main instruments are the two cameras present on the top face of the satellite (see left). The cameras shoot in near infrared and visible wavelengths, allowing for visualization of vegetation. The RamSat has five solar panels, that gather energy and temperature data (see right). This data revealed large fluctuations in temperature.



The graph below shows both the beta angle and predicted altitude of the satellite over the course of one year. The beta angle measures the angular difference between the sun and the satellite's orbital plane. Our highest temperatures were recorded on July 11th, during an especially high beta angle. Changes in beta angle are a result of precession caused by the satellite's inclination of 51.6 degrees. Fluctuations in altitude follow a similar 60-day pattern.

The graph below plots the predicted altitude of the satellite versus the data given by telemetry observations. The thickness of the red plot represents the difference between the apogee and perigee of the orbit. Telemetry data is mostly received in the northern hemisphere, leading to most observations occurring at close to perigee. Patterns in the altitude seem to be related to the same precession that effects the beta angle.







RamSat

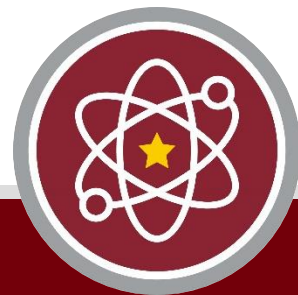


RamSat



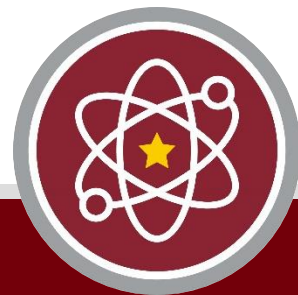
STEM

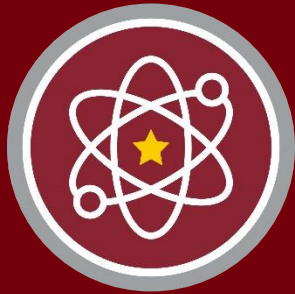
in Oak Ridge Schools



Holistic STEM-Based Learning





Focusing on this holistic model for STEM-based learning and preparation for future careers aligns with our vision that **every Oak Ridge student will graduate prepared for college, career, and life success.**





Top 10 skills of 2025

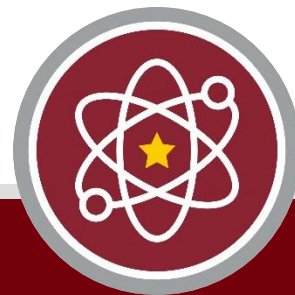
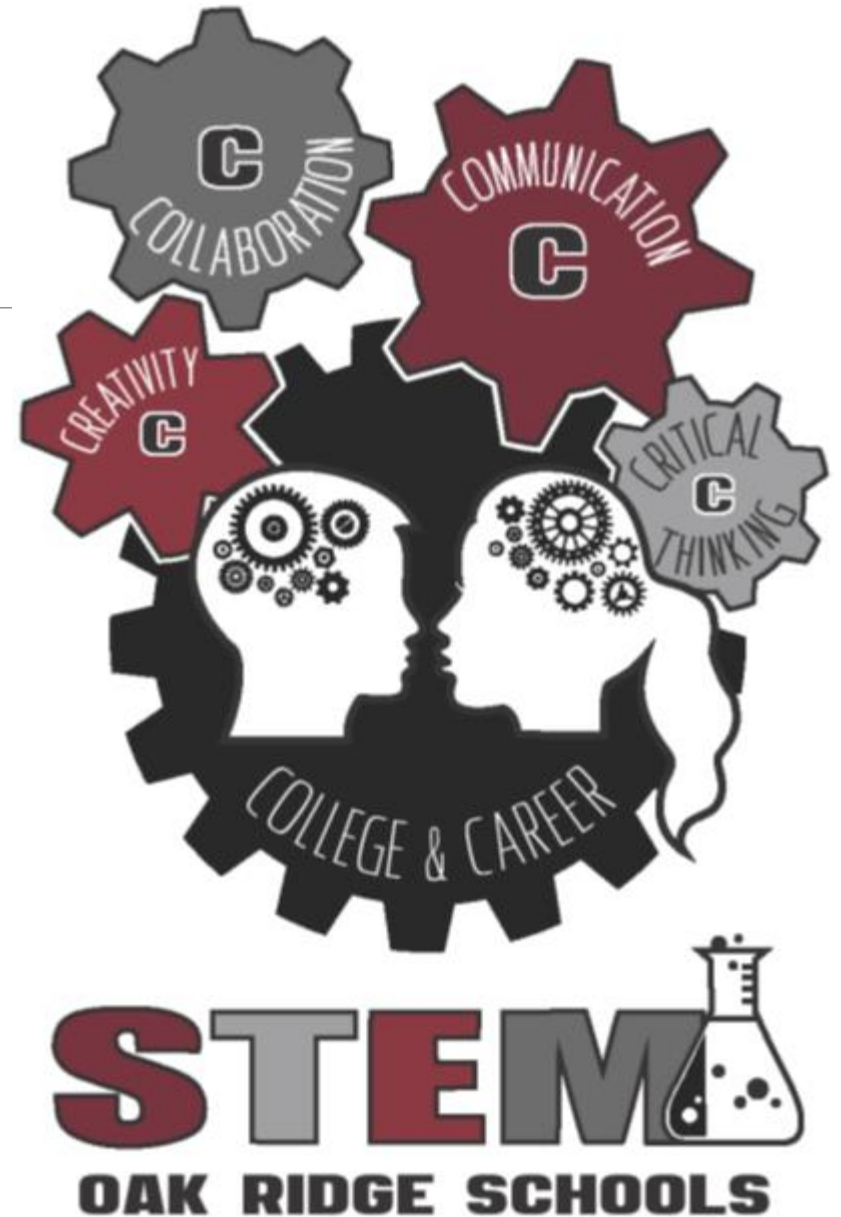
Type of skill

