No-Cost Digital STEM Resources
from Discovery Education & TGR Foundation
Presented by

JACKIE KAVEGE
DIRECTOR, CORPORATE EDUCATIONAL PARTNERSHIPS ACTIVATION

&

GYLA BELL
SR. DIRECTOR, PROGRAMS, TGR FOUNDATION
Corporate Education Partnerships

 ✓ Diverse content portfolio, including resources for STEM, SEL, Workforce Readiness, Substance Misuse Prevention & more
 ✓ Digital resources – Virtual Field Trips, Interactive Modules, Classroom Activities, Video & more
 ✓ Programs developed in partnership with diverse corporate and community partners
Where to find the programs

1. Corporate & Nonprofits Section
2. Corporate Education Partnerships
Where to find the programs
STEM-Based Learning Resources

HANDS-ON STEM EXPLORATION
HEALTH & WELLNESS
TECHNOLOGY & ENGINEERING
FINANCIAL LITERACY
COLLEGE & CAREER READINESS
Hands-On STEM Exploration

VISIT THE MAKER CORNER FOR NEW STEAM-POWERED

PROJECT IDEAS
Search through hundreds of idea starters to develop your own investigation or engineering design challenge.

- Scientific Ideas ➜
- Engineering Ideas ➜

PROJECT STEPS
Organize your investigation or engineering design challenges using our guides.

- Scientific Steps ➜
- Engineering Steps ➜

Trash Fishing
Grades 6-8 | 45-60 Minutes
Students will design, build, test, and refine a device that will allow them to fish trash out of local waterways while standing on the shoreline.

Download Activity

Designed for Delivery
Grades 6-8 | 45-60 Minutes
Students will take on the role of a packaging designer and be tasked with creating a package design for a box left outside after delivery that needs to remain cold and dry.

Download Activity

Armadillo Architecture
Grades 6-8 | 45-60 minutes
Students will learn about the efficient and lightweight shell of an armadillo. They will then apply these advantageous adaptations to their own architectural model using a variety of different materials.

Download Activity

KEEPING YOU CONNECTED
Hands-On STEM Exploration

SCIENCE FAIR CENTRAL

Overview

Every day, people around the world rely on cold drinks for refreshment and hot drinks to warm up. Homes, stores, and restaurants currently have cups designed to keep beverages hot and cold—but could they be better? In this activity, students will design and build a beverage cup insulator with the goal of keeping a hot drink the warmest. They will also experiment with the fastest way to cool a beverage, using a thermometer and trying a variety of cooling techniques. After analyzing their results, students will share their findings in a one-minute public service announcement.

Have you ever wondered...

Why liquids have to eventually cool down?

There are three main reasons why any liquid, in a regular cup, will eventually move towards room temperature. Even a boiling cup of water and a block of ice will eventually reach the same temperature, thanks to heat transfer. Heat transfer is the process by which heat, a form of energy, flows from a body of high temperature to a body of low temperature. Using a cup of hot chocolate as our model, let’s think about how this drink would cool down naturally.

Materials

One per student group:

- Thermometer
- For the class to share:
  - Paper cups
  - Aluminum Foil
  - Bubble Wrap
  - Cloth
  - Coffee Carafe
  - Cotton
  - Plastic Wrap
  - All Purpose Glue
  - Super Glue
  - Rubber Bands
  - Scissors
  - Clear Packaging Tape
  - Duct Tape

Put the following materials to the side, as they are specifically for Part 2:

- Ice
- Table Salt
- Paint Bucket, one per student group

Even a boiling cup of water and a block of ice will eventually reach the same temperature, thanks to heat transfer.

1. Conduction: This kind physical contact. When you begin to move quickly, and with the side of the paper cup, the cup transfers heat from hot to cold and back.

2. Convection: Heat transfer between liquids. Hot air (and hot liquid) sinks. When you pour the air just on top of the heat, the heat is transferred from your hand to the drink.

3. Radiation: Radiation transfer can be seen. Rises which travels to Earth in the Sun’s heat into the atmosphere. Radiation heat transfer objects like burning men also account for a little.

What can you do to keep temperature no matter what?

There are certain materials that stop/and slow

Blueprint for Discovery

Prior to the Class Arriving:

- On a white board or a large piece of paper, there will be a blank available to several students.
- Photocopy the Hot! Brainstorm + Data Sheet
- Display the insulator materials in an area where the cooling materials separate.

During Class:

1. As students enter, invite them to answer the quick sketch.

2. Think/Pairs/Share: Why do all of these hot drinks cool down?

3. Share this Doodle Science video. (You may have a presenter speak quickly.) Ask: Which of your ideas are new?

Part 1:

1. Explain that students will be having a friend demonstrate a hot beverage insulator for a paper cup. For this group, each participant will need 10 minutes to complete the task. If available, three different trial insulators are used:

2. Pass out the Brainstorm + Data sheet to the student and introduce the available materials, and change any brainstorm design, and building process. After a building phase, if they haven’t already.

