

INVENTIONLAND®

Educators Guide and Resources
for Teaching 21st Century Skills

INVENTIONLAND®

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The World's Innovation Destination point, located in Pittsburgh, Pennsylvania. Over 1,000 visitors tour the invention factory each month. Inventionland provides comprehensive educational course materials, as well as innovation lab supplies and services for schools and corporate innovation labs.

ABOUT INVENTIONLAND



Inventionland innovates and invents new products everyday. Inventionland-invented products sell in 1200 retail stores and online sites nationally and internationally. This success prompted the company to gather its expertise and create once again. This creation became course material and teacher resources that transform classrooms into productive maker and STEAM environments. Teachers get the backing of a proven, successful method to engage students for a semester and a lifetime.



"It helped me learn how to work with others."

"It helped me learn how to solve problems."

"I liked going to class and making my idea."

"It was nice having a role in the project instead of having to do it all myself."

"I learned what an innovation officer does at a company and that's what I'm going to be one day."

"Our team learned how we could draw on each other's strengths to make something."



INVENTING COURSE

Thinking of integrating innovation into your classroom? Experience real world inventing, innovation and entrepreneurship. Students build career-ready skills as they bring their ideas to life. Whether it's learning how to use observational skills to identify opportunities, how to come up with ideas, how to research the viability of that idea, how to design and make the idea or how to package and present it, students get exposed to how things are created and are taught how to create their own products.

As students go through the course, they are exposed to all sorts of jobs that are out in the world. During the inventing, making and storytelling process, each student draws upon their own inner desire to make their contribution to the project. Whether the students discover a career direction or seek to become one of tomorrow's entrepreneurs, their eyes have been opened to a world of new possibilities. Lesson plans included.



Meets
Standards

Students will:

- Embark on a journey of self discovery
- Create career-ready skills
- Learn to collaborate
- Build confidence

- Course material is cloud based
- All lesson plans are aligned with standards





FUN TEACHER TRAINING



Audrey Mowry
Regional Education
Service Agency

TEACHER TRAINING

Teachers

You know education; we know inventing. Together, we deliver 21st century skills. If you are interested in teaching the Inventionland course, please contact your Regional Education Service Agency to get trained and certified. Included with the training certification is a Teacher Starter Kit (see next page). If your Regional Education Service Agency does not offer the course, please contact Inventionland at 1-800-585-8434.

Regional Education Service Agencies

Inventionland awards exclusive contracts to specific territories with select Regional Education Service Agencies that strive to provide educational support to the students, parents, educators, school administrators, camps and communities. If your ESA is interested in training teachers on the Inventionland Institute course, please contact Inventionland Institute at 1-800-585-8434.

Teacher quotes:

"I used to teach math and now I have been trained in the Inventionland course and found that we are getting positive student outcomes."

*- Kevin McKee
Colonial School*

"From the training, to the course, to the cardboard kits and other teacher resources, I feel confident teaching this course."

*- Leslie Poston
Kiski School*

"I never thought I would be teaching a course on innovation to my students. The training was engaging, simple and fun."

*- Darren Kite
DuBois College*





Teacher Starter Kit

Inventionland's Teacher Starter Kit

After teacher training, any classroom or makerspace can be easily upgraded with Inventionland's Teacher Starter Kit. This kit is designed to work hand in hand with our inventing course, which is based upon inventing, making and storytelling.

The kit includes:

- ✓ **1** *How To Invent chart (large 65" x 40")*
- ✓ **4** *MakerBox education kits (wood, metal, plastic, fabric)*
- ✓ **54** *Brainstorming cards*
- ✓ **3** *Peek-A-Boo posters from "The Innovator." collection (Edison, Ford, Disney)*
- ✓ **12** *Inventing signs*
- ✓ **12** *Storytelling signs*
- ✓ **3** *Cardboard kits (pencil holders)*
- ✓ **30** *Cardboard kits (sticky note holders)*
- ✓ **30** *Inventionland sticky notes*
- ✓ **30** *Idea Recorder log books (large)*
- ✓ **1** *Inventionland factory viewbook*
- ✓ **30** *Inventionland pencils*
- ✓ **1** *MakerStrips box (E-flute)*
- ✓ **1** *MakerStrips box (B-flute)*
- ✓ **1** *MakerApron*