-  Problem-solving
-  Self-management
-  Working with people
-  Technology use and development

-  Analytical thinking and innovation
-  Active learning and learning strategies
-  Complex problem-solving
-  Critical thinking and analysis
-  Creativity, originality and initiative
-  Leadership and social influence
-  Technology use, monitoring and control
-  Technology design and programming
-  Resilience, stress tolerance and flexibility
-  Reasoning, problem-solving and ideation

STEM Education

There are many skills and behaviors associated with STEM, however, the four most commonly discussed in our district are the 4C's: Collaboration, Communication, Critical Thinking, and Creativity (innovation).

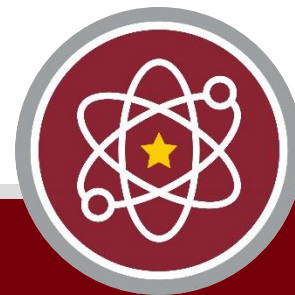


Teacher STEM Resources

Our teachers are provided numerous resources to implement STEM education in their classrooms from classroom resources, to professional development, to project-based learning ideas.

These resources are shared and regularly updated on the STEM Teachers Resources webpage.

www.ortn.edu/STEM-teacher-resources/



Classroom Resources

ORS 4Cs Rubrics

Preschool 4Cs Rubrics

Grades K-2 4Cs Rubrics

Grades 3-4 4Cs Rubrics

PD Opportunities

TN STEM Innovation Summit 2022



PBL Resources

Oak Ridge Schools Trainings

PBL 101 Training

PBL 201 Training

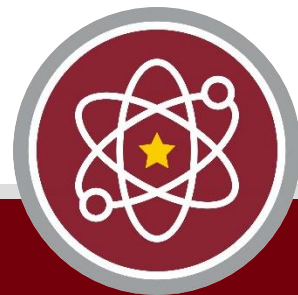
Oak Ridge Schools Forms

STEM-Based Curriculums

Creative Curriculum in Preschool

Illustrative Math in kindergarten through Algebra 1

Expeditionary Learning (EL) and Amplify ELA curriculum

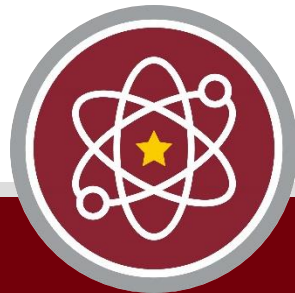




Project-Based Learning

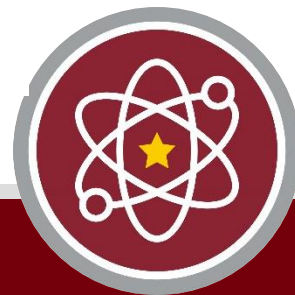
“Students work on a project over an extended period of time – from a week up to a semester – that engages them in solving a real-world problem or answering a complex question. They demonstrate their knowledge and skills by creating a public product or presentation for a real audience.”

