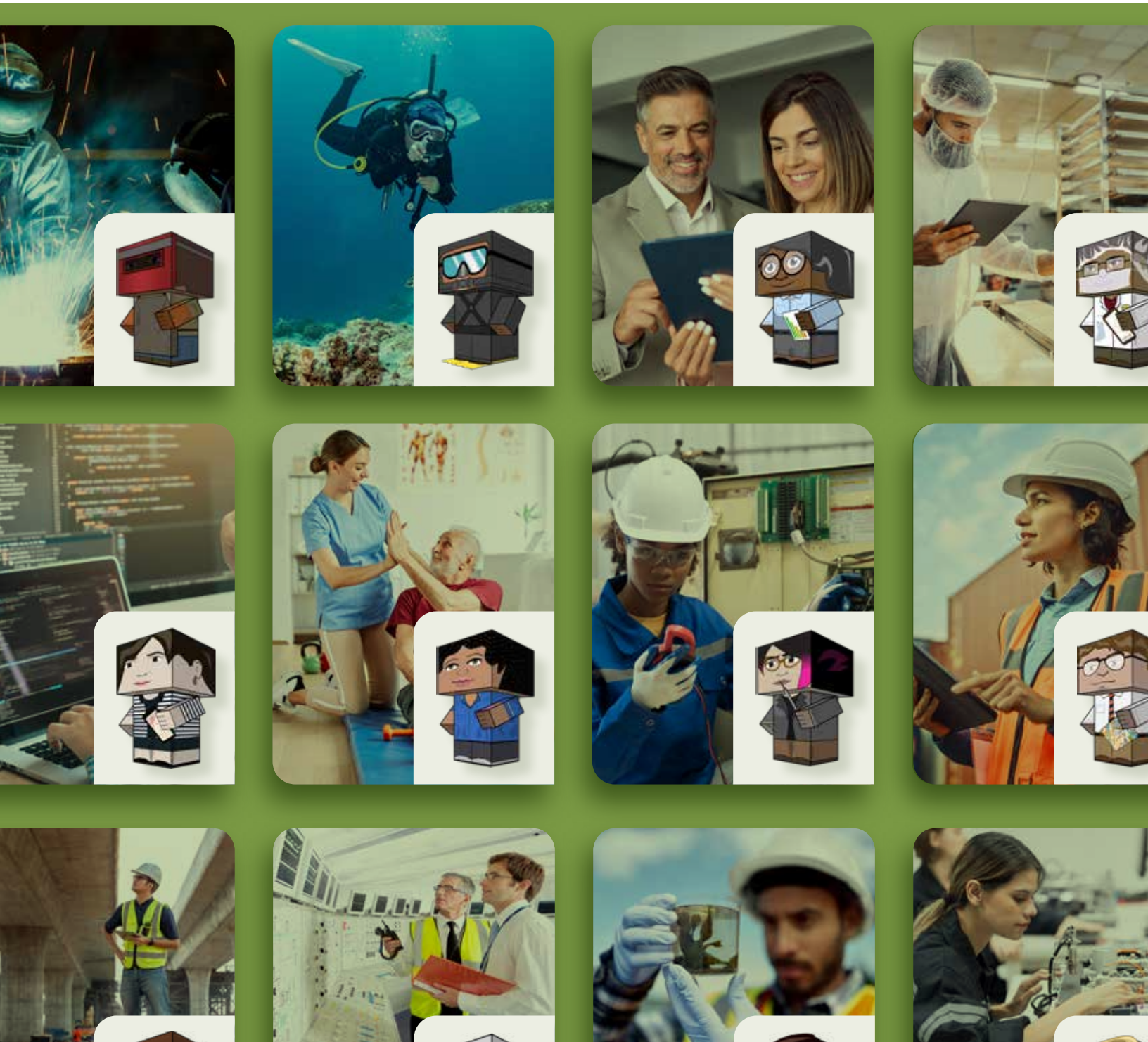
Learning Blade
Powered by eDynamic Learning

Learning Blade Catalog

Missions and Modules to Discover Students Career Interests



Why Use Learning Blade?

Learning Blade offers middle schools online interactive supplemental lessons and activities that are proven to increase career interests in a variety of high-demand areas including computer science, STEM, and CTE careers.

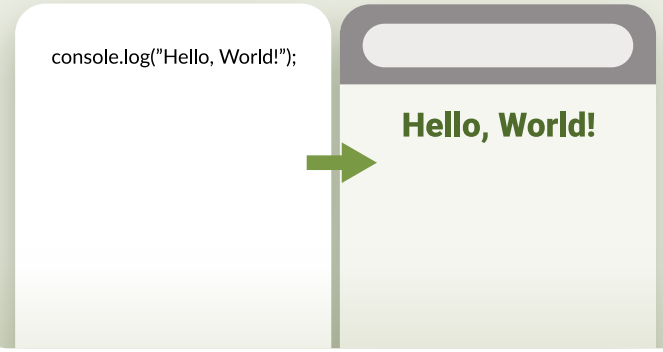
Ready-to-use online student lessons for math, science, social studies, and language arts, aligned to state standards, with corresponding lesson plans for teachers.



69% increase in students recognizing what they learn in school will be useful later on in life.



55% increase in students interested in Computer Science Careers



71% of students learned about new careers.



The Expanding STEM Toolbox

Learning Blade is constantly adapting and expanding our STEM curriculum toolbox that allows educators to integrate STEM awareness and career readiness into their teaching needs.



Interactive Lessons

Over 400 online lessons connect more than 100 STEM, Computer Science careers, and technologies to students' academic skills, demonstrating real-world problem solving.



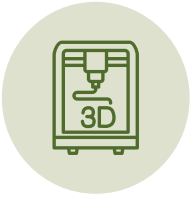
Design Thinking

Students use design thinking methodology to solve complex problems through brainstorming, collaboration, and the creative exploration of new possibilities.