3. Provide students with updates indicating how brainstorm, design, and building process. After a building phase, if they haven’t already.

4. Once 10 minutes is up, direct student groups.

5. Fill the student’s cups with hot water. If all use that, or hot water from the sink will work as the water’s starting temperature on their data sheet.

Hot! Hot! Hot! Brainstorm & Data Sheet

Directions: In the grid below, brainstorm the materials and design of your insulators as well as a brief description of why you think each insulator will be effective. There are 4 brainstorming slots in case you would like to brainstorm an idea and then narrow them down to three.

<table>
<thead>
<tr>
<th>Idea #1</th>
<th>Sketch of the design:</th>
<th>Why do you think this design will work?</th>
<th>Temperature Trials</th>
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<th>Sketch of the design:</th>
<th>Why do you think this design will work?</th>
<th>Temperature Trials</th>
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<th>Why do you think this design will work?</th>
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Hands-On STEM Exploration

SIEMENS STEM DAY

Train the Trainer Toolkit  Employees  Educators  Sweepstakes

Elementary K-5
Spark student interest in STEM with classroom activities. >

Middle School 6-8
Extend and deepen interest in STEM with classroom activities. >

High School 9-12
Apply STEM to everyday life with classroom activities. >

Share

#IDreamOfSTEM
SIEMENS STEM DAY

This is your destination for quality, standards-aligned content that is both easy to implement and applicable to students of all backgrounds and abilities – plus, it’s all FREE!

Train the Trainer Video

See how easy it is to put the Siemens STEM Day resources to work with students in your community. This new training video will show you how to find the activities and resources, present ideas on how to implement them with students, and demonstrate the value of opening students’ minds to the possibilities of STEM. You’ll hear from a coordinator at the Georgia Youth Science and Technology Center about how she has been able to utilize the Siemens STEM Day activities with

Train the Trainer Guide

No need for fancy STEM equipment here! Siemens STEM Day was purposefully designed to use materials commonly found in the classroom or at home, while still providing a hands-on, engaging learning experience for students. Use this guide for more information on how to use the Siemens STEM Day resources, including how to effectively incorporate technology, how to manage your time, and how to find the right resource for you.

- Looking for ideas on how to organize multiple activities into a series?
- Not sure how to insert personal or real-life connections to the concept?
- How about understanding what it’s like to lead kids through a learning experience?

Download the training guide now to answer these questions and more!
Hands-On STEM Exploration

3M YOUNG SCIENTIST LAB & 3M SCIENCE AT HOME

STUDENTS

Student Activities

Enter a world of cool science through brain boggling experiments!

These activities are designed to capture your curiosity and engage you in the scientific thinking process while having fun! They are based on classic scientific discoveries some dating back over 200 years. Scientists have used these activities to engage audiences around the world. They might not overwhelm you, but we predict you just might be wowed!

Balloons Electroscope

Use balloons to make an electroscope and witness the effect of static charges before your very eyes!

Download Activity

Balloon Rocket

Build a multistage rocket from two balloons.

Download Activity

Charged Fingers

Do you have the magic touch? Watch as your fingers mysteriously move a piece without touching it.

Download Activity

Disappearing Glass

Glass objects seem to disappear when placed in a cooling oil.

Download Activity

Gelatin Optic Fibers

Strips of gelatin dessert and a laser pointer demonstrate total internal reflection.

Download Activity

Pie Pan Accelerometer

A metal pie pan demonstrates the acceleration of gravity.

Download Activity

INTERACTIVES

Interactives

Help Students Feel Engaged and Excited about Science

Is there chemistry in the kitchen? Is there physics at the park? Interactives help students discover the real-world science around them and make connections to what they are learning in school. These activities could ignite the spark that may lead students to a scientific career.

Wind Energy

You will be able to design, build, and test a wind turbine. Your challenge is to design a wind turbine that will supply 40 homes with electricity for a year at the highest efficiency.

Download Activity

Innovation Exploration

Advance your way through everyday life by exploring the science all around you. Take a journey through a system within each scene and answer each question to proceed to the next.

Download Activity

Travel through Time

Transport yourself through the last 100 years to meet the inventors that have shaped our world.

Download Activity

Too Hot to Handle

Can you design a handle for Hot Stuff’s new skillet?

Download Activity

Getting Connected

Can you find the problem and fix the circuit in time for the Halloween contest?

Download Activity
Hands-On STEM Exploration

3M YOUNG SCIENTIST LAB & 3M SCIENCE AT HOME

Science Experiments for Kids at Home
Watch more science experiments designed, and tailored, for kids at home using commonly available items from around your place of living. Each experiment includes information on how to include them in your distance learning curriculum.