- Buck Institute for Education

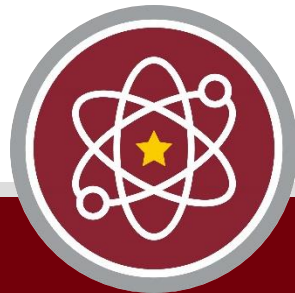




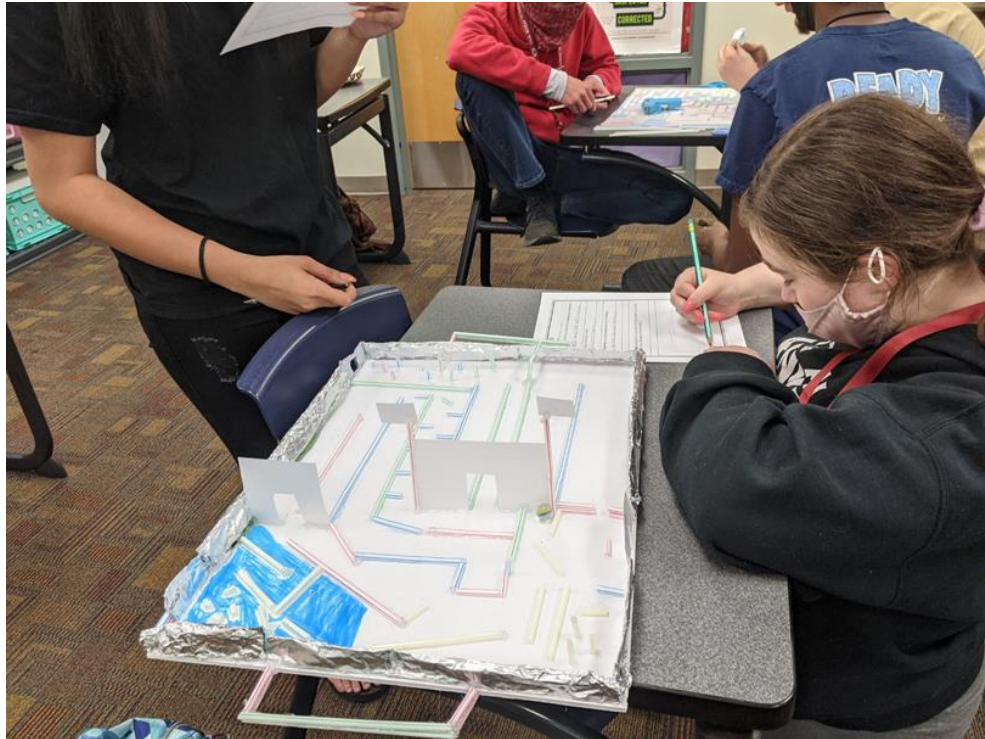
Long Walk to Water 7th Grade PBL



3rd Grade Titanic Living Museum



High School Geometry A/B PBLs



Mazes

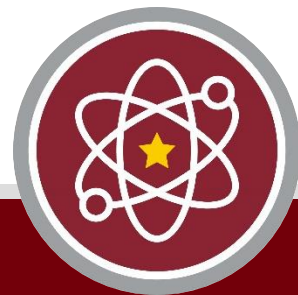


Security Cameras

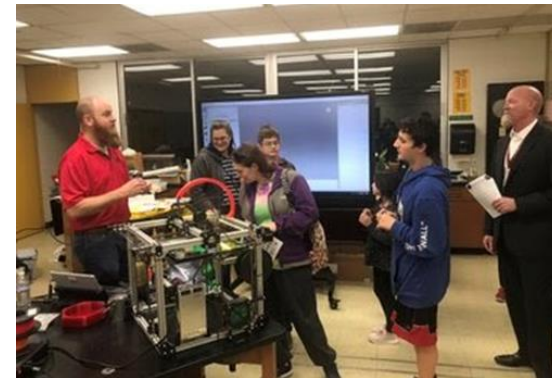




School-wide STEM Events



STEM Nights



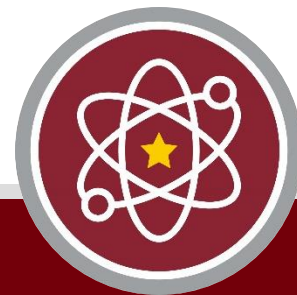
STEM Day Events

Physics is Phundamentally Phun!



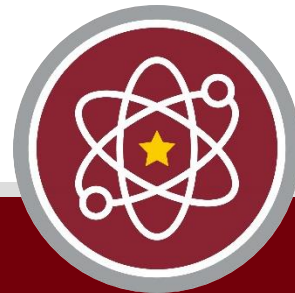
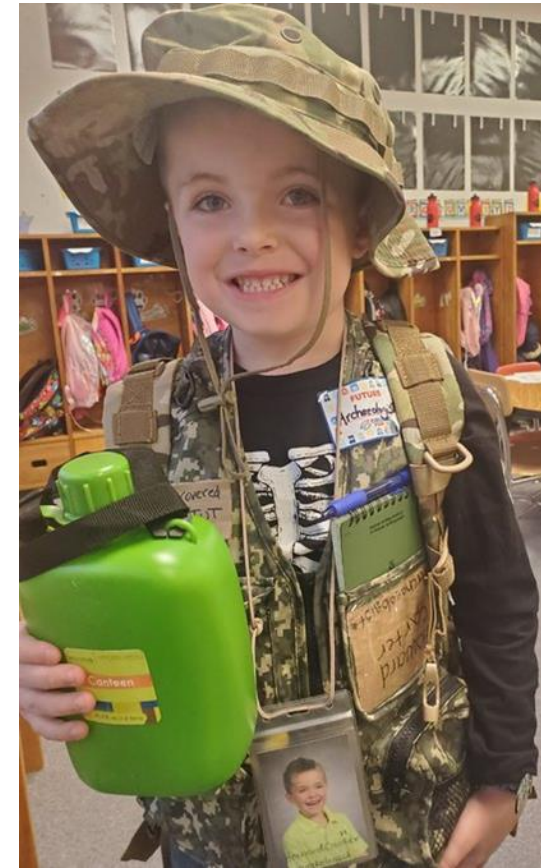
November 1, 2019

Fun with
Pendulum
Science!