Challenge Projects

Simple hands-on activities emphasize problem solving, critical thinking, teamwork and communication using readily-available materials.



3D Printing Activities

3D printing experiments and projects demonstrate STEM principles and provide students experience turning 3D designs into physical items



Career Videos

Each STEM and CS career addressed in our online lessons also includes a career introduction video presenting the career and the education pathway.



Parent Discussions

Parent-ready handouts simulate STEM conversations at home, help fill ESSA requirements for parental involvement, and encourage research and simple at-home experiments.



Papercraft Figures

Each STEM and CS career and technology is accompanied by a 3D papercraft figure students can assemble, helping internalize a knowledge of 3D Shapes and offer a tangible reminder of the careers and technologies.

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Intro to Coding

Intro to Computer Careers

Intro to Engineering Careers





Assemble the Fleet

Mission Lessons

Explore engineering and manufacturing through the nationwide supply chain behind modern U.S. Navy vessels.

Career Emphasis:
Engineering, Manufacturing

● *Express missions only include these lessons*



CNC Machining

Meet the Machinist: Diego Torres (English)
From Hand Tools to High Tech (Social Studies)
Material to Component (Science)
Precision and Programming (Math) ●
CNC Machinists at Work (Video) ●



Electrician

Meet the Electrician: Jasmine Lee (English)
The History of Naval Electrical Work (Social Studies) ●
Current and Circuits at Sea (Science)
Watts, Volts, and Amps (Math)
Electricians at Work (Video) ●



Marine Engineer

Meet the Marine Engineer: Marcus Patel (English)
Powering the Fleet (Social Studies)
Propulsion Systems in Motion (Science) ●
System Specs and Calcs (Math)
Marine Engineers at Work (Video) ●



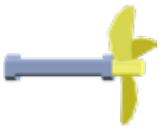
Robotic Tech

Meet the Robotics Tech: Alex Monroe (English)
The Rise of Robots in American Industry (Social Studies)
Sensors, Circuits, and Control (Science) ●
Coding Precision: Coordinates and Commands (Math)
Robotics Technicians at Work (Video) ●



Supply Chain Coordinator

Meet the Coordinator: Renee Washington (English) ●
Mapping Modern Logistics (Social Studies)
Weathering the Chain (Science)
Tracking the Chain: Time, Quantity, and Cost (Math)
Supply Chain Coordinators at Work (Video) ●



Material Testing

The Reports That We Use to Build Ships (English)
The Supply Chain of Ship Names (Social Studies) ●
Break It to Make It (Science)
Rate of Failure (Math)



Precision Measurement

Building Our Ship with Words (English)
The Standard of Standards (Social Studies)
Measuring the Invisible (Science)
Percision Powers the Fleet (Math) ●



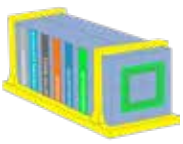
Regional Manufacturing

Made in America: Steel (English) ●
Steel Town USA (Social Studies)
From Ground to Gear (Science)
Output by the Numbers (Math)



Route Planning

Moving the Message (English)
Infrastructure in Motion (Social Studies) ●
Engineering the Journey (Science)
Planning the Perfect Route (Math)



Supply Chain

Reading the Chain: Following Materials from Start to Ship (English)
America's Transportation Networks (Social Studies)
A Sonar Processor's Journey (Science) ●
From Raw Materials to Ship Parts (Math)



Building Submarines

Mission Lessons

Explore modern manufacturing techniques and technologies to improve the design and construction of a new Naval submarine.

Career Emphasis:
Engineering, Manufacturing

● *Express missions only include these lessons*



Engineers

Meet the Engineers (Social Studies)
Systems that Work (Math)
Pick a Specialty (English) ●
Environmental Controls (Science)
Nuclear Engineers (Video) ●



Naval Architects

On the Job with a Naval Architect (English)
Math Under the Waves (Math) ●
Designing a Submarine (Science)
A Timeline of Submarine Design (Social Studies)
Marine Engineers and Naval Architects (Video) ●



Machinists

Meet a Machinist (English)
Precision in Motion (Math) ●
CNC Magic (Science)
Machining Your Future (Social Studies)
Machinists (Video) ●



Quality Control Inspectors

Meet a Quality Control Inspector (Science)
Measuring for Submarine Safety (Math)
Communication During Inspection (English)
Failing the Test (Social Studies) ●
Fire Prevention and Protection Engineers (Video) ●



Welders

Meet a Welder (Science) ●
Numbers in the Heat (Math)
Communication for Welders (English)
Forging Futures (Social Studies)
Welders, Cutters, Solderers, and Brazers (Video) ●



Additive Manufacturing

3D Printing Revolution (Science) ●
From Ideas to Print (Math)
On-Demand Innovation (English)
Future Tech (Social Studies)



Metals

Metal Magic (Science) ●
Shaping Metals (Math)
Wonderful World of Welding (English)
Safety in Metalworking (Social Studies)



Nondestructive Testing

Putting Subs to the Test (Science)
Quality Matters (Math)
Tech Spotlight: NDT Techniques (English) ●
Learning From Mistakes (Social Studies)



Nuclear Reactors

Powering the Deep (Science) ●
Inside the Reactor (Math)
Balancing Act: Dangers and Challenges (English)
Future Horizons (Social Studies)



Robotics and Automation

Robots at Work (Science)
Math in Motion (Math)
Tech Talk (English)
Shaping the Future (Social Studies) ●



Car Manufacturing

Mission Lessons

Students explore and use modern manufacturing techniques to design and build a new concept car