Soap Boat
Join 3M Researcher Yasir Shami as he introduces you to the science of surfactants. Not only is it the only important ingredient in many engineering and earth science processes; it also makes blowing bubbles possible.

Chromatography
Did you know red ink has more than just red in it inside? 3M’s VP for Research & Development and Chief Technology Officer, John Bowers, shows a simple way to separate the materials in your marker using capillary action.

Feeling Sound
Believe it or not, you can feel sound! Join Geeta Pillai, former Discovery Education 3M Young Scientist Challenge winner, as she teaches about the frequency of sound and how we perceive pitch.

Bernoulli Balance
A jetliner can weigh thousands of tons, but it is able to fly! Join 3M’s VP, Corporate Affairs, Rutherford Brooks III, as he explains how their weight is not a problem and how without lift, planes couldn’t fly.

Diffusion with Miss America 2020
Even wonder why things mix or don’t mix differently in different temperatures of water? Join Camille Schrier, a scientist who was crowned Miss America 2020, as she explains diffusion and how substances move through water.

Push & Pull
Follow along with 3M’s Sam Rekis, as he shows you that magnetism is more than just a simple push and pull—it’s an example of the power of the earth itself.

Liquid Fireworks
Join 3M scientist Jeff Penney as he uses nothing more than milk, dish soap, and a few other kitchen supplies to get the amazing effects of fireworks without using any fire at all.

Inflation Station
Follow along with 3M Advocate, Jassyhia Si, as students show scientific facts in a fun and engaging way.
DISCOVER DATA

STUDENT INTERACTIVE

STUDENT INTERACTIVE: DATA IN MY DAY
10-15 min.
In this self-paced eLearning module, students travel through a typical day to investigate everyday occurrences and discover where and how data and data science play a part. Students will explore the many ways data can be used along with various data-driven careers.

LAUNCH INTERACTIVE
DOWNLOAD EDUCATOR GUIDE

UNDERSTANDING THE ELECTION CYCLE
Grade: 6-12
Subject(s): ELA, Math, Science, After school enrichment
Students will investigate voting participation rates in elections, the impact of advanced data on campaign advertisements, and the evolving impact of media consumption and election information.

DOWNLOAD

BIG DATA IN THE BIG GAME
Grade: 6-12
Subject(s): ELA, Math, Science, Afterschool Enrichment
Do you prefer to watch the game, the commercials or the halftime show? In these activities, students will investigate consumer data bytes surrounding championship football—such as the fans, the entertainment, and the food.

WOMEN & GENDER EQUITY AT 100
Grade: 6-12
Subject(s): ELA, Math, Science, Afterschool enrichment
Students will assess the extent of the progress in 2020 by analyzing data through women's changing role in entertainment, professional sports, and leadership.

USING THE CENSUS FOR A U.S. SNAPSHOT
Grade: 6-12
Subject(s): ELA, Math, Science, Afterschool enrichment
Students will use archived Census data to explore changes in U.S. population density, diversity, and voting participation.
Hands-On STEM Exploration

DISCOVER DATA

EDUCATOR WEBINAR

Looking for ways to make data more interesting for your students? Whether this is your first step in exploring data science or you are a seasoned expert looking for new strategies, the DISCOVER DATA educator webinar will have something for everyone.

This webinar is broken out into two thematic parts:

- How to make data in everyday life come alive for your students
- Strategies for engaging students with the multi-media resources available from the DISCOVER DATA initiative

WATCH NOW

WANT MORE? SCHEDULE A VIRTUAL VISIT FROM A REAL-WORLD DATA EXPERT

KEEPING YOU CONNECTED
Hands-On STEM Exploration

GIRLS GET STEM

Cyber Detectives

Powerful Resources

Virtual Field Trip  Educator Resources  About

KEEPING YOU CONNECTED
Join us as we experience a brand-new kind of camp – it’s not just swimming, sun, and s’mores – but STEM! Tune in to transport students to the STEM Center of Excellence where STEM will come to life in new and unexpected ways.
STEM-Based Learning Resources

HANDS-ON STEM EXPLORATION

HEALTH & WELLNESS

TECHNOLOGY & ENGINEERING

FINANCIAL LITERACY

COLLEGE & CAREER READINESS

KEEPING YOU CONNECTED
Educators

Turn-key, standards-aligned materials provide engaging, hands-on activities that help students to identify actionable ways to bring happiness to their communities.