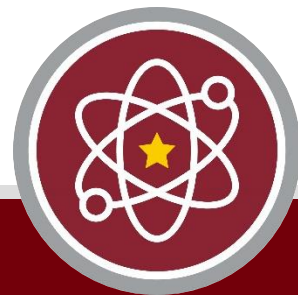
Fall into STEM with TTU

STEM Career Day at Elementary



College, Career, and Technical Education Coursework

CCTE ACADEMIES – MIDDLE AND HIGH SCHOOL

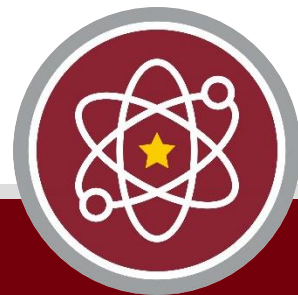


Middle School CTE Offerings

Business

STEM

Career Exploration, including courses with an Aviation focus



High School CTE Career Clusters

Advanced Manufacturing (Welding)

Arts and A/V Communications (Broadcasting & Digital Arts)

Business, Finance, and Marketing

Early Childhood Education Careers

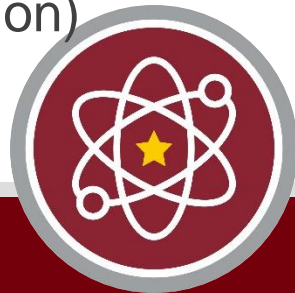
Government and Public Administration (NJROTC)