Career Emphasis:
Advanced Manufacturing and Industrial Engineering

● *Express missions only include these lessons*



Automotive Designer

Ground breaking Design (Social Studies) ●
If You Can Dream It (English)
Making It Go - How an Engine Works (Science)
The Great Shape-Up (Math)
Automotive Designers Invent the Future of Transportation (Video) ●



Manufacturing Technician

Communication in Manufacturing (English) ●
Get It Right - Calibration (Science)
Meeting Demand (Math)
Quality Assurance (Social Studies)
Learning About a Manufacturing Technician (Video) ●



Mechanical Drafter

Aerodynamics in Action (Science) ●
From the Page to the Track (Social Studies)
Reality - The Simulation (English)
The Magic Number (Math)
Mechanical Drafters Work Through the Details (Video) ●



Safety Administrator

Anatomy of an Accident (Science)
Crash Test Dummies (English)
Roof Strength Test (Math) ●
Safety in the Factory (Social Studies)
Safety Administrator Keeps You Safe (Video) ●



Welder

Arcs to Sparks (Science) ●
Artistic License (English)
The Cost of Design (Math)
Forging Ahead (Social Studies)
Welders Assemble Our World (Video) ●



Assembly Lines

Assembly Lines and the Industrial Revolution (Social Studies)
Making your Quota (Math)
Control It (Science)
Assemble Something Different (English) ●



Automation Mechatronics

Digital Decision Making (Math)
Jack of All Trades (English)
Real Life Autobots (Science) ●
Why Now for Mechatronics? (Social Studies)



Innovative Materials

Fabric 2.0 (English)
Rubber Meets the Road (Social Studies) ●
Unbreakable (Science)
Wear and Tear (Math)



Paint Technology

By the Bucket (Math) ●
Color Your World (English)
Perfect Coat (Science)
Rust and Society (Social Studies)



Test Track

Design Matters (Science) ●
Length vs Speed (Math)
Start Your Engines (English)
Test Track Disney Style (Social Studies)



Dolphin Rescue

Mission Lessons

Help rescue and rehabilitate an injured dolphin, including creating an artificial prosthetic tail.

Career Emphasis:
Biomedical, Veterinary Medicine

● *Express missions only include these lessons*



Biomedical Engineer

Physics of Swimming (Math)
Students Driving Change (English)
The Bionic Man (Science)
What is a Biomedical Engineer (Social Studies) ●
Biomedical Engineers Use Technology To Improve Our Health (Video) ●



Machinist

3D Printing Technology (Math)
A Day in the Life of a Machinist (Social Studies) ●
Getting into Shape (Science)
Modern Machining Technology (English)
Machinists Craft Our Modern World (Videos) ●



Marine Biologist

A Day in the Life of a Marine Biologist (English) ●
Jacques Cousteau (Social Studies)
Lessons from the Gulf Oil Spill (Math)
Whale Hunting (English)
Marine Biologists Preserve Our Aquatic Environments (Video) ●



Scuba Diver

Aquarius Underwater Laboratory (Science) ●
A Day in the Life of an Aquarium Diver (Math)
The History of Underwater Diving (Social Studies)
Coral Reefs - Our Underwater Rainforests (English)
Commercial Divers Go to Great Depths (Video) ●



Veterinarian

Advanced Surgical Care for Pets (Social Studies)
Calculating a Diet for a Dolphin (Math) ●
Modern Advances in Veterinary Care (Science)
The Perfect Habitat (English)
Veterinarians Care for Our Animal Friends (Video) ●



Antibiotics

Antibiotics in Livestock (English)
History of Antibiotics (Social Studies)
How Antibiotics Work (Science)
The Right Dose (Math) ●



Artificial Limbs

History of Prosthetics (Social Studies)
Measuring Up (Math)
Should Amputees with Prosthetics Compete in Sports? (English)
Strength of Limbs (Science) ●



Cell Phone

Cell Phone - Help When You Need It (English)
Designing a Cell Network (Math) ●
Effects of Cell Phones Society (Social Studies)
Inside the Cell Phone (Science)



