Elementary Course Outline

The elementary version (grades 3-5) of Inventionland's course on Real World Inventing will unleash your students' creativity while helping them enhance a wide range of important skills, from graphic design to group collaboration. Along the way, numerous fun, practical challenges will maintain students' interest.

The main section of the course follows the proven 9 Step Method of inventing as students work in groups to develop their own idea into a product. After that, our "ABCs of Storytelling" modules teach students what makes good storytelling and guide them through telling the story of their own product.

Finally, we've provided Maker Technology modules to help you use a variety of high-tech tools effectively, from 3D printers to electronics.

Following is a brief description of the instructional content in each module.

Getting Started

We start with a set of background materials related to inventing that you can use to grab your students' attention and inspire them toward high-quality work.

History of Inventionland shows the Disney-like offices where Inventionland staff actually work, including a video tour of the building.

History of Innovation contains a wide collection of inventions and new ideas from ancient to modern times.

Our Founder's Influences: Students are introduced to the historic impact of inventing by learning about Thomas Edison, Henry Ford, and Walt Disney.

Character Traits contains brief descriptions of five desirable personal traits related to inventing: curiosity, dependability, confidence, determination, and patience.

The 9 Step Method

1. Create and Protect Your Idea

Students are guided in thinking about types of simple innovations they could develop. They also learn the important of not stealing other people's work and how to prevent others from stealing their ideas.

2. Research Your Idea

Students learn how to do Internet research safely and then conduct their own research in a product category that interests them.

3. Brainstorm Your Idea

Students learn what brainstorming is and then brainstorm and discuss ideas for the product they will develop. A series of fun challenges help them practice generating and trying out ideas. One section of the module sensitively introduces the issue of constructive criticism.

4. Sketch Your Idea

Students learn how simple shapes can help them sketch their idea, even if they aren't great artists. Videos introduce them to manufacturing processes, and students discover different kinds of plastic and what those numbers on plastic containers mean. They then make their own product sketch.

5. Model Your Idea

After some mind-expanding building challenges, students construct their own product model using simple materials. They learn about survey research and conduct their own survey on their product, and they consider various types of product names and their marketing benefit.

6. Draft Your Idea

Students review precise measuring skills with a ruler or tape measure and then create an actual version of their product using common materials or computer-aided design and 3D printing, if available.

7. Package Your Idea

Students learn about the different types of packaging and their purposes (such as keeping products from breaking or being easily stolen). They then determine a package design for their product. This module accommodates whatever technology is available—students can create their package design on a cardboard box or in Adobe Illustrator software.

8. Research Your Idea

Students learn about different personality types, how to market products to each type, and the psychological impact of colors. They apply this knowledge to creating a graphic design for their product.

9. Put It All Together

Students use everything they've learned to create heir final product. This module also contains guidance for students to create a brief presentation or a video about their product. (Or you can extend the curriculum by covering the "ABCs of Storytelling" before students prepare their presentation.)

ABCs of Storytelling

A to D

The first four steps discuss essential aspects of any good story: (A) setting, (B) characters, (C) conflict and resolution, and (D) plot. Students examine how these five essential components of stories function and complete creative challenges that incorporate these components.

E. Telling Your Story

Students apply what they have learned to a different type of storytelling—pitching their product. They learn about three types of pitches and begin to prepare their own.

F. Presentation Pointers

Students learn about other factors that contribute to an excellent presentation: attire, self-confidence, enunciation, politeness, and getting ready for questions. After this module, students should be fully equipped to develop and deliver their own presentation.

Innovation Lab® Technology Modules

These eye-opening modules will help you learn and guide your students in the use of advanced equipment that makes inventing much easier! They are not designed to replace the instructional manual, but we think you'll find them full of valuable information.

3D Printing

These detailed instructions cover effective use of your 3D printer, including common pitfalls to avoid.

Laser Cutting

Learn proper setup and operation of this powerful cutting and engraving tool. We also offer suggestions on your purchase decision.

Vinyl Cutting

These relatively inexpensive machines can pay for themselves in a hurry. We describe the most popular options and great ways to use them.

Raspberry Pi and Arduino

These are the two most widely used basic electronics systems. Raspberry Pi is a mini-computer, whereas Arduino is a microcontroller. What's the difference, and which one is best for your students? We provide easy-to-understand answers to these key questions.

Coding

Coding is an immensely valuable skill for today's students. We cover what coding is, why it is so important, and ways to teach it.

Electronics kits

We introduce and explain five amazing kits that offer fascinating ways to introduce beginners to the world of electronics.

Stop-motion animation

With smartphones and an app students can turn a series of still photos into a realistic video in no time. This module explains how. No background knowledge required!

"One of the best parts of this real-world experience is that every student comes to recognize this lesson or outcome: their personal journey as a learner, inventor, or innovator will be filled with ups and downs on their own. To witness this gift of self-discovery in each of my students is one of the greatest gifts a teacher can see."

Karen Garland - Grove City PA