INNOVATIVE RESOURCES

TEACHER RESOURCES

Environment means something. These teacher resources are designed to help innovate the environment in any classroom or makerspace. Additionally, we selected simple projects that were successful inventions (not theory) done by Inventionland. Our resources come in three basic groups (by design) that flow with the Inventionland Inventing Course. The three basic groups are Inventing, Making and Storytelling.

INVENTING Resources:



Inspire



Observation



Research



Ideation

MAKING Resources:



Concept Models



Drawings



Prototype



Assemble

STORYTELLING Resources:



Concept Packaging



Product Sample



Video



Pitching



CLASSROOM COLLABORATION

INVENTING

INVENTING Resources:

Peek-A-Boo Poster collections:

The Innovator.

The Power of Observation

Innovation Secrets

Dumb Idea

How To Invent Charts (BagStor, Bottle Ice and more)

Material Charts (Foam, Wood, Plastic and more)

Inspiration (Signs, Brainstorming Cards, Inventor's Log Books)



Innovation Mentor Posters

Mentors can be great inspirers that motivate people and our collection starts off with three inventors who represent the three basic steps of innovation. We have Edison for inventing, Ford for making and Disney for storytelling. The collection comes in our Peek-A-Boo design that shows our innovation heroes in their younger years and then unveils them in their older years under the flap. Kids get to see these mentors in their youth so they can start to believe that they can make the world better. Each poster comes with a lesson plan.

Peek-A-Boo poster series: The Innovator.



Edison
(Inventing)



Ford
(Making)



Disney
(Storytelling)



3-pack:

Regular: 24" x 36"

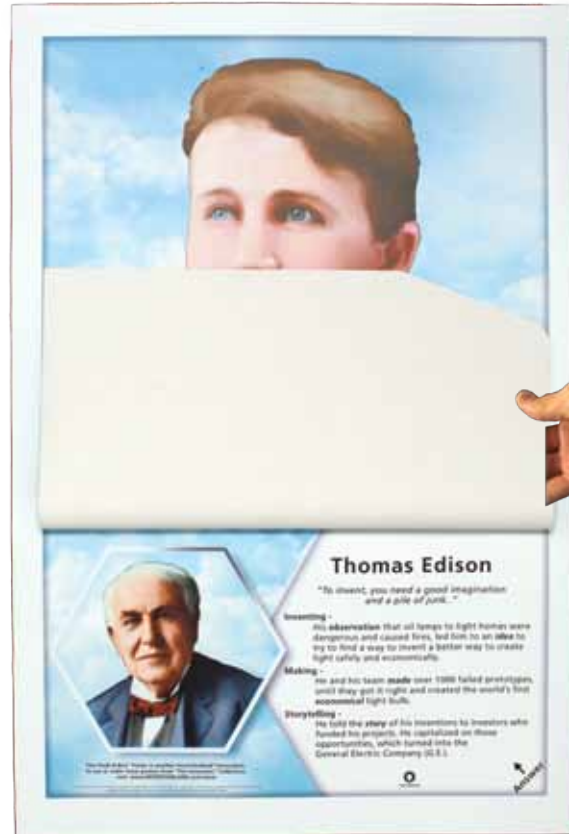
SKU# 19962652745

A CLASSROOM MUST HAVE

* All lesson plans are aligned with standards.

Peek-A-Boo™

Edison (Inventing)



Flip
Up
Flap

Regular: 24" x 36"

SKU# 653341380005



Innovation Mentor Posters

Ford (*Making*)



Flip
Up
Flap

Regular: 24" x 36"

SKU# 653341380104

Peek-A-Boo™

Disney (Storytelling)



Flip
Up
Flap

Regular: 24" x 36"

SKU# 653341380203

"With each new group of students, the Peek-A-Boo collection is always a great source that captures student imagination when I start the course."

- Tracy Haswell (Academics Director at the Kiski School)



Observation Posters

The first step in inventing is learning how to observe or identify challenges and opportunities. Then your creative mind can come up with ideas on how to innovate and solve those challenges. These posters come in our Peek-A-Boo design so the lesson under the flap comes as a surprise. Each poster comes with a lesson plan.

Peek-A-Boo poster series: The Power of Observation



Spider Web



Lightning



Shipworm



3-pack:

Regular: 24" x 36"

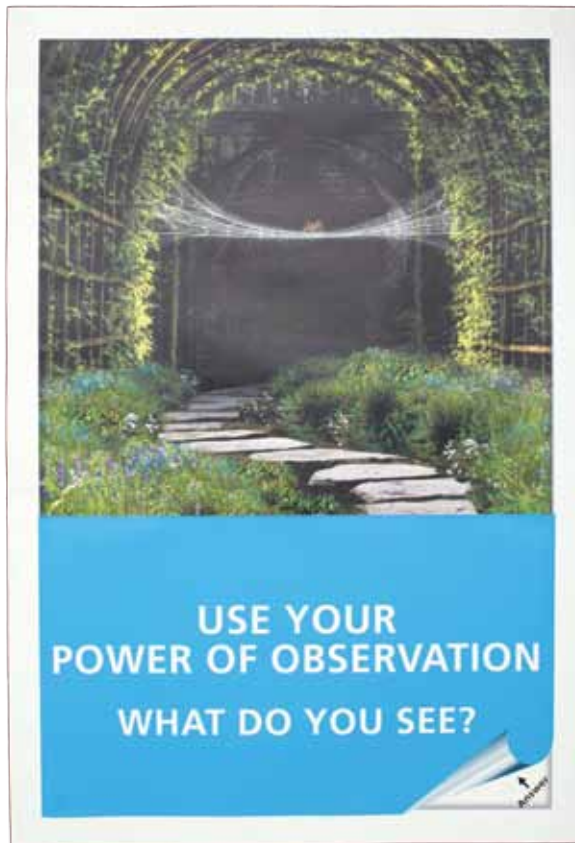
SKU# 19962652943

A CLASSROOM MUST HAVE

* All lesson plans are aligned with standards.

Peek-A-Boo™

Spider Web



Flip
Up
Flap

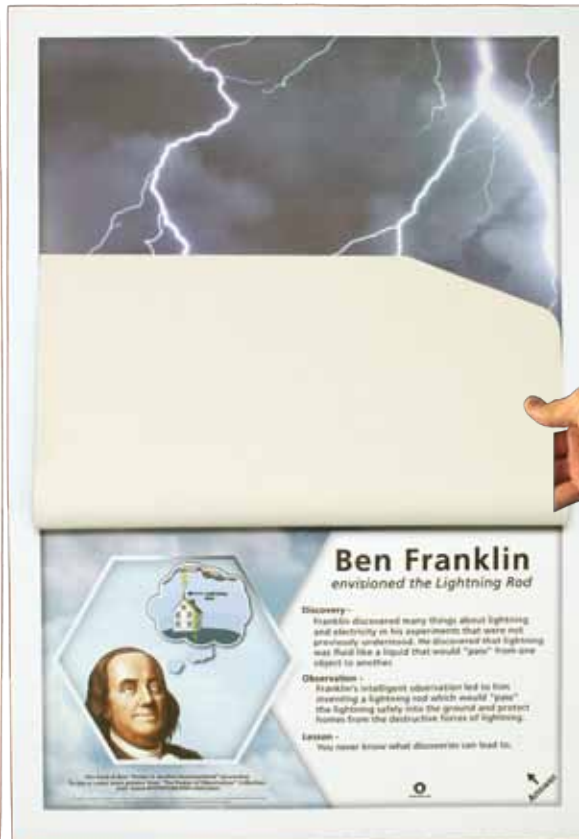
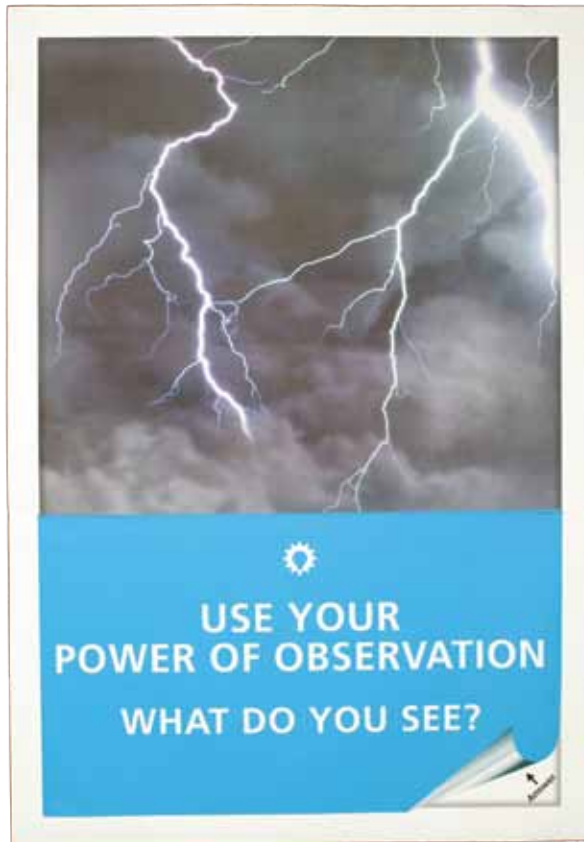
Regular: 24" x 36"

SKU# 653341380401



Observation Posters

Lightning



Flip
Up
Flap

Regular: 24" x 36"
SKU# 653341380302



Peek-A-Boo™

Shipworm



Flip
Up
Flap

Regular: 24" x 36"

SKU# 653341380500



Innovation Secrets Posters

Whether working alone or collaborating with others, there are secrets for how to innovate, how to keep an innovation brainstorm moving forward, and how to innovate by failing your way forward. This collection comes in our exclusive Peek-A-Boo design and each poster comes with a lesson plan.

Peek-A-Boo poster series: Innovation Secrets



Observation



Pens



Pencils



3-pack:

Regular: 24" x 36"

SKU# 19962653148

A CLASSROOM MUST HAVE

* All lesson plans are aligned with standards.

Peek-A-Boo™

Observation



Flip
Up
Flap

Regular: 24" x 36"

SKU# 653341381101



Innovation Secrets Posters

Pens



Flip
Up
Flap

Regular: 24" x 36"

SKU# 53341380906



Peek-A-Boo™

Pencils



Flip
Up
Flap

Regular: 24" x 36"

SKU# 653341381002



Dumb Idea? Posters

Learning to respect other people's ideas is important. When trying to keep everyone working together as a team, nothing will shut down a team member faster than when someone says, "That's a dumb idea." This series shows successful products that seemed "dumb" to some in the early days. Display this series to prevent others who express negative energy during brainstorming and creative sessions. This collection comes in our exclusive Peek-A-Boo design and each poster comes with a lesson plan.

Peek-A-Boo poster series: Dumb idea?



3D Puzzle



Twisted Metal



**Blanket with
Sleeves**



3-pack:

Regular: 24" x 36"

SKU# 19962653346

A CLASSROOM MUST HAVE

* All lesson plans are aligned with standards.

Peek-A-Boo™

3D Puzzle



Regular: 24" x 36"

SKU# 653341380807

Dumb Idea? Posters

Twisted Metal



Flip
Up
Flap

Regular: 24" x 36"
SKU# 653341380708



Peek-A-Boo™

Blanket with Sleeves



**Flip
Up
Flap**

Regular: 24" x 36"

SKU# 653341380609



How To Invent Charts

See how successful inventions that sold in the largest retail stores in large volumes went to market. After going through the Idea Recorder notebooks on successful products, we extracted the 9 basic steps on how they were invented and created these easy to follow charts. These charts integrate in with the Inventionland Inventing Course. These charts were created with the permission of the inventor and the corporation that manufactures these products. The charts come in 2 different sizes. Lesson plan included.

How To Invent - BagStor™



Large: 65" x 40"
SKU# 19962654640



Regular: 36" x 24"
SKU# 19962654541

* All lesson plans are aligned with standards.

How To Invent

How To Invent - Bottle Ice™



Large: 65" x 40"

SKU# 19962654442



Regular: 36" x 24"

SKU# 19962654343

* All lesson plans are aligned with standards.



Inspiration Items

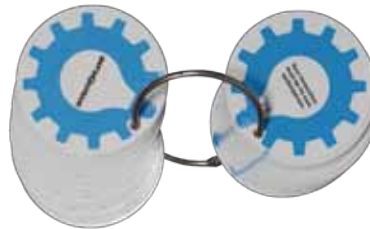
You can start the creativity flowing in any classroom with these inspirational items. The inspirational signs and the brainstorming cards are a great way to create energy in the room. Once the ideas start to flow, it's handy to have Idea Recorders to document those ideas and drawings properly.

INSPIRATIONAL:

Did you know Thomas Edison filled over 3,500 Idea Recorders with his ideas and drawings?



Inspirational inventing signs: 12-pack
(includes hook & loop fasteners)
SKU# 653341384904



Brainstorming cards: 54-pack
SKU# 653341384102



Idea Recorder: Large - 8.5" x 11"
SKU# 978-0-692-54628-4



Idea Recorder: Pocket Size - 3.5" x 4.75"
SKU# 978-0-692-54629-1

Inspiration Items

INVENTIONLAND BOOK:

Inventionland is an actual place. It was built by an inventor named George Davison that Entrepreneur Magazine called a "Creative Genius." This large viewbook is used by teachers to inspire students of all ages.



SKU# 781427619754

CHIPPER CLOUD BOOK:

For middle school children, Chipper is a positive, creative, curious and inventive character who inspires creativity in people. This book is a wonderful way to introduce middle school students to the power of their imagination.



SKU# 781480997738



Maker Apron:
black logo

SKU# 19962652547



Maker Apron:
white logo

SKU# 19962652646



Maker Supercharger Kit

Makerspace Kit

If your school is lucky enough to have a makerspace, we can bring it to life with course material and our supercharger kit. Rev up your makerspace so your students can get more done in less time. Lesson plans included.

The kit includes:

- ☒ **1** *How To Invent chart (large 65" x 40")*
- ☒ **4** *MakerBox education kits (wood, metal, plastic, fabric)*
- ☒ **16** *MakerCharts (laser cutting, 3D printing)*
- ☒ **3** *Peek-A-Boo posters from "The Innovator." collection (Edison, Ford, Disney)*
- ☒ **30** *MakerAprons (15 black stitch/15 white stitch)*
- ☒ **10** *Cardboard kits (trash cans)*
- ☒ **10** *Cardboard kits (pencil holders)*
- ☒ **10** *Cardboard kits (sticky note holders)*
- ☒ **10** *Inventionland sticky notes*
- ☒ **30** *Idea Recorder log books (large)*
- ☒ **1** *Inventionland factory viewbook*
- ☒ **30** *Inventionland pencils*
- ☒ **1** *MakerStrips box (E-flute)*
- ☒ **1** *MakerStrips box (B-flute)*
- ☒ **1** *MakerStrips box (B/C-flute)*



MAKING

MAKING Resources:

[MakerKits™](#) (Pencil Holder, Note Holder, Trash Can, Hobby Knife Block)

[MakerCharts™](#)

Materials (Foam, Wood, Plastic, Acrylics and more)

3D Printing (Tips, Possibilities, Filaments, Density, Troubleshooting)

3D Printing to manufacturing (Injection Molding, Stamping, Blow Molding)

Laser Cutting (Tips, Cardboard, Acrylic, Wood, Styrene, Engraving & Materials)

Prototyping Adhesives

[MakerBoxes™](#) (Wood, Metal, Plastic, Fabric and more)

[MakerStrips™](#) (E-Flute, B-Flute, B/C Flute)

[Supplies and Accessories](#) (Aprons, Pencils and more)





GREAT WAY TO START THE COURSE

MakerKits™

For students who have never built something, there is no better way to ease them into “Making.” These pre-cut cardboard MakerKits lets them create actual products from flat cardboard that are useful while they are taking the course. Teachers like to use these kits as a way to introduce the students to our course, because it helps to create a “can-do” spirit. They get exposed to building models in cardboard which also happens to be part of the concept modeling part of the course. Additionally, they get introduced to what it would be like to have to assemble something in a factory. They experience basic principles in inventing and entrepreneurship. They learn that the more time something takes to assemble, the more expensive it would be. They are easy and fun to do. Lesson plan included.



Pencil Holder

Great for the sketching & brainstorming desks or tables.

SKU# 19962653841



Note Pad Holder

Great for sticky notes and recording project reminders.

SKU# 19962654749

- one pad included



Trash Can

Great for all those paper and cardboard scraps while “making” in class.

SKU# 19962653940



Hobby Knife Block

Great for sticking your hobby knife into so it doesn't roll off the table.

SKU# 19962654848



A MAKERSPACE MUST HAVE

MakerCharts™

The MakerChart series was created because there's never enough time in class. These charts also make it easy for the teacher to reference with the waves of different students year after year. When it comes to learning about making, it is helpful to have general knowledge of different materials, basic machines, 3D printing, how 3D printing and manufacturing work together, laser cutting and different adhesives that work to bond materials that you are using to put together concept models and prototypes. Lesson plan included.

3D PRINTING collection: set of 6 SKU# 19962653643



SKU# 653341381804

Learn how to get successful PLA parts on a single head printer.



SKU# 653341382306

Learn about the possibilities of what can be printed.



SKU# 653341382108

Learn about the patterns, colors, and finishing techniques.



SKU# 653341382009

How to choose the density for the part you're going to print.



SKU# 653341381903

Learn how to identify and fix basic clogs and jams in the 3D printer.



SKU# 1653341382207

Learn the pros and cons of when to use ABS vs PLA.



HOW TO CONCEPT MODEL BagStor™



SKU# 19962654046

Learn how to build concept models in cardboard. This example of BagStor is in the course.

PROTOTYPING ADHESIVES



SKU# 019962654145

Learn to select the right adhesive for the job. Wrong adhesives can destroy projects!

INVENTING WITH MATERIALS collection: set of 3 *SKU# 19962653742*



SKU# 653341382801

Learn about different foams so you can make the right selection for your project.



SKU# 653341382603

Learn about different woods so you can make the right selection for your project.



SKU# 653341382702

Learn about different plastics so you can make the right selection for your project.

3D PRINTING TO MANUFACTURING collection: set of 3 SKU# 19962653445



SKU# 653341382405

Learn to 3D print plastic objects like an injection molding factory.



SKU# 653341382504

Learn to 3D print plastic objects like a metal stamping factory.



SKU# 19962653544

Learn to 3D print plastic objects like an injection blow molding factory.

LASER CUTTING collection: set of 7 SKU# 19962653049



SKU# 653341381606

Learn to use the laser cutter more cost effectively and safely.



SKU# 653341381200

Learn the machine settings for cutting cardboards and carton stocks.



SKU# 653341381309

Learn the machine settings for cutting different types and thicknesses of acrylics.

continued LASER CUTTING collection:
set of 7 *SKU# 19962653049*



SKU# 653341381408

Learn to use the laser cutter more cost effectively and safely.



SKU# 653341381507

Learn to use the laser cutter more cost effectively and safely.



SKU# 653341381705

Learn to use the laser cutter more cost effectively and safely.



SKU# 653341384805

Learn how to align materials with the graphics you wish to engrave.

ACRYLICS collection: set of 5 SKU# 19962653247



SKU# 653341382900

Learn about the different types of fluorescent acrylics that can be laser cut.



SKU# 653341383303

Learn about the different types of mirrored acrylics and settings to engrave them.



SKU# 653341383204

Learn about acrylics and their features that most people don't know.



SKU# 653341383105

Learn about transparent acrylics to enhance your options in design.



SKU# 653341383006

Learn about translucent acrylics to enhance your options in design.



MakerBox™

Our Manufacturing Education Kits (MakerBoxes) make learning, as well as understanding manufacturing, simple. They are designed so students can see how basic materials are manufactured into everyday parts they recognize. When your creative mind is shown many different manufacturing processes, you empower your inner inventor to envision different ways that you could design your ideas so they could be manufactured efficiently. Each kit comes with online video and lesson plan.

MakerBox™ series 4-pack:

SKU# 19962652943



* All lesson plans are aligned with standards.



MakerBox™

MakerBox™ series: WOOD

SKU# 653341383501

**Lesson
Plan
Included***



The classroom or maker lab comes alive when students see the four basic methods to wood manufacturing. The kit contains actual wood samples that were manufactured using 4 different methods. Teachers can show the wooden products, use the QR code and show each process on a large classroom screen, or students can watch on their phones or pads. This kit can be used for years. Lesson plan included.

* All lesson plans are aligned with standards.

MakerBox™

MakerBox™ series: PLASTIC

SKU# 653341383600

**Lesson
Plan
Included***



The classroom or maker lab comes alive when students see the four basic methods to plastic manufacturing. The kit contains actual plastic samples that were manufactured using 4 different methods. Teachers can show the plastic products, use the QR code and show each process on a large classroom screen, or students can watch on their phones or pads. This kit can be used for years. Lesson plan included.

* All lesson plans are aligned with standards.

MakerBox™

MakerBox™ series: METAL

SKU# 653341383402

**Lesson
Plan
Included***



The classroom or maker lab comes alive when students see the four basic methods to metal manufacturing. The kit contains actual metal samples that were manufactured in 4 different methods. Teachers can show the metal products, use the QR code and show each process on a large classroom screen, or students can watch on their phones or pads. This kit can be used for years.

* All lesson plans are aligned with standards.



MakerBox™

MakerBox™ series: FABRIC

SKU# 653341383709

**Lesson
Plan
Included***



The classroom or maker lab comes alive when students see the four basic methods to fabric manufacturing. The kit contains actual fabric samples that were manufactured using 4 different methods. Teachers can show the fabric products, use the QR code and show each process on a large classroom screen, or students can watch on their phones or pads. This kit can be used for years. Lesson plan included.

* All lesson plans are aligned with standards.



MakerStrips™

With MakerStrips, your students can build faster concept models in class. We understand that the joy of making things makes time go by fast. Pre-cut strips can help get more done during allotted class time. They come in 3 different thicknesses (flutes) and come in 1/2" and 1" widths that are 30" long. Now the focus is on building; not wasting time cutting perfectly straight strips for the concept model you are building. Some strips come in one color and some come in two colors. Since some people like to build their concept models in white, (that's called a white model) there is a side in white or you can flip the strip over to tan. MakerStrips are not only time savers, they make for a safer classroom. If you want a lesson plan on How To Concept Model with cardboard, please go back to page 42 and get the MakerChart.

MakerStrips™ set of 3 **SKU# 19962652844**



E-Flute (thin)

750 strips (each strip has one side white and the other side tan)

SKU# 653341383808



B-Flute (regular)

500 strips (each strip has one side white and the other side tan)

SKU# 653341383907



B/C-Flute (thick)

250 strips (each strip is tan only)

SKU# 653341384003



WINNING STUDENT OUTCOMES

INVENTION CONTEST

How to organize an invention contest

We've innovated the old science fair and made it easy to do in any size classroom or auditorium. The Inventionland course wraps up with a contest where the students present their inventions. All contest preparation checklists and downloadable certificates for the students can be found in the Inventionland cloud. The training for how to organize and run an Invention Contest is included in the teacher training offered by the Regional Education Service Agency.



"When my students were in the preparation area for the contest and waiting for their turn, we saw a new sense of confidence in them."

"My most difficult kid who sleeps in most classes would stay engaged during the entire period and we couldn't believe the transformation we saw in him at the contest."



"It brought tears to my eyes watching some of my most challenging students do such a great job presenting their idea at the contest. I am so proud of the growth that our students went through with this course."



"They were all so excited for the invention contest that they came to school early on a Monday morning :-)"



WELCOME TO INVENTIONLAND®

MORE THAN A PLACE, IT'S A CREATIVE STATE OF MIND

INVENTIONLAND TOURS

Interested in taking a peek inside our 61,000 square foot facility known as America's largest invention factory? Adults and children ages 8 and older are invited to join us to discover where great ideas become innovative new products. Plan your visit today!

Inventionland Tours

Tour Hours

Monday – Thursday

8:30am, 10:00am, 1:00pm, or 2:30pm

Call **1-800-585-8434** to reserve your day and time.

The no-cost tour will last approximately 70 minutes.
Please arrive 10 minutes prior to your scheduled start time.

Tour Policies

Open to adults and children ages 8 and older.

Able to accommodate groups of up to 20 guests in a single tour.

Each guest is required to have a completed confidentiality waiver upon arrival for their tour.

Group leader is to have all confidentiality waivers complete and ready to be handed in to the tour guide.

Waivers

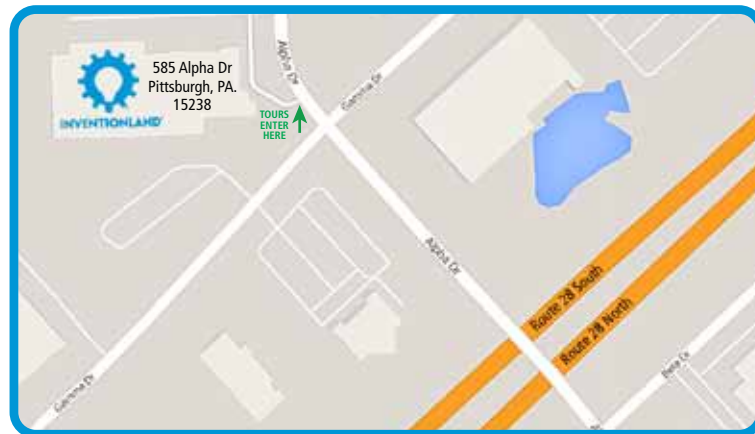
[Minor Confidentiality Waiver](#)

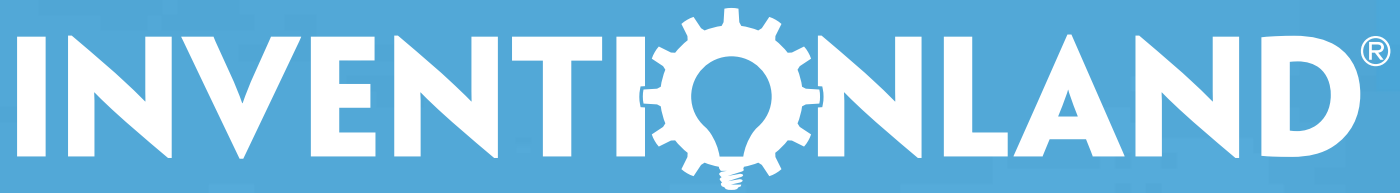
[Adult Confidentiality Waiver](#)

Tour Parking

If arriving by car, please park in the marked "Reserved" spaces. If traveling by van or bus, please drop off all guests at the front entrance, then park in the adjacent lot.

Schedule your tour today!





RIDC Park

585 Alpha Drive

Pittsburgh, PA 15238

Phone: 800-585-8434

www.inventionland.com/edu