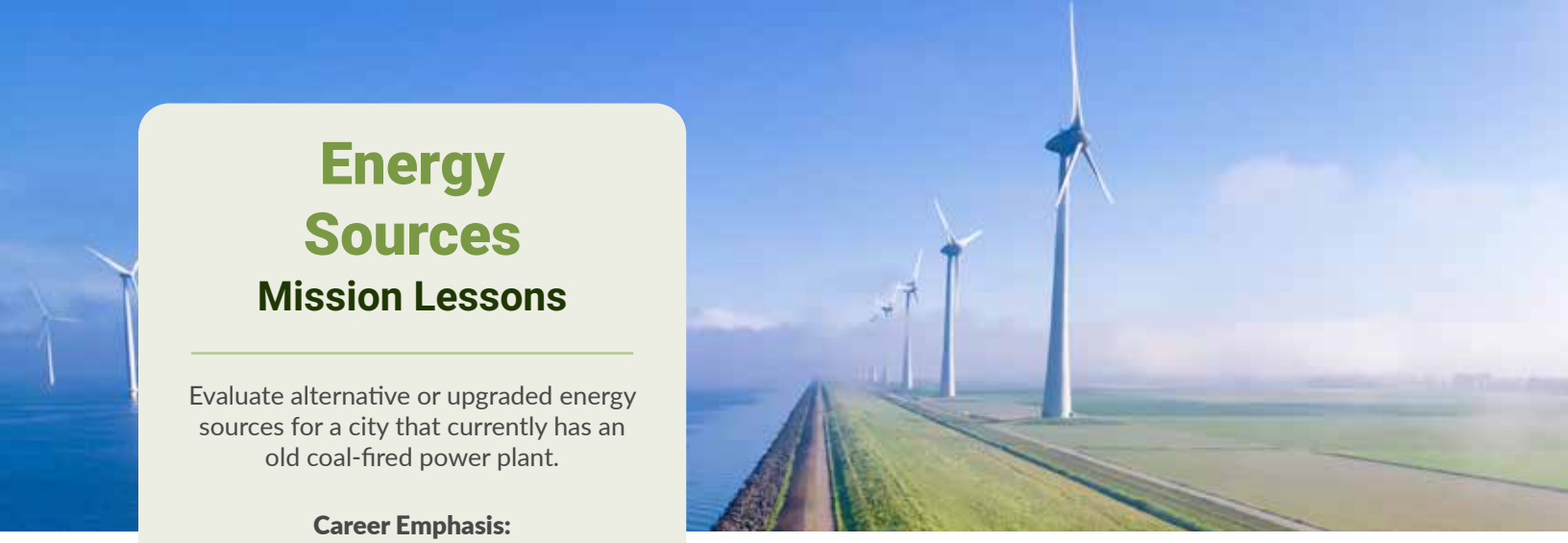
Radio Tracking

An Overview of GIS (Social Studies)
Privacy Issues of Radio Tracking (English)
Radio Tracking in Conservation (Science) ●
Whale Tracking with GPS (Math)



Diving Gear

Breathing Under Pressure (Science)
Diving in Warfare (Social Studies)
Observing Sea Life in a Submarine (English) ●
Timing Your Dives (Math)



Energy Sources

Mission Lessons

Evaluate alternative or upgraded energy sources for a city that currently has an old coal-fired power plant.

Career Emphasis:
Energy, Environment

● *Express missions only include these lessons*



Economist

A Day in the Life of an Economist (English)
Economic Impacts of Global Warming (Science)
The Great Energy Debate (Social Studies) ●
To Build or Not to Build (Math)
Economists Affect the Bottom Line (Video) ●



Environmental Engineer

A Day in the Life of an Environmental Engineer (English) ●
Can the Color of Your House Reduce Your Energy Bill? (Science)
Electrical Energy Cost Calculator (Math)
History of Coal Fired Power Plants (Social Studies)
Environmental Engineers Keep Our World Clean and Healthy (Video) ●



Environmental Protection Specialist

Fuels - Coal, Oil, and Natural Gas (Science)
How to Become an Environmental Protection Specialist (English)
Keeping It Clean (Math)
Renewable Energy vs. Fossil Fuels (Social Studies) ●
Environmental Protection Specialist Give Good Stewardship (Video) ●



Nuclear Engineer

Benefits and Uses of Nuclear Power (English)
How a Nuclear Power Plant Works (Science) ●
The Cost of Nuclear Power (Math)
Top Nuclear Power Disasters (Social Studies)
Nuclear Engineers Provide the Power (Video) ●



Power Engineer

History of Oil Exploration (Social Studies)
Is Renewable Energy the Answer? (English)
Oil and Gas Exploration (Math) ●
What is Power and Energy? (Science)
Power Engineers Get Energy (Video) ●



Energy Conservation

Calculate Your Carbon Footprint (Math)
Great Inventors (Social Studies)
Saving Energy at Home (Science) ●
What is Clean Energy? (English)



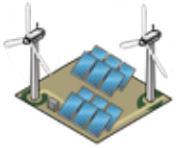
Emission Controls

Emission Releases (Math)
Hazardous Air Pollutants (Social Studies) ●
The Science Behind Emissions (Science)
What are Emissions? (English)



Environmental Protection Agency

Climate Change (Science) ●
What is the Energy Star Program? (English)
How Clean is the Energy You Use? (Math)
What is the EPA? (Social Studies)



Renewable Energy

Geothermal Heating and Cooling (Science)
Hydroelectric Power (Social Studies)
Calculations for Solar Energy Systems (Math) ●
Wind Energy (English)



The Power Grid

Blackout (Social Studies)
How Much Power Do You Need? (Math)
The Power Grid (Science)
The Smart Grid (English) ●

Entrepreneurship

Mission Lessons

Set up a new business with a focus on entrepreneurship.

Career Emphasis:
Finance, Business,
Resource Management



● *Express missions only include these lessons*



Accounting

Account for This (Social Studies)
Count on This (Math)
Is This the Best Way? (English)
Just Graph It (Science) ●
Accountants Monitor the Bottom Line (Video) ●



Business Consultant

Is Your Plan Ready? (English) ●
Looking at Finances (Math)
Management Principles (Social Studies)
Systematically Scientific Problem Solving (Science)
Business Consultants Provide Leadership (Video) ●



Data Scientist

AI vs IQ (English)
Female Firsts in Computer Engineering (Social Studies) ●
It's All in the Stats (Math)
Mining For More Than Gold (Science)
Data Scientists are Statisticians (Video) ●



Industrial Engineer

Control It (Science)
Maximize This (English)
What Does It Cost (Math)
What is an Industrial Engineer? (Social Studies) ●
Industrial Engineers Sees the Big Picture (Video) ●



Investor

Stocks Equity or Cash (Social Studies) ●
The Science of Investing (Science)
What are Stocks? (Social Studies)
Which Investor? (English)
Investors Manage Vital Resources (Video) ●



3D Printing

3D Printing is the Latest Form of Additive Manufacturing (Social Studies)
A Day in the Life of a 3D Printing Technician (English)
A World of 3D Printing Options (Science) ●
Making Models - Printing 3D Objects (Math)



Cybersecurity

Are You a Target? (Social Studies)
Breaking the Language (English)
The Business of Security (Science)
The Math of Security (Math) ●



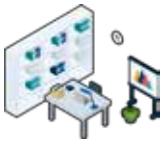
Database

Find the Information (Math)
Getting Information Efficiently (Science)
Really Amazing Data (Social Studies)
Store This (English) ●



Business Software

A Proposal: Using Words - Creating Action (English)
Mean, Median, and Mode in Spreadsheets (Math) ●
Typewriters to Word Processors (Social Studies)



Workspace

Green the Office (Science)
Plan the Space (Math) ●
The 9 to 5...Does It Still Work? (Social Studies)
Where Do We Work? (Math)



Flu Outbreak

Mission Lessons

Learn how health and IT professionals use data, GIS and social media analysis to predict flu outbreaks.