NEW VIDEO: See how happiness can lead to student success

CHOOSE A FILTER

CLASSROOM ACTIVITY  DIGITAL LESSON BUNDLE  FAMILY ACTIVITY  INFOGRAPHIC  PROFESSIONAL DEVELOPMENT  VIDEO  VIRTUAL FIELD TRIP

KEEPING YOU CONNECTED
STEM for Health & Wellness

DISCOVER YOUR HAPPY (SEL)

VIDEO

This Is Your Brain on Happiness

Grades 7-12
4 min. duration

Happiness is an essential aspect of what it means to be human. Explore the science behind happiness and how happiness can affect our sympathetic and parasympathetic nervous systems.

CLASSROOM ACTIVITY

This Is Your Brain on Happiness

Grades 7–12
45 min. duration

Students participate in a jigsaw activity to research how happiness changes the brain and how they can take control of those positive changes.

Watch Video

Student Activity

Student Activity | Be Thankful

Happiness Skill: Gratitude

Time
45-minute session

Overview
After viewing the This Is Your Brain on Happiness video, students work in groups with classmates. Students brainstorm for happiness.

Resources
• How to Trick Your Brain
• How to Hack Your Brain
• How to Make the Most of Your Happiness

Objectives
Students will
• Collaborate with peers
• Explain connections
• Select strategies to tackle happiness challenges

Materials
• Video: This Is Your Brain
• Poster paper
• Markers
• Computer access
• Article: How to Trick Your Brain
• Understanding
• How to Chop
• How to Take

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Student Activity | Agree to Disagree

Happiness Skill: Human Connection

Time
20–45 minutes

Overview
In this activity, students explore the importance of human connection. After watching a video on the topic, students complete an activity that helps them understand the importance of human connection.

Objectives
Students will
• Explain the value of human connection
• Identify ways to maintain human connection

Materials
• Video: Agree to Disagree
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STEM for Health & Wellness

AHA NFL PLAY60 (PHYSICAL FITNESS)

**Pump You Up**
Science/PhysEd/ELA | 45 min.
Students will learn about the many benefits of regular physical activity, analyze statistics related to physical activity levels in the U.S., and track their own physical activity level.

**The Influence of Science & Tech in Sports & Physical Activity**
Science/PhysEd/ELA | 90 min.
Students will design a measurement tool so they can track their fitness goals, ensuring that they get a balance of muscle and bone strengthening activities.

**Fitness Mini Train**
PhysEd | 90 min.
Students collaborate to simulate a fitness program incorporating physical activity, and team-building activities.

**Journey of The Blood**
Science | 60 min.
Students learn about the circulatory system and the impact of physical activity on blood flow and heart rate.

**What Happens When You Move?**
Science | 90 min.
Students learn about cardiovascular health and the relationship between physical exercise and physiological changes.

**PLAY 6o Presents!**
ELA/Science | 90 min.
Students create a personal or physical activity plan and present it to the class. Students learn about physical fitness and how different sports involve the use of different muscle groups and other body systems.

**NEW**
**FUTURE**
**FAVORITE**

**Performance**, 250 m
Use this circuit workout to exercise your whole body, increase your heart rate, and keep your physical activity fun and exciting.

**Lateral Movements**, 314 m
These lateral movements will strengthen your oblique muscles while challenging your mind and heart.

**Agility**, 328 m
Learn these easy ways to move quickly and efficiently into different positions to increase your coordination.

ZIP

ZIP
STEM for Health & Wellness

AHA NFL PLAY60 (PHYSICAL FITNESS)

NFL PLAY 60 Challenge: What’s Your Game Plan?

Do you have a game plan for your 60 minutes of physical activity every day? Come explore the different ways that regular physical activity can benefit your life, both at school and at home. It’s an important part of each day! Join the NFL PLAY 60 Challenge, and design your own game plan to get moving!

Now that you know why it’s important to be physically active, it’s time to design your three-day game plan.

Activities

- Football
- Swimming
- Riding a bike
- Skateboarding
- Jumping rope
- Roller skating
- Handball
- Hopscotch
- Running

Weekday 1

- Before School: 15 minutes
- During School: 15 minutes
- After School: 15 minutes
- Evening: 15 minutes

Weekday 2

- Before School: 15 minutes
- During School: 15 minutes
- After School: 15 minutes
- Evening: 15 minutes

Saturday/Sunday

- Morning: 15 minutes
- Mid Day: 15 minutes
- Afternoon: 15 minutes
- Evening: 15 minutes

Fill in your game plan before continuing.
ASK, LISTEN, LEARN – A PROGRAM OF RESPONSIBILITY.ORG (UNDERAGE DRINKING PREVENTION)

Alcohol and the Developing Brain

Teachers, School Nurses and Counselors

Together, let’s equip students in grades 5-7 with the tools to say "YES" to a healthy lifestyle and "NO" to underage drinking. Explore no-cost digital classroom curriculum and engaging videos that uncover the science behind how alcohol affects developing brains, bodies and behavior.

Digital Exploration

Digital Exploration, Educator Guide, and Classroom Activities
ASK, LISTEN, LEARN – A PROGRAM OF RESPONSIBILITY.ORG (UNDERAGE DRINKING PREVENTION)
DOSE OF KNOWLEDGE (SUBSTANCE MISUSE PREVENTION)

Dose of Knowledge

A substance misuse prevention program for grades 6–12
Edward Fernandes, a CVS pharmacist who will talk to students about opioids, the risk associated with substance misuse, and what students should do if they are prescribed an opioid.
STEM-Based Learning Resources

HANDS-ON STEM EXPLORATION
HEALTH & WELLNESS
TECHNOLOGY & ENGINEERING
FINANCIAL LITERACY
COLLEGE & CAREER READINESS
ecoAction Virtual Field Trip

Boeing and Discovery Education are celebrating the 50th anniversary of Earth Day with the ecoAction Virtual Field Trip. Students will investigate the themes of air, land, water, and waste as they explore how they can do their part to improve the environment as well as how a large company like Boeing is doing its part, too.

Wondering how we make sure to stay safe on set?
Check out the Health and Safety Questions & Answers

ecoAction Virtual Field Trip
Experience Handout

Directions: As you learn more about the Mars rover throughout the 360 experience, use the space below to take notes on the rover’s important features as well as any challenges that it faces. Complete sentences are not needed, but notes must be taken.

Part 1: Label the rover’s key parts below, as well as why each part is important. Be as specific as possible.

Part: ________________________
Function: ____________________

Part: ________________________
Function: ____________________

Part: ________________________
Function: ____________________

Part 2: As you navigate the rover, jot down any challenges you face, as well as new or improved rover elements that may help make its mission more successful. Sketch or explain your ideas in the space below.

Part: ________________________
Function: ____________________

Part: ________________________
Function: ____________________

Part: ________________________
Function: ____________________

STEM

Companion Activities & Educator Guide
Grades 6-8

Each Activity takes 45-60 minutes

Welcome to Mars! This 360-experience guides students through three space-based scenarios with a focus on various aspects and considerations with respect to travelling to Mars. The Educator Guide provides instructions on how to maneuver once inside the experience, while the Companion Activities provide wrap-around context for the three sections of the experience:
The Lab, The Rover, and The Museum.

Companion Educator Guide: PDF, 2MB
Activity 1: Plant Study: PDF, 421KB
Activity 2: Rover Exploration: PDF, 760KB
Activity 3: Earth-Mars Physics Museum: PDF, 591KB

STEM

Discover Mars

 immersed your students in the Mars experience where they can venture to the Boeing Mars Experiment Laboratory and investigate how to grow plants in Martian soil. Then, program the deep space rover to collect samples for research. Finally, enter the Earth-Mars museum to see the differences in gravity, magnetism, air pressure, and plate tectonics on each planet.

Explore Extended-Reality Video

Discover Mars
TECH FOR TOMORROW

Inspire the innovators of tomorrow. Spark curiosity today!

About Tech for Tomorrow
Tech for Tomorrow is an education program for grades 4–8 designed to highlight technology and innovation can better our world. Tech for Tomorrow’s mission is to bring students to today’s cutting-edge technology and inspire them to create enduring ideas for the future.

Classroom Activities

CRYPTOBAEL
Coded Communication
Grades 4–6
80–75 minutes
Students are presented with a top-secret scenario in which they must intercept a message from a spy.

NETBUILDER
Information Transfer
Grades 4–6
80–75 minutes
Students must teach others about how information is transferred over the Internet.
**Zipline**
How can we deliver life-saving medical supplies to remote hospitals?

- The Problem
- The Solution
- The Impact
- The What Can I Do?

**Amandla Mobi**
How can those without internet access come together to create change?

- The Problem
- The Solution
- The Impact
- The What Can I Do?

**Solvatten**
How can we increase access to safe, clean water in developing nations?

- The Problem
- The Solution
- The Impact
- The What Can I Do?
INTERNET OF THINGS: INFINITE POSSIBILITIES
VIRTUAL FIELD TRIP

The Internet of Things refers to a collection of computing devices—such as smart speakers, thermostats, and sensors—which are connected to a network to allow for an improved real-time data to better manage two of the most critical resources to humanity: energy and water. Students will get an exciting look at how the Internet they use in their everyday lives can be used to conserve natural resources, protect ecosystems, and create safer, more sustainable communities.

Get the learning started BEFORE watching the Virtual Field Trip... Download the standards-aligned companion guide to discover how the Internet does more for us than we think—it has a direct effect on how we can make our communities more sustainable. This activity is designed for completion during and post viewing with key ideas for extend student learning to classroom concepts.

Educator Guide 📝

INTERNET OF THINGS
Infinite Possibilities
Virtual Field Trip

Learn to Conserve
The Internet of Things and Energy Conservation
Design and Development of Smart Meters
Smart Cities and Environmental Action
The Internet of Things and Natural Disasters

Unable to watch the video above? Watch on YouTube here...
CONSERVATION STATION

WEIGHT OF RESOURCEFULNESS
Creating a Water Conscious Meal
Grades 6 – 9
45-60 minutes
This activity is designed to help families understand how their food choices affect water availability on Earth by discovering how much water is needed to produce certain foods.

Family Activity 🕵️

WEIGHT OF RESOURCEFULNESS
Energy Audit
Grades 6 – 9
45-60 minutes
Families will identify the top 10 devices that consume the most electrical energy and develop a plan to reduce the amount of energy used in the house.

Family Activity 🕵️

WEIGHT OF RESOURCEFULNESS
“Smarter” Home Blueprints
Grades 6 – 9
45-60 minutes
Family members will work together to create a blueprint of their living space that highlights ways that they can save energy and water.

Family Activity 🕵️

TECHNOLOGY & ENGINEERING

CLASSROOM ACTIVITY
Create a Global Energy Infographic
Grades 6 – 9
45-60 minutes
In this activity, students will use the Global Energy Statistical Yearbook (2015) to create a data chart about energy use around the world. They will be able to look at various types of energy use, such as oil, gas, and renewable energy, by country and compare and contrast how different countries consume energy.

Download Activity 🕵️

CLASSROOM ACTIVITY
Harvesting Energy in Your School
Grades 6 – 9
40-60 minutes
In this activity, students will discover how high school science students use technology and innovation to harvest energy in their school or community. Students will be asked to think about their own school and identify ways that various types of energy, such as heat, energy, or solar energy, may be used every day.

Download Activity 🕵️

CLASSROOM ACTIVITY
How Much Water Does It Take?
Grades 6 – 9
40-60 minutes
In this activity, students will be introduced to the idea that it takes a lot of energy to make many of the products that we buy and use or consume every day. Often, the amount of water and the energy that it is used is unreported and hidden from the consumer.

Download Activity 🕵️

CLASSROOM ACTIVITY
Calculating Your Ecological Footprint
Grades 6 – 9
40-60 minutes
In this activity, students will consider and estimate their consumption of energy used in the home, transportation, food, housing, and for goods and services, while estimating the amount of waste they generate. The goal is to identify ways they can reduce their impact on the Earth.

Download Activity 🕵️

CLASSROOM ACTIVITY
Combustion Energy Conversion
Grades 6 – 9
40-60 minutes
This activity demonstrates the conversion of energy into usable forms through a demonstration showing the conversion of potential chemical energy to heat energy. Students will discuss how to improve this process to create electrical energy.

Download Activity 🕵️

CLASSROOM ACTIVITY
Solar Powered Homes
Grades 6 – 9
40-60 minutes
In this activity, students will study how solar electricity can be generated, stored, and utilized in homes. Students will be given a small solar panel to test and improve.

Download Activity 🕵️
STEM-Based Learning Resources

HANDS-ON STEM EXPLORATION
HEALTH & WELLNESS
TECHNOLOGY & ENGINEERING
FINANCIAL LITERACY
CAREER EXPLORATION
CHA-CHING MONEY SMART KIDS

Educational Resources

Classroom Activities
Activities made especially for K-6 educators to provide the knowledge and tools necessary for kids to be money smart. Get your class rockin' with the band and learning the building blocks of finance.

Download Classroom Activities (ZIP)

Educator Guides
Guides created to help educators make meaningful classroom connections and leverage the Cha-Ching financial literacy videos and classroom activities.

Download Educator Guides (ZIP)

Family Activities
Activities made especially for parents to provide the knowledge and tools necessary for kids to be money smart. Get the entire family involved in creating a strong financial future!

Download Family Activities (ZIP)
CHA-CHING MONEY SMART KIDS

Videos

Episode 1
Earn, Save, Spend, Donate
- Download Activity (ZIP)

Episode 2
It's Got to be Earned
- Download Classroom Activity (PDF)
- Download Family Activity (PDF)

Episode 3
Entrepreneur
- Download Classroom Activity (PDF)

Episode 4
Grow Money
- Download Classroom Activity (PDF)

Episode 5
Saving For Success
- Download Family Activity (PDF)

Episode 6
Just in Case
- Download Classroom Activity (PDF)

Episode 7
Spend Your Money Wisely My Friend
- Download Classroom Activity (PDF)
- Download Family Activity (PDF)

Episode 8
Please Little Spender, Think
- Download Classroom Activity (PDF)
PATHWAY TO FINANCIAL SUCCESS

