STEM Career Awareness Resources for TN

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A partnership between:

TENNESSEE CHAMBER of Commerce & Industry

TENNESSEE MANUFACTURERS ASSOCIATION

Thinking Media

Career Awareness and Preparation for TN

Bringing together experience and expertise across the State of Tennessee to implement strategies, systems and resources to improve school-to-career transitions for all students

LearningBlade®
STEM and Computer Science Career Awareness

Tennessee CAPS
Career Awareness and Preparation System

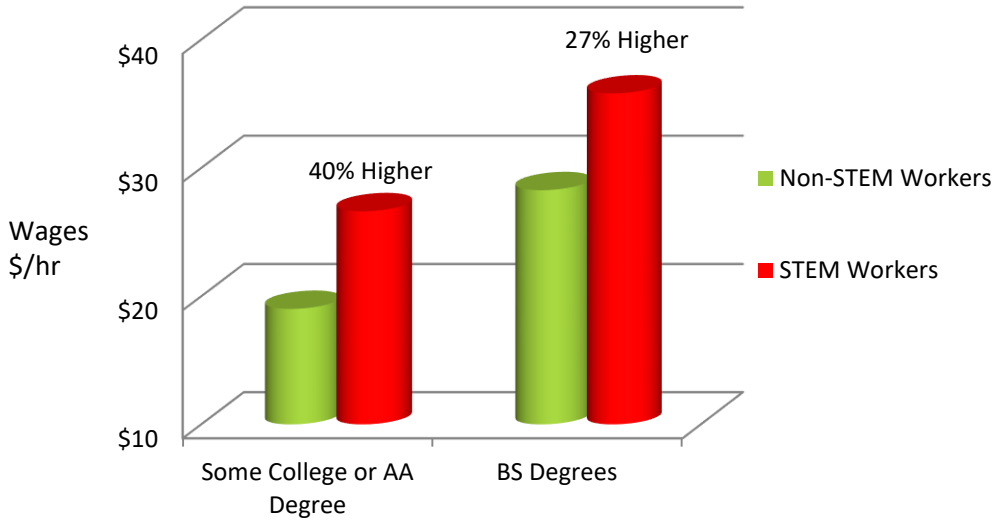
Students Need Early Exposure to Careers

No. 1 Reason Students do not Major in STEM is **Lack of Awareness of Careers**

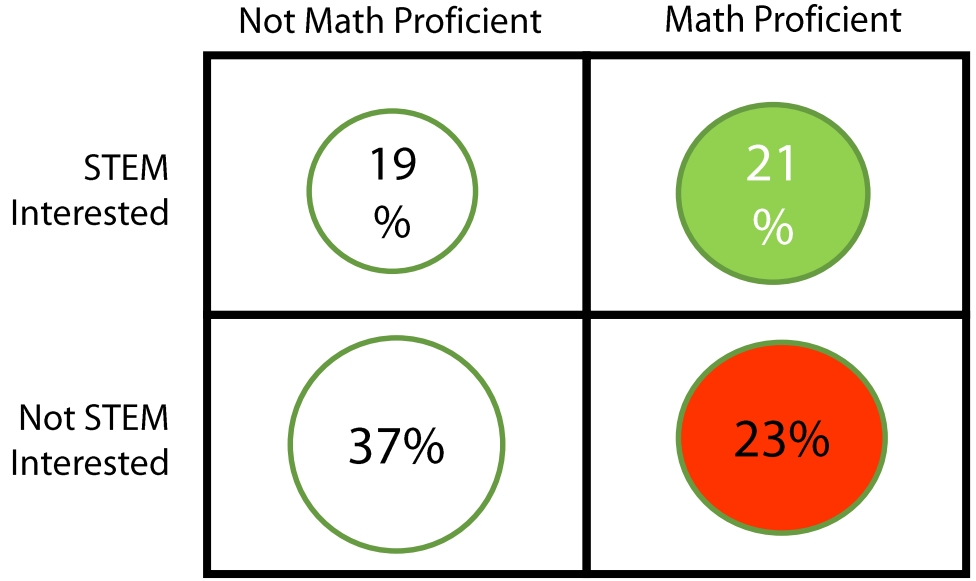
94% Middle School Students Making **Career-Related Decisions**

"Increasing Student Interest in Science, Technology, **Engineer**ing, and Math (STEM)" UMass Donahue Institute Research and Evaluation Group, 2011, as retrieved from http:www.mass.edu/forinstitutions/prek16/documents/Student%20Interest%20Summary%20Report.pdf

Demand for STEM and computer science workers is growing, but participation by students is lacking.

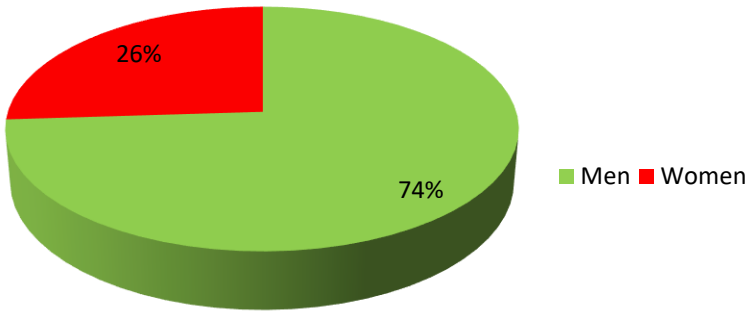


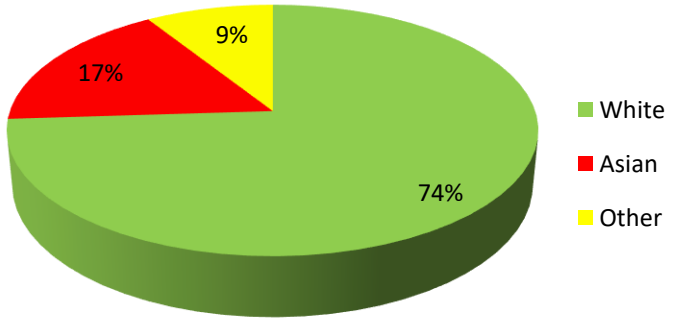
STEM Jobs Pay More at All Levels



12th Graders, 2013, from ACT, Inc.

23% of Students are Prepared for STEM, but Not Interested





Women and Minorities are Underrepresented in STEM

We introduce students to STEM and CS careers through “Missions”

Students

Contextualized Learning
Tailored to the Interests of each Student

Teachers

Reinforcement of Basic Academics Indexed by
Standards and Providing Resources

LB Missions contain over 100 careers and technologies, 400 lessons in the specific contexts of science, math, English and social studies

Learning Blade is a supplemental system that engages underrepresented students and supports academics in grades 5-9

- Introduces students to a wide range of STEM technologies and careers and **engages students** through an online, game-based platform
- **Easily accessible via the Internet** and teachers can make remote assignments
- Provides additional downloadable resources linked to **coding, design thinking, 3D printing** that can be used at home
- Motivates **minorities, girls, rural and urban students** to explore STEM and Computer Science fields
- Addresses **many academic subjects**, not just science
- Analyzes student skills according to the **academic state standards** to continue reviewing of these.
- **5-9 Grade Materials** –more than 200 hours of curriculum that can be used in Middle and High schools (online and lesson plans)

Each "Mission" involves a societal challenge that interests students

12

"Missions" that engage all students

Mission	Challenge	Career Clusters
Dolphin Rescue	Help rescue rehabilitate an injured dolphin, including creating an artificial prosthetic tail	Biomedicine, Marine Science
Haiti Orphanage	Design and build an environmentally-sound orphanage for children left homeless by an earthquake in Haiti	Construction, Sustainability
Heart Surgery	Conduct heart surgery and therapy for a child with a heart defect; evaluate the use of artificial hearts or heart components	Medicine
Energy Production	Evaluate alternative or upgraded energy sources for a city that currently has an old coal-fired power plant	Energy Production, Environment
Local Food	Consider methods to increase production of local foods in a community	Agriculture
Robotics Design	Explore technology used for robotics design, such as sensors, electrical circuits, industrial design and computers	Electronics, Computer Science
Flu Outbreak	How health and IT professionals can use data warehousing and analysis to predict flu outbreaks using GIS and social media data	Information Technology
Transportation Jam	Evaluate new transportation methods for a city that has a traffic congestion problem	Transportation
Manufacturing Concept	Use modern manufacturing techniques to design and build a new concept car	Advanced Manufacturing
Entrepreneurship	Set up a new business with a focus on entrepreneurship	Finance, Business
Lightweight Aircraft	Design a lightweight and easily maintained aircraft for distant missions	Lightweight Metals Manufacturing
Hack Attack	Learn about methods to create and protect website, apps and social media after a school's website and media are hacked	Computer Science

Each Mission includes an interactive toolbox of lessons and activities.

Interactive online lessons, ready-to-use lesson plans and activities for middle and high school students. Can be used by any teacher, anywhere. Validated and proven to increase STEM career interest.