Career Emphasis:
Information Technology, Disease Management

● *Express missions only include these lessons*



Anthropologist

Evolution of an Outbreak (English)
Germs and Their Interactions (Science)
Learning to Count - The History of Math (Math)
What is a Cultural Anthropologist? (Social Studies) ●
Anthropologists Provide Insight into Our Humanity (Video) ●



Computer Programmer

Bits and Bytes (Science)
A Day in the Life of a Computer Programmer (English)
Programming Logic (Math) ●
The Information Age (Social Studies)
Computer Programmers - Writing the Future (Video) ●



Database Administrator

A Day in the Life of a Database Administrator (English) ●
Adding It Up With a Program (Math)
Computer Languages (Social Studies)
Small Bytes - How Does a CD Work? (Science)
Database Administrators Keep Track of Critical Information (Video) ●



Epidemiologists

History of Health Records (Social Studies)
How Does the Flu Spread? (Math)
Preventive Methods and Treatments of the Flu (Science)
What is an Epidemiologist? (English) ●
Epidemiologists Make the World Safer (Video) ●



Statistician

A Day in the Life of a Statistician (English)
Mean, Median, and Mode (Math)●
What is Statistical Modeling? (Science)
Stimulating Work as Data Scientists (Video) ●



Big Data

Big Data Technology (Science) ●
Examining Data - Exponentially Expanding Exabytes (Math)
They are Watching - How Social Media Gathers Data (Social Studies)
What is Big Data? (English)



Computer Data

Charles Baddage: The Father of Computing (English)
Chart It Up - The Best Way to Display Data (Math) ●
The Computer Age (Social Studies)
What is a CPU? (Science)



GIS - Geographic Information Systems

The Geographic Approach (Science)
An Overview of Geographic Information Systems (Social Studies) ●
Spatial Math (Math)
Tracking Yourself with GPS (English)



Social Media

Changing the Way We Communicate (English)
Extra! Extra! Read All About It (Social Studies)
Predicting the Future with Social Media (Math) ●
Social Media Networks (Science)



Vaccines

Calculating the Appropriate Dose (Math)
How to Create a Vaccine (Science) ●
The History of Polio (Social Studies)
What is a Vaccine? (Science)



Fresh Food

Mission Lessons

Consider methods to increase production of local foods in a community.

Career Emphasis:
Agricultural Science

● *Express missions only include these lessons*



Agricultural Engineer

By the Light of the Moon (Social Studies)
Grinding the Grain (Science)
Growing Green (English) ●
Why Waste Energy? (Math)
Agricultural Engineers Help Feed the World (Video) ●



Agronomist

Around the Ground Crop Rotation (Science) ●
Criss Cross Hybrid Crops (Social Studies)
A Day in Life of Agronomist (English)
Time is Money (Math)
Agronomists Make Food Better (Video) ●



Food Assurance Technician

Better Building Blocks (Science)
It's Found in Food (Social Studies)
Making the Right Choice (English)
You Are What You Eat (Math) ●
Food Assurance Technicians Keep Us Healthy and Safe (Video) ●



Microbiologist

Finding Your Fit (Social Studies)
Microbes and Disease -The Study of Microbiology (Science)
Tiny Dangers -To Eat or Not to Eat (Math)
When Food Goes Bad (English) ●
Microbiologists Focus on the Details (Video) ●



Veterinarian

Antibiotics in Livestock (English)
A Day in Life of a Large Animal Vet (Social Studies) ●
Getting it Right -Caring for Large Animals (Math)
Health Benefits of Humane Animal Treatment (Science)
Veterinarians Care for Our Animal Friends (Video) ●



Farming Equipment

A Day to Pick a Day to Plant (English) ●
From Farm to Glass (Science)
My Tractor My Friend (Social Studies)
Water Your Work (Math)



Hydroponics

Building a Hydroponic Garden (Math) ●
Explaining Hydroponics (Science)
Growing Our Lunch (English)
History of Hydroponics and its Benefits (Social Studies)



Living Livestock

Farm Fresh Fish (Science) ●
Free the Beef (Social Studies)
Room to Farm (Math)
The Food that Moos (English)



Improving Crop Yield

Composting (Social Studies)
Growing Needs (Math)
Jack and the Beanstalk (Science)
Pesticide Use -Advantages and Disadvantages (English) ●



Organic Farming Methods

Designer Plants -Plant Genetics (Science)
Entomologists - a Ladybugs Best Friend (Social Studies) ●
Maximum Efficiency, Minimum Space (Math)
Organic Food Argument (English)



Hack Attack

Mission Lessons

See how web development, applications, and social media experts restore a school's website and social media after being hacked.