Health Science

Information Technology

STEM Engineering by Design and iSchool (Innovative High School)

Transportation (Automotive and Aviation)









NTS

ORANGE AUTO PARTS

4MATIC



i-SchoolLearn

An Innovation Learning Ecosystem
by Dr. Holly Cross & Dr. Mark Buckner

empowering the Innovat**ORS** of tomorrow today!

innovation, **i**ndividualized, **i**nclusion, **i**nterpersonal, **i**ntegrative-
thinking, **i**nterdisciplinary, always **i**mproving and **i**nternal
motivation

Mark Buckner, Ph.D.

ORHS i-School Lead Instructor

Enterprise Agile Transformation Consultant, Trainer, Coach @Scrum Inc.

Distinguished Research Scientist, Power & Energy Systems Group Leader, Scrum Coach @ Oak Ridge National Laboratory – 32+ years.

FIRST Robotics Lead Mentor and Scrum Coach – 4265 Secret City Wildbots.

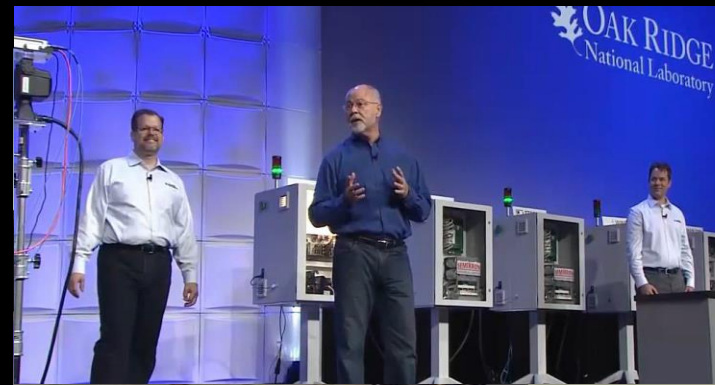
BA: Physics, Psychology; MS: Nuclear Engineering; PhD: Applied Artificial Intelligence.

Adjunct Faculty: Oak Ridge High School, Roane State Community College, University of Tennessee

2016 Smart Industry 50: Innovators at the leading edge of digital transformation



Scrum for Hardware Gathering, August 2016

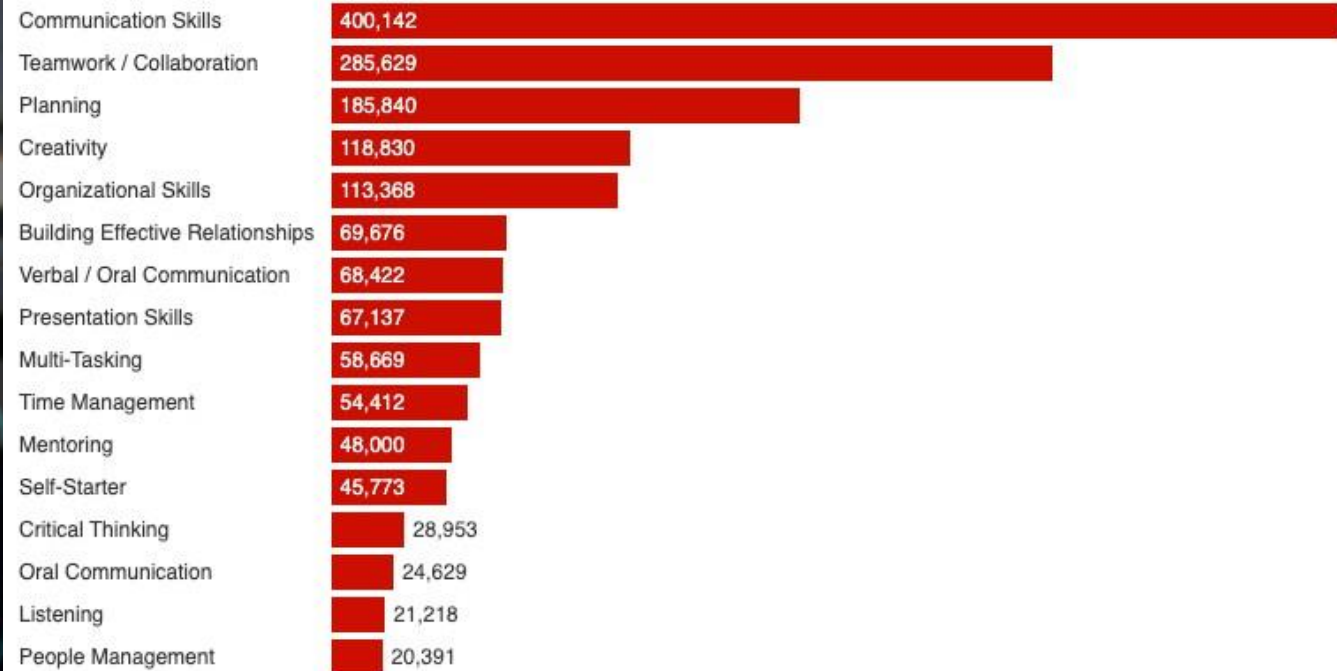


Current/Future Skills Needs

According to the World Economic Forum, the top ten skills needed to thrive in the Fourth Industrial Revolution

1. **Complex problem solving**
2. **Critical thinking**
3. **Creativity**
4. **People management**
5. **Coordinating with others**
6. **Emotional intelligence**
7. **Judgement and decision-making**
8. **Service orientation**
9. **Negotiation**
10. **Cognitive flexibility**

Most Popular Soft Skills in Job Postings



Source: Burning Glass

Dice

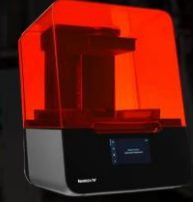
Credentials

- Registered Scrum Master, Registered Scrum Product Owner, Scrum@Scale Practitioner for students, faculty, staff and counselors/advisors
- Autodesk/Fusion360 Credentials
- ACE/SEAMTN
- Titan's of CNC Academy
- Certificates from SACA.org
- Siemens Industry 4.0 certifications and Industrial Internet of Things (IIoT)
- PMMI Association for Packaging and Processing technologies certificates <https://www.pmmi.org/>



Scrum Startup for Teams

Equipment



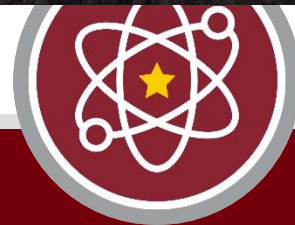
New Track

“The Ben Martin Track renovations will vastly improve the quality of life of ORHS track athletes and the community in general. Our track is a community track and is used every day by various residents for healthy living. The new facility will allow ORHS to not only host traditional track meets but also community events for the public, partnered businesses, and various school activities such as the Back to School Bash. This is an opportunity to have a state-of-the-art gathering place for athletics and public use.”

—Tom Sauer, ORHS Head Track & Field Coach



Groundbreaking



Groundbreaking



New Track



New Track



Top Workplace



Oak Ridge
SCHOOLS


Every student prepared for college, career, and life success.



TOP WORK PLACES 2021

knox news.
knox.biz

OAK RIDGE IS PROUD TO BE A 2021 TOP WORKPLACE!



Drivers of Our Words and Actions


Oak Ridge
SCHOOLS

OAK RIDGE IS PROUD TO BE A 2021 TOP WORKPLACE!

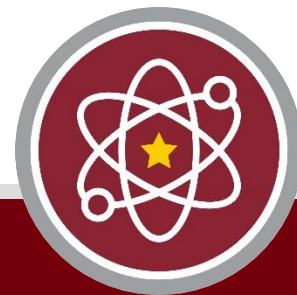
TOP WORK PLACES 2021

knox news.
knox.biz

- Students First
- Accountability
- Equity
- Excellence
- Engagement
- Integrity
- Teamwork



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TOP WORK PLACES 2021

Knoxville NEWS SENTINEL
PART OF THE USA TODAY NETWORK

the Oak Ridge Schools is a 2021 Top Workplace!