UNIT 4: USING CREDIT WISELY
What is Credit, and How do You Use It?
When it comes to money, credit is basically a loan where you borrow money with the promise of paying it back later. Learn how to use credit responsibly to pay for items you want or need.
Watch Unit 4 Video

UNIT 5: MAKING MAJOR FINANCIAL DECISIONS
“To Buy or Not to Buy” That is the Question
From your favorite social media stars to ads popping up in apps, does everyone seem to be trying to sell you something? Learn how to block out the noise and evaluate purchases as a savvy consumer.
Watch Unit 5 Video

UNIT 6: GROWING & PROTECTING YOUR FINANCES
The Risks and Rewards of Investing
What exactly is investing, and how is it different than setting up a regular savings account? Discover ways to own a piece of a company with this introduction to the stock market.
Watch Unit 6 Video

STUDENTS
Middle School
How do you picture your future? Making your dreams come true requires smart planning, especially in managing your money. Your path to financial success starts here. Check out these videos for an overview of basic money matters.

UNIT 1: BEING FINANCIALLY RESPONSIBLE
Budgeting: What Is It and How Does It Work?
Simply put, a budget is a spending plan for your money. Learn how to use a budget to map out your path to financial success.
Watch Unit 1 Video

UNIT 2: GETTING PAID
What Do You Want to Be When You Grow Up?
It’s not too early to think about your future career. Learn how to research careers and consider how your education can help you meet your goals.
Watch Unit 2 Video

UNIT 3: PAYING YOURSELF FIRST
How Can You Get the Most from Your Money?
Money does not grow on trees, but it can grow with smart planning. Learn how savings accounts increase the value of your funds with compound interest.
Watch Unit 3 Video
Financial Literacy

PATHWAY TO FINANCIAL SUCCESS

UNIT 1: BEING FINANCIALLY RESPONSIBLE

SELF-PACED MODULE

TOPIC 2
Imagining Your Financial Future
10 to 15 minutes

What are your goals for the future? Learn about setting goals and financial success strategies to help you reach those goals.
Launch Module

TOPIC 3
Money Habits
10 to 15 minutes

Money habits include the way you spend, save, and talk about money. Learn about differences between good habits and how to form good habits.
Launch Module

Pathway to Financial Success

Use the icon to the right to turn on audio transcript.

What are your goals for the future?
STEM-Based Learning Resources

HANDS-ON STEM EXPLORATION
HEALTH & WELLNESS
TECHNOLOGY & ENGINEERING
FINANCIAL LITERACY
CAREER EXPLORATION
Career Exploration

INNOVATION GENERATION

Career Profiles

Show students the many STEAM careers available to them with detailed career profiles featuring professionals from Stanley Black & Decker.

Meet Shernale

3 minutes
Shernale is a Materials Engineering Manager at Stanley Black & Decker who manages the prototype teams to ensure they have the most high-quality materials for their products.

Download Career Connection 🔄
Watch Video 🎥

Meet Caroline

4 minutes
Caroline is an Outdoor Product Manager at Stanley Black & Decker who ensures that outdoor products like mowers and leaf blowers meet marketplace needs.

Download Career Connection 🔄
Watch Video 🎥

Meet Harry

4 minutes
Harry is a Technical Innovation Lead at Stanley Black & Decker who devises new and improved methods and protocols for machine operations.

Download Career Connection 🔄
Watch Video 🎥
Career Exploration

INNOVATION GENERATION

CONCEPT & CREATE
VIRTUAL FIELD TRIP

INNOVATION GENERATION
Making an Impact

Stanley Black & Decker
Discovery Education

Empower the Next Generation of Makers to THINK BIG

ENTER NOW

Chapter 1: Meet the Teams
Chapter 2: What is a Makerspace?
Chapter 3: The Design Process

Keeping You Connected
**Career Exploration**

**STEM CAREERS COALITION**

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**Software Engineer**

Elementary, Middle, and High School | Grades K-12

Video Length: 3:11 min

Software Engineers apply the principles of engineering and computer science to solve problems in many areas. Their expertise in programming languages offers many career opportunities developing apps, video games, social media and more.

- Student Activation [pdf]
- Career Profile [pdf]

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**AI Researcher**

Elementary, Middle, and High School | Grades K-12

Video Length: 3:01 min

Senior Principal Researchers have an edge under leadership of advanced Artificial Intelligence technologies. They pursue topics such as facial recognition, voice search, and other AI-driven applications.

- Student Activation [pdf]
- Career Profile [pdf]

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**Data Scientist**

Elementary, Middle, and High School | Grades K-12

Video Length: 3:07 min

Data scientists use computers and advanced statistical methods in search of patterns and information that can help companies solve problems. Data science careers are available in almost every industry, including e-commerce, healthcare, finance, and other data-driven fields.