Career Emphasis:
Computer Science, Communications

● *Express missions only include these lessons*



Data Scientist

AI VS IQ (English)
Female Firsts in Computer Engineering (Social Studies) ●
It's All in the Stats (Math)
Mining For More Than Gold (Science)
Data Scientists are Statistician (Video) ●



Information Security Analyst

Don't Open The Door (Science)
If I Were a Hacker (English) ●
It Could Happen To You (Social Studies)
Spreading the Bugs (Math)
Information Security Analysts Secure Our Future (Video) ●



Software Engineer

Pushing the Limit (Science)
The Journey of 1000 Miles Begins with a Line of Code (Math) ●
The Language of Code (English)
The Power of Possibilities (Social Studies)
Software Engineers Make the Future Possible (Video) ●



UI-UX Designer

Creating a Visual Interface (Science) ●
Getting The Message Write (English)
Sizing Up the Competition (Math)
Translating our Meaning (Social Studies)
UI/UX Designers Create Digital Experiences (Video) ●



Web Developer

Oh Sweet Phi! (Math) ●
The First Website (Social Studies)
The Story of a Site (English)
The Three Second Rule (Science)
Web Developers Build Our Digital Experiences (Video) ●



Cloud Computing

How Big is Big? (Math)
It's Not Just a Nimbus (English)
The History of Cloud Computing (Social Studies)
Protecting the Cloud (Science) ●



Cybersecurity

Are You A Target? (Social Studies)
Breaking the Language (English)
The Business of Security (Science)
The Math of Security (Math) ●



Mobile Applications

Design Your App (Science)
DIV App (Math)
Hot Spots Are Not (English)
Misdirection (Social Studies) ●



Robot Development Kit

Controlling Your World (Social Studies)
If You Build It (English) ●
Sensory Overload (Math)
Simple and Compound Machines (Science)



Social Media

Check Yourself (Science)
Driving The Traffic (Math) ●
To the Ends of the Earth (English)
Who is Watching You? (Social Studies)



Haiti Orphanage
Mission Lessons

Design and build an environmentally-sound orphanage for children left homeless by an earthquake in Haiti.

Career Emphasis:
Civil Engineering, Sustainability

● *Express missions only include these lessons*



Architect

A Day in the Life of an Architect (English)
Amazing Architectural Art (Social Studies)
Designing an Orphanage (Math)
What a Hurricane Can Do To a Building (English) ●
Architects Design the Cities of the Future (Video) ●



Civil Engineer

Builder of a Civilized World (English)
Stand Your Ground with Surveying (Math) ●
The Best Type of Bridge (Science)
Wonders of the Modern World (Social Studies)
Civil Engineers Design our World (Video) ●



Electrician

A Day in the Life of an Electrician (English)
Designing Electric Circuits (Math) ●
Electrifying Rivals: Edison vs Tesla (Social Studies)
Energy Use in the Home (Social Studies)
Electricians Bring the Power (Video) ●



Environmental Engineer

A Day in the Life of an Environmental Engineer (English) ●
Monitoring Our Air (Science)
Supplying Clean Water (Math)
Trash Troubles (Social Studies)
Environmental Engineers Keep Our World Clean and Healthy (Video) ●



Nurse

Calculating Antibiotic Doses for Children (Math)
Preventative Medicine for Children (Science) ●
Providing Medical Care in the 3rd World (Social Studies)
To Vaccinate or Not to Vaccinate (English)
Nurses Deliver Care (Video) ●



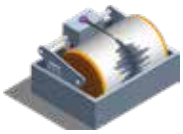
Antibiotics

Antibiotics in Livestock (English)
How Antibiotics Work (Science)
The History of Antibiotics (Social Studies)
Calculating Antibiotic Doses for Children (Math) ●



Cell Phone

Cell Phone - Help When You Need It (English) ●
Designing a Cell Network (Math)
Effects of Cell Phones Society (Social Studies)
Inside the Cell Phone (Science)



Earthquake Science

An Earthquake Strikes Haiti (Social Studies) ●
Earthquake Safe Buildings (Science)
Measuring Earthquakes - The Richter Scale (Math)
The Great Alaskan Earthquake (Social Studies)



Green Buildings

Advancements in Green Building Technology (English)
Efficient Building Construction (Social Studies) ●
Energy Conversion Rates of Solar Panels (Math)
Geothermal Heating and Cooling (Science)



Water Purification

Determining Water Safety (Science) ●
Making Clean Drinking Water (English)
Natural Disasters and Disease in Haiti (Social Studies)
The Water Cycle (Science)



Heart Surgery

Mission Lessons

Understand heart surgery techniques and therapy used to treat a child's heart defect.

Career Emphasis:
Medicine, Healthcare

● *Express missions only include these lessons*



Biomedical Engineer

How Big is My Heart (Math)
Keep It Level - Sensors for Diabetic Patients (Science)
Students Driving Change (English) ●
What is a Biomedical Engineer? (Social Studies)
Biomedical Engineers Use Technology to Improve Our Health (Video) ●



Doctors

Ethics and Modern Medicine (English)
Great Doctors in History (Social Studies)
Knowing you numbers - Diagnostic Testing (Math) ●
The Respiratory System (Science)
Doctors Improve Quality of Life (Video) ●



Nurses

Blood - It's Chemistry (Science) ●
Nurse Counseling (Social Studies)
Pediatric Nursing Care (English)
You Are What You Eat (Math)
Nurses Deliver Care (Video) ●



Paramedics

Day in Life of a Paramedic (Social Studies)
Race Against the Clock (Math) ●
The Golden Hour (Science)
When Seconds Count (English)
Paramedics Provide Critical Response (Video) ●



Therapist

Make it Move - Physical Therapy (Math)
Meeting Ralph - Dog Therapy (English)
Take a Swim - Aquatic Therapy (Science)
Work It Out - Occupational Therapy (Social Studies) ●
Physical Therapists Bring Healing and Recovery (Video) ●



Air Ambulance

A Bird with One Wing - How Helicopters Fly (Science) ●
Air Ambulance - Getting Off the Ground (Math)
Air EMT (English)
History of the Air Ambulance (Social Studies)



Body Imaging

Cat Scans - Looking Inside You (Science)
Industrial Uses of Medical Imaging (Science)
Magnetic Resonance Imaging (English) ●
X-Rays - The Inside View (Social Studies)



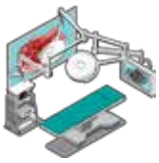
Heart Repairing

History of Artificial Heart (Social Studies)
Keep up the Pace (Science)
Our Incredible Heart (Math) ●
Putting your Heart at Risk (English)



Medical Technology

Anesthetics (Math)
How Antibiotics Work (Science)
New Discoveries in Medicine (English)
Robotic Surgery (Social Studies) ●



Organ Transplants

Artificial Organs (Social Studies) ●
Foreign Bodies (Science)
We Got the Beat - Heart-Lung Machines (Math)
Organ Donation - Myth vs Fact (English)



Lightweight Aircraft

Mission Lessons

Design a lightweight and easily maintained aircraft for multiple roles and mission distances.

Career Emphasis:
Aerospace, Manufacturing, Metallurgy, Recycling

● *Express missions only include these lessons*



Industrial Designer

The Material Difference - New Materials in Product Design (Science)
A Day in the Life of an Industrial Designer (Social Studies) ●
Balancing Form and Function (English)
3D Modeling (Math)
Industrial Designers Develop Amazing Things (Video) ●



Machinist

3D Printing Technology (Math)
A Day in the Life of a Machinist (Social Studies) ●
Getting Into Shape (Science)
Modern Machining Technology (English)
Machinists Craft Our Modern World (Video) ●



Manufacturing Technician

Communication in Manufacturing (English)
Get It Right - Calibration (Science)
Meeting Demand (Math) ●
Quality Assurance (Social Studies)
Learn About a Manufacturing Technician (Video) ●



Mechanical Engineer

Simple and Compound Machines (Science)
Mechanical Advantage and Efficiency (Math)
How Machines Advance Civilization (Social Studies)
A Day in the Life of a Mechanical Engineer (English) ●
Mechanical Engineers Design Tools (Video) ●



Welder

Arcs to Sparks (Science) ●
Artistic License (English)
The Cost of Design (Math)
Forging Ahead (Social Studies)
Welders Assemble Our World (Video) ●



Aircraft

As the Crow Files (Math)
Silent Flight (English)
The Solar Impulse (Social Studies) ●
The Plane Truth About Planes (Science)



Automation Mechatronics

Digital Decision Making (Math)
Jack of All Trades (English)
Real Life Autobots (Science)
Why Now for Mechatronics? (Social Studies) ●



Metals and Alloys

How Much Metal is There? (Math)
How to Make it with Metals (Science)
Out of the Iron Age - The History of Metals (Social Studies) ●
The Rarest of Metals (English)



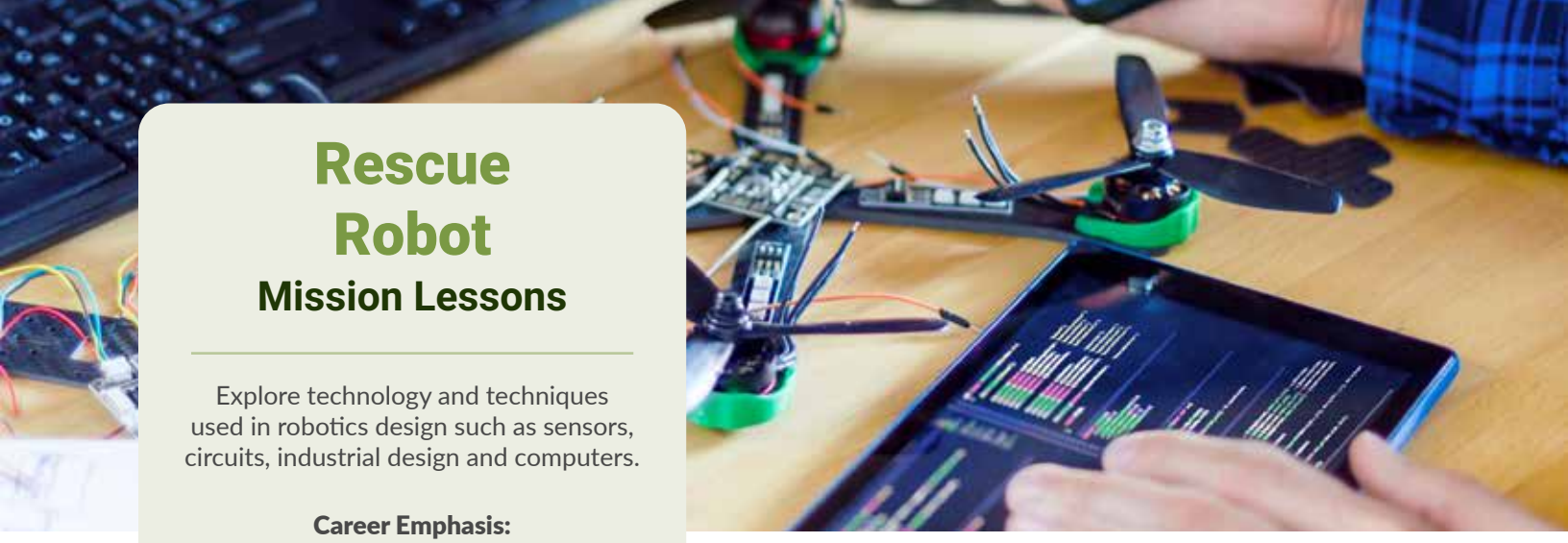
Modern Innovative Materials

Fabric 2.0 (English)
Flying Farther (Math) ●
Wear and Tear (Math)
Who's Your Alloy? (Science)



Recycling

Making the Argument for Recycling (English) ●
Save the Earth Through Recycling (Math)
Where Does Your Can Go? (Science)
Who Recycles the Most? (Social Studies)



Rescue Robot

Mission Lessons

Explore technology and techniques used in robotics design such as sensors, circuits, industrial design and computers.

Career Emphasis:
Electronics, Computer Science

● *Express missions only include these lessons*



Computer Programmer

Bits and Bytes (Science)
A Day in the Life of a Computer Programmer (English)
Programming Logic (Math)
The Information Age (Social Studies) ●
Computer Programmers - Writing the Future (Video) ●



Drone Operator

Getting It Under Control (Science) ●
A Day in the Life of a Drone Operator (English)
The Right Tool for the Job - Drone Features (Math)
It's Automatic - History of Automated Machines (Social Studies)
Drone Operators Use Robots to Inspect the World (Video) ●



Electrical Technician

A Day in the Life of an Electrical Technician (English) ●
Electric Circuits (Science)
Ohm's Law (Math)
Throwaway and Repairable Electronics (Social Studies)
How Electrical Technicians Power the World (Video) ●



Industrial Designer

3D Modeling (Math)
Balancing Form and Function (English)
A Day in the Life of an Industrial Designer (Social Studies) ●
The Material Difference (Science)
Industrial Designers Develop Amazing Things (Video) ●



Mechanical Engineer

A Day in the Life of a Mechanical Engineer (English)
How Machines Advance Civilization (Social Studies)
Mechanical Advantage and Efficiency (Math) ●
Simple and Compound Machines (Science)
Mechanical Engineers Design Tools (Video) ●



Cameras

Cameras vs Privacy (Social Studies)
Get Focused - Lenses (Math) ●
I See You - Facial Recognition (English)
Over the Rainbow - Electromagnetic Spectrum (Science)



Computers

A Supercomputer in Your Pocket (Math)
Communicating with Computers (English) ●
Making Memory (Science)
The Computer Age (Social Studies)



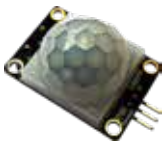
Electrical Circuits

Print Circuit Boards (English)
Staying Alive (Math)
Vacuum Tubes to Circuit Boards (Social Studies)
Zap, Crackle, Pop! = Resistors and Capacitors (Science) ●



Microphones

Can you Hear Me? (English)
Making Waves - Sound Waves (Science) ●
Sound Bites - Microphone Technology (Social Studies)
Turn it Up - Decibel Levels (Math)



Sensors and Logic

Digital Decision Making (Math)
How Decisions Are Made (Social Studies)
How We and Machines Perceive the World (English)
Seeing with Sound - Sonar (Science) ●



Transportation Congestion

Mission Lessons

Evaluate new Transportation methods for a city with traffic congestion problems.

Career Emphasis:
Transportation, Engineering

● *Express missions only include these lessons*



Automotive Engineer and Technician

A Day in the Life of an Automotive Engineer (English) ●
Consumption Junction (Math)
Fuel Cells (Science)
Intelligent Roadways (Social Studies)
Automotive Technicians Keep Things Moving (Video) ●



Logistics Engineer

Find It and Fix It (Math)
Five Minutes Late (Science) ●
Labyrinth of Logistics (Social Studies)
The Text Heard Round the World (English)
Logistics Engineers Get Things Done (Video) ●



Mechanic

Diesel Gas or Electric? (Science)
Dr. Diagnosis (English)
Engine Mechanics - What's Your Specialty? (Social Studies) ●
Hold Your Horses (Math)
Mechanics Keep Our World Moving (Video) ●



Transportation Engineer

Building Blocks (English)
Mix It Up (Science)
The Master Plan (Social Studies)
To Grid or Not to Grid? (Math) ●
Transportation Engineers Move the World (Video) ●



Transportation Planner

An Ounce of Prevention (English)
Drive or Dollars (Social Studies)
Eye in the Sky (Science)
Hurry UP and Go (Math) ●
Transportation Planners Keep the World Moving (Video) ●



Aircraft

As the Crow Files (Math) ●
Silent Flight (English)
The Solar Impulse (Social Studies)
The Plane Truth About Planes (Science)



Automobiles

Better Mileage and Better Safety (Science) ●
Cars and Society (Social Studies)
Home James - Self Driving Cars (English)
Pay the Toll (Math)



Hybrid and Electric Vehicles

Braking the Car (Science)
Government Policies and Electric Cars (Social Studies)
Hybrid and Electric Vehicles - Are They Worth It? (Math)
Range Anxiety (English) ●



Public Transportation

Busing It (Social Studies)
Chemistry of Smog (Science) ●
Pedal Power (English)
What Floats Your Boat (Math)



Trains

Railroad Tracks - One Size Fits All (English)
Riding the Rails (Social Studies)
The Force is With You (Science)
Worth the Ride (Math) ●

Modules





Introduction to AI

From the wheel to the printing press and all the way to the internet, we can mark human history through some key innovations. There's the world before and the world after. AI technologies are surely another one of those innovations, and the world isn't going to be the same. In this course, students will take a walk through the world of AI. They'll learn what it is, how it works, what it's already doing for people, and where it will take us in the future.



Introduction to Coding

This 20-hour course provides everything you need to introduce students to computer science and real, text-based computer programming for middle school! This course includes online lessons, group classroom activities and complete lesson plans for guiding students through authentic coding experiences. Students will learn basic programming concepts, careers in IT and computer science, and explore mobile applications and cloud computing.



Introduction to Computer Careers

This comprehensive module is designed specifically for middle school students looking to learn more about the different careers in the field of computer science and technology. This course offers a blend of online lessons, group classroom activities, and complete lesson plans to introduce students to the various roles, responsibilities, skills, and knowledge required for different positions for computer professionals.



Introduction to Engineering Careers

This module provides a comprehensive overview of various aspects of engineering, designed to inspire and educate middle school students. This course includes online lessons, group classroom activities, and complete lesson plans designed to engage students with interactive content, real-world applications, and insights into the daily lives of engineers, fostering an interest in engineering careers and technology.

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