Club Invention®

FLEXIBLE STEM PROGRAMMING

FOR GRADES 1-6

IMMERSIVE INVENTION EDUCATION

Club Invention® makes it easy to create an environment that promotes critical and creative thinking, in school or after school. Children gain insight and inspiration while finding opportunities to take risks and develop new ideas. These experiences empower children to thrive as problem solvers in their own lives and in the world around them. Together, the eight Club Invention units incorporate a wide range of subject areas through purposeful, hands-on exploration.

> "The kids **CULTIVATE THEIR CREATIVITY,** work on their strengths, are stimulated with new experiences, learn to work in groups, learn new educational concepts **AND HAVE FUN AT THE SAME TIME.**"
>
> MARIA L., VISTA, CALIFORNIA

See Club Invention in action here

INNOVATIVE EXPERIENCES

- Research-based curriculum allows teachers to lead with confidence
- Open-ended exploration promotes creativity and builds 21st Century Skills
- Challenges empower children to use their imagination, build functioning prototypes and make their thinking visible

FLEXIBLE CURRICULUM

- Eight hours per unit of activities that can be implemented in school or after school
- Eight units available with a wide range of subject areas
- Aligned to Common Core and Next Generation Science Standards for grades 1-6

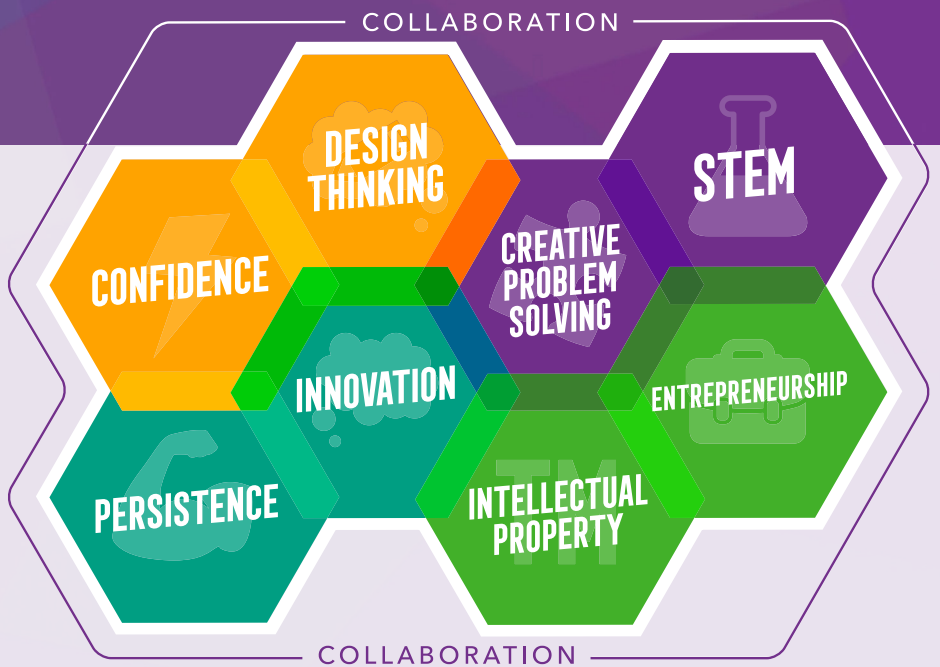
SOCIAL-EMOTIONAL LEARNING

- Stories and materials guide children to experience empathy and advance their capacity for civic responsibility
- Activities encourage child-led learning through the invention of new ideas and exploration of ways to share them with others

TURNKEY IMPLEMENTATION

- Step-by-step curriculum guide
- All materials for a classroom of 25 students
- Dedicated National Inventors Hall of Fame® (NIHF) support

THE INNOVATION MINDSET



Each National Inventors Hall of Fame® (NIHF) education program is built on the belief that every child can invent. Through open-ended, hands-on exploration, children build an Innovation Mindset – a growth mindset infused with lessons from world-changing inventors – that enables and empowers them in any area of life.

The Innovation Mindset is made up of these nine essential skills and traits that are strengthened every time a child applies them. Each Club Invention unit highlights different aspects of this mindset, and by participating in all eight units, children unlock their full potential and discover the magic of their own creativity.

CLUB INVENTION UNITS

BOLDER BUILDERS™
Children join an engineer, architect and builder to restore a town by designing, creating and testing structures including shelters and bridges.

- Creative Problem Solving
- Innovation
- STEM

CASTLES, CATAPULTS AND COATS OF ARMS™
Working together to explore science and medieval history, children take on roles from knights to craftspeople and engage in hands-on creativity.

- Confidence
- Design Thinking
- STEM

E.Z. SCIENCE™
To help a famous science magazine develop solutions to everyday problems, children create games, conduct experiments and solve puzzles.

- Entrepreneurship
- Innovation
- STEM

FLIGHT SIGHT™
Children learn how flight innovations provide new perspectives as they invent ways to jump higher, fly giant paper planes and create three-dimensional maps.

- Creative Problem Solving
- Intellectual Property
- Persistence

PASSAGE TO PLANET ROG™
Traveling to a distant planet, children apply teamwork and creative problem solving to develop devices that will help them succeed in space.

- Confidence
- Creative Problem Solving
- Design Thinking

PHYS ED: PHYSICS IN MOTION™
Children explore the laws of gravity, energy, motion and magnetism as they create games based on the work of famous physicists.

- Confidence
- Persistence
- STEM

SOS: ENDANGERED EARTH™
Investigating ecology and discovering threats to animal habitats, children design safe spaces for wildlife from black bears to birds.

- Confidence
- Design Thinking
- Persistence

TRASH ISLAND: A GARBAGE PATCH JOURNEY™
Children take on ocean research challenges and apply creative thinking to address the extreme buildup of trash in the North Pacific Central Ocean Gyre.

- Confidence
- Design Thinking
- Innovation

Learn more about Club Invention here.

BOLDER BUILDERS

GRADES 1-6

SUBJECTS

- Architecture
- Biomimicry
- Design Thinking
- Ecology
- Engineering
- Physics
- Oral Language

UNIT OVERVIEW

In Bolder Builders™, children join engineer, architect and builder Archie Tek to restore a town called Unlucky. They apply building principles that have been used for centuries, learning that even through natural disasters, people can be resilient and rebuild their communities. Considering both function and aesthetics, children design the town layout and construct buildings and bridges. They collaborate, brainstorm and plan their design, and then create, test and recreate to discover that they can make an impact on the world.

CURRICULUM HIGHLIGHTS

THIS UNIT EMPHASIZES THESE INNOVATION MINDSET HABITS:

CREATIVE PROBLEM SOLVING — Applying empathy and creative problem solving to design shelters for different weather conditions.

INNOVATION — Exploring biomimicry and innovation, using inspiration from nature to create strong structures.

STEM — Using STEM principles to replicate bridge construction and learn how earthquakes impact buildings.

UNIT PROTOTYPES

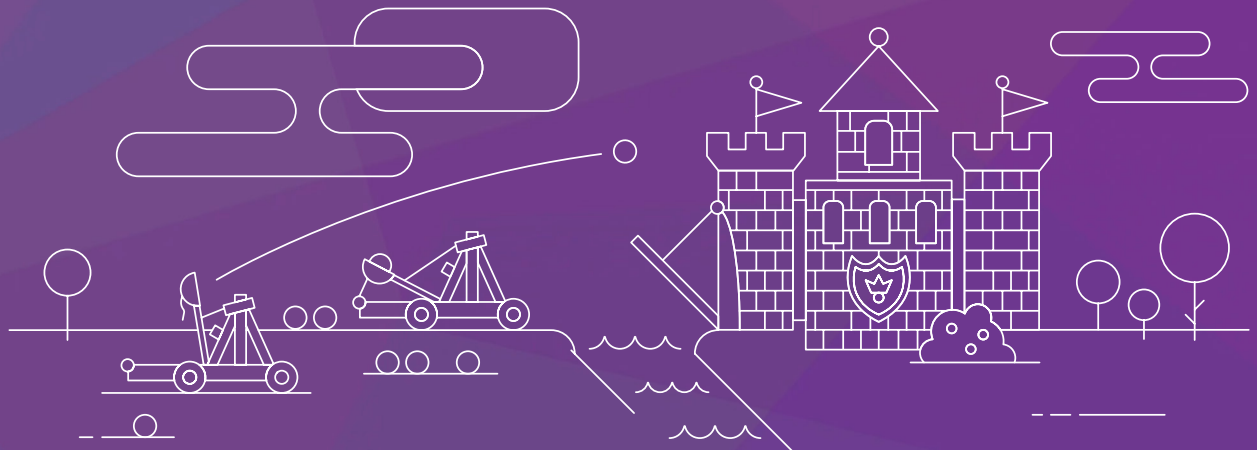
IN THIS UNIT, CHILDREN CREATE:

- Tent Blueprint and Prototype
- Suspension Bridge
- New Town Buildings
- Model Implosion
- Giant Spider Web
- Burrow Marble Run

Bolder Builders aligns to Common Core and Next Generation Science Standards.

CASTLES, CATAPULTS AND COATS OF ARMS

GRADES 1-6



SUBJECTS

- English Language Arts
- Social Studies
- Mathematics
- Measurement and Data
- Engineering
- Visual Arts

UNIT OVERVIEW

Children build skills for the future as they explore the past in Castles, Catapults and Coats of Arms™. Investigating basic scientific principles through the lens of medieval history, children use their imaginations to take on the roles of lords, ladies, knights, craftspeople and serfs. They work together to complete hands-on challenges and discover that inventiveness has existed even in times of suppressed learning, helping them to build empathy and social awareness, along with responsible decision making.

CURRICULUM HIGHLIGHTS

THIS UNIT EMPHASIZES THESE INNOVATION MINDSET HABITS:

DESIGN THINKING — Exercising design thinking and creative problem solving to construct a castle wall and sculpt boats to transport cargo.

STEM — Applying fundamental knowledge of STEM concepts while exploring history.

CONFIDENCE — Creating, testing and recreating a catapult and drawbridge using simple machines.

UNIT PROTOTYPES

IN THIS UNIT, CHILDREN CREATE:

- Cup Towers
- Boats
- Drawbridge
- Catapult

Castles, Catapults and Coats of Arms aligns to Common Core and Next Generation Science Standards.

E.Z. SCIENCE

GRADES 1-6

SUBJECTS

- Writing
- Chemistry
- Art
- Design Thinking
- Physics

UNIT OVERVIEW

In E.Z. Science™, children conduct experiments, solve puzzles and create games in order to help the manager of a famous science magazine keep subscribers happy. As they help the magazine publish solutions to everyday problems, children encounter engaging lessons in physics, mathematics, engineering, invention and the arts. Building valuable skills with each hands-on activity, children are introduced to the writing process and the challenges of entrepreneurship as they use their creativity to save the day.

CURRICULUM HIGHLIGHTS

THIS UNIT EMPHASIZES THESE INNOVATION MINDSET HABITS:

INNOVATION — Practicing Innovation and learning about historical timelines.

ENTREPRENEURSHIP — Building an understanding of entrepreneurship while overcoming obstacles to run a successful business.

STEM — Exploring a variety of STEM concepts while sketching and constructing prototypes.

UNIT PROTOTYPES

IN THIS UNIT, CHILDREN CREATE:

- Sand Clock
- Egg Protecting Device
- Invention to Make Schoolwork Easier
- Original Board Game
- Printing Process Device
- Delivery Map

E.Z. Science aligns to Common Core and Next Generation Science Standards.

FLIGHT SIGHT

GRADES 1-6

SUBJECTS

- Physical Science
- Engineering
- Biomimicry
- History
- Algebraic Thinking
- Speaking and Listening

UNIT OVERVIEW

Flight Sight™ offers children insight and inspiration from inventors who have made human flight possible, from the first attempts at manned flight through space exploration. Just as people have gained new perspectives by flying farther and soaring higher, children also discover new ways to see the world in this unit. Both collaboratively and independently, they engage in kinesthetic activities, explore art concepts and practice real-world problem solving to defy gravity, create topographical maps and travel beyond Earth's atmosphere.

CURRICULUM HIGHLIGHTS

THIS UNIT EMPHASIZES THESE INNOVATION MINDSET HABITS:

PERSISTENCE — Demonstrating persistence while investigating aspects of flight from the ground up.

INTELLECTUAL PROPERTY — Building an appreciation for intellectual property by getting to know National Inventors Hall of Fame Inductees and their innovations.

CREATIVE PROBLEM SOLVING — Applying creative problem solving and exploring biomimicry to simulate space travel.

UNIT PROTOTYPES

IN THIS UNIT, CHILDREN CREATE:

- Gravity-Defying Device
- Jet Pilot Flight Simulator
- Topographical Map
- Astronaut Suits
- Model Airplanes
- Flight Craft of the Future

Flight Sight aligns to Common Core and Next Generation Science Standards.

PASSAGE TO PLANET ROG

GRADES 1-6

SUBJECTS

- Life Science
- Physical Science
- Engineering
- Biology
- Earth and Space Science
- Measurement and Data

UNIT OVERVIEW

Passage to Planet ROG™ engages children in an exciting journey through space to a distant planet. Through a series of challenging missions, from establishing an outpost to making clay sculptures, children practice creativity, collaboration and communication as they develop solutions to explore this new place and then return home to Earth. Children also practice empathy and understanding of differences through observing alien lifeforms. This hands-on adventure empowers children to use their imaginations, make observations, collect data, apply engineering principles and practice responsible decision making.

CURRICULUM HIGHLIGHTS

THIS UNIT EMPHASIZES THESE INNOVATION MINDSET HABITS:

CONFIDENCE — Building confidence while working individually and in teams to survive on a new planet.

CREATIVE PROBLEM SOLVING — Applying creative problem-solving skills to complete missions and travel back to Earth.

DESIGN THINKING — Empowering the use of imagination and creativity to understand differences.

UNIT PROTOTYPES

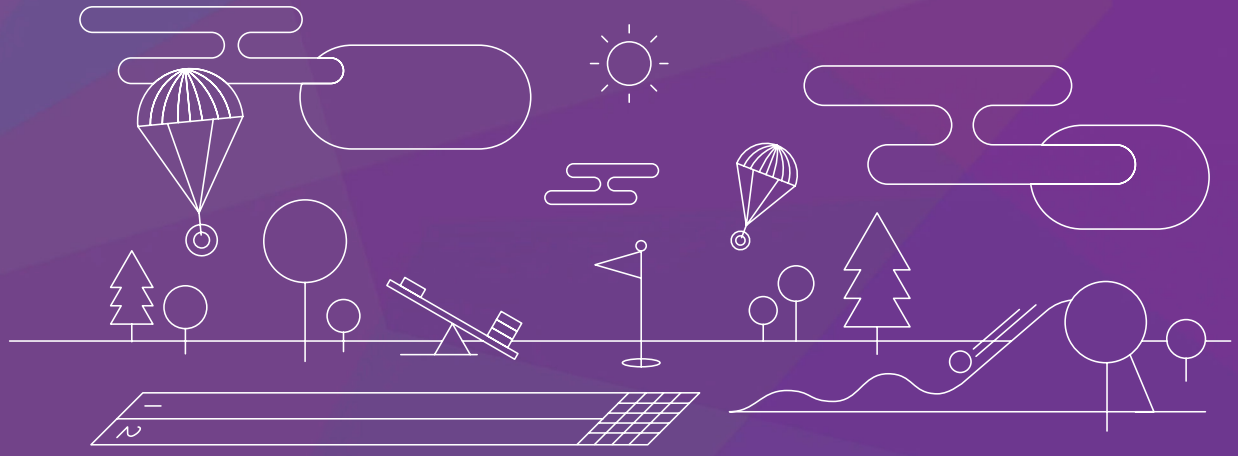
IN THIS UNIT, CHILDREN CREATE:

- Space Craft Repair Tools
- Planet ROG Outpost
- Communication Devices
- Planet ROG Inhabitant Sculptures
- Mineral Retrieving Device
- Transportation Device
- Space Travel Artifact

Passage to Planet ROG aligns to Common Core and Next Generation Science Standards.

PHYS ED: PHYSICS IN MOTION

GRADES 1-6



SUBJECTS

- Physical Science
- Engineering
- Design
- Measurement
- Algebraic Thinking
- Energy
- Fluid Dynamics
- Aerodynamics

UNIT OVERVIEW

In Phys Ed: Physics in Motion™, children team up to create imaginative games inspired by famous scientists including Galileo, Newton, Bernoulli and Gilbert. Through fast-paced, creative problem solving, children explore and experiment to discover how and why objects move. They investigate the laws of gravity, energy, friction, motion and magnetism, and they build perseverance and pride as they determine how to incorporate each of these concepts into their dynamic game designs.

CURRICULUM HIGHLIGHTS

THIS UNIT EMPHASIZES THESE INNOVATION MINDSET HABITS:

PERSISTENCE — Developing persistence while experimenting with air pressure to complete an exciting parachute challenge.

STEM — Engaging in STEM exploration by creating an innovative golf game based on Newton's laws of motion.

CONFIDENCE — Gaining confidence by investigating magnetic fields and building kinetic sculptures.

UNIT PROTOTYPES

IN THIS UNIT, CHILDREN CREATE:

- Ramp
- Miniature Golf Course
- Parachute Drop
- Shuffle Bowling
- Maze for Magnets
- Gravity Towers
- Kinetic Sculptures

Phys Ed: Physics in Motion aligns to Common Core and Next Generation Science Standards.

SOS: ENDANGERED EARTH

GRADES 1-6

SUBJECTS

- Measurement
- Animal Science
- Writing
- Ecology
- Biology

UNIT OVERVIEW

In SOS: Endangered Earth™, children team up with the Saving Our Species (SOS) organization and use their ingenuity to fulfill an important mission – protecting animal habitats and preserving natural resources across the country. This mission guides children to practice empathy, explore the relationship between humans and wildlife, investigate the real ecological issues that will affect their futures, and apply responsible decision making and creative problem solving to make a positive impact on the world.

CURRICULUM HIGHLIGHTS

THIS UNIT EMPHASIZES THESE INNOVATION MINDSET HABITS:

CONFIDENCE — Building confidence by applying unique ideas and talents that can help the environment and shape the future.

DESIGN THINKING — Practicing design thinking to invent solutions that balance the needs of animals and humans.

PERSISTENCE — Demonstrating persistence while brainstorming, sketching, testing and modifying prototypes.

UNIT PROTOTYPES

IN THIS UNIT, CHILDREN CREATE:

- Bear-Proof Invention
- Bat Houses
- Safe Crossings for Wildlife
- Oil Spill Clean-Up Device
- Animal-Friendly Zoