



PITSCO MAKER SPACE™

⦿ Explore ⦿ Create ⦿ Discover ⦿ Innovate



Makerspace + Pitsco = Student Success

East Central University leading the way with its new Pitsco Maker Space Lab

Ada, OK – A Pitsco Maker Space Lab in a college’s education department is an ideal setting for workshops, courses, and in-service events where veteran teachers and preservice teachers alike can grow confident in how to set up and facilitate a makerspace.

Pitsco Education CEO Dr. Harvey Dean said he is excited about the potential impact of the makerspace training ground at ECU. “More and more preservice teachers will experience the application of learning using that third domain, the psychomotor domain. About one-third of the students in a classroom, that’s their dominant learning style,” he noted. “For us to be a part of this is exciting because literally tens of thousands of students will be affected by the teachers who come through here.”

“Every university with an education degree program should have a makerspace lab.” – Harvey Dean, Ed.D.

Table of Contents

Balloon Car	8	AP Bottle Racer	27	Foam Wing Gliders	46
Fold-N-Roll	9	Balsa Bridges	28	Ray Catcher	47
Large Structures	10	Balsa Foam Flyer	29	Super Clip	48
Making Your Own Ruler	11	Balsa Glider	30	T-Bot® II with Challenge Set	49
Parachutes	12	Catapults	31	True Scale House Framing Kit	50
Pop-Ups	13	ChallengePak	32	Utility Building Kit	51
Prop Buggy	14	Delta Dart	33	Resources	52-53
Sail Car	15	Eco-Wind Generator	34	3-D Printing: Design Solutions	54
Toolbox Racer	16	Maglev	35	3-D Printing: Vehicle Engineering	55
Toothpick Bridges	17	Mousetrap Vehicle	36	TETRIX® PRIME	56
AP Dragster	18	Prop Racer	37	TETRIX® MAX	57
Invention Explore-A-Pak	19	Roller Coaster	38	Tools and Materials	58-59
Straw Rocket	20	Solar Oven	39	Furniture	60-61
Zoon Balloon	21	Solid-Fuel Rocket	40	Storage	62-63
KaZoon Kite	22	Trebuchet	41	Books	64
Packaging Design	23	Blade Engineering	42	Posters	65
SunEzoon	24	Blinky Robot	43	Policies	66
Water Rocket	25	CO ₂ Dragster – High School	44	Order Form	67
CO ₂ Dragster – Middle School	26	Earthquake Towers	45		

Dear makerspace enthusiast:

Pitsco Education is excited to bring you the very first Pitsco *Maker Space* catalog! Inside this catalog you will be introduced to our entire line of elementary, middle-level, and high school Maker Projects as well as tools, materials, furniture, and storage that are perfect additions to any makerspace.

For every Maker Project, we have included **Essential Questions** and **Career Connections** for you to incorporate in the activity if you wish. These questions will spark conversation among students in their discovery of STEM connections (science, technology, engineering, and math). The STEM Connections listed with each Maker Project are only starting points in the discovery of additional STEM connections in your makerspace!

Pitsco Education is your source for finding positive, hands-on products, activities, and solutions for your makerspace. We love what you do for your students! Thank you for being leaders who encourage students to be successful!

Sincerely,



Harvey Dean, CEO
Former Teacher



P.S. Pitsco Maker Projects include items needed to create the project, but additional materials can enhance the activity. Items such as paint, tape, glue, craft sticks, and more can be found in our Maker Space Materials Package featured on page 58 or found online at www.pitsco.com.



Elementary

Elementary Maker Space Package

MS41759—\$4,295

A Pitsco Exclusive

Eager to get your elementary classroom involved in the maker movement? The Elementary Maker Space Package has everything you need to get students moving, thinking, creating, and building. With a wide variety of hands-on products ranging from straw rockets to roller coasters, your students' minds will be filled with endless possibilities. This package includes 18 Pitsco products from six different themes. (See below.)

Elementary Pitsco Maker Space Package Projects

AP Dragster.....	18	Pop-Ups.....	13
Balloon Car.....	8	Prop Buggy.....	14
Fold-N-Roll.....	9	Sail Car.....	15
Invention Explore-A-Pak.....	19	Straw Rocket.....	20
KaZoon Kite.....	22	SunEzoon.....	24
Large Structures.....	10	Toolbox Racer.....	16
Making Your Own Ruler.....	11	Toothpick Bridges.....	17
Packaging Design.....	23	Water Rocket.....	25
Parachutes.....	12	Zoon Balloon.....	21

Choosing which Maker Projects best fit your needs just got easier with our Maker Themes! Check out the **Elementary Maker Themes** listed and the corresponding activities you can incorporate into any makerspace.

Themes

Aerospace Maker Theme

KaZoon Kite.....	22
Parachutes.....	12
Straw Rocket.....	20
Water Rocket.....	25
Zoon Balloon.....	21

Dragster Maker Theme

AP Dragster.....	18
Balloon Car.....	8
Fold-N-Roll.....	9
Prop Buggy.....	14
Toolbox Racer.....	16

Engineering Maker Theme

Invention Explore-A-Pak.....	19
Sail Car.....	15

Math Maker Theme

Large Structures.....	10
Making Your Own Ruler.....	11
Packaging Design.....	23
Pop-Ups.....	13

Structures Maker Theme

Toothpick Bridges.....	17
------------------------	----

Sustainable Energy Maker Theme

SunEzoon.....	24
---------------	----



Complete your makerspace with additional projects, tools, materials, furniture, and storage listed on pages 54-63.



Students' creativity will flow when they work in a BuilderSpaces classroom! Designed for many configurations, the BuilderSpaces SpacePort™ furniture can meet those flexible seating needs of a makerspace. Check out the BuilderSpaces SpacePort on page 60.

Middle Level

Middle-Level Maker Space Package

MS41763—\$7,995

A Pitsco Exclusive

Fill your makerspace with hands-on products to get your middle schoolers making. Whether they tackle the ChallengePak, explore the dynamics of AP Bottle Racers, or soar to new heights with KaZoon Kites, the Middle-Level Maker Space Package will stretch the imaginations of your students. This package includes 24 Pitsco products from seven different themes. 3-D Printing and Robotics packages are recommended but not included in the Middle-Level Maker Space package. (See below.)

Middle-Level Pitsco Maker Space Package Projects

AP Bottle Racer	27	Maglev	35
AP Dragster.....	18	Mousetrap Vehicle.....	36
Balsa Bridges	28	Packaging Design.....	23
Balsa Foam Flyer	29	Prop Racer	37
Balsa Glider	30	Roller Coaster	38
Catapults	31	Solar Oven	39
ChallengePak.....	32	Solid-Fuel Rocket	40
CO ₂ Dragster – Middle School	26	Straw Rocket.....	20
Delta Dart.....	33	SunEzoon.....	24
Eco-Wind Generator	34	Trebuchet	41
Invention Explore-A-Pak.....	19	Water Rocket	25
KaZoon Kite	22	Zoon Balloon.....	21

Choosing which Maker Projects best fit your needs just got easier with our Maker Themes! Check out the **Middle-Level Maker Themes** listed and the corresponding activities you can incorporate into any makerspace.

Themes

Aerospace Maker Theme

Balsa Foam Flyer	29
Balsa Glider	30
Delta Dart.....	33
KaZoon Kite	22
Solid-Fuel Rocket.....	40
Straw Rocket	20
Water Rocket	25
Zoon Balloon	21

Dragster Maker Theme

AP Bottle Racer.....	27
AP Dragster	18
CO ₂ Dragster – Middle School.....	26
Prop Racer	37

Engineering Maker Theme

ChallengePak.....	32
Invention Explore-A-Pak	19

Math Maker Theme

Packaging Design.....	23
-----------------------	----

Physical Science Maker Theme

Catapults	31
Mousetrap Vehicle.....	36
Roller Coaster	38
Trebuchet.....	41

Structures Maker Theme

Balsa Bridges.....	28
--------------------	----

Sustainable Energy Maker Theme

Eco-Wind Generator	34
Maglev.....	35
Solar Oven	39
SunEzoon.....	24



Complete your makerspace with additional projects, tools, materials, furniture, and storage listed on pages 54-63.



Let the fun soar high with the KaZoon Kite Maker Project! KaZoon Kite is only one of the 24 Maker Projects included in the Middle-Level Maker Space Package. Check out the KaZoon Kite Maker Project on page 22.

High School

High School Maker Space Package

MS41762—\$15,995

A Pitsco Exclusive

Ready to expand the learning potential of your high school students? Immerse them in creating and critical thinking with the High School Maker Space Package. Science, technology, engineering, and math are all covered, and students' imaginations will be encouraged to explore. From catapults, airplanes, and solar ovens to wind generators, magnetic tracks, robots, and more, this package includes 29 Pitsco products from eight different themes. 3-D Printing and Robotics packages are recommended but not included in the High School Maker Space package. (See below.)

High School Pitsco Maker Space Package Projects

AP Bottle Racer	27	Mousetrap Vehicle.....	36
Balsa Bridges	28	Packaging Design.....	23
Balsa Foam Flyer	29	Prop Racer	37
Balsa Glider	30	Ray Catcher	47
Blade Engineering.....	42	Roller Coaster	38
Blinky Robot	43	Solar Oven	39
Catapults	31	Solid-Fuel Rocket	40
ChallengePak.....	32	SunEzoon.....	24
CO ₂ Dragster – High School.....	44	Super Clip	48
Delta Dart.....	33	T-Bot® II with Challenge Set	49
Earthquake Towers.....	45	Trebuchet	41
Eco-Wind Generator	34	True Scale House Framing Kit	50
Foam Wing Gliders	46	Utility Building Kit	51
KaZoon Kite	22	Water Rocket	25
Maglev	35		

Choosing which Maker Projects best fit your needs just got easier with our Maker Themes! Check out the **High School Maker Themes** listed below and the corresponding activities you can incorporate into any makerspace.

Themes

Aerospace Maker Theme

Balsa Foam Flyer	29
Balsa Glider	30
Delta Dart	33
Foam Wing Gliders	46
KaZoon Kite	22
Solid-Fuel Rocket.....	40
Water Rocket.....	25

Dragster Maker Theme

AP Bottle Racer.....	27
CO ₂ Dragster – High School	44
Prop Racer	37

Engineering Maker Theme

ChallengePak.....	32
Super Clip	48

Math Maker Theme

Packaging Design.....	23
-----------------------	----

Physical Science Maker Theme

Catapults	31
Mousetrap Vehicle.....	36
Roller Coaster	38
Trebuchet.....	41

Robotics Maker Theme

T-Bot® II with Challenge Set	49
------------------------------------	----

Structures Maker Theme

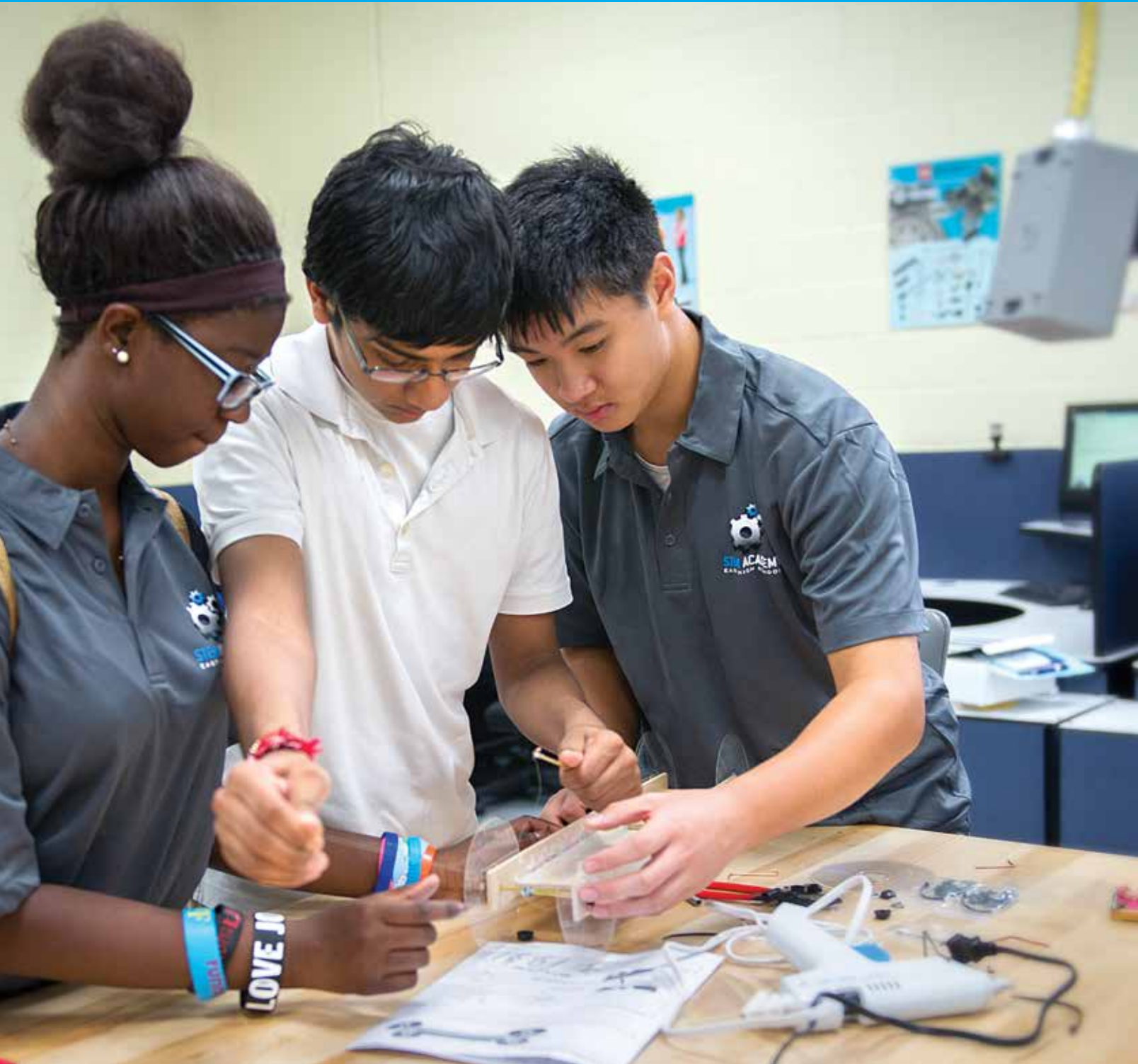
Balsa Bridges	28
Earthquake Towers	45
True Scale House Framing Kit.....	50
Utility Building Kit.....	51

Sustainable Energy Maker Theme

Blade Engineering.....	42
Blinky Robot	43
Eco-Wind Generator	34
Maglev.....	35
Ray Catcher	47
Solar Oven	39
SunEzoon.....	24



Complete your makerspace with additional projects, tools, materials, furniture, and storage listed on pages 54-63.



Students will discover STEM connections (science, technology, engineering, and math) in every Maker Project they encounter. In the above photo, students are creating a mousetrap vehicle and also learning about STEM connections such as force, problem solving, data analysis, and ratios.

Check out the Mousetrap Vehicle Maker Project on page 36.

Balloon Car

Students Served: 50



Essential Questions

What variables affect maximum distance?

How could you modify your balloon car to travel farther?

How can balloon inflation be used to predict the distance the vehicle will travel?

Career Connections:

- Farm Equipment Mechanic
- Truck Driver
- Bicycle Repair Technician
- Automotive Designer



Balloon Car Maker Project

MS42950—\$95

A Pitsco Exclusive

Have students build balloon-powered cars with the Balloon Car Maker Project. With balloons as the source of power, the range of designs students will come up with is sure to be fun and challenging. The project includes a Balloon Car Explore-A-Pak, which has axles, wheels, straws, and balloons to create your cars. For convenience, the project also comes with labels, a bin, and a bin prep sheet for storage and organization.



STEM Connections

Science

- Newton's third law
- Potential/kinetic energy
- Thrust

Technology

- Systems
- Friction reduction
- Problem solving

Engineering

- Engineering design process
- Iterative design

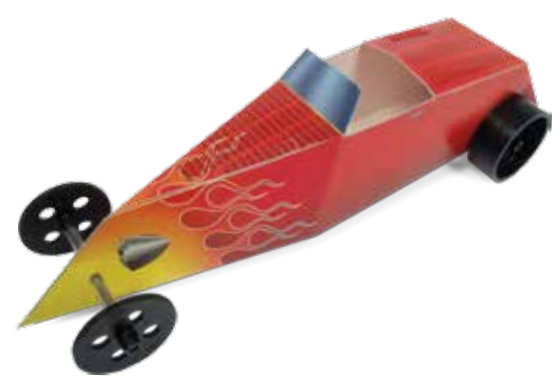
Math

- Measurement (time and distance)
- Derived measurement (velocity)
- Averages

Explore

Fold-N-Roll

Students Served: 32



Essential Questions

- How does the placement of mass affect how far a Fold-N-Roll car can travel?
- Why are there differences in the distances traveled by the same car?
- How does the angle of the roll ramp affect the distance traveled by the vehicle?

Career Connections:

- Automotive Engineer
- Graphic Artist
- Race Car Driver
- Mechanic



Fold-N-Roll Maker Project

MS42952—\$99
A Pitsco Exclusive

Building a car has never been easier. With the Fold-N-Roll Maker Project, students can build simple, folded cars and launch them down the included ramp for fun vehicle-design based activities. The project includes the Fold-N-Roll GS Pack, which has vehicle templates, axles, wheels, two test ramps, and a *Dr. Zoon Fold-N-Roll Video*. For convenience, the project also comes with labels, a bin, and a bin prep sheet for storage and organization.



Create

STEM Connections

Science

- Gravity
- Modeling
- Newton's laws
- Friction

Technology

- Design process
- Testing
- Problem solving

Engineering

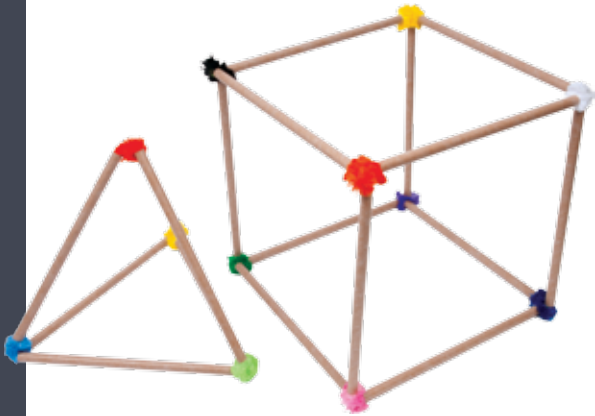
- Engineering design
- Dynamics

Math

- Patterns
- Geometric solids
- Spatial sense

Large Structures

Students Served: 30



Essential Questions

What shapes create stronger structures? Why?

What is the difference between a 2-D and a 3-D shape?

What attributes are important for naming shapes?

Career Connections:

- Architect
- Civil Engineer
- Animation Artist
- Math Teacher



Large Structures Maker Project

MS42955—\$95

[A Pitsco Exclusive](#)

Sometimes, building structures can be fun. With the Large Structures Maker Project, students use big, fuzzy, and colorful pipe cleaners with rocket tubes to construct all kinds of shapes. The project includes 180 rocket tubes and 120 large assorted color pipe cleaners. For convenience, the project also comes with labels, a bin, and a bin prep sheet for storage and organization.



STEM Connections

Science

- Forces
- Materials science
- Equilibrium

Technology

- Design processes
- Construction
- Historical perspectives

Engineering

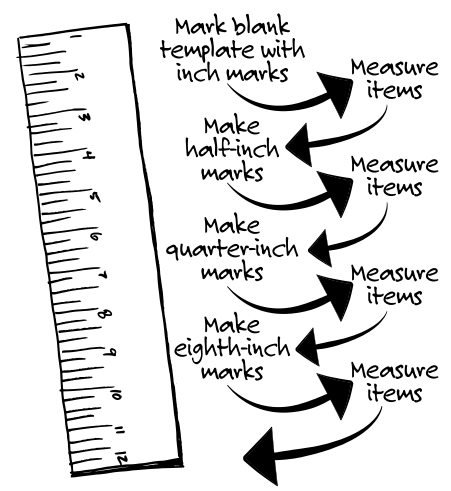
- Structural engineering
- Technological design
- Observations and analysis

Math

- Regular polygons
- Geometric solids
- Measuring angles/lengths

Making Your Own Ruler

Students Served: 30



Making Your Own Ruler Maker Project

MS42956—\$75
A Pitsco Exclusive

Instead of using a regular ruler, students can learn about measuring and fractions as they make their own ruler with the Making Your Own Ruler Maker Project. The project comes with the Making Your Own Ruler Pack – which includes permanent markers, plastic material, templates, and student worksheets – and the *Dr. Zoon Making Your Own Ruler Video*. For convenience, the project also comes with labels, a bin, and a bin prep sheet for storage and organization.

Essential Questions

What fractional parts of an inch are common on a ruler?

How do you estimate measurements?

What tools are most useful for collecting measurement data?

Career Connections:

- Math Teacher
- Architect
- Drafter
- Cost Estimator



Imagine

STEM Connections

Science

- Using estimates
- Measuring in correct units

Technology

- Measurement techniques
- Accuracy

Engineering

- Scale
- Data collection

Math

- Measurements
- Fractions
- Accuracy

Parachutes

Students Served: 30



Essential Questions

What material would you want a parachute made of if it were attached to your back?

How does the mass attached to the parachute affect how fast the parachute falls?

How does the size of the parachute affect how fast the parachute falls?

Career Connections:

- Skydiving Instructor
- Pilot
- Astronaut
- Civil Engineer



Parachutes Maker Project

MS42958—\$280

A Pitsco Exclusive

For a fast activity that teaches students about load, gravity, and parachutes, there's nothing better than the Parachutes Maker Project. The project includes parachute kits, modeling clay, a Rip Cord Parachute Drop, a Rip Cord Stand, and a *Dr. Zoon Parachutes Video*. For convenience, the project also comes with labels, a bin, and a bin prep sheet for storage and organization.



Envision

STEM Connections

Science

- Aerodynamic drag
- Negative acceleration
- Observation and data

Technology

- Design processes
- Troubleshooting
- Historical perspectives

Engineering

- Problem solving
- Safety engineering
- Technological design

Math

- Circular area
- Radius
- Ratios
- Geometric shapes

Pop-Ups

Students Served: 25



Pop-Ups Maker Project

MS42959—\$25

A Pitsco Exclusive

Remember reading pop-up books as a child and being fascinated by how they worked? With the Pop-Ups Maker Project, students can learn about the accurate geometric skills needed to make pop-ups and have some artistic fun. The project includes the *Finding Out About Pop-Ups* book and enough card grid for a whole class to begin making pop-ups in no time! For convenience, the project also comes with labels, a bin, and a bin prep sheet for storage and organization.

Essential Questions

How does design affect the stability of a structure?

What are the most effective techniques for creating exciting pop-up books?

In your own words, what is engineering?

Career Connections:

- Mechanical Engineer
- Artist/Illustrator
- Author
- Animator



Visualize

STEM Connections

Science

- Levers
- Compound machines
- Force and motion

Technology

- Materials science
- Troubleshooting

Engineering

- Engineering design
- Designing to specifications

Math

- Measurement
- Congruent shapes

Prop Buggy

Students Served: 50

ELEMENTARY



Essential Questions

How can Newton's first law of motion be applied to the activity?

What is the relationship between the number of winds of the rubber band and the distance the car travels?

What changes can you make to your car to make it go faster?

Career Connections:

- Automotive Engineer
- Pilot
- Mechanic
- Farmer



Prop Buggy Maker Project

MS42960—\$285

[A Pitsco Exclusive](#)

Propellers aren't just for airplanes; they can also be used to power cars! With the Prop Buggy Maker Project, students can learn about resistance, stored energy, friction, and Newton's laws of motion while creating a buggy car. The project includes a Propeller Buggy 50-Pack, rubber band winders, and glue. For convenience, the project also comes with labels, a bin, and a bin prep sheet for storage and organization.



STEM Connections

Science

- Elastic potential energy
- Energy transformations

Technology

- Technological design
- Materials science

Engineering

- Problem solving
- Iterative design

Math

- Measurements
- Right angles

Innovate

Sail Car

Students Served: 30



Sail Car Maker Project

MS42962—\$105

A Pitsco Exclusive

Challenge your students with an engineering-oriented activity in which they design a sail car. With the Sail Car Maker Project, students go through the design process to figure out the best way to craft their sail car. The project includes enough sail cars for the whole class and a three-speed, high-velocity fan. For convenience, the project also comes with labels, a bin, and a bin prep sheet for storage and organization.

Essential Questions

How does the shape of the sail affect the distance the sail car can travel?

How can too much wind be bad for sailors?

What causes the car to stop (without hitting a wall or barrier)?

Career Connections:

- Sailing Instructor
- Wind Farm Developer
- Energy and Environmental Engineer
- Environmentalist



STEM Connections

Science

- Force and motion
- Unbalanced forces

Technology

- Problem solving
- Systems

Engineering

- Engineering design process
- Developing possible solutions

Math

- Measurements
- Estimating

Fabricate

Toolbox Racer

Students Served: 30

ELEMENTARY



Essential Questions

What changes can you make to your car to make it go faster? Slower?

How does the racing surface affect the distance the racer travels?

If the measuring tape were removed, how could you make the car move?

Career Connections:

- Mechanical Engineer
- Mechanic
- Farmer
- Math or Physics Teacher



Toolbox Racer Maker Project

MS42965—\$385

A Pitsco Exclusive

Potential energy is a surprising thing. Sometimes, an object as simple as a tape measure can have an unexpected amount of power. With the Toolbox Racer Maker Project, students can tap into the potential energy of tape measures to create a simple race car. The project includes the Toolbox Racer Pack, Toolbox Racer Start Gate, glue, tape measures, duct tape, kite string, and a *Toolbox Racer* video. For convenience, the project also comes with labels, a bin, and a bin prep sheet for storage and organization.



Form

STEM Connections

Science

- Potential and kinetic energy
- Testing variables

Technology

- Systems
- Energy and power

Engineering

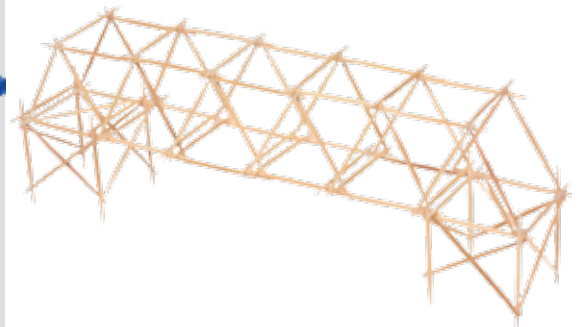
- Data collection
- Modeling

Math

- Prediction
- Charts and graphs

Toothpick Bridges

Students Served: 30



Toothpick Bridges Maker Project

MS42966—\$109

A Pitsco Exclusive

Toothpicks can be used for more than just cleaning teeth. With the Toothpick Bridges Maker Project, students can build bridges out of toothpicks and test them to see how much weight their bridges can hold. The project includes enough materials for a whole class to build bridges such as toothpicks, Structures Glue, empty glue bottles, waxed paper, a Toothpick Bridge Tester, and a *Dr. Zoon Toothpick Bridges Video*. For convenience, the project also comes with labels, a bin, and a bin prep sheet for storage and organization.

Essential Questions

If you were to build a bridge, what material would be best to use considering the physical properties of the material?

What causes weakness in a bridge?

What shapes are best to use to create a strong bridge? Why?

Career Connections:

- City Planner
- Architect
- Civil Engineer
- Carpenter



STEM Connections

Science

- Data collection and analysis
- Equilibrium
- Forces

Technology

- Modeling
- Design processes
- Historical perspectives

Engineering

- Technological design
- Design aesthetics
- Destructive testing

Math

- Geometric shapes
- Cooperative problem solving
- Budgeting and accounting

Plan

AP Dragster

Students Served: 30



Essential Questions

How does the mass of the vehicle affect the distance and speed it can travel?

How is air harnessed and used for propulsion?

How can compressed air be used to move other larger objects?

Career Connections:

- Race Car Driver
- Mechanic
- Test Car Driver
- Classic Car Restorer



AP Dragster Maker Project

MS42949—\$555

A Pitsco Exclusive

Prepare to get your wheels turning with the AP Dragster Maker Project. Students use the provided tools and their imaginations to create AP dragsters and test them with the AP Dragster Launcher. The project includes AP Dragster Pack, AP Dragster Launcher, and a hand pump. For convenience, the project also comes with labels, a bin, and a bin prep sheet for storage and organization.



Realize

STEM Connections

Science

- Air power
- Force and motion
- Aerodynamic drag
- Acceleration

Technology

- Using tools for measurement
- Troubleshooting
- Applying design processes

Engineering

- Designing to specifications

Math

- Symmetry
- Calculating velocity
- Measurement

Invention Explore-A-Pak

Students Served: 30



Invention Explore-A-Pak Maker Project

MS42953—\$195

A Pitsco Exclusive

With the Invention Explore-A-Pak Maker Project, we provide the supplies while students supply their imaginations. The project includes the Invention Explore-A-Pak, which comes with a wide variety of materials such as rubber bands, straws, basswood, dowel rods, Skill Sticks, balloons, wheels, glue, plastic spools, and more. For convenience, the project also comes with labels, a bin, and a bin prep sheet for storage and organization.



1. What is the problem?
2. Brainstorm solutions.
3. Create the solution you think is best.
4. Test your solution.
5. Evaluate your solution.

Essential Questions

How would you define *inventing* in your own words?

Why are wheels round instead of square?

Why can designs be so different yet accomplish the same goals?

Career Connections:

- Mechanical Engineer
- Hobbyist
- Analyst
- Researcher



Think

STEM Connections

Science

- Materials science
- Problem solving
- Modeling

Technology

- Systems
- Troubleshooting
- Materials science

Engineering

- Specifications
- Engineering design process
- Prototypes

Math

- Measurements
- Scaling
- Calculating efficiency

Straw Rocket

Students Served: 30 (each student can make 4 Straw Rockets)



Essential Questions

How do the forces applied affect the flight of the straw rocket?

How do the shape and mass of the nose cone affect the flight of the straw rocket?

How does the launch angle affect the parabolic path of the rocket?

Career Connections:

- Aerospace Engineer
- Military
- Project Engineer
- Algebra Teacher

Straw Rocket Maker Project

MS42963—\$550

A Pitsco Exclusive

Rockets are always fun. That is a simple truth of the world. With the Straw Rocket Maker Project, students play with rockets and design their own rockets while learning about projectile motion, aerodynamics, gravity, and much more. The project includes enough straw rocket material for a whole class, a *Straw Rocket* video, and three Straw Rocket Launchers. For convenience, the project also comes with labels, a bin, and a bin prep sheet for storage and organization.



Invent

STEM Connections

Science

- Force and motion
- Thrust
- Center of gravity/pressure

Technology

- Problem solving
- Calibrations
- Pneumatic systems

Engineering

- Modeling
- Prediction
- Technological design

Math

- Measurements
- Data collection and graphing
- Data analysis and prediction

Zoon Balloon

Students Served: 30

ELEMENTARY

MIDDLE LEVEL

Zoon Balloon Maker Project

MS42968—\$620

A Pitsco Exclusive

Hot-air balloons are mesmerizing to watch as they float up into the sky. With the Zoon Balloon Maker Project, students can create their own hot-air balloons and learn about buoyancy, temperature, density, and more. The project includes glue sticks, hot-air balloon templates, assorted color tissue paper, paper clips, a *Hot-Air Balloon* video, an Indoor Balloon Tester, and an Inflation Station. For convenience, the project also comes with labels, a bin, and a bin prep sheet for storage and organization. Propane is required for outdoor launches and is sold separately.



Essential Questions

What is the similarity between a boat and a hot-air balloon?

How did hot-air balloons become the first reliable vehicles of human flight?

What are the scientific principles behind hot-air balloon flight?

Career Connections:

- Hot-Air Balloon Pilot
- Helicopter Pilot
- Travel Planner
- Design Engineer



STEM Connections

Science

- Buoyancy
- Density
- Molecular motion

Technology

- Design processes
- Modeling
- Historical perspectives

Engineering

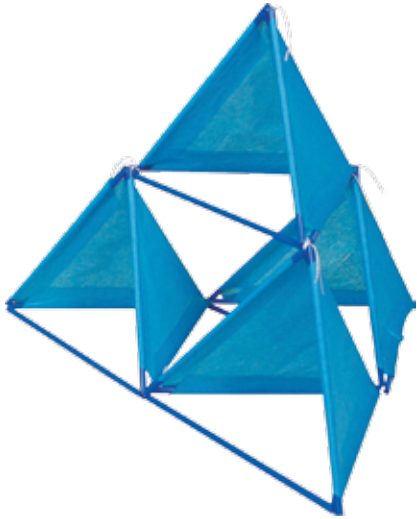
- Problem solving
- Prototyping
- Technological design

Math

- Surface area
- Volume
- Measuring mass

KaZoon Kite

Students Served: 30



Essential Questions

What factors determine density?

What is the name of the basic 3-D shape of this kite?

What is the best process for building something larger from something small?

Career Connections:

- Jeweler
- Fashion Designer
- Construction Worker
- 3-D Graphic Artist



KaZoon Kite Maker Project

MS42954—\$180

A Pitsco Exclusive

It's time to build a kite and let it soar sky high with the KaZoon Kite Maker Project. Students can build a kite and discover the principles of flying while having fun outside. The project includes a KaZoon Kites class pack and a *Dr. Zoon KaZoon Kite Video*. For convenience, the project also comes with labels, a bin, and a bin prep sheet for storage and organization.



STEM Connections

Science

- Forces
- Lifting bodies
- Newton's laws
- Equilibrium

Technology

- Attributes of design
- Structures
- Historical perspectives

Engineering

- Problem solving
- Materials strength
- Technological design

Math

- Geometric solids
- Binomial expansion
- Congruency

Innovate

Packaging Design

Students Served: 25

ELEMENTARY

MIDDLE LEVEL

HIGH SCHOOL



Packaging Design Maker Project

MS42957—\$190

A Pitsco Exclusive

Packaging is a part of any product we buy. With the Packaging Design Maker Project, students can become familiar with packaging design and techniques. The project includes five Super Boxmakers, a *Dr. Zoon Packaging Design Video*, and card stock. For convenience, the project also comes with labels, a bin, and a bin prep sheet for storage and organization.



Essential Questions

Does a larger surface area guarantee a larger volume?

What did you do to make sure your package would fit the object provided?

What efficiencies are important for packaging companies to consider in the design of their packaging?

Career Connections:

- USPS Worker
- Graphic Artist
- Package Design Engineer
- Marketer



Create

STEM Connections

Science

- Materials science
- Force and motion
- Problem solving

Technology

- Safety
- Construction techniques
- 3-D modeling

Engineering

- Scale and structure
- Modeling
- Technological design

Math

- Solid geometry
- Surface area
- Volume

SunEzoon

Students Served: 30



Essential Questions

What is the optimal combination of gears to achieve the maximum speed?

Why is it important to conserve energy and consider alternative energy sources?

How is energy from the sun converted into electricity?

Career Connections:

- Scientific Researcher
- Solar Power Plant Operator
- Photovoltaic Panel Installer
- Electrician

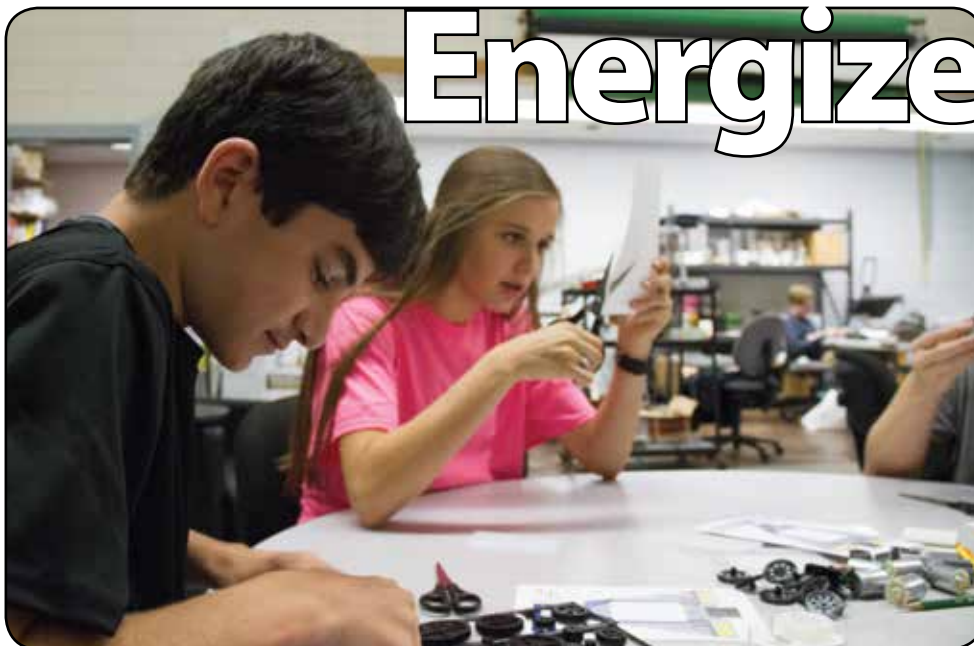


SunEzoon Maker Project

MS42964—\$385

A Pitsco Exclusive

Solar energy is all around us and is an important renewable energy resource. With the SunEzoon Maker Project, students can learn about solar energy while designing their own simple solar car. The project includes everything you need to make a solar car such as solar panels, alligator clamps, motors, wheels, steel axles, gears, and more, and it also comes with a *Dr. Zoon SunEzoon Video*. For convenience, the project also comes with labels, a bin, and a bin prep sheet for storage and organization.



STEM Connections

Science

- Photovoltaics
- Force and motion
- Energy and power

Technology

- Systems
- Problem solving
- Social impacts

Engineering

- Technological design
- Data analysis and prediction
- Electric power

Math

- Ratios
- Graphing data
- Measurements

Water Rocket

Students Served: 30

ELEMENTARY
MIDDLE LEVEL
HIGH SCHOOL



Essential Questions

- How do fin shape and size affect the altitude of the water rocket?
- How do water and air make a rocket fly?
- How do Newton's first, second, and third laws apply to rockets?

Career Connections:

- Research Engineer
- Aerospace Engineer
- Rocket Scientist
- Electrical Engineer



Water Rocket Maker Project

MS42967—\$375

A Pitsco Exclusive

Water rockets take fun and learning outdoors and to the sky. With the Water Rockets Maker Project, students learn important scientific principles such as Newton's laws, acceleration, thrust, and inertia while blasting water-filled rockets into the sky. The project includes materials for constructing water rockets: body tubes, transition cones, fin materials, nose cones, sandpaper, an AquaPort II Water Rocket Launcher, and a Deluxe Port Pump II. Students need to provide their own plastic bottle (20 ounce, 1 liter, or 2 liter). For convenience, the project also comes with labels, a bin, and a bin prep sheet for storage and organization.

Discover



STEM Connections

Science

- Thrust
- Newton's laws
- Center of gravity/pressure

Technology

- Problem solving
- Design processes
- Construction processes

Engineering

- Prediction
- Technological design
- Modeling

Math

- Trigonometry
- Truncated cones
- Axial symmetry

CO₂ Dragster

Students Served: 50

MIDDLE LEVEL



Essential Questions

How does mass affect speed?

How does aerodynamic drag affect speed?

What is the best way to design a car?

Career Connections:

- Classic Car Restorer
- Car Designer
- Automotive Journalist
- Test Car Driver



CO₂ Dragster – Middle School Maker Project

MS43154—\$780

A Pitsco Exclusive

Learn about the aerodynamics of cars with the Middle School CO₂ Dragster Maker Project and start racing today. The project includes a balsa DragPak, Dr. Zoon Dragster Videos, graph paper, the EZ Finish Gate, and the EZ Start Gate. For convenience, the project also comes with labels, a bin, and a bin prep sheet for storage and organization.



Make

STEM Connections

Science

- Newton's laws
- Modeling
- Friction

Technology

- Design processes
- Finishing
- Troubleshooting

Engineering

- Engineering design process
- Prototyping
- Energy and power systems

Math

- Metric measurements
- Tolerances
- Calculating speed

AP Bottle Racer

Students Served: 30



AP Bottle Racer Maker Project

MS43149—\$395

A Pitsco Exclusive

Design your bottle and get to racing with the AP Bottle Racer Maker Project. Students decide how to design their bottle and launch it down the track to see whose bottle is the fastest. The project comes with the AP Bottle Racer Class Pack, AP Bottle Racer Launcher, AP Racer Nozzles, and a Deluxe Port Pump. For convenience, the project also comes with labels, a bin, and a bin prep sheet for storage and organization.

Essential Questions

How does friction affect the distance and speed the vehicle can travel?

How is air harnessed and used for propulsion?

How can compressed air be used to move other larger objects?

Career Connections:

- Race Car Driver
- Mechanic
- Test Car Driver
- Classic Car Restorer

MIDDLE LEVEL

HIGH SCHOOL



Spark

STEM Connections

Science

- Air power
- Force and motion
- Aerodynamic drag
- Acceleration

Technology

- Using tools for measurement
- Troubleshooting

Engineering

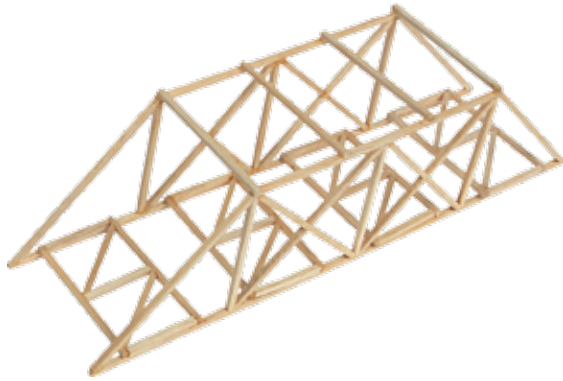
- Applying design processes

Math

- Symmetry
- Calculating velocity
- Measurement

Balsa Bridges

Students Served: 25



Essential Questions

If you were to build a bridge, what material would be best to use considering the physical properties of the material?

How are bridges a form of art?

What problems can occur before and during construction, and how might you learn from these problems? How can engineers avoid these problems?

Career Connections:

- City Planner
- Architect
- Civil Engineer
- Carpenter



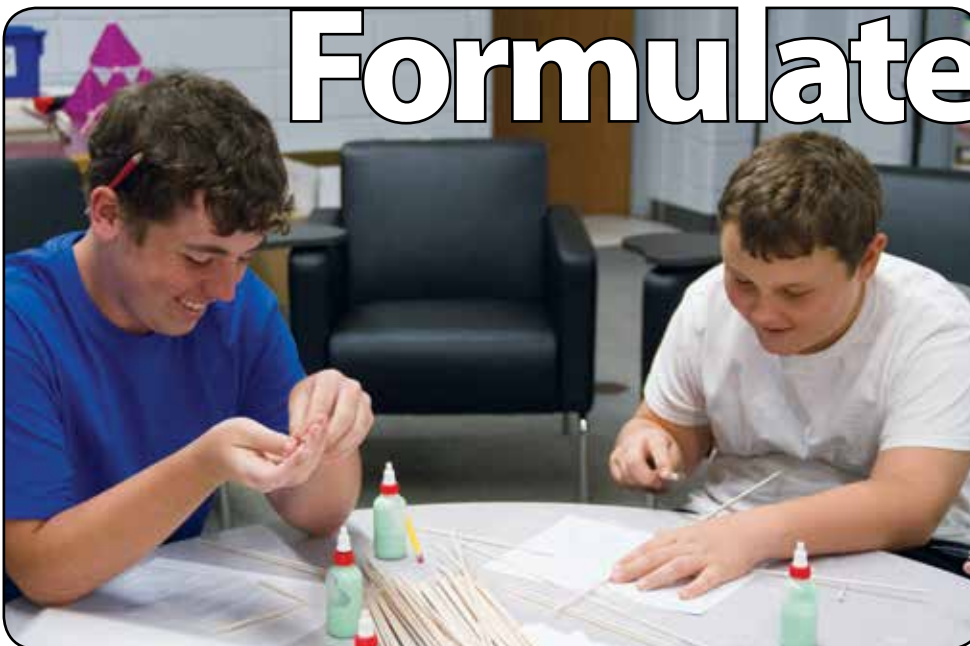
Balsa Bridges Maker Project

MS43150—\$420

A Pitsco Exclusive

There are tons of different bridge designs. With the Balsa Bridges Maker Project, students create bridges and test them out to see which design is best. The project includes a balsa BridgePak 25-Pack, the *Bridge* video, and the Structure Testing Device. For convenience, the project also comes with labels, a bin, and a bin prep sheet for storage and organization.

Formulate



STEM Connections

Science

- Modeling
- Equilibrium
- Forces

Technology

- Construction
- Design processes
- Historical perspectives

Engineering

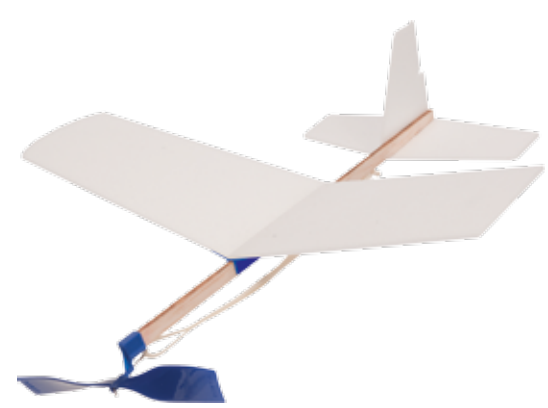
- Design aesthetics
- Data analysis
- Technological design

Math

- Pythagorean theorem
- Efficiency
- Symmetry

Balsa Foam Flyer

Students Served: 30



Balsa Foam Flyer Maker Project

MS43151—\$195
A Pitsco Exclusive

Decide on a wing pattern, wind up a rubber band, and let your foam flyer soar. The Balsa Foam Flyer Maker Project combines the simplicity of a foam glider with the power of a rubber band-powered motor. The project contains enough BFF Balsa Foam Flyer packs for a class of 30. For convenience, the project also comes with labels, a bin, and a bin prep sheet for storage and organization.

Essential Questions

- Where should weight be placed on the fuselage to make it balanced?
- How does the number of winds on the rubber motor affect the flight of the model?
- What design changes can be made to reduce the drag force on a flying object?

Career Connections:

- Pilot
- Flight Attendant
- Aerospace Engineer
- Military

MIDDLE LEVEL
HIGH SCHOOL



Plan

STEM Connections

- Science**
 - Forces of flight
 - Energy transformations
 - Newton's laws
- Technology**
 - Historical perspectives
 - Testing and evaluating
 - Materials science
- Engineering**
 - Technological design
 - Problem solving
 - Modeling
- Math**
 - Geometric shapes
 - Symmetry
 - Measurements

Balsa Glider

Students Served: 30



Essential Questions

What factors affect the flight of the glider from traveling in a straight line?

What are the flying forces that aircraft designers have to consider?

How can you prove the existence of air?

Career Connections:

- Aeronautical Engineer
- Aircraft Technician
- Air Traffic Controller
- Pilot



Balsa Glider Maker Project

MS43152—\$140

A Pitsco Exclusive

Learn about the principles of flight and have students put their knowledge to the test. With the Balsa Glider Maker Project, students can learn about flight and create their own balsa glider design to flight test. The project includes a FlightPak Power Pack and the *Dr. Zoon Balsa Glider Video*. For convenience, the project also comes with labels, a bin, and a bin prep sheet for storage and organization.

Brainstorm



STEM Connections

Science

- Force and motion
- Center of gravity/pressure
- Aerodynamics

Technology

- Problem solving
- Construction techniques
- Materials science

Engineering

- Technological design
- Scale and structure
- Modeling

Math

- Ratios
- Surface area
- Measurements

Catapults

Students Served: 30

MIDDLE LEVEL

HIGH SCHOOL



Catapults Maker Project

MS43173—\$260

A Pitsco Exclusive

Give students a taste of medieval times with the Catapults Maker Project! This project includes enough materials for students to build and test their own rubber band-powered catapults. This project also comes with labels, compartment tray, a bin, and a bin prep sheet for storage and organization.

Essential Questions

How does the catapult set an object in motion?

What do you know about motion and force after building a catapult?

What modifications can be made to improve the catapult's accuracy? What about distance?

Career Connections:

- Inspector
- Mechanical Engineer
- Construction Worker
- Crane Operator



Devise

STEM Connections

Science

- Potential energy
- Projectile motion
- Force and motion

Technology

- Systems
- Historical perspectives
- Data collection

Engineering

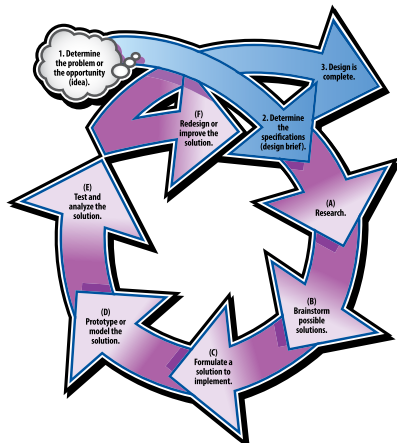
- Technological design
- Modeling
- Prediction

Math

- Measurement
- Ratios
- Graphing

ChallengePak

Students Served: 25



Essential Questions

What is an engineering challenge you could solve with the given materials?

How would you design a car that can travel two meters using the fewest materials from the ChallengePak?

Why did you choose the materials you chose in your design? Why is the type of material used in a design important?

Career Connections:

- Mechanical Engineer
- Hobbyist
- Analyst
- Researcher



ChallengePak Maker Project

MS43153—\$189

A Pitsco Exclusive

Endless possibilities come with the ChallengePak Maker Project. With the provided mousetraps, wheels, axles, dowel rods, wood strips, rubber bands, balloons, and more, the only limit to creating something exciting is your imagination. The project includes the ChallengePak, which provides enough materials for 25 students. For convenience, the project also comes with labels, a bin, and a bin prep sheet for storage and organization.



Observe

STEM Connections

Science

- Materials science
- Problem solving
- Modeling

Technology

- Systems
- Troubleshooting

Engineering

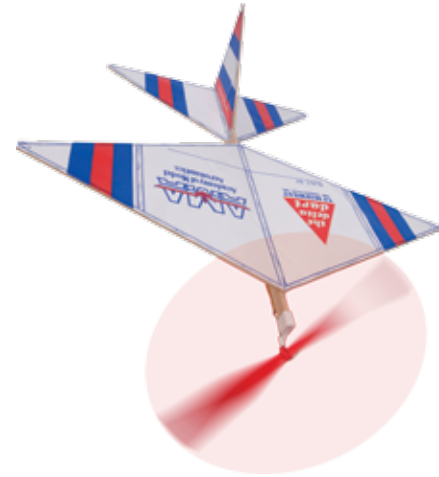
- Specifications
- Engineering design process
- Prototypes

Math

- Measurements
- Scaling
- Calculating efficiency

Delta Dart

Students Served: 35



Delta Dart Maker Project

MS43155—\$140

A Pitsco Exclusive

Learning about airplanes is great with model airplanes. The Delta Dart Maker Project gives students the chance to build a rubber band-powered airplane and learn a little about the aerodynamics involved in flight. The project includes enough materials for 35 students with the Delta Dart Model Airplane, electric winders, and *Dr. Zoon Delta Dart Video*. For convenience, the project also comes with labels, a bin, and a bin prep sheet for storage and organization.

Essential Questions

What are the differences in flight time across three launches?

How can the wings be modified to improve the distance traveled?

How do different sizes of propellers affect a plane's movement?

Career Connections:

- Aeronautical Engineer
- Aircraft Technician
- Air Traffic Controller
- Pilot

MIDDLE LEVEL

HIGH SCHOOL

Examine



STEM Connections

Science

- Forces of flight
- Energy transformations
- Newton's laws

Technology

- Historical perspectives
- Testing and evaluating
- Materials science

Engineering

- Technological design
- Problem solving
- Modeling

Math

- Geometric shapes
- Symmetry
- Measurements

Eco-Wind Generator

Students Served: 30



Essential Questions

What fuel might replace oil as the primary fuel source for travel?

How do the aerodynamics of blades affect a turbine's efficiency?

What are the long-term benefits to the community of developing a wind farm?

Career Connections:

- Environmental Engineer
- Industrial Engineer
- Meteorologist
- Wind Turbine Technician



Eco-Wind Generator Maker Project

MS43156—\$410

A Pitsco Exclusive

Wind energy is a growing form of energy in our world. With the Eco-Wind Generator Maker Project, students can learn about wind energy and construct their very own wind generator. The project includes an Eco-Wind Generator II 30-Pack; *Eco-Wind Gen* video; and three 3-speed, high-velocity fans. For convenience, the project also comes with labels, a bin, and a bin prep sheet for storage and organization.

Contemplate



STEM Connections

Science

- Alternative energies
- Energy transformations
- Electricity production

Technology

- Energy conservation
- Social perspectives
- Environmental perspectives

Engineering

- Problem solving
- Modeling
- Technological design

Math

- Proportions
- Data analysis
- Formulas

Maglev

Students Served: 30



Maglev Maker Project

MS43157—\$230

A Pitsco Exclusive

Magnetic levitation is used to create faster, quieter, and smoother transit systems. In the Maglev Maker Project, students can create their own maglev vehicle and begin learning about the wonders of magnetism. The project includes enough Levitator Maglev Vehicles for 30 students, the *Dr. Zoon Maglev Video*, and a Maglev II Track. For convenience, the project also comes with labels, a bin, and a bin prep sheet for storage and organization.



Essential Questions

How do magnets cause motion?

How can magnets improve transportation?

What is the effect of mass and mass distribution on magnetic levitation?

Career Connections:

- Transportation Engineer
- Subway Driver
- Crane Operator
- Civil Engineer

MIDDLE LEVEL

HIGH SCHOOL



Improvise

STEM Connections

Science

- Aerodynamic drag
- Magnetism
- Center of mass

Technology

- Design processes
- Social perspectives
- Friction reduction

Engineering

- Problem solving
- Modeling
- Technological design

Math

- Measuring time
- Using formulas
- Proportions

Mousetrap Vehicle

Students Served: 30



Essential Questions

How can your design take advantage of the most kinetic energy that the mousetrap could provide?

How would you change your design to minimize friction?

Where is energy stored in a mousetrap vehicle?

Career Connections:

- Physics Teacher
- Mechanical Engineer
- Vehicle Design Engineer



Mousetrap Vehicle Maker Project

MS43158—\$380

A Pitsco Exclusive

Mousetraps pack a surprising amount of force. With the Mousetrap Vehicle Maker Project, students can create a mousetrap-powered vehicle and begin learning some basic physics concepts. The project includes a Basic Mousetrap Vehicle 30-Pack and the *Mousetrap Vehicle* video. For convenience, the project also comes with labels, a bin, and a bin prep sheet for storage and organization.



STEM Connections

Science

- Simple machines
- Force and motion
- Newton's laws

Technology

- Problem solving
- Systems
- Troubleshooting

Engineering

- Technological design
- Data analysis and prediction
- Materials science

Math

- Circumference
- Ratios
- Measurements

Snap

Prop Racer

Students Served: 32



MIDDLE LEVEL

HIGH SCHOOL

Prop Racer Maker Project

MS43159—\$475

A Pitsco Exclusive

Use the power of rubber bands to create a vehicle with the Prop Racer Maker Project. The project includes a Prop Racer Class Pack, Prop Racer System, four Rubber Band Winders, six bottles of HD Bond II, and a *Prop Racer* video. For convenience, the project also comes with labels, a bin, and a bin prep sheet for storage and organization.

Essential Questions

How could the propeller be modified to increase the distance the car travels?

How has the evolution of propeller design affected society?

What design modifications can be made to improve stability?

Career Connections:

- Avionics Equipment Mechanic
- Air Traffic Controller
- Mechanical Engineer
- Helicopter Pilot



Spin

STEM Connections

Science

- Thrust
- Force and motion

Technology

- Systems
- Testing and evaluating

Engineering

- Obtaining data
- Analyzing data

Math

- Measurement
- Prediction

Roller Coaster

Students Served: 12 (teams of 4)



Essential Questions

What forces are acting upon the ball at specific points on the track?

How does apparent weight vary during circular motion?

What safety precautions should be taken to prevent injury on roller coasters?

Career Connections:

- Structural Engineer
- Math or Science Teacher
- Amusement Park Repair Technician
- Astronaut

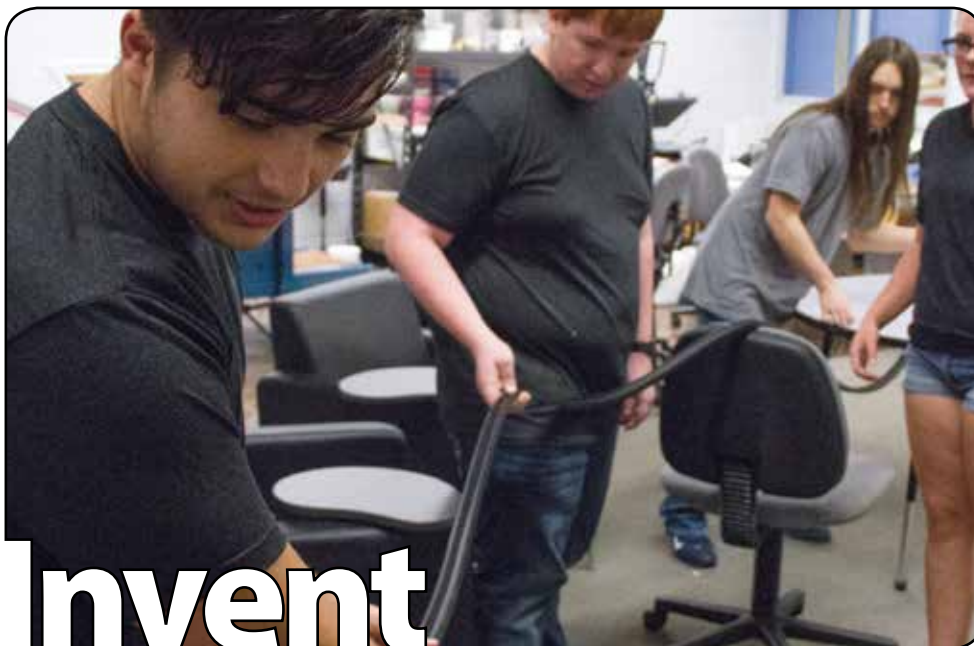


Roller Coaster Maker Project

MS42961—\$580

A Pitsco Exclusive

Bring the excitement of an amusement park to the classroom with the Roller Coaster Maker Project! Students can learn about physics concepts while designing all the loops, hills, and banked curves found in all of the best roller coasters. The project comes with roller coaster tracks, track stands, and roller coaster balls for the class. For convenience, the project also comes with labels, a bin, and a bin prep sheet for storage and organization.



Invent

STEM Connections

Science

- Kinetic and potential energy
- Angular velocity

Technology

- Attributes of design
- Problem solving

Engineering

- Iterative design
- Testing

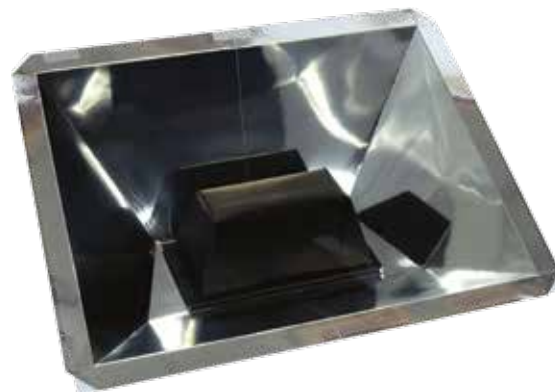
Math

- Measurements
- Estimations

MIDDLE LEVEL
HIGH SCHOOL

Solar Oven

Students Served: 30



Solar Oven Maker Project

MS43160—\$260

A Pitsco Exclusive

Solar energy has many applications in our world. In the Solar Oven Maker Project, students learn to use solar energy to create a solar oven. The project includes the Solar Oven 30-Pack. For convenience, the project also comes with labels, a bin, and a bin prep sheet for storage and organization.

Essential Questions

How can you design something that will transfer the sun's energy for a useful purpose?

What factors limit the use of solar heat?

How do different materials react to solar energy, and how can those materials be used for solar energy?

Career Connections:

- Physicist
- Materials Scientist
- Chemical Engineer
- Semiconductor Processor

MIDDLE LEVEL

HIGH SCHOOL



Cook

STEM Connections

Science

- Heat transfer
- Alternative energy

Technology

- Social impacts
- Technological design

Engineering

- Problem solving
- Prototyping

Math

- Angles
- Solving equations

Solid-Fuel Rocket

Students Served: 50



Essential Questions

Why is knowledge of fuels important in understanding fuel delivery systems?

How has flight influenced society?

How does proper assembly of a rocket affect the performance of the rocket?

Career Connections:

- Research Engineer
- Aerospace Engineer
- Pyrotechnics Specialist
- Rocket Scientist



Solid-Fuel Rocket Maker Project

MS43161—\$460

A Pitsco Exclusive

Learn about rockets, build your own, and launch them with the Solid-Fuel Rocket Maker Project. The project includes the Economy Rocket Pack with engines, Estes Altitude Finder, *Solid-Fuel Rocket* video, Launchpad, and Launch Commander Module. For convenience, the project also comes with labels, a bin, and a bin prep sheet for storage and organization.



Launch

STEM Connections

Science

- Acceleration
- Thrust
- Center of gravity/pressure

Technology

- Problem solving
- Spin-offs
- Systems

Engineering

- Safety engineering
- Technological design
- Modeling

Math

- Trigonometric ratios
- Measuring angles and lengths
- Symmetry

MIDDLE LEVEL
HIGH SCHOOL

Trebuchet

Students Served: 25



Trebuchet Maker Project

MS43162—\$280

A Pitsco Exclusive

Siege machines are a medieval history and physics goldmine. The Trebuchet Maker Project lets students experiment with physics and create their own siege machines. The project includes the Trebuchet 25-Pack, modeling clay, the *Trebuchet* video, and mass plates. For convenience, the project also comes with labels, a bin, and a bin prep sheet for storage and organization.

Essential Questions

What are the limitations to the trebuchet design, and how can they be overcome?

How has engineering knowledge advanced through the years?

How has the history of the trebuchet influenced today's technology?

Career Connections:

- Inspector
- Mechanical Engineer
- Construction Worker
- Crane Operator

MIDDLE LEVEL

HIGH SCHOOL



Make

STEM Connections

Science

- Mechanical advantage
- Force and motion
- Tangential velocity

Technology

- Historical perspectives
- Problem solving
- Systems

Engineering

- Data analysis and prediction
- Technological design
- Simple machines

Math

- Circumference
- Ratios
- Tangents

Blade Engineering

Students Served: 24 (teams of 4)



Essential Questions

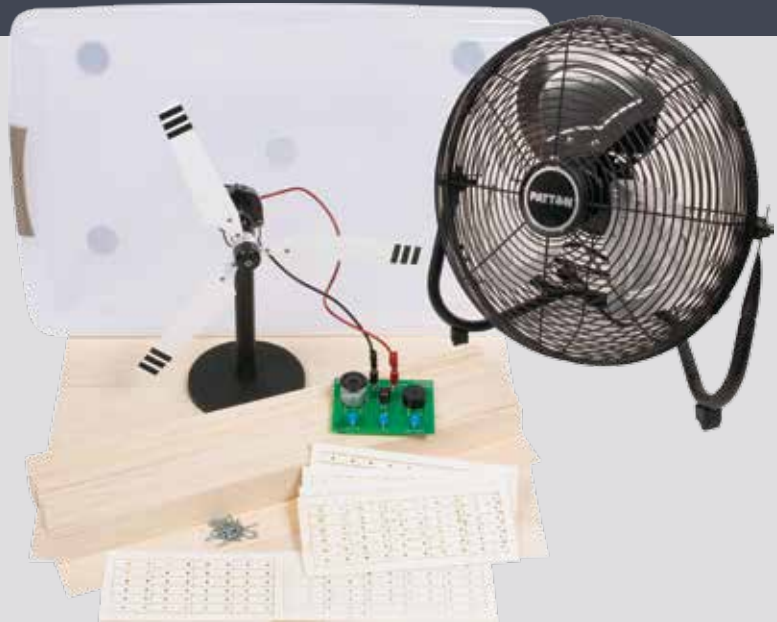
How can wind energy be transformed into more useful forms of energy?

Why should efficiency influence blade design and construction?

What are some things you can do to help the sustainability movement moving forward?

Career Connections:

- Environmental Engineer
- Industrial Engineer
- Meteorologist
- Machinist



Blade Engineering Maker Project

MS43174—\$570

A Pitsco Exclusive

The importance of wind energy continues to grow. With the Blade Engineering Maker Project, students can create their own wind generator blades and try them out to see what design is best for harnessing the wind. The project comes with six Blade Engineering Packs; three 3-speed, high-velocity fans; a WinDynamo III Wind Generator; and a WinDynamo Demo Board Assembly. For convenience, the project also comes with labels, a bin, and a bin prep sheet for storage and organization.



Discover

STEM Connections

Science

- Alternative energies
- Energy transformations
- Electricity production

Technology

- Energy conservation
- Social perspectives
- Environmental perspectives

Engineering

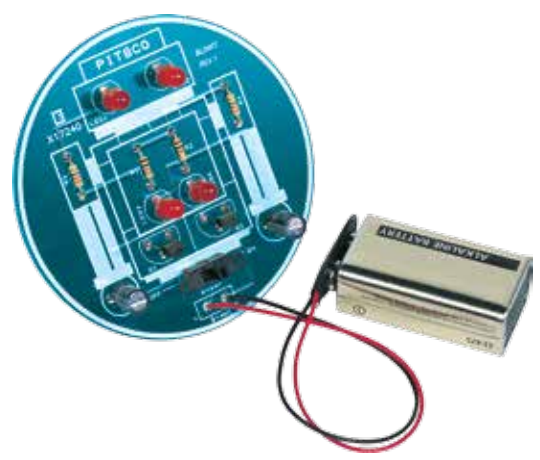
- Problem solving
- Modeling
- Technological design

Math

- Proportions
- Data analysis
- Formulas

Blinky Robot

Students Served: 30



Blinky Robot Maker Project

MS43175—\$290
A Pitsco Exclusive

Learn about creating electronic components with the Blinky Robot Maker Project. Students learn soldering skills while working with a hands-on circuit board kit to build a robot board with intermittently flashing LEDs. The project includes a Blinky Robot 30-Pack, six solder tubes, a *Dr. Zoon Learning to Solder* video, and thirty 9V batteries. For convenience, the project also comes with labels, a bin, and a bin prep sheet for storage and organization.

Essential Questions

How can the basics of electronics be applied to other disciplines?

What will the circuit do based on the parts that are present?

How can you design and build a circuit that accomplishes a task?

Career Connections:

- Hobbyist
- Electrician
- Programmer
- Engineer

HIGH SCHOOL

Electrify



STEM Connections

Science

- Electronic components
- Ohm's law
- Semiconductors

Technology

- Soldering techniques
- Troubleshooting
- Simple circuits

Engineering

- Electricity and electronics
- Identifying components
- Timing circuits

Math

- Measurements
- Symbols
- Math connections

CO₂ Dragster

Students Served: 50



Essential Questions

How do applied math and the use of measurement translate into your dragster design?

Why are the right tools and the right size of tools important?

What modifications can be made to meet specific specifications/tolerances for a dragster race?

Career Connections:

- Classic Car Restorer
- Car Designer
- Automotive Journalist
- Test Car Driver



CO₂ Dragster – High School Maker Project

MS43176—\$4,875

A Pitsco Exclusive

Create a balsa dragster today and begin racing with the High School CO₂ Dragster Maker Project. The project includes a balsa DragPak, *Dr. Zoon Dragster Video*, graph paper, two Wheel Deals, the AirTech Scout Wind Tunnel, the FLO: Flow Visualization Tunnel, a Wheel Lathe, and the Impulse G3 Race System. For convenience, the project also comes with labels, a bin, and a bin prep sheet for storage and organization.



Compete

STEM Connections

Science

- Newton's laws
- Modeling
- Aerodynamics
- Friction

Technology

- Design processes
- Finishing
- Troubleshooting
- Problem solving

Engineering

- Engineering design
- Prototyping
- Energy and power systems

Math

- Metric measurements
- Tolerances
- Calculating speed

Earthquake Towers

Students Served: 30 (teams of 2)



Earthquake Towers Maker Project

MS43177—\$1,620

A Pitsco Exclusive

More goes into constructing buildings than you might think. Engineers have to find the perfect design to make sure the building stays strong through many hardships. With the Earthquake Towers Maker Project, students will construct their own towers and test them with a shaker table to simulate an earthquake. The project includes the balsa QuakePak, EQ⁵ Mass Plate Hardware Pack, three packages of EQ⁵ Wood Floor Plates, EQ⁵ Earthquake Tower video, and the EQ⁵ Tremor Table. For convenience, the project also comes with labels, a bin, and a bin prep sheet for storage and organization.



Essential Questions

Why are we having so many earthquakes?

How should you prepare for an earthquake?

What needs to be considered in designing structures for areas that are prone to earthquakes?

Career Connections:

- Geophysicist
- Seismologist
- Meteorologist
- Civil Engineer

HIGH SCHOOL



Build

STEM Connections

Science

- Seismic forces
- Earth structure
- Resonance

Technology

- Design attributes
- Systems
- Historical perspectives

Engineering

- Logic/creativity in innovation
- Prototypes
- Technological design

Math

- Wave functions
- Scaling
- Logarithmic functions

Foam Wing Gliders

Students Served: 25



Essential Questions

How do birds create thrust and control their direction of flight?

What are some of the common features of planes with the longest flight times?

What other materials might you use in constructing the plane to get a longer flight time?

Career Connections:

- Aeronautical Engineer
- Aircraft Technician
- Air Traffic Controller
- Pilot



Foam Wing Gliders Maker Project

MS43178—\$1,210

A Pitsco Exclusive

Create your own foam wing design and then attach it to a balsa wood fuselage to test it out with the Foam Wing Glider Maker Project. The project includes the Foam Wing Glider Pack, Foam Wing Cutter, Wing Tester Balance Beam Assembly, Wing Test Enclosure, and the *Dr. Zoon Foam Wing Glider Video*. For convenience, the project also comes with labels, a bin, and a bin prep sheet for storage and organization.



Think

STEM Connections

Science

- Force and motion
- Center of gravity/pressure
- Aerodynamics

Technology

- Problem solving
- Construction techniques
- Materials science

Engineering

- Technological design
- Scale and structure
- Modeling

Math

- Ratios
- Surface area
- Measurements

Ray Catcher

Students Served: 30



Ray Catcher Maker Project

MS43179—\$560

A Pitsco Exclusive

Using the sun to power a vehicle sounds pretty awesome, and with the Ray Catcher Maker Project, students can do just that. The project includes a Ray Catcher Consumable Pack, six Ray Catcher Solar Panels, and the *Ray Catcher* video. For convenience, the project also comes with labels, a bin, and a bin prep sheet for storage and organization.

Essential Questions

How do solar cells convert the sun's energy into electricity?

What are the disadvantages of solar power?

How can solar power be used in future inventions?

Career Connections:

- Scientific Researcher
- Solar Power Plant Operator
- Photovoltaic Panel Installer
- Electrician

HIGH SCHOOL

Drive



STEM Connections

Science

- Photovoltaics
- Force and motion
- Energy and power

Technology

- Systems
- Problem solving
- Social impacts

Engineering

- Technological design
- Data analysis and predictions
- Electric power

Math

- Ratios
- Graphing data
- Measurements

Super Clip

Students Served: 30



Essential Questions

What is the best method of planning and executing woodworking projects?

How should wood be prepared for stains and finishes, and how are they applied?

What other materials could the project be made from? Would these materials make the project simpler or more difficult and why?

Career Connections:

- Woodworker
- Furniture Repairperson
- Carpenter
- Mechanical Engineer



Super Clip Maker Project

MS43180—\$220

A Pitsco Exclusive

Learn how to work with wood while creating a large clip with the Super Clip Maker Project. The project comes with enough Giant Super Clip Kits and Giant Super Clip Workbooks for a class of 30. For convenience, the project also comes with labels, a bin, and a bin prep sheet for storage and organization.



Visualize

STEM Connections

Science

- Simple machines
- Potential energy

Technology

- Materials and processes
- Safety

Engineering

- Defining problems
- Developing models

Math

- Right angles
- Measurements

T-Bot® II

Students Served: 24 (teams of 4)



T-Bot® II with Challenge Set Maker Project

MS43181—\$580

A Pitsco Exclusive

Learn about the power of hydraulics and robotics with the T-Bot® II with Challenge Set Maker Project. The project includes the T-Bot II 10-Pack, six T-Bot II Challenge Sets, and the *T-Bot II* video. For convenience, the project also comes with labels, a bin, and a bin prep sheet for storage and organization.

Essential Questions

How is teamwork essential in controlling the hydraulic system?

How would using different-size syringes enable you to gain mechanical advantage?

What were some challenges you encountered in building, and how did you overcome them?

Career Connections:

- Bioengineer
- Hydraulic Mechanic
- Robot Technician
- Mechatronics Engineer

HIGH SCHOOL

Manipulate



STEM Connections

Science

- Axles and levers
- Force and motion
- Newton's laws

Technology

- Hydraulics
- Systems
- Construction techniques

Engineering

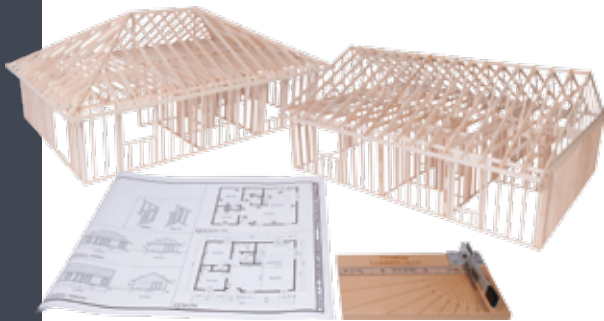
- Load force and effort force
- Simple machines
- Teamwork

Math

- Logic
- Graphing data
- Measurements

True Scale House Framing Kit

Students Served: 30



Essential Questions

What are the building standards for wood frame construction?

How can the basic knowledge of construction be applied to other disciplines?

Why is the ability to measure accurately essential in the construction trades?

Career Connections:

- Framer
- Architect
- Carpenter
- Construction Manager



True Scale House Framing Kit Maker Project

MS43182—\$820

A Pitsco Exclusive

Build a gable or hipped roof while learning how to create dimensions, read house plans, and use construction techniques with the True Scale House Framing Maker Project. The project includes six True Scale House Framing Kits. For convenience, the project also comes with labels, a bin, and a bin prep sheet for storage and organization.

Build



STEM Connections

Science

- Static forces
- Materials science

Technology

- Design processes
- Criteria and constraints

Engineering

- Modeling
- Civil engineering

Math

- Angles
- Measurement
- Computations

Utility Building Kit

Students Served: 24 (teams of 4)



Utility Building Kit Maker Project

MS43183—\$205

A Pitsco Exclusive

Building knowledge is a good life skill to have. The Utility Building Kit Maker Project introduces students to the basic concepts of construction. The project includes six Utility Building Framing Kits 101. For convenience, the project also comes with labels, a bin, and a bin prep sheet for storage and organization.

Essential Questions

What drafting concepts are needed for effective communication?

What improvements could be made to the design to decrease cost?

What makes roofing materials so important to protecting and preserving a structure?

Career Connections:

- Framer
- Architect
- Carpenter
- Construction Manager

HIGH SCHOOL



Construct

STEM Connections

Science

- Static forces
- Materials science

Technology

- Design processes
- Criteria and constraints

Engineering

- Modeling
- Civil engineering

Math

- Angles
- Measurement
- Computations

Resources



Maker Cart

MS43020—\$6,500

Roll the Maker Cart into your classroom for the ultimate STEM/STEAM solution. With more than 60 STEM projects and almost every TeacherGeek component, this cart can support hundreds of kids. It comes with a pallet of replacement supplies and tools to create almost any project. The sign is dry erase, so you can color it your way. This is NGSS aligned and appropriate for Grades 3-12.

What will your students make with the cart? Here are a few examples: rubber band racers, electromagnet cranes, hovercrafts, judo/sumo-bots, terrariums, water filters, trebuchets, ramp-roll vehicles, straw rocket shooters, and many more inventions!



Tool Set

MS43019—\$30

You will need these tools to complete most TeacherGeek projects. Why do you need them? TeacherGeek enables you to build real stuff. With TeacherGeek, you get to cut, tap, ream, and screw.

How many tool sets do you need for a classroom? It works well to have one tool set for every three projects being completed. Most classrooms have six or more tool sets. Tool sets can be reused between class periods and year after year.

Mini Wind Turbine

MS43058—\$4.98

MS43013 10-Pack—\$41

Design and build a wind turbine that generates electricity. Start by experimenting and changing blade designs. Learn how the shape, pitch, and number of blades affect how much electricity it can generate. Grow your understanding through experimentation and the Mini Wind Turbine lab, and then create your own amazing and unique wind turbine design. How much electricity can you generate?

Found (recycling bin) materials can be used to create the blades and other parts of the turbine. Tape the blades to skewer sticks (included) and mount them to the turbine hub. The hub holds one to six turbine blades and enables you to adjust blade angles. This activity will blow you away!

What else will you need for this activity?

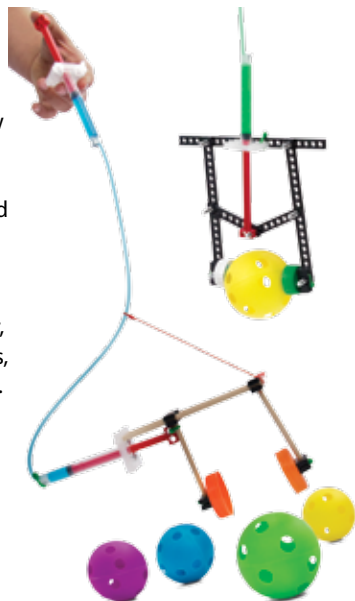
- Materials for blades (cereal boxes, chipboard, recyclables), tape, scissors
- Fan
- Wind Turbine Test Kit – This can be shared by students. Contains 2 multimeters, 8 alligator clip leads, 4 load resistors
- Optional: TeacherGeek Tool Set – This can be reused and shared by students.



Hydraulic Claw

MS43060—\$7
MS43015 10-Pack—\$60

Create a hydraulic claw that can pick up objects. Move the control cylinder and watch the claw open and close below. Example claw designs get you started, but the final claw design is up to you. Learn about fluid power, mechanical advantage, ratios, and the engineering process. Customize your claw to pick up specific objects (worms, marshmallows, balls, and so on).



Possible claw challenges: (1) Compete on a playing field, moving balls or marshmallows with claws to score points. (2) Use your claw to gather as many components from a toxic environment within a time limit (marshmallows from an area where hands cannot reach). (3) Use your claw to stack blocks.

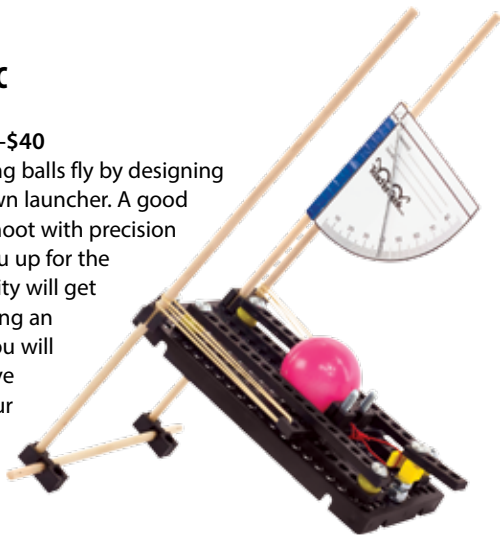
What else will you need for this activity?

- Other materials (recycling bin stuff or whatever else you have available), tape, scissors
- TeacherGeek Tool Set – This can be reused and shared by students.

Launcher Basic

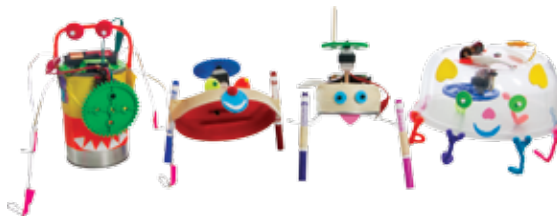
MS43061—\$5
MS43016 10-Pack—\$40

Make Ping-Pong balls fly by designing and building your own launcher. A good launcher is able to shoot with precision and accuracy. Are you up for the challenge? This activity will get you started by building an example launcher. You will then be able to evolve the launcher into your own unique design using the scientific method and engineering process.



What else will you need for this activity?

- Other materials (recyclables or whatever else you have available), tape, scissors
- TeacherGeek Tool Set – This can be reused and shared by students.



Super Wiggle-Bot

MS43063—\$8
MS43018 10-Pack—\$75

Scribble, race, dance, paddle. These are some of the amazing things Wiggle-Bots can be designed to do. They are motorized contraptions powered by kids' imaginations.

Wiggle-Bots are much more than a lot of fun. They inspire. Watch eyes widen as wires are connected and Wiggle-Bots start to move. See how understanding and design evolves through experimentation. Appreciate the challenge of going beyond step-by-step instructions and creating something completely new. It's an incredible experience. How will you Wiggle?

Optional: Learn about basic electronics using the included Wiggle-Bot lab.

What else will you need for this activity?

- Other materials (recyclables or whatever else you have available), tape, scissors, markers, AA batteries
- Optional: TeacherGeek Tool Set – This can be reused and shared by students.



Rubber Band Racer Basic

MS43062—\$7
MS43017 10-Pack—\$65

Design and build a vehicle that is propelled by the energy stored in rubber bands. Make it go for distance, stop with precision, cross difficult terrain, or speed down a track. Rubber Band Racers can be easily reengineered, so every day you can have a different challenge.

Learn engineering and scientific concepts including potential and kinetic energy, friction, and simple machines.

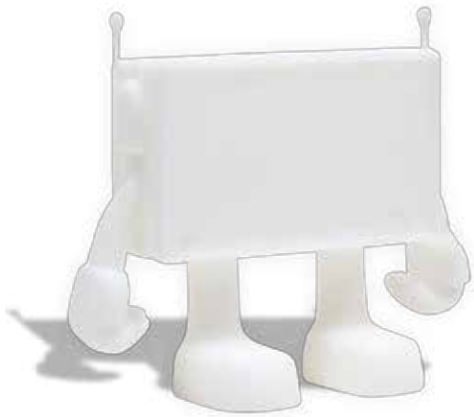
Optional: Start your Rubber Band Racer as a ramp-roll vehicle. See how mass, height, friction, and other variables affect how far it travels. Use this understanding to help you create your rubber band-powered racer.

What else will you need for this activity?

- Other materials (recyclables or whatever else you have available), tape, scissors
- TeacherGeek Tool Set – This can be reused and shared by students.

3-D Printing: Design Solutions

Students Served: 120 (24 students per class, 2 students per group, 5 classes)



Essential Questions

How can making mistakes improve design?

Describe the engineering design process in your own words.

What step of the engineering design process do you believe is the most important? Why?

Career Connections:

- Animator/Designer
- Biomedical Engineer
- Prosthetics Designer
- Toy Maker



3-D Printing: Design Solutions Package

MS41458—\$10,925

MS41472 3-D Printing: Design Solutions Curriculum—\$395

A Pitsco Exclusive

Pitsco's 3-D Printing: Explorations in Innovation/Design Solutions Package features four 3-D printers and curriculum that enables students to create three small designs that can be 3-D printed. The curriculum enables instructors to effectively present basic 3-D design along with copyright and patent information. Included activities foster a greater understanding of 3-D design, CAD and CAM software platforms, and methods used for 3-D printing.

Design



STEM Connections

Science

- Scientific discovery
- Density
- Displacement

Technology

- Safety
- Societal impact

Engineering

- Design basics
- Problem solving
- Prototyping

Math

- 3-D geometry
- Ratios
- Measurement

3-D Printing: Vehicle Engineering

Students Served: 250 (25 students per class, 5 students per group, 10 classes)



3-D Printing: Vehicle Engineering Package

MS41455—\$4,225

MS41456 3-D Printing: Vehicle Engineering Curriculum—\$395

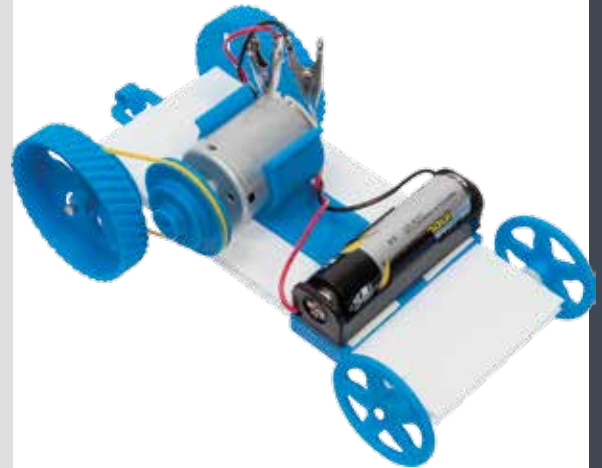
A Pitsco Exclusive

Pitsco's 3-D Printing: Explorations in Innovation/Vehicle Engineering Package enables students to create prototype components and other parts, which is rapidly becoming a normal part of the engineering process.

This package includes:

- 3-D printer (Afinia H800 model)
- 3-D software for PC and Mac
- 3-D printer curriculum
- Handling tools
- ABS filament
- *Competition catalog* (5)
- *Vehicle Engineering Class Pack* (axles, wheels, motors, and so on)
- *Vehicle Engineering Notebook* (250)

No assembly is needed for the printer, but it does require the use of a wall outlet and a computer. **System Requirements:** PC – Windows XP/Vista/7; Mac – OSX.



Essential Questions

Which combination of 3-D printed gears makes the vehicle go faster?

Why is rapid prototyping important to engineers?

How are modifications to the vehicle determined?

Career Connections:

- Mechanical Engineer
- Automobile Designer
- CNC Machinist
- Industrial Designer

MIDDLE LEVEL

HIGH SCHOOL



Model

STEM Connections

Science

- Simple machines
- Force and motion

Technology

- Evolution of automotive industry
- Tools

Engineering

- Materials science
- Gear mechanics
- Prototyping

Math

- Ratios
- Dimension
- Precision

TETRIX® PRIME

Students Served: 24



Essential Questions

Why is rapid prototyping important to engineers?

What role does robotics have in manufacturing?

How have robotics changed society?

Career Connections:

- Programmer
- Robot Technician
- Electrical Engineer
- Robotics Technologist



TETRIX® PRIME Getting Started Package

MS41946—\$5,995

✓ Remote controlled

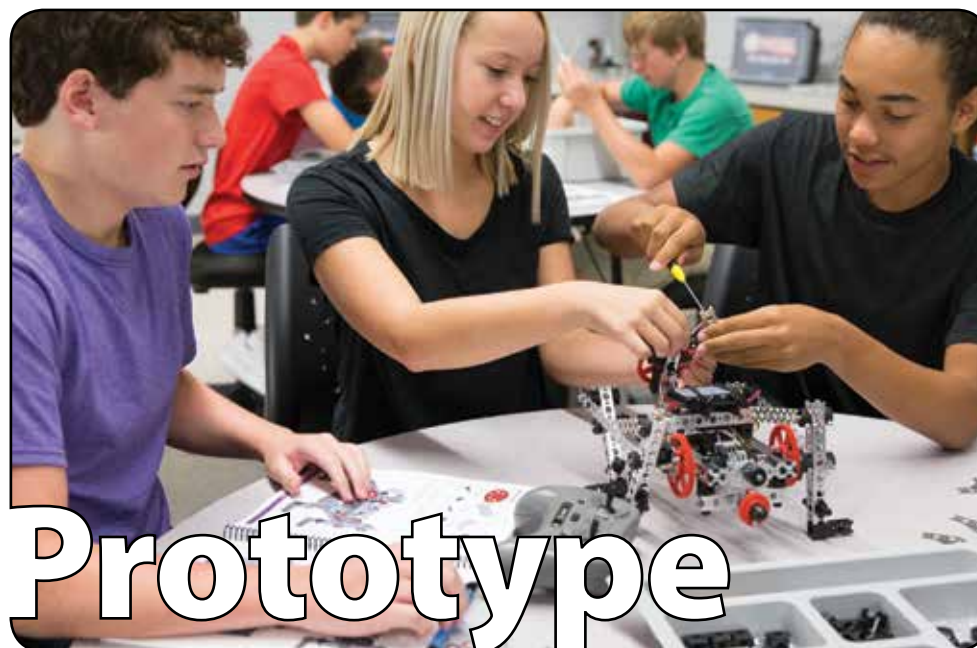
✓ Serves 24 students

A Pitsco Exclusive

The TETRIX® PRIME Getting Started Package offers the ultimate robotics experience. Teams of two work to design fully functioning, remote-controlled robots, with each student pair having access to both a TETRIX PRIME R/C Starter Set and a TETRIX PRIME Expansion Set. The included Instructional Build DVD for TETRIX PRIME Robotics and Engineering Design Loop Poster Set provide an added bonus to the builder's guides.

Includes:

- 12 TETRIX PRIME R/C Starter Sets
- 12 TETRIX PRIME Expansion Sets
- Engineering Design Loop Poster Set
- Instructional Build DVD for TETRIX PRIME Robotics



Prototype

STEM Connections

Science

- Kinetic and potential energy

Technology

- Construction techniques
- Modeling
- Systems

Engineering

- Prototyping
- Gear mechanics
- Innovation

Math

- Ratios
- Proportions
- Equations

TETRIX® MAX

Students Served: 24



TETRIX® MAX R/C Getting Started Package

MS41944—\$4,850

- Remote controlled
- Serves 24 students

A Pitsco Exclusive

The TETRIX® MAX R/C Getting Started Package offers the ultimate robotics experience. Teams of four work to design fully functioning, remote-controlled robots, with each student group having access to both a TETRIX MAX R/C Robotics Set and a TETRIX MAX Expansion Set. The included curriculum materials, Instructional Build DVD for TETRIX MAX Robotics, and Engineering Design Loop Poster Set provide an added bonus to the builder's guides.

Includes:

- 6 TETRIX MAX R/C Robotics Sets
- 6 TETRIX MAX Expansion Sets
- *A Teacher's Guide to Integrating Simple Machines in Robotics*
- Engineering Design Loop Poster Set
- Instructional Build DVD for TETRIX MAX Robotics



Essential Questions

Why is logical thinking a desired trait in programmers?

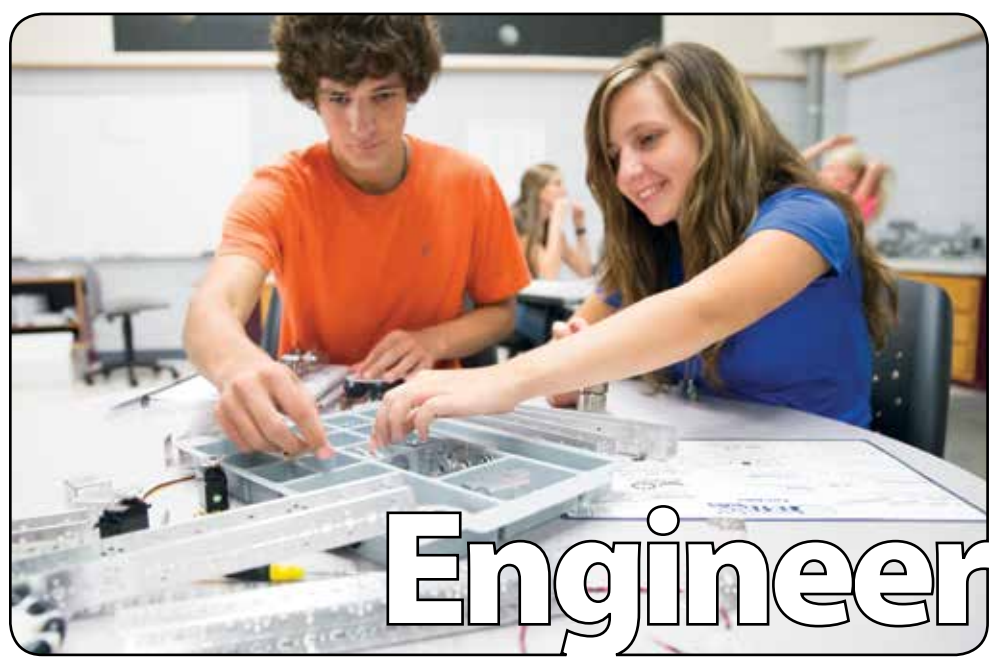
How do robots know what to do?

How do robots see the world?

Career Connections:

- Programmer
- Robot Technician
- Electrical Engineer
- Robotics Technologist

HIGH SCHOOL



Engineer

STEM Connections

Science

- Material strength
- Forces

Technology

- Programming
- Historical perspectives
- Construction techniques

Engineering

- Innovation
- Problem solving

Math

- Proportional relationships
- Ratios

Tools and Materials

Makerspace teachers will need a variety of items (glue, paint, craft sticks, rubber bands, and so on). The Maker Space Materials Package enables teachers to have those often-needed items to provide success for students in the process of making almost anything.



Maker Space Materials Package

MS41760—\$1,995

A Pitsco Exclusive

Need additional materials for your makerspace? Look no further than the Maker Space Materials Package. This package includes a variety of resistors, motors, dowel rods, valves, decals, and all the other little things that might have been missed but will be appreciated when the making starts. Photo is a representation of the package and does not show all items in the Materials package.




Elementary Maker Space Tools Package

MS43168—\$1,475

A Pitsco Exclusive

Pitsco Maker Space Projects come with all the materials you'll need to build new and exciting creations, but sometimes additional tools are required. With the Elementary Maker Space Tools Package, you'll have all the tools you'll need to complete any of elementary Maker Space Projects. The package includes safety glasses, screwdriver sets, cool-melt glue guns, glue slugs, drill bit sets, 6' tape measures, hammers, and more.

 Pitsco Education is proud to provide solutions for your makerspace and while our Maker Projects are categorized by school level (elementary, middle-level, high school), we understand the needs and abilities of every student is different. Please exercise teacher discretion when selecting activities for your classroom and understand that adult supervision may be required for activities and tool usage.

Middle-High Maker Space Tools Package

MS41761—\$8,995

A Pitsco Exclusive

Need some tools to get your makerspace functioning? How about almost any tool you can imagine? From scissors to a band saw, this package holds almost every tool your students might use to keep the making going. Photo is a representation of the package and does not show all items in the Middle-High Tools package.



Furniture

Easily reconfigured!



Same furniture,
different configuration!



All items on this spread marked
"Pitsco Exclusive"
are proudly manufactured by us
in Pittsburg, KS, USA. Visit us!



BuilderSpaces SpacePort™

MS43263—\$2,395

A Pitsco Exclusive

Reconfiguring your makerspace workstations is a breeze with the BuilderSpaces SpacePort™. Designed to seat eight students, this series features four desks, four storage cabinets, and an elevated central platform that enables students to share supplies easily. Assembly required. Chairs not included.





Tall Storage Cabinet

MS40357 (72" x 41" x 23.75")—\$995
 MS42683 (72.375" x 37" x 29.375")—\$995

A Pitsco Exclusive

This floor-standing cabinet features adjustable shelving and two doors and comes in two sizes to meet the storage needs of your makerspace or classroom. Assembly required. Volume pricing available.



Dual Purposed as Standing Workstation



Mobile Storage Unit

MS38757—\$895

A Pitsco Exclusive

Every work space needs organization, and this Mobile Storage Unit does just that! Designed to fit various storage bins, this cabinet features adjustable rails and 2" rolling casters to easily move wherever you need it. This unit also works great for TETRIX® storage! Unit measures 44" x 41" x 19-1/2". Assembly required. Volume pricing available.



Flex Power Storage

MS40555—\$995

A Pitsco Exclusive

Keep your classroom supplies all in one place with the Flex Power Storage. This mobile cart also serves as a standing workstation and measures approximately 34" x 45" x 27". Assembly required.



Pitsco Maker Space Cabinet

MS43030—\$895

A Pitsco Exclusive

Keep your makerspace tidy with the Pitsco Maker Space Cabinet! This handy cabinet is built to hold various storage bins and can also be utilized as a standing workstation. Cabinet measures 43" x 39-1/2" x 23". Assembly required. Volume pricing available.



Rectangular Table

MS28331—\$425

A Pitsco Exclusive

Need extra workspace for your makerspace? This rectangular table is the answer. Table measures approximately 31" x 60" x 30". Assembly required. Volume pricing available.



Wood Processing Center

MS22092—\$1,375

A Pitsco Exclusive

Makerspaces can become messy, especially when you're working with natural materials such as wood. This Wood Processing Center is specifically made for wood projects and the tools needed for those projects. The center measures approximately 47" x 66" x 27". Assembly required. Tools sold separately.



Wood Processing Center shown with tools mounted.

Storage



27355 Clear Container with Blue Flip-Top Lid



43214 Clear Storage Bin with Lid

Storage Bins

MS39358 Shallow Red Bin with Lid—\$7.50

MS43222 Standard Grey with Lid—\$10.50

MS39356 Extra Deep Blue Bin with Lid—\$12.50

MS43223 Large Blue Bin with Lid —\$13.50

MS27355 Clear Container with Blue Flip-Top Lid—\$25

MS43214 Clear Storage Bin with Lid—\$35

Whether you're storing robot components, hand tools, craft materials, or whatever you use in your classroom, these bins help keep it organized and neat.



Sorting Tray (16 compartments)

MS34074—\$7.50

A Pitsco Exclusive

This sorting tray fits into our blue, red, green, black, and gray containers and offers 16 different sections, including one long one, for keeping small parts organized.



Sorting Tray (6 compartments)

MS40682—\$7.50

This sorting tray fits into our blue, red, green, black, and gray containers and offers six different sections, including one long one, for keeping small parts organized.

Volume pricing available for all items on this page.



Maple Stool

MS81479 (18")—\$73

MS81480 (24")—\$76

MS81481 (27")—\$76

MS81482 (30")—\$77

Shipping: Drop shipped directly from the manufacturer. Please allow six to eight weeks for delivery.



15-Drawer Multicolored Storage Cart

MS36431—\$145

Get tons of colorful storage with this 15-drawer cart. Patented interlocking rail-and-drawer system on this smoke-colored cart prevents shifting off the rails, and the molded stops on the drawers prevent the drawers from pushing through the back of the cart. Has middle leg supports and six casters (three locking) for added stability. Inside-bottom dimensions of tapered standard drawers are 13-3/8" x 9-3/8" x 2-1/2". Inside-bottom dimensions of tapered deep drawers are 13-5/8" x 9-3/4" x 5".



Three-Drawer Storage Cart

MS36427—\$49

Patented interlocking rail-and-drawer system on this smoke-colored cart prevents shifting off the rails, and the molded stops on the drawers prevent the drawer from pushing through the back of the cart. Has four casters (two locking). Inside bottom dimensions of tapered drawers are 13-5/8" x 9-3/4" x 5".



Six-Drawer Multicolored Storage Cart

MS36430—\$59

This colorful storage cart features two drawer sizes for added flexibility. Patented interlocking rail-and-drawer system on this smoke-colored cart prevents shifting off the rails, and the molded stops on the drawers prevent the drawer from pushing through the back of cart. Has four casters (two locking). Inside bottom dimensions of tapered standard drawers are 13-3/8" x 9-3/8" x 2-1/2". Inside bottom dimensions of tapered deep drawers are 13-5/8" x 9-3/4" x 5".

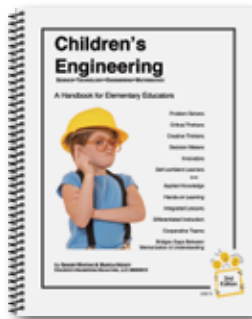


10-Drawer X-Frame Storage Cart

MS36428—\$89

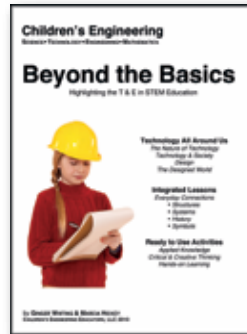
The x-frame gives this 10-drawer cart a sleek, stylish look. Patented interlocking rail-and-drawer system on this clear-and-smoke-colored cart prevents shifting off the rails, and the molded stops on the drawers prevent the drawer from pushing through the back of the cart. Has four casters (two locking). Inside bottom dimensions of the tapered drawers are 13-3/8" x 9-3/8" x 2-1/2".

Books



Children's Engineering: A Handbook for Elementary Educators

MS59874—\$24.95
Paperback, 111 pages.



Children's Engineering: Beyond the Basics

MS59888—\$24.95
Paperback, 141 pages.



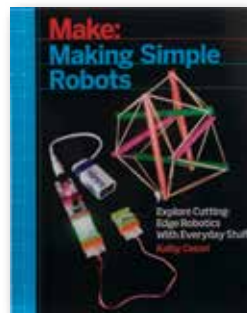
Make: The Makerspace Workbench

MS41917—\$24.95
Paperback, 282 pages.



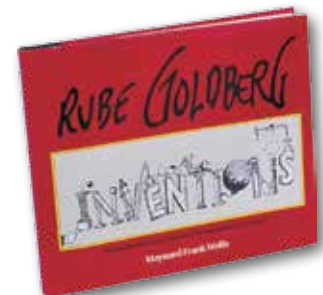
Amazing Leonardo da Vinci Inventions You Can Build Yourself

MS31384—\$19.95
Paperback, 122 pages.



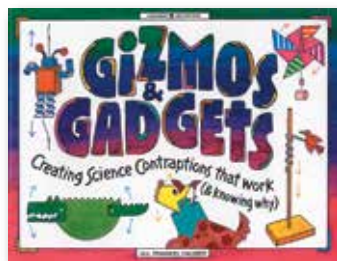
Make: Making Simple Robots

MS41916—\$19.95
Paperback, 200 pages.



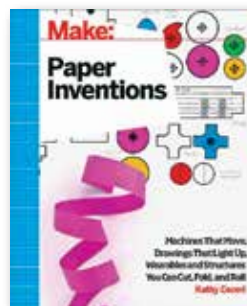
Rube Goldberg: Inventions

MS57881—\$25
Hardback, 191 pages.



Gizmos & Gadgets

MS57704—\$12.95
Paperback, 144 pages.



Make: Paper Inventions

MS43039—\$19.95
Paperback, 132 pages.

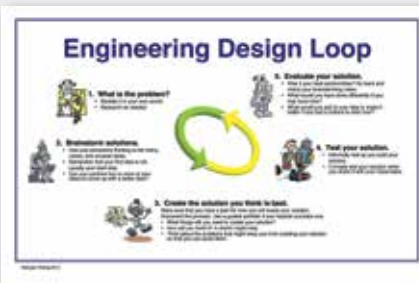
Posters

Lower Elementary



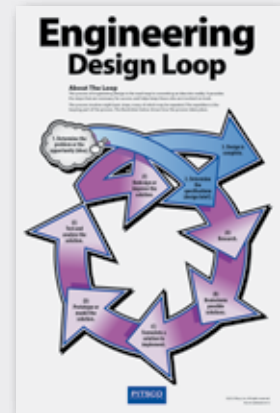
Technology Design Loop Poster
MS59884 (11" x 17")—\$2.95

Upper Elementary



Intermediate Engineering Design Loop Poster
MS60161 (11" x 17")—\$2.95

Middle Level and High School



Engineering Design Loop Poster Set
MS60112 (11" x 17")—\$9.95



Tools & Rules Safety Posters
MS59973 (11" x 17")—\$14.95



Mechanical Geometry Poster Set
MS59578 (17" x 22")—\$19.95



New York East River Bridge Poster
MS57975 (26" x 40")—\$28



Engineering Wonders: Top Fuel Dragster Poster
MS54663 (35" x 23")—\$15.95



The Parachute Poster
MS57619 (18" x 24")—\$18



Bridge Towers: Monuments in Time Poster
MS31895 (30" x 15.5")—\$18

4 Easy Ways to Order

Policies

1. Telephone

800-835-0686

Please feel free to phone us with any questions or orders. If you phone in an order that will also be mailed or faxed, be sure to indicate clearly on the form that it is a confirmation order only. Understandably, we can't be held responsible for duplicate shipments, and a restocking fee will be assessed if the confirmation order is not clearly marked.

2. Internet

Link to our online catalog at pitsco.com. Shop over the Internet with confidence on our secure e-commerce site.

Fast Turnaround!



Orders are normally shipped within 48 hours. In peak seasons (July-October) there may be some delay. Placing your order before July helps speed up the process.

Every order is a **RUSH** order to us. However, if you need overnight delivery, we're prepared to serve you. We will be glad to ship your order next day whenever possible. Some additional charges may apply.

Most orders are shipped parcel carrier. The shipping charges are prepaid by us and then included on your invoice.



We gladly accept MasterCard, Visa, Discover, and American Express cards for your convenience.

Schools are welcome to use net 30 terms if approved by accounting. (Email AR@Pitsco.com for more information.) Payment must be made within 30 days.

A \$30 charge for each order containing any hazardous materials will be assessed. (Charge for air delivery of hazardous materials is \$40.) The Department of Transportation has very specific rules about packaging of hazardous materials. We have labeled all hazardous materials in this catalog.

Tax rates can change at any time. The governing body of the state that we are shipping to determines the change, not Pitsco Incorporated or its affiliates.

If a valued customer is using his or her personal credit card in a taxable state, we must charge tax. School or State District exemption forms do

3. Mail

Simply complete the order form and drop it in the mail. Please fill out the form completely and accurately. This enables us to serve you better. Mail your order to:

Pitsco, Inc.
P.O. Box 1708
Pittsburg, KS 66762

4. Email

orders@pitsco.com

not apply to personal credit card or personal check orders. If a customer is in a taxable state but would like tax exemption, we must have the tax exempt form to process the order. If you have any questions, please call our **Answerline at 800-358-4983** or visit us online at Pitsco.com/help.

When you receive your order, please check the contents immediately. Please check the box thoroughly. (Sometimes small items get hidden at the bottom.)

If you discover a problem with your order, you must call us immediately (within 30 days). You'll want to keep all packaging material for inspection by the carrier.

If there is a need to return any merchandise, please call, and we will give you a Return Authorization Number. **A 25% return charge will be assessed.** Opened software cannot be returned. On truckline orders, shipment damage must be stated on bill of lading at time of delivery or shipment refused in order to submit a damage claim. **Please don't return items without calling first.**

Pitsco provides a one-year limited warranty against defects in manufacturing on all items purchased unless otherwise specified by the manufacturer. In a warranty situation, Pitsco will arrange for the return of defective items for evaluation. Qualified Pitsco staff will determine warranty coverage and notify the customer. Items under warranty will be repaired or replaced at Pitsco's discretion. Customers will be billed for all costs associated with non-warranty items.

Online: Pitsco.com/help

Answerline: 800-358-4983

Contact us. We'll help. We promise.

Our friendly customer service staff will assist you in resolving any concern. We want you to be completely satisfied.

Curriculum Assistance

If you need help finding curriculum or activities for a specific aspect of your class, we're ready to help.



Right to Know

If you need "Right to Know" information, we have SDS (Safety Data Sheets) for any product that falls under the statutes of federal legislation. SDS information may be obtained from the website or by emailing a request to Pitsco.com/help.

We're open Monday through Friday from **7:30 a.m. to 5:30 p.m.** Central Time. We're normally closed on major holidays and from December 24 through January 1.

Notice:

Although every precaution was taken, errors in pricing and/or specifications may occur in printing. We reserve the right to correct any such errors. We sincerely hope that they do not cause you any inconvenience.

Prices are subject to change without notice after the date indicated below. Products with prices that change more than 15% will not be shipped until we have obtained your school's authorization to ship the items at the increased price.

Disclaimer: All products offered for sale in this catalog are sold without warranty, implied or expressed, of fitness or merchantability other than the purpose expressly stated in this catalog. Pitsco is liable only for the replacement or purchase price in the case of a manufacturing defect or mislabeling. Pitsco is not liable for incidental or consequential damages.

All trademarks and copyrights are the property of their respective holders.



Shipping Information

We want to get your educational products in your classroom as quickly as possible. With some products, government and carrier regulations require specific packaging and methods of transportation. If you see the shipping information icon next to an item, one of the following situations will apply to that item.

Rocket Engines and Starters

UPS forbids air shipment of rocket engines and rocket kits containing rocket engines. These items will be shipped on your order and *must* ship Fourth-Class Parcel Post. (If requested, we can ship engines UPS ground with a \$30 hazard fee.) Orders shipped Fourth Class USPS will not incur a hazardous materials charge but may take 10 business days for delivery.

CO₂ Cartridges

By government definition, CO₂ cartridges are considered a hazard for air shipments. CO₂ cartridges or products containing CO₂ cartridges may be shipped by air with a \$40 hazardous materials charge.

Spray Paint (and other aerosols)

By government definition, spray paint and other spray products are considered a hazard for air shipments. Spray paint and other aerosols may be shipped by air with a \$40 hazardous material charge, under limited quantity

requirements.

If you need these products rushed, Pitsco has no option other than ground transportation. Be sure to order early.

Furniture

Furniture can only ship by truck line or LTL carrier and cannot be expedited. If you order furniture, your entire order will be packed and prepared for this type of shipment. Please note any damage to the furniture on the bill of lading (BOL) when signing for the goods and then call Pitsco regarding the damage so that we can start the claims process and begin to address your damaged items. Please allow at least two weeks upon receipt of the purchase order to receive your furniture.

Various Other Products

Other products throughout the catalog may have the shipping information icon. Please call for specific information, as there may be a hazardous materials charge or specific shipping limitations may apply.

We Can Help

We use UPS as our primary provider. If you have preferences for shipping these items, clearly note this on your mail or online order, or mention it when placing a phone order. If you have questions regarding the best way to ship your order, please call the Answerline at 800-358-4983.



PITSco

E D U C A T I O N

Phone Orders 800-835-0686
 Online Orders pitsco.com
 Email orders@pitsco.com
 Answerline 800-358-4983
 Pitsco.com/help

PITSco, INC. • P.O. BOX 1708 • PITTSBURG, KS 66762

Thank you for your order. You are not just a customer, you are our friend, and I am grateful for the relationship we share. Your questions, concerns, suggestions, and ideas are our first priority.

Thank you for being our customer and friend. We're committed to serving you.

Sincerely,

Harvey R. Dean
 CEO, FOUNDER

SHIP TO:	NAME _____	PLEASE CHECK ONE IN EACH CATEGORY:
	EMAIL _____ (PERSONAL OR SCHOOL) <small>(Providing your email address will enable us to send you a shipment notification.)</small>	
	SCHOOL _____	
	SHIPPING ADDRESS _____ _____	
BILL TO:	CITY _____ STATE _____ ZIP _____	LEVEL:
	TELEPHONE NO. () _____ FAX NO. () _____	<input type="checkbox"/> ELEMENTARY SCHOOL
	SCHOOL _____	<input type="checkbox"/> MIDDLE SCHOOL
	BILLING ADDRESS _____	<input type="checkbox"/> HIGH SCHOOL
	CITY _____ STATE _____ ZIP _____	<input type="checkbox"/> UNIVERSITY
	TELEPHONE NO. () _____ FAX NO. () _____	<input type="checkbox"/> OTHER _____
		PRODUCTS USED FOR:
P.O. No. _____		<input type="checkbox"/> TECHNOLOGY
Ordered by _____		<input type="checkbox"/> SCIENCE
		<input type="checkbox"/> LIBRARY/MEDIA CENTER
		<input type="checkbox"/> MATH
		<input type="checkbox"/> GIFTED
		<input type="checkbox"/> OTHER

QTY	ITEM NO.	DESCRIPTION	ITEM PRICE	TOTAL PRICE
			<small>Be sure to add shipping! (see chart below)</small>	
			TOTAL	

Thanks for your order!

Unless billing to a tax-exempt school, school district, or other entity, applicable sales tax will be applied.

Purchase for:
 School Individual
 Please provide your tax-exempt number: _____ Any purchase for an individual must be prepaid, including purchase total and shipping charges.

Order Amount	Ground	NDA*	SDA*	Alaska, Hawaii, Puerto Rico (Expedited)*	Alaska, Hawaii, Puerto Rico (Ground)* @
\$0-\$100	\$10	\$35	\$20	\$45	\$20
\$101-\$200	9%	\$45	\$30	\$65	\$25
\$201-\$500	7%	\$60	\$40	\$80	\$35
\$501-\$800	6%	\$80	\$55	\$100	\$50
\$801-\$1,200	5%	\$100	\$75	\$125	\$65
\$1,201-\$1,800	4%	\$125	\$90	\$140	\$80
> \$1,801	3%	\$155	\$115	\$165	\$100

*in addition to regular shipping charges.
 @ LTL shipments have to be quoted

Experienced Makerspace Teachers

Elementary



"Exposing our students to these opportunities for discovery helps to prepare them to be the scientists, engineers, and problem solvers of the future and transform them from consumers to contributors."

~Jessica Malloy
Christie Elementary, Plano, TX

Middle Level



"Makerspaces provide unlimited opportunities to make learning relevant, nonthreatening, and successful for students whose minds are transitioning from being the former elementary student to the rising high schooler."

~Nicole Penn
Kiser Middle School, Greensboro, NC

High School



"Pitsco had all these amazing gizmos and gadgets that seemed to be the answer to the question I had been asking: "How do I get my students excited and motivated to learn this challenging set of skills?" I started a ball rolling that has yet to stop. I didn't know what it was called at the time, but I started to create my own classroom makerspace."

~Karn Gustafson
Volcano Vista High School, Albuquerque, NM

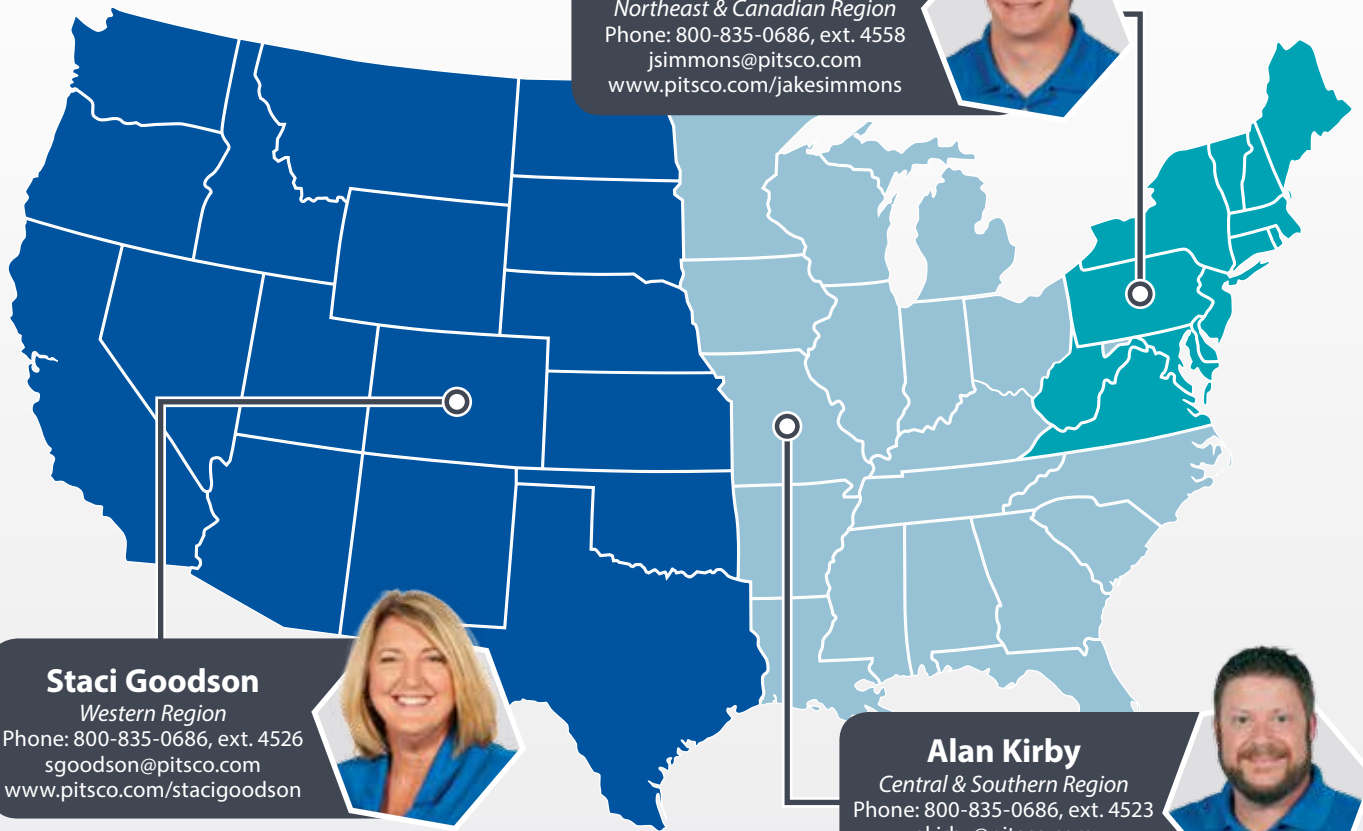


Visit www.pitsco.com/makerspace to learn more and to view our free makerspace webinars. Pitsco Maker Space Professional Development opportunities are available. Contact us at 800-835-0686 to learn more!



Request a catalog at
www.pitsco.com/catalogrequest.

Pitsco Education Consultants



Jake Simmons
 Northeast & Canadian Region
 Phone: 800-835-0686, ext. 4558
jsimmons@pitsco.com
www.pitsco.com/jakesimmons



Staci Goodson
 Western Region
 Phone: 800-835-0686, ext. 4526
sgoodson@pitsco.com
www.pitsco.com/stacigoodson



Alan Kirby
 Central & Southern Region
 Phone: 800-835-0686, ext. 4523
akirby@pitsco.com
www.pitsco.com/alankirby



800-835-0686 • pitsco.com



**CHANGE SERVICE
REQUESTED**

If this catalog is not addressed correctly or the recipient is no longer at your school, please log on to our website at <http://forms.pitsco.com/correctmyinfo.asp> and make any necessary changes. Thank you.

Crack the code with **TETRIX**® robotics in your makerspace

“Robotics keeps students **engaged and involved** more than any other activity. **It’s hands on.** They’re **building stuff** and they’re **collaborating** ... This allows them to have that verbal communication with each other, which is so important for their future.”

– Roni Gonzales, K-6 gifted and talented facilitator

Request a Robotics catalog at www.pitsco.com/catalogrequest.