Interactive Lessons

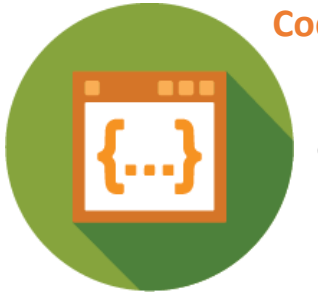
Over 400 online lessons tied to academic standards

Design Thinking

Solve complex problems with the 5-step creative thinking process

Career Videos

Introduce over 50 careers with real-life people

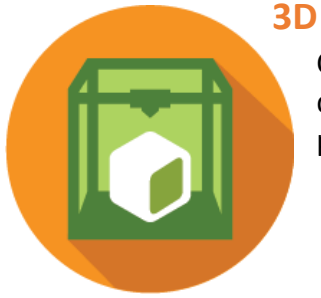


Coding Activities

Demonstrate coding principles on and offline, including Code.Org

Challenge Projects

Hands-on, project-based lessons using common materials



3D Printing Activities

Create objects that demonstrate science principles

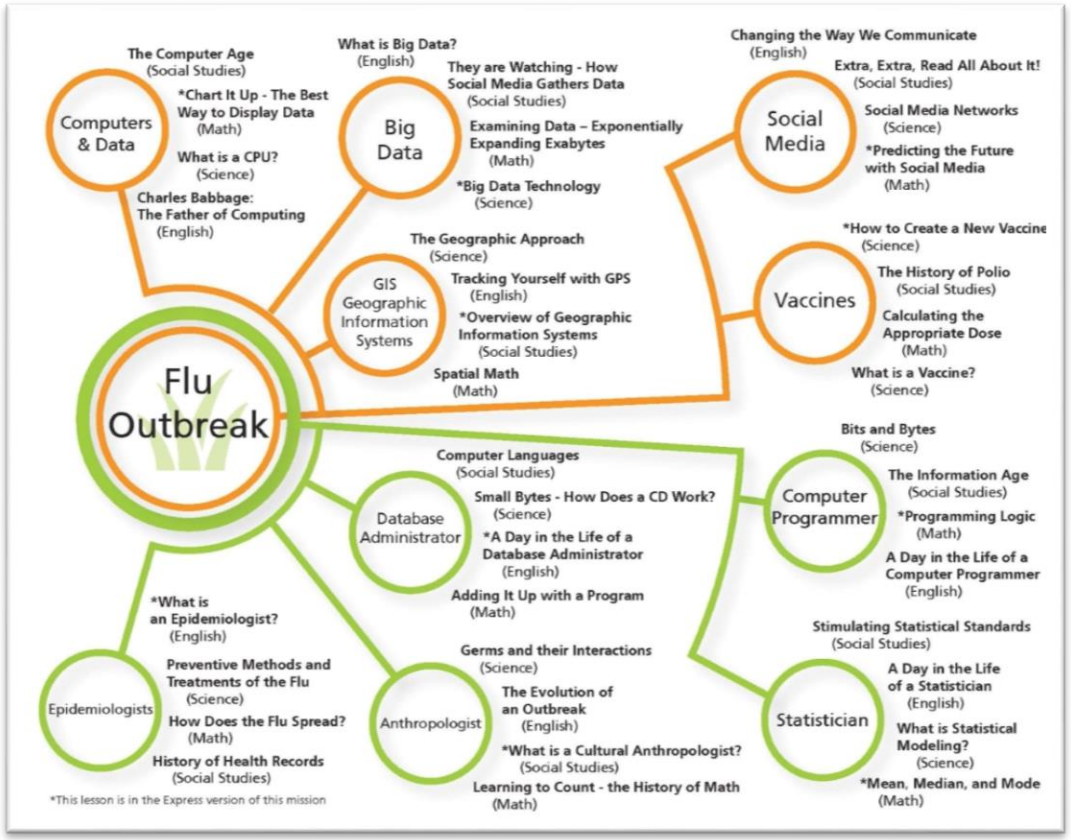
Parent Discussions

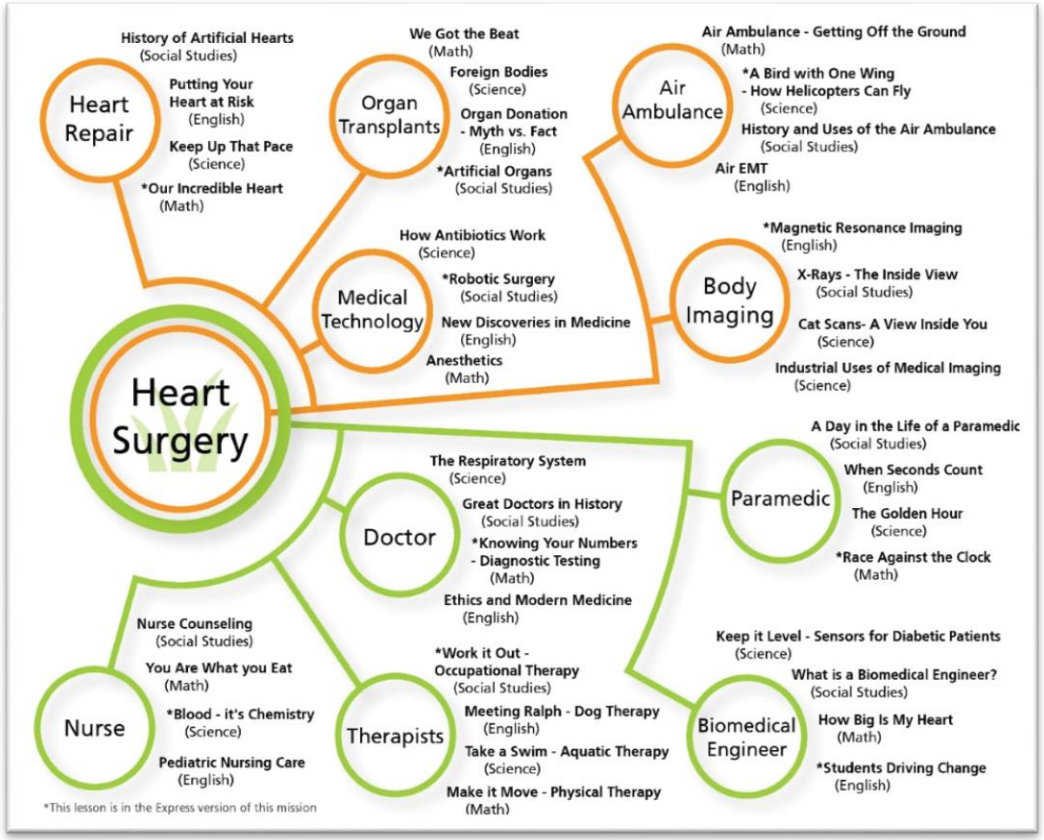
Handouts and easy experiments for at-home discussions

Papercraft Figures

Students origami-type figures of 100 careers and technologies

LB contains over 100 careers and technologies, 400 lessons in the specific contexts of science, math, English and social studies



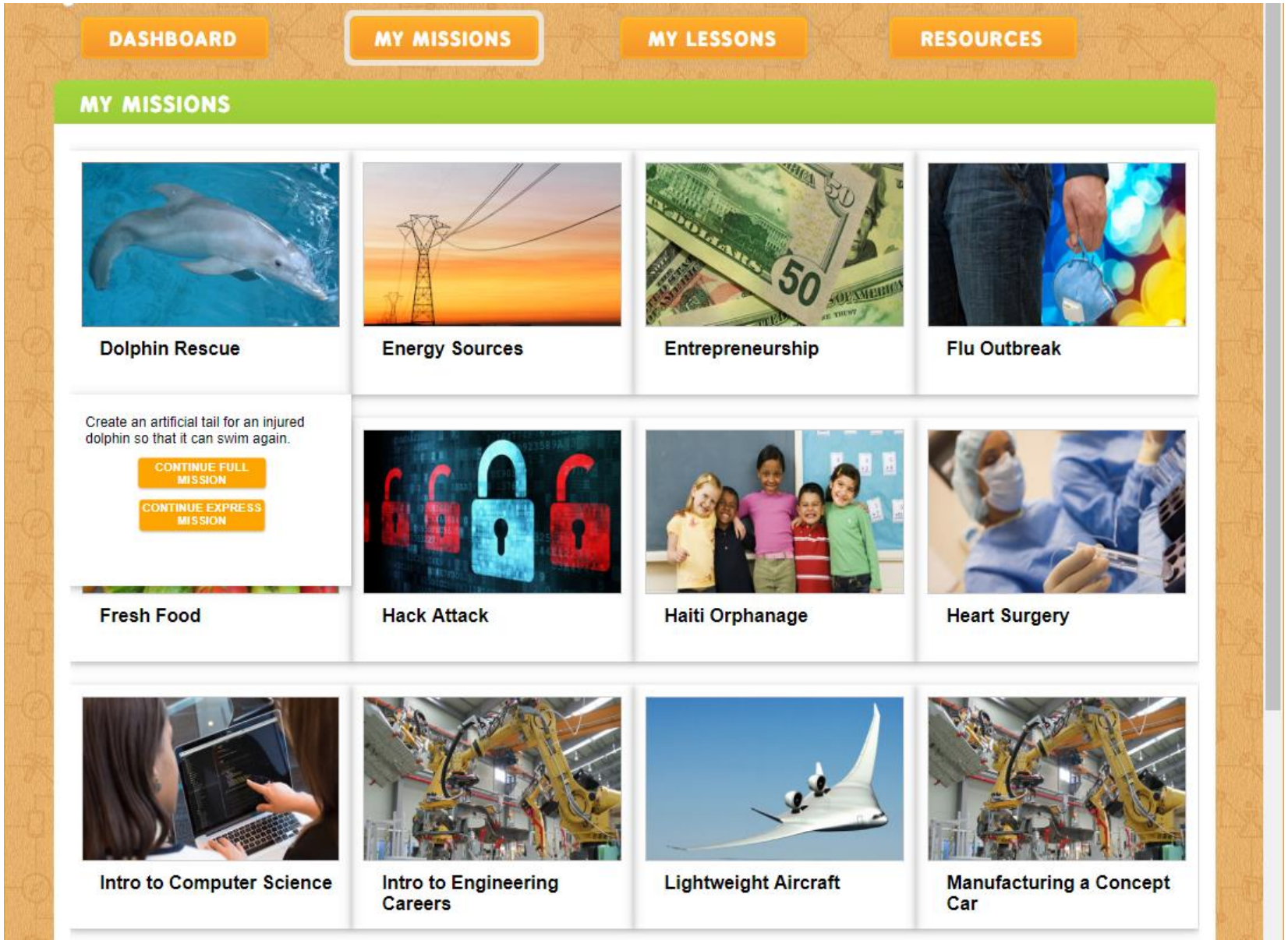


Tools

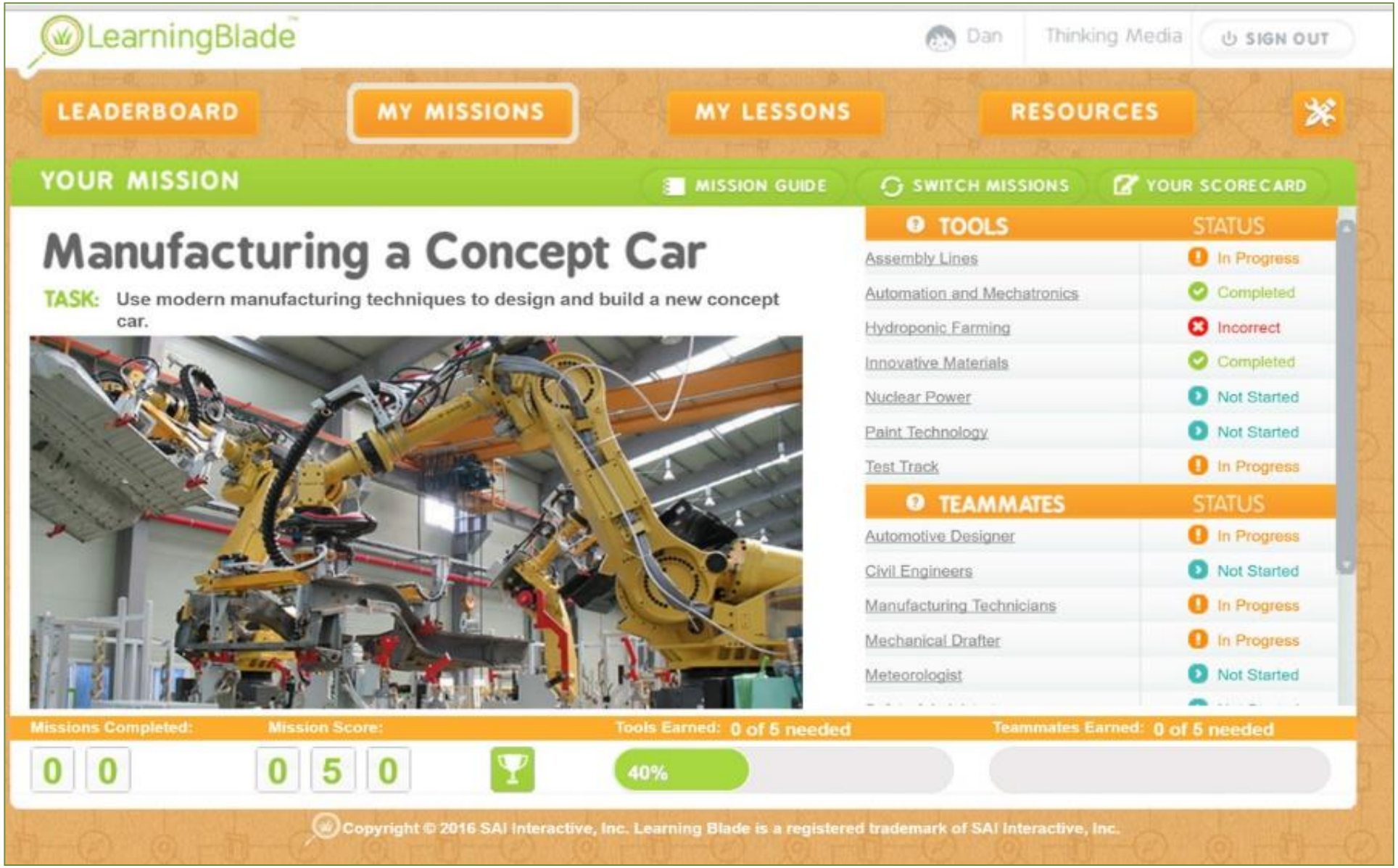
Teammates

Sample mission outlines showing Science, Math, English and Social Studies lessons for each career and technology

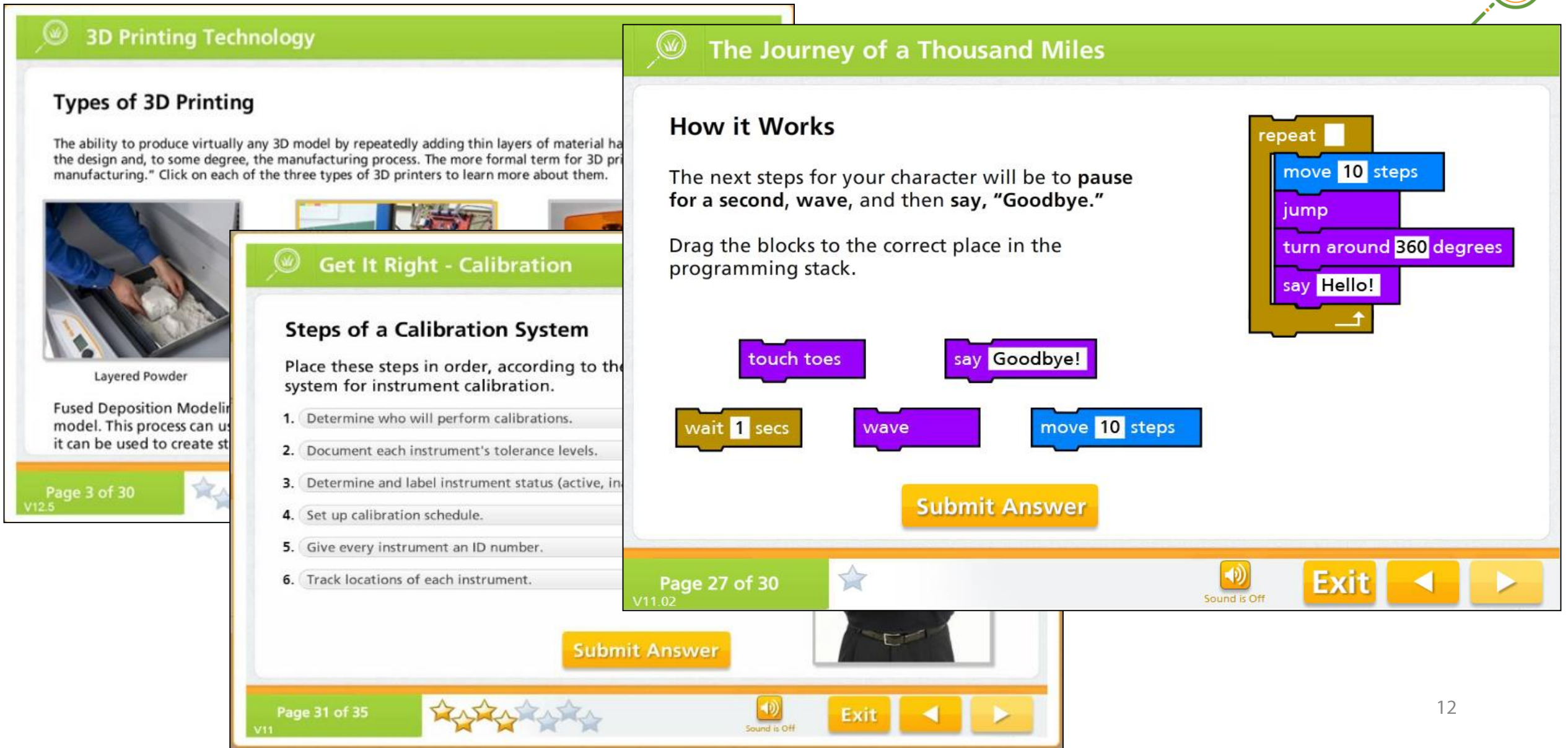
Students can select, or teachers can assign, specific Missions



Students operate Missions from a Dashboard



LB introduces students to careers while reviewing academics.



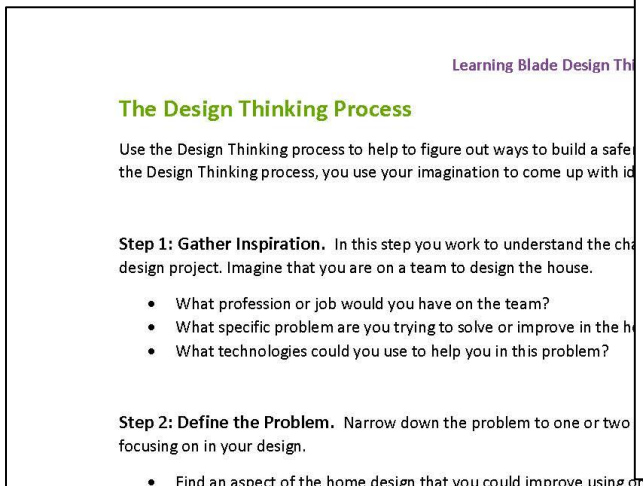
Design Thinking lessons let students create a solution to the Mission.

Design Thinking

New Design Thinking lessons encourage students to explore their own solutions to the problems related to each the mission, and to present their ideas in front of other students.

Each lesson includes:

- Background research information
- Suggestions for problem statements
- Five-step design thinking process guides
- Standards alignment
- Teacher rubric



Learning Blade Design Thi

The Design Thinking Process

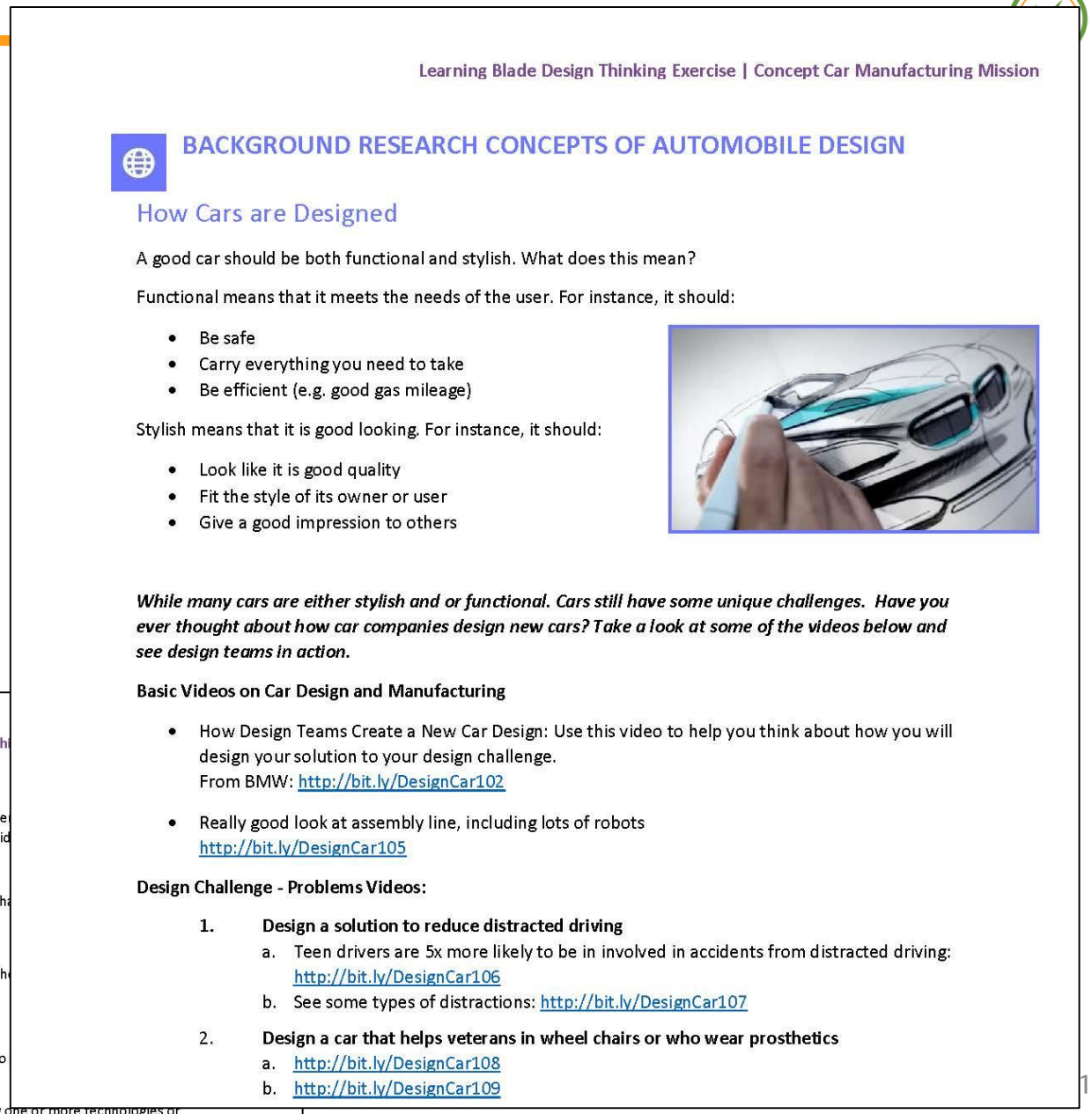
Use the Design Thinking process to help to figure out ways to build a safe
the Design Thinking process, you use your imagination to come up with id

Step 1: Gather Inspiration. In this step you work to understand the cha
design project. Imagine that you are on a team to design the house.

- What profession or job would you have on the team?
- What specific problem are you trying to solve or improve in the h
- What technologies could you use to help you in this problem?

Step 2: Define the Problem. Narrow down the problem to one or two
focusing on in your design.

- Find an aspect of the home design that you could improve using one or more technologies or



Learning Blade Design Thinking Exercise | Concept Car Manufacturing Mission

BACKGROUND RESEARCH CONCEPTS OF AUTOMOBILE DESIGN

How Cars are Designed

A good car should be both functional and stylish. What does this mean?

Functional means that it meets the needs of the user. For instance, it should:

- Be safe
- Carry everything you need to take
- Be efficient (e.g. good gas mileage)

Stylish means that it is good looking. For instance, it should:

- Look like it is good quality
- Fit the style of its owner or user
- Give a good impression to others

While many cars are either stylish and or functional. Cars still have some unique challenges. Have you ever thought about how car companies design new cars? Take a look at some of the videos below and see design teams in action.

Basic Videos on Car Design and Manufacturing

- How Design Teams Create a New Car Design: Use this video to help you think about how you will design your solution to your design challenge.
  From BMW: http://bit.ly/DesignCar102
- Really good look at assembly line, including lots of robots
  http://bit.ly/DesignCar105

Design Challenge - Problems Videos:

1. **Design a solution to reduce distracted driving**
   a. Teen drivers are 5x more likely to be in involved in accidents from distracted driving: http://bit.ly/DesignCar106
   b. See some types of distractions: http://bit.ly/DesignCar107
2. **Design a car that helps veterans in wheel chairs or who wear prosthetics**
   a. http://bit.ly/DesignCar108
   b. http://bit.ly/DesignCar109

Mission Challenges include experiments, projects and presentations.

Mission Challenges

Each lesson includes:

- Writing prompt
- Presentation prompt
- Manipulatives using common household or classroom materials

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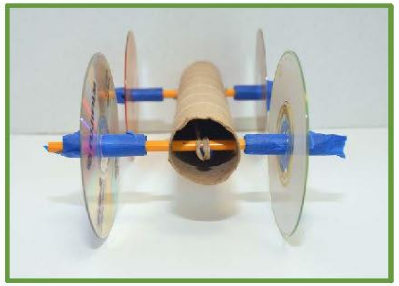
CAR MANUFACTURING MISSION CHALLENGE

Design a Rubber Band Car



Objective

To construct a rubber band-powered car using common household items

Description

Students will design and construct a rubber-band-propelled car. The cars will be measured on various criteria.

Materials

Almost any common household items can be used as materials. The design of the rubber band car may be dictated by the availability of materials. Students' cars may function radically different from one another.

- Basics tools like a ruler, a hole punch, thumb tacks, tape, or glue
- 2 unsharpened pencils or some other long, round objects suitable for axels
- 2 rubber bands (these will be the power source)
- Cardboard, paper towel tubes, craft sticks, or some other materials suitable for a car frame/ body
- paper clip
- CDs, small plastic lids, cardboard cut into circles, or some other materials suitable for wheels

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CAR MANUFACTURING MISSION CHALLENGE

Evaluating a Racecourse

Objective

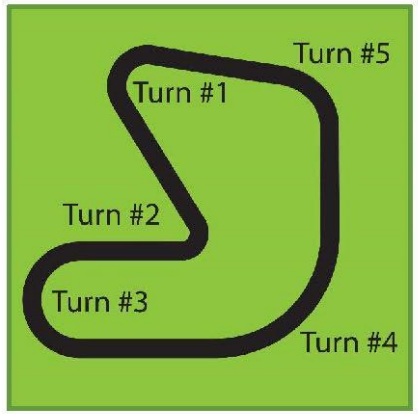
To understand the equations for uniform circular motion, and how they apply to real world scenarios

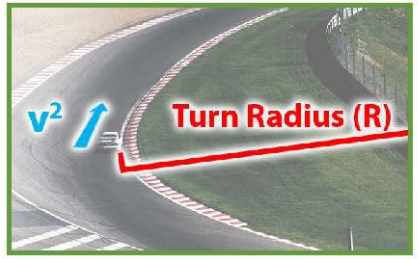
Description

Students will imagine they are designing a new racetrack, and calculate the curvature of a turn given the projected speed and friction force of a car's tires.

How to Begin

The uniform circular motion equations help us understand how object behave when going around turns. The first equation we'll use is: $\mathbf{a = v^2 / R}$. This will tell us the acceleration of an object as it moves around a circle.
The second equation is: $\mathbf{F = m \cdot a}$. This tells us the force acting on an object as it moves through the curve.
Students will imagine they are helping design a new race track. You will evaluate several turns on the track. Use the uniform circular motion equations above to answer the questions about the turns.





Turn #1 – How Much Force?

Turn #1 is a turn around a corner with a radius of 25 meters. If a 900-kg car moving at 10 m/s drives through this turn, what is the acceleration and the force acting upon the car?
The first step is to determine the circular acceleration of the car as it goes around the turn.
We use the equation: $\mathbf{a = v^2 / R}$, and use the information give to solve for the acceleration.

$$a = v^2 / R$$
$$a = (10\ m/s)^2 / (25\ m)$$
$$a = (100\ m^2/s^2) / (25\ m)$$

3D Printing lessons let students design objects and then do experiments.

3D Printing projects

Each lesson includes:

- Downloadable 3D design models
- Ability to modify the model online
- Instructions for activities that use the object after printing to illustrate science concepts

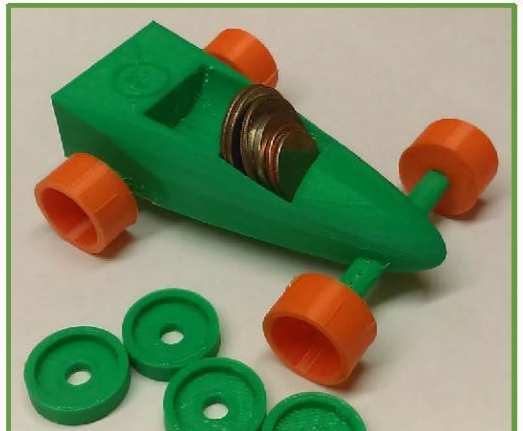
MAKER QUEST

LearningBlade® - MAKER QUESTS

Model Car Prototyping

QUEST OBJECTIVES

To practice 3D printing and testing procedures used in automotive design prototyping



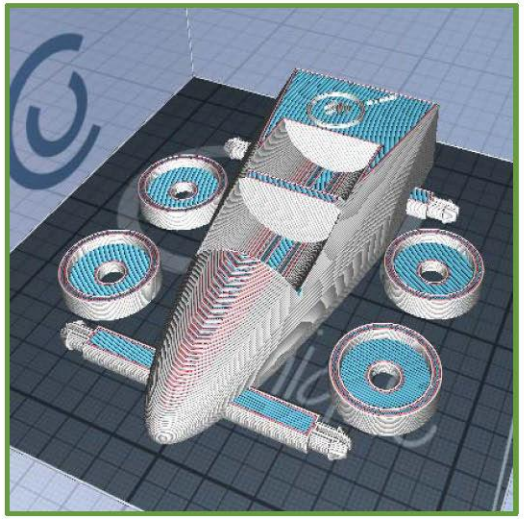
QUEST SITUATION

Have you ever wondered how automobiles are created? Taking a new automobile from concept to reality involves a long series of steps. At each step, automotive engineers and designers must test and evaluate their work to make sure the automobile will perform the way it's designed. A major tool is this evaluation is Prototyping.

Prototyping involves making a digital or physical model of a product, so that it can studied before the product goes into production. Most Prototypes are not the same size as the final version of the product. Instead, smaller, scaled-down

QUEST PROCEDURE

Read to students, or have them read, the Quest Situation section before beginning. Review the Materials list and make sure students have access to the required materials.



Download the 3D Prototype Files

Digital files for this Maker Quest have been prepared, and may be downloaded at: http://www.thingiverse.com/thing:1954693. Students should identify the files for this Quest and download those files to their computer hard drive.

Prototype Scaling

Once the files are downloaded, students should import them into the 3D slicing software and set the prototype scale. The 3D prototype model is designed as an approximately 1:15 scale model of a 4000mm long, full-sized car. Depending on the size of the 3D printer, students may need to adjust the scale of the model. Any adjustment to the model's scale will need to be recorded and accounted for during testing.

Prototype Assembly

Once the printing is complete, students will need to carefully remove the pieces from the printing surface and separate and loose filament and printed flashing from them. The finishing nails should be pushed through the center of the wheels, into the holes in the side of the car. The plastic studs should be inserted into the two holes in the front and back of the model. The washers can be placed on these studs to adjust the weight of the car for testing.

Testing the Prototype

Setup the board as a ramp, placing one end of the board on a smooth floor, and several books under the other end. For the first experiment, create a ramp that's at least 4 inches high. Have the students measure the height and length of the ramp, and use the measurements to record the slope.

Coding - Hour of Code Plans

These lesson plans combine offline, interactive classroom activities with suggested online lessons from Code.org's Hour of Code to help students of all ages understand the basic principles of computer science. This is available on the teacher's resources page in Learning Blade and makes it easy for any teacher to participate in computer science instruction.

- Offline, interactive lessons
- Instructions for specific online Code.org lessons
- Suggestions for different experience levels

LearningBlade HOUR OF CODE

WELCOME TO LEARNING BLADE'S HOUR OF CODE!

WHY HOUR OF CODE?

Learning Blade has collaborated with Code.org to develop an easy-to-implement coding lesson plan educators can use to introduce students into the world of computer programming. Computers and digital data are increasingly important in the workplace, and Learning Blade aims to prepare students for successful careers by developing basic skill sets, as well as personal character.

Everyone should have the opportunity to learn computer science and develop their problem-solving skills, logic and creativity. By experiencing coding early, students will have a foundation for success in any 21st-century career path.

A MESSAGE FOR EDUCATORS

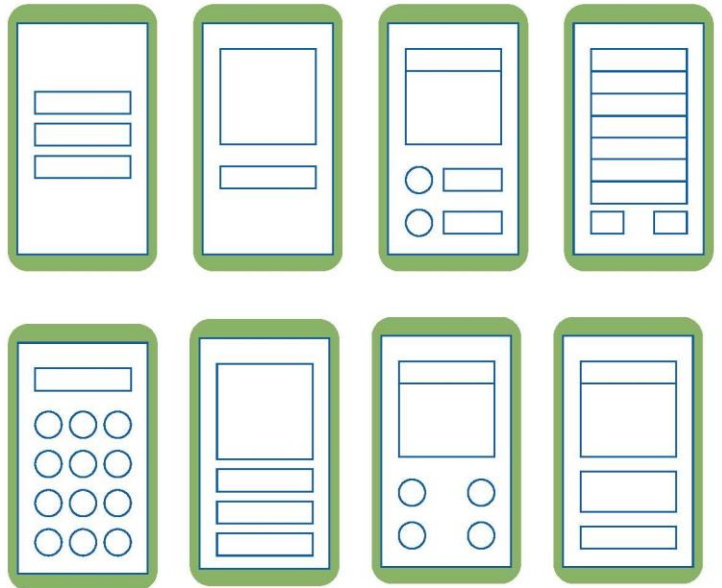
These activities are part of an effort to significantly improve the digital fluency of America's students. Our students need an increasing level of digital skills to compete for well-p need does not stop there. Digital skills are also needed to be influenti communities. Code.org's Hour of Code will give students a solid and e skills. Additionally, this activity will connect computer science skills to

LearningBlade HOUR OF CODE

App Wireframing! - Handout Sheet

Welcome to wireframing. Wireframing uses simple outline frames to layout the app's images, text, and other elements. The wireframe screens below give you an idea of how simply and quickly a wireframe can be done. Choose an app that you have used before diagram wireframes to show how that app works.

Draw boxes where the screen elements go, and label what they are. Do this for all the major screen in the app, then use arrows and written descriptions to identify what the buttons do, and how the app navigates through the different screens. Remember that your wireframing doesn't have to be extremely detailed. Wireframing works best when you can quickly diagram the app's functions



ONLINE ACTIVITY - INTERMEDIATE CODE.ORG ACTIVITIES (45 MINUTES)

These activities show how coding is used in different situations, and take students' step-by-step through different coding exercises and challenges. Students can begin by visiting the links listed for each activity. All Code.org lessons are designed to run within most common web browsers, on most operating systems, and on a variety of devices. Teachers may also wish to use other online Hour of Code activities. Code.org has a list of other offline lessons related to coding here: code.org/hourofcode/overview.

Intro to Play Lab (Intermediate Level)	Hour of Code: Flappy Code (Intermediate Level)
Explore the basic commands used in programming a computer game.	Use drag-and-drop programming to make your own Flappy Bird game.
	

Current Resource for Career Awareness in Tennessee

1,000,000+ online STEM lesson completed

200,000+ hours of STEM instruction

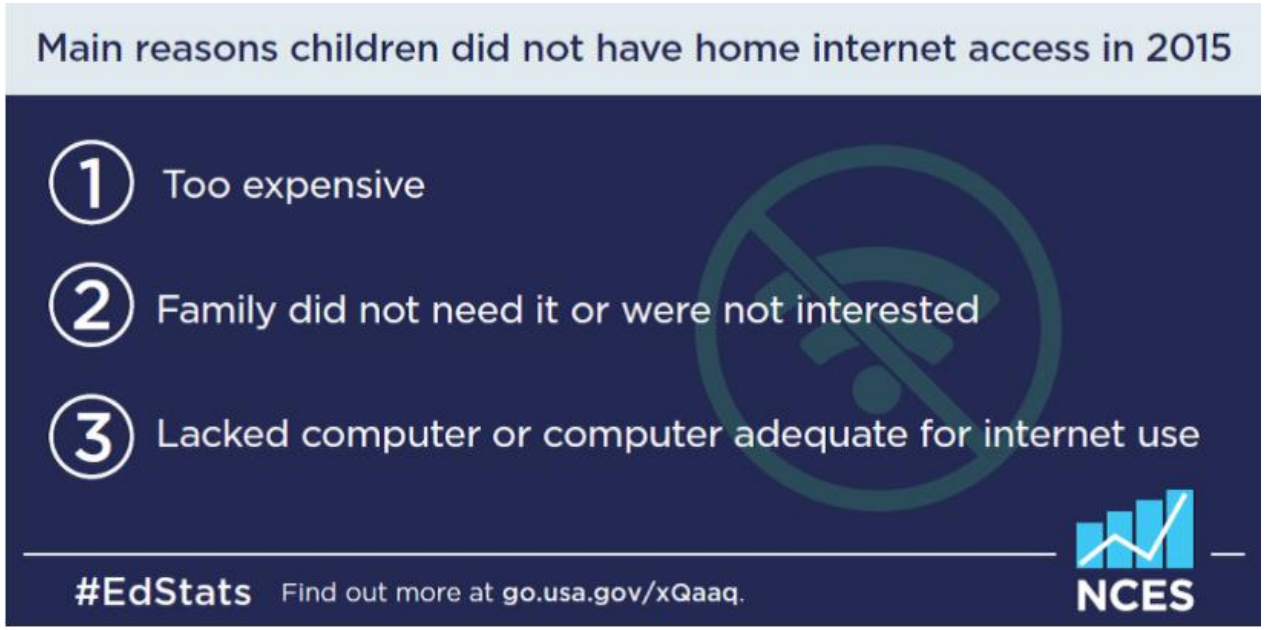
Results from National Student Surveys:

59%
MORE LIKELY
TO BE INTERESTED IN STEM CAREERS

140%
MORE LIKELY TO RESPOND THAT THEY KNOW WHAT STEM WORKERS DO

70%
MORE LIKELY TO TALK ABOUT SCIENCE WITH OTHERS

Students Need Access to Resources



Nationwide, **one in four students do not have an adequate internet connection or devices for remote learning,** leaving between 15 and 16 million students unable to access school regularly, according to an analysis by Common Sense Media.

Only 30 percent of teachers in high-poverty schools reported most students had access to the Internet at home.

*https://www.rand.org/pubs/research_reports/RRA134-3.html

Bridging the Digital Divide - Connecting All Students

NEW!!! - Learning Blade Backpack:
An innovative support for navigating remote instruction without universal Internet access

- Offline Access to Learning Blade's Lessons
- Available for Chromebooks in the Google Play store
- Learn more at www.learningblade.com/Backpack

Learning Blade®
BACKPACK

Students Need Real-Life Career Connections

- According to a **2016 US Business Roundtable Survey**, at least **95 percent of CEOs** reported that it was **difficult to find workers** with the skills needed to fill open positions.

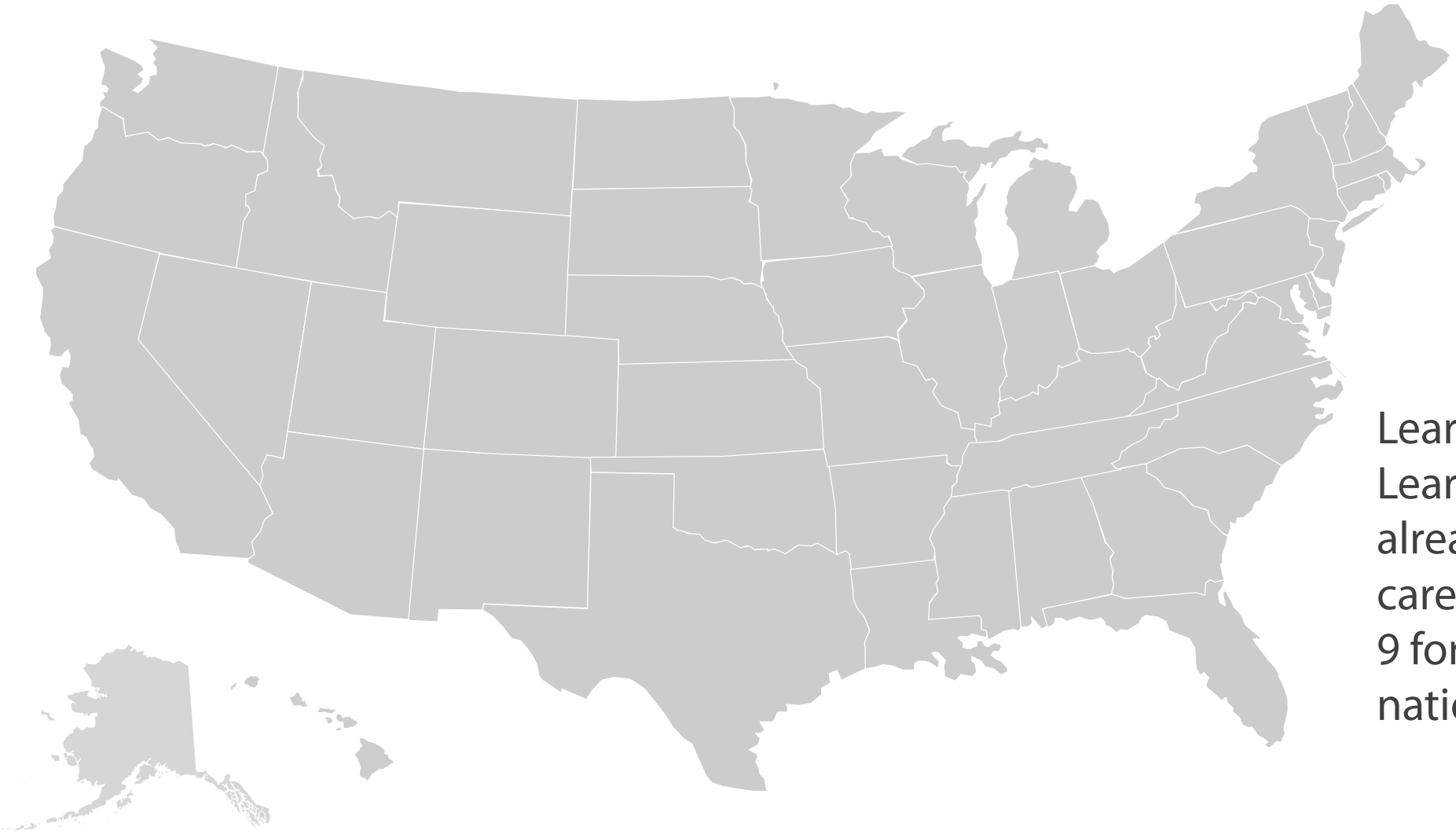
- Nationally, 65% of jobs **do not require a 4-year degree.**

- Rural areas are experiencing a **dramatic shortage of skilled talent** that can help to sustain high-wage industries.

- Both **rural and urban students** often lack the home or community life that demonstrates the type of high-skilled jobs that will be demanded in the future workforce.

"You can't be what you can't see…"

Extending Career Engagement in Tennessee

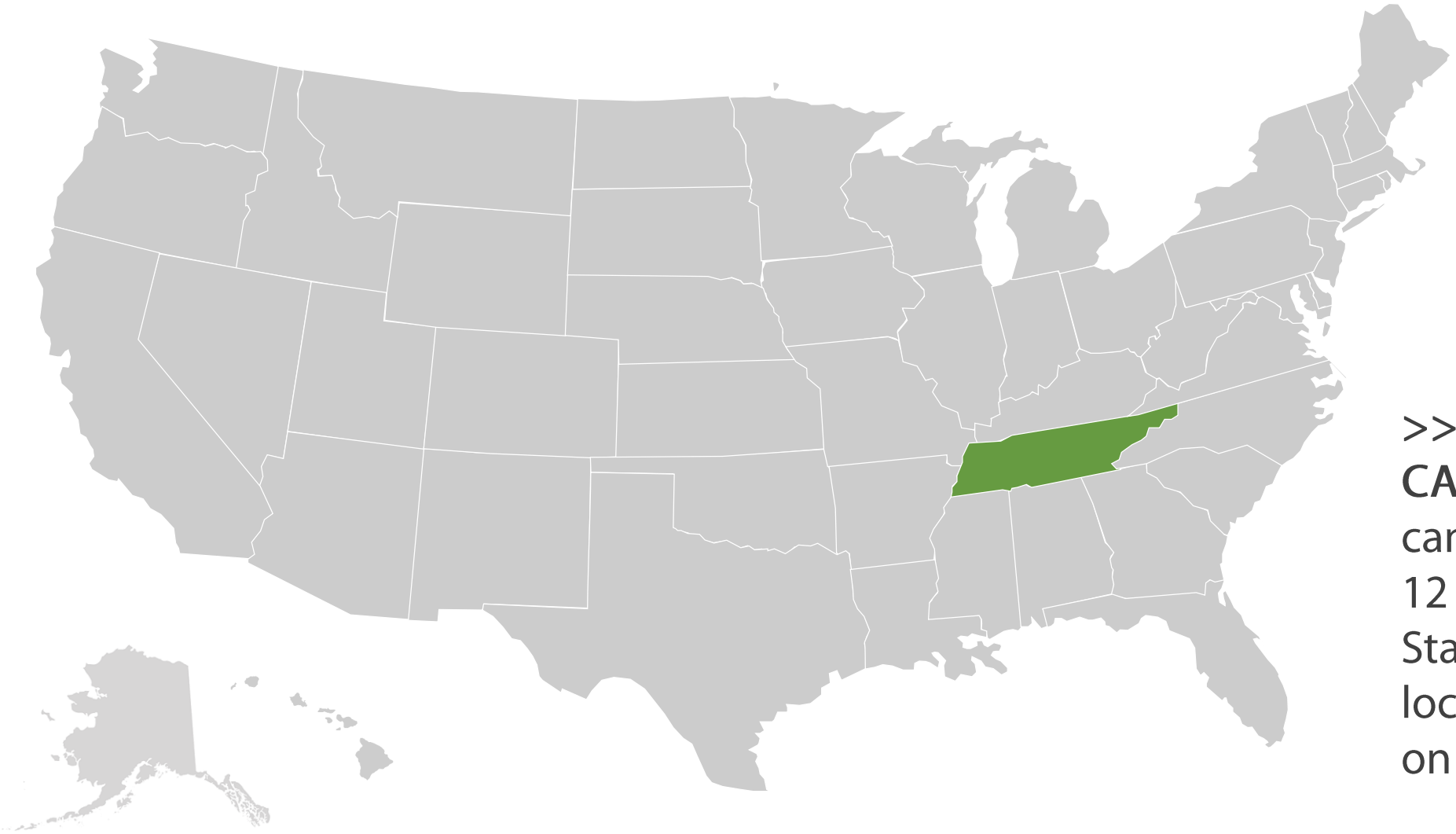


LearningBlade®
STEM and Computer Science Career Awareness

Learning Blade® BACKPACK

Learning Blade and, now, the Learning Blade Backpack app already provide STEM and CS career awareness to grades 5-9 for generic opportunities nationwide… **however** >>

Extending Career Engagement in Tennessee



LearningBlade®
STEM and Computer Science Career Awareness

Learning Blade® BACKPACK

Tennessee CAPS
Career Awareness and Preparation System

>>**when paired with TN-CAPS**, career engagement can be expanded to all K-12 students within the State of Tennessee with localized content based on economic region.

Tennessee Must Grow Skilled Workforce from Within

- TN Dept of Labor & Workforce Development projects **81% of jobs through 2024 will require an Associate's degree or less**.

- Chris Winton, FedEx VP of Human Resources, noted that they have over **600 IT jobs available now** that do not require a 4-year degree.

- The **Nashville/Clarksville region** is expected to create between **1.1 and 1.5 million job openings from 2015-20**. However the region can expect to gain **only 90,000-115,000** high school and college graduates over the next five years.

- A survey of Chattanooga area residents showed that the single largest concern was that **"good jobs and good schools are not available to all members of the community."**

Tennessee CAPS
Career Awareness and Preparation System

Connecting Local Businesses with Local Schools by Providing Grades K-12 with Career-in-Classroom Resources

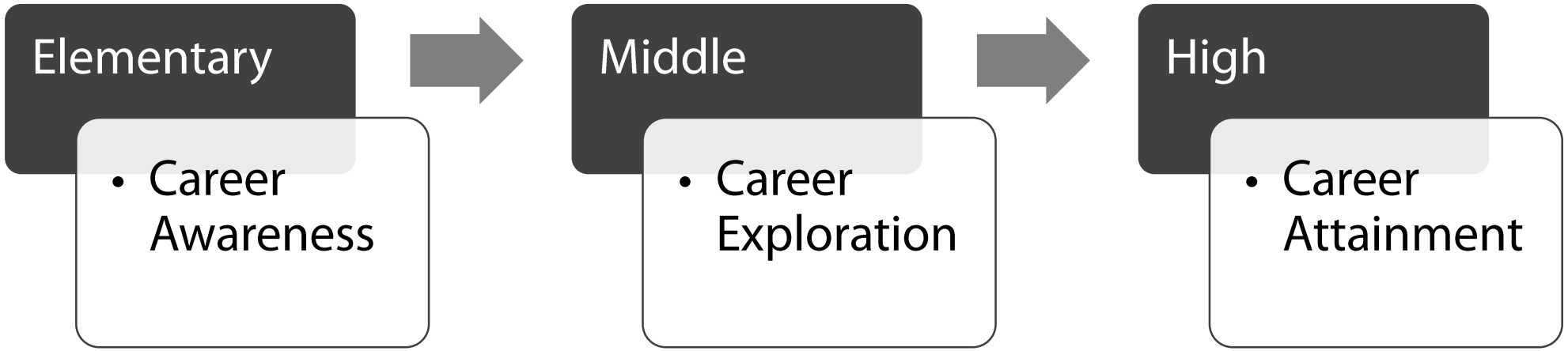
Educators

Businesses

Chambers

Education Standards Require Career Knowledge

TN legislature and standards now requires career awareness at all levels.



TN-CAPS Connects Students to Career Opportunities in their Own Communities

Teachers/Staff across all K-12 grades lack the time and experience to help students understand today's high-demand careers. Additionally, they may not have **connections to employers** willing to interact with students.

Teachers/Staff are highly attracted to student-ready lesson plans and career resources that support classrooms and reinforce academic curriculum through group activities.

By embedding industry information into lessons, we **form an awareness of and a positive image of the variety of local businesses** in the minds of their future workforce.

Lessons Link Academics to Local Careers

Lessons searchable by **Age Range**, **Career**, **Industry Sector**, or **Business.**

Lessons include:

- Career Name and Description
- Student Self-Paced Academic Lesson
- Lesson Plan for Hands-On or Creative Thinking Problem Solving
- Career Connection – how the lesson connects to the career
- Local Connections – regional employers that hire this type of career
- Salary and Outlook
- Academic Standards Alignment

Initial Pilot Locations (2019-2020)

- **Rutherford County**
- **Kingsport City Schools**
- **Hamilton County**
- **Cleveland City Schools**
- **Jackson-Madison County School System**
- **Collierville Schools**

45,913 Tennessee Student impressions

- **Business information currently focused on these areas**
- **Other areas have access to lesson plans**

How it Works

Lesson plans are individually tailored to the grade level and local regions of the state.

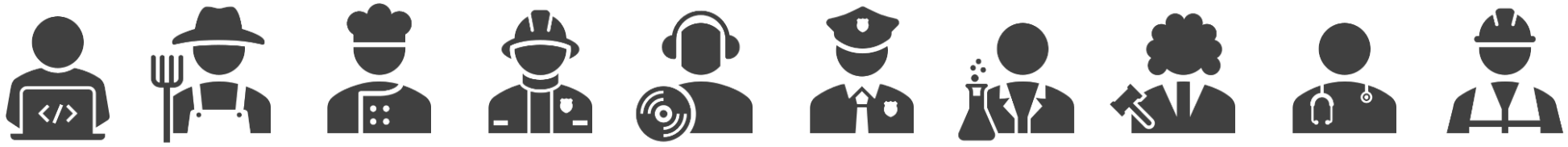
More than 120 companies already participating in TN!

Step #1:
TN and Local Chambers Recruit Businesses and Gain Support of Education Leadership Regionally (Understanding current and future efforts)

Step #2:
Businesses Complete Surveys and Agree to Engage with Schools

Step #3:
Teachers are Provided Access to Customized Resources Introducing Students to Local Careers

Step #4:
Students Connect With Local Employers to See Careers



Inspired Students Become Motivated to Pursue Career Paths Available in their Communities!

Lessons Customized for Teachers' Needs

By Age Range:

- K-2
- 3-5
- 6-8
- 9-12

By Industries

By Local Businesses

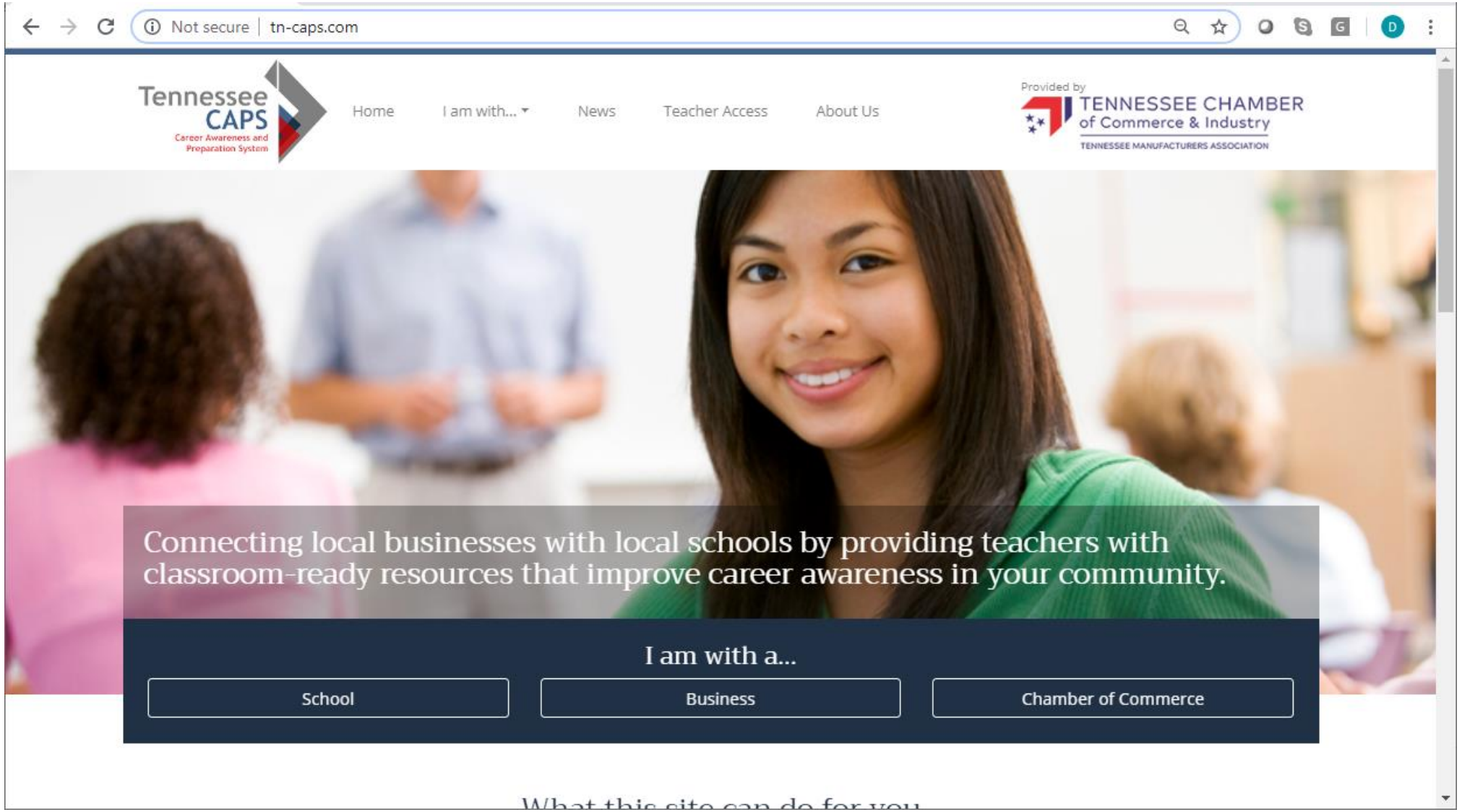
By Careers

- CNC Operator/Machinist
- Computer Programmer
- Database Administrator
- Data Scientist
- Electrician
- Farmer/Rancher
- Financial Analyst
- Industrial Maintenance
- Info Security Analyst
- Logistics/Truck Driver
- Marketing Manager
- Nursing
- Production Manager
- Supply Chain Analyst
- Welder

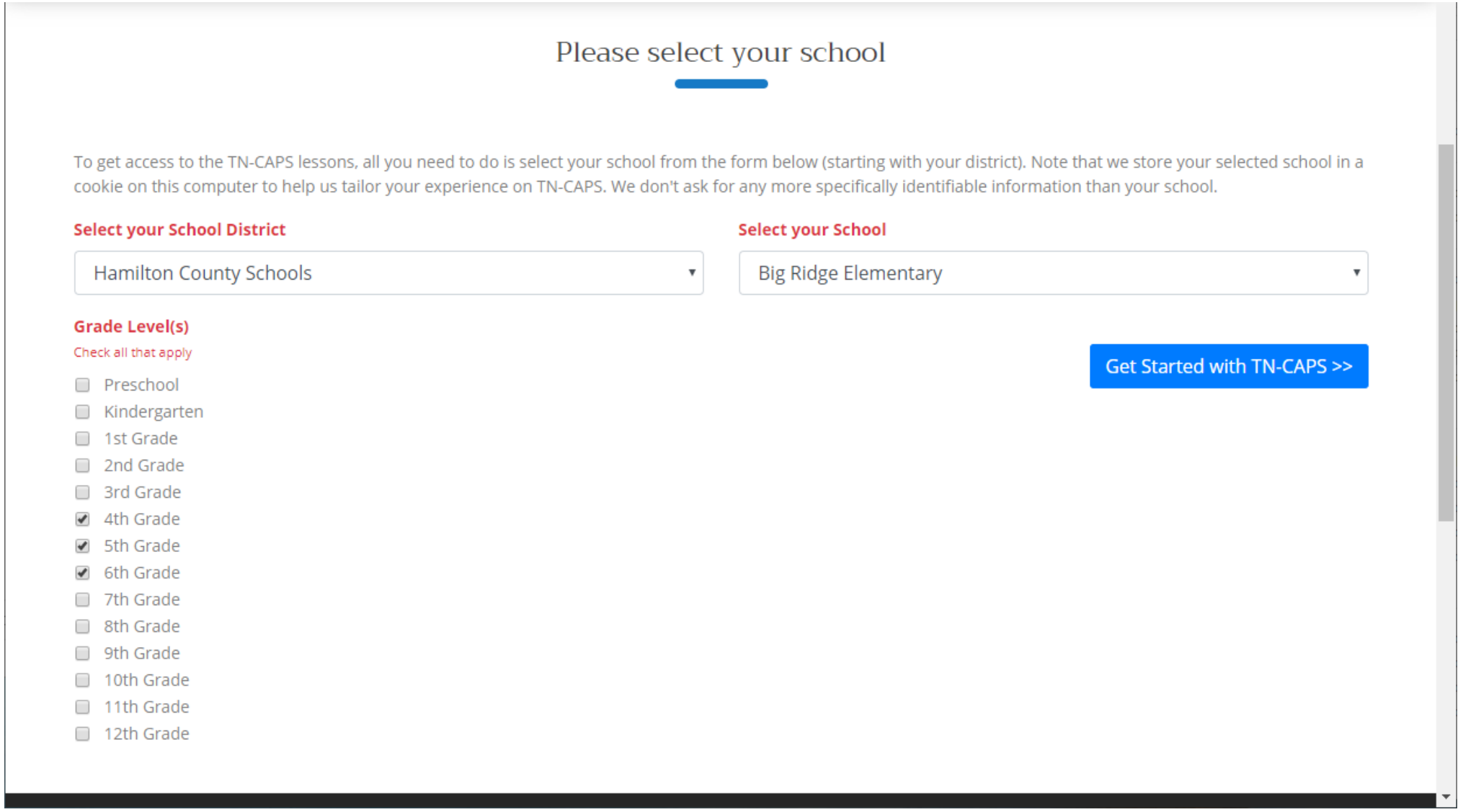
By Economic Region:

- Northwest TN
- Northern Middle TN
- Upper Cumberland
- East TN
- Northeast TN
- Southeast TN
- Southern Middle TN
- Southwest TN
- Greater Memphis

TN-CAPS Website



Teachers/Staff Specify their District and School



Searches Lead Teachers/Staff to Lessons Plans

NURSING: NURSES HELP MAINTAIN HEALTHY LIFESTYLE

Tennessee CAPS

LESSON PLAN OVERVIEW

Purpose: This lesson plan highlights some of the skills a Nurse for patients. Licensed Practical Nurses (LPN), Licensed Vocation Registered Nurses (RN) provide and coordinate patient care, ed about various health conditions, and provide advice and emotic their family members.

Grade Level: 3-5

Learning Objectives:

- Students will explore the roles of nurses in common healthcare situations.
- Students will learn how to measure and record resting and active pulse rates.
- Students will complete a design thinking exercise of developing a heart health menu plan.
- Students will gain an insight into the nursing profession, including common job tasks, salary,

Class Message: Today we are going to explore nursing careers within the healthcare system. We will discuss common nursing tasks, like checking vital signs, and practice doing some of the tasks that nurses do in their work. We will also discuss healthy living and create a plan for a healthy heart.

A Nurse provides and coordinates patient care to include assessing patients' condition, recording medical history and symptoms, administering patient medicine and treatment, consulting and collaborating with doctors and other healthcare providers, performing diagnostic tests and analyzing results, and teaching patients and their families how to manage illness or injury at home.

Let's watch this brief video to better understand the role of a Nurse and how they affect our everyday lives.

Nurses: Experts in Patient Care (http://tn-caps.com/r/35VNR)

Lessons Plans Lead to Activities

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Activity Procedure:

- Using the first and second fingertips, press firmly but gently on the arteries until you feel a pulse.
- Begin counting the pulse when the clock's second hand is on the 12.
- Count your pulse for 60 seconds (or for 15 seconds and then multiply by four to calculate beats per minute).
- When counting, do not watch the clock continuously, but concentrate on the beats of the pulse.
- If unsure about your results, ask another person to count for you.

Activity Results: Record your pulse rate results in the spaces below, then compare your results to the Pulse Rate Chart shown.

Charting Your Results	Results
Resting Pulse Rate	
Active Pulse Rate	
Difference between Active & Resting	

Pulse Rate Chart

Age	Pulse Range	Are You Within This Range?
3 to 4 years old	80 to 120 beats per minute	
5 to 6 years old	75 to 115 beats per minute	
7 to 9 years old	70 to 110 beats per minute	
10 years and older	60 to 100 beats per minute	

Activity Discussion:

- How easy was it to measure pulse rate in the different ways shown above?
- Why is it important to measure a person's pulse rate in different situations?
- How did your pulse rate compare to the Pulse Rate Chart?
- How can doctors and nurses use pulse rate information to help patients?
- Why is measuring a patient's pulse rate every time they visit a doctor helpful?

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ACTIVITY #1: LOOKING AFTER HEALTHY HEARTS

Introduction: Nurses gather important information about patients so doctors can provide better medical care. Part of this information is taking a patient's vital signs to include Pulse Rate. A nurse checks your pulse to check your heart's rate, rhythm, and regularity. Each pulse matches up with a heartbeat that pumps blood into your arteries. The force of the pulse helps evaluate the amount (strength) of blood flow to different areas of your body. If a patient's pulse rate is too low or too high, it is a possible indicator that the patient is not following a healthy diet and lifestyle. The four main vital signs most often monitored by health care providers are:

- **Body temperature** – the average temperature inside your body
- **Pulse rate** - the rate at which your heart beats
- **Respiration rate** - the rate at which you take breaths
- **Blood pressure** – the amount of effort it takes to pump blood through your body

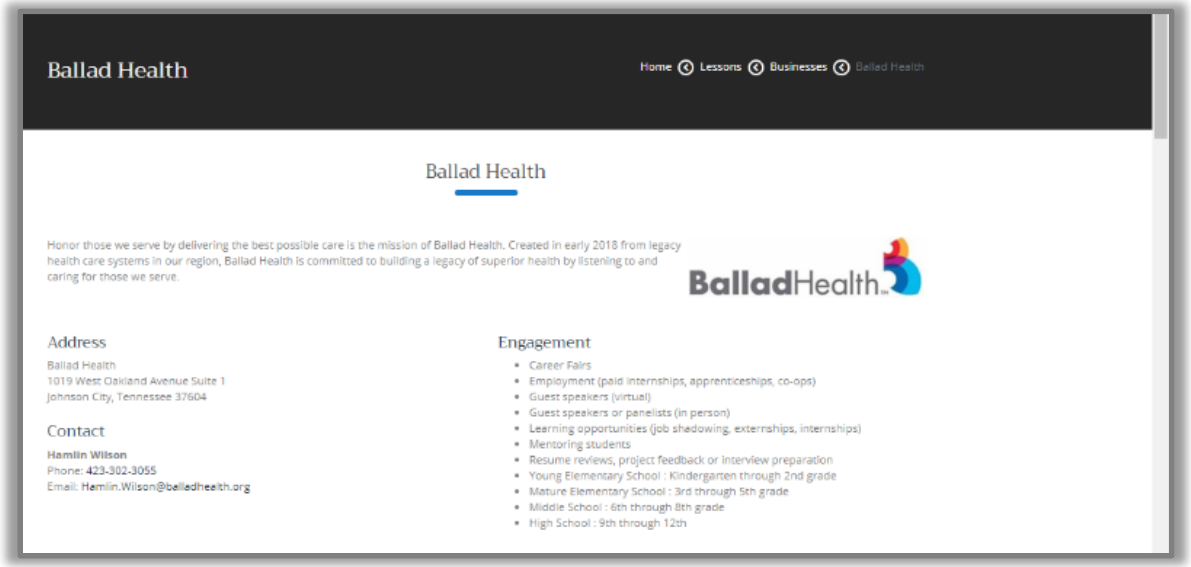
Activity Description: Today, we are going to practice measuring pulse rate. In this activity you'll be counting the number of times the heart beats per minute. As the heart beats, it pushes blood through the arteries, causing the arteries to expand and contract with the flow of blood. You can feel the beats by firmly pressing on the arteries, which are located close to the surface of the skin at certain points of the body.

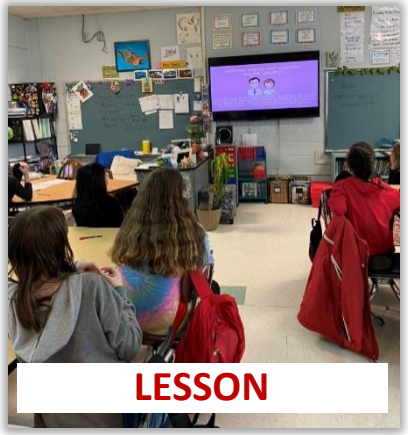
Your pulse can be found:

- on the side of the neck
- on the inside of the elbow
- at the wrist

NOTE: If you use the lower neck, be sure not to press too hard, and never press on the pulses on both sides of the lower neck at the same time to prevent blocking blood flow to the brain.

Activities Lead to Employer Engagement





Lesson plans include specific contact information and interaction opportunities:

- Guest speakers or Panelists One-day Field Trips
- Mentoring students
- Video or picture uploads
- Resume reviews, project feedback or interview preparation
- Volunteer opportunities
- Learning opportunities Employment
- Career Fairs
- Curriculum support or experiential learning programs
- Sponsorships and/or equipment donations
- Product Donation

Our Own Employer Engagement

Thinking Media

*"The **students were very excited to talk about the different careers** that they knew about from their families, and then to hear more about our career paths in getting to be in the computer science field. They **wanted to understand how we did what we did and they also wanted to share what they were thinking about**. We used examples that they could relate to–like how to make a box of cereal by understanding all the computer programming that goes into its creation from designing, printing, cutting, and folding the box to using a recipe and machines to make the actual cereal. This **real-life example helped the students see that computer programming is used in almost every industry**, and that learning even a little bit of programming can help make you successful."*

Sheila Boyington, President, Thinking Media

The Benefits

Afterschool and Out of School Orgs

Increase the value of the these settings in supporting the educational goals and helping to provide businesses the needed future labor market.

Local Businesses

Increase the number of students who are aware and have a positive image of the business workforce needs and increase the interest of students in becoming trained for the workforce needs of the business.

Students

Connect students to high-demand, high-paying careers available in their own communities and encourage students to follow career pathways that will prepare them for these opportunities.

Teachers/Staff

Provide easy-to-use resources that allow teachers to communicate these high-demand career pathways to students in a way that builds STEM and academic skills that will prepare students for future success.

Together These Systems Provide Robust Career Awareness

	LearningBlade® STEM and Computer Science Career Awareness	Tennessee CAPS Career Awareness and Preparation System
Format	Online and Lesson Plans	Lesson Plans
Grades	5-9	K-12
Focus	Introduce General STEM and CS Careers through Mission-based Problems	Introduce Local High-Demand Careers with Connections to Local Employers

Thank you!

For more information, please email:

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LearningBlade®
STEM and Computer Science Career Awareness

Tennessee CAPS
Career Awareness and Preparation System