- Student Activation [pdf]
- Career Profile [pdf]

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**Welder**

Elementary, Middle, and High School | Grades K-12

Video Length: 3:06 min

Welders use hand-held or remote-controlled equipment to join or cut metal parts, with a combination of both manual labor and automation. They bring ideas, concepts, and parts to life through their knowledge of materials and tools, whether working in a manufacturing facility or in a field.

- Student Activation [pdf]
- Career Profile [pdf]

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**Technician**

Elementary, Middle, and High School | Grades K-12

Video Length: 3:11 min

Technicians are problem solvers who work with their hands, using tools to repair and maintain equipment. A career in technology offers a wide variety of opportunities, from developing new technologies to maintaining existing ones.

- Student Activation [pdf]
- Career Profile [pdf]

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**Facilities Engineer**

Elementary, Middle, and High School | Grades K-12

Video Length: 3:09 min

Facilities engineers are the masterminds behind the scenes. They oversee the management of buildings, systems, and equipment, ensuring smooth operation and efficient use of space.

- Student Activation [pdf]
- Career Profile [pdf]

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**Chemical Engineer**

Overview: Chemical engineers figure out how to transform chemicals and raw materials into products that humans can use. They create new products and improve existing ones, from pharmaceuticals to fuels.

EVALUATE YOUR INTEREST

- Enjoy analyzing and solving problems
- Like being creative and thinking outside the box

Learn more at www.STEMCareersCoalition.org
Career Exploration

STEM CAREERS COALITION

COVID-19 Solution Seekers

With the rapid spread of COVID-19 effecting nearly every aspect of life, many inspiring people, communities, companies, and governments have quickly mobilized to fight the spread of the coronavirus. COVID-19 Solution Seekers highlights a series of diverse individuals working in a variety of industries, who are all harnessing their STEM skills to help contribute to this urgent global effort.

COVID-19 SOLUTION SEEKER
Senior Policy Advisor, American Petroleum Institute
Grades K-12
Video Length: 3:35 min

With expertise in addressing community concerns about environmental health issues, Uni is drawing on her knowledge to help mitigate the spread of COVID-19, finding ways to reduce transmission in community areas and workplaces.

Companion Activity

COVID-19 SOLUTION SEEKER
Senior Researcher, Microsoft
Grades K-12
Video Length: 3:30 min

To help support precision medicine in clinical settings during the pandemic, Grace uses data science methods to research and identify genetic, biologic, and environmental factors that help in tracking and treating the virus.

Companion Activity
Career Vignettes

See computational thinking at work. Meet the diverse and dynamic people who have taken their passions and launched amazing careers in computer science and design thinking. Our career connections highlight professionals in a variety of specialties.

Christopher
Business Analyst
Christopher loved the complexity of video games growing up. Now he serves as a centerpoint for his clients and his company, connecting all of the pieces.

Elisha
Quality Assurance & Control
Computer Engineering class in high school ignited Elisha’s love of technology. Today, thousands of professionals rely on the applications she tests for accuracy daily.

Saravanan
Business Analyst & Designer
Saravanan had an early knack for identifying and solving problems. Now, he combines his computer and math skills with creativity and brainstorming to develop the best products and solutions for users.
IGNITE MY FUTURE

Career Exploration

IGNITE MY FUTURE

Master Class
What does computational teaching look like in real classrooms? Meet three real-life educators who share their personal experiences and demonstrate their computational teaching strategies within diverse classrooms. Teachers will share their insights and success utilizing unique tools.

Resources
Ignite their knowledge in the classroom and at home with resources that will get students on the path toward seeing the world through the powerful lens of computational thinking.

Middle School Curriculum
Explore content by subject, guiding question or computational thinking strategy.

Family Activities
Engage in computational thinking with family-friendly activities that can be applied at home.

Career Vignettes
Meet professionals using computer science and design thinking to build a brighter future.

Pete Delgado
Young Women’s STEAM Research and Preparatory Academy.
El Paso, TX
Meet Pete and learn how he consistently infuses aspects of computational thinking into his daily lessons, including collect and analyzing data, decomposing problems, building models, and developing algorithms.

Jenna Rosienski
Franklin Middle School
Janesville, WI
Meet Jenna and learn how she demonstrates computational thinking across subjects and the importance of collaboration with her fellow educators and administration that has made this strategy such a success.

Emy Aultman
G.O. Bailey Elementary School
Tifton, Georgia
Meet Emy and learn how she debunks myths about teaching computational thinking – such as needing technology like computers in the classroom to use computational thinking resources or that teaching computational thinking will take time away from “regular” classes.

Continue the journey, and register for the TECHademy webinar series
Where to find the programs

1. Corporate & Nonprofits Section
2. Corporate Education Partnerships
Where to find the programs
Where to find the programs

EXPERIENCE
Thank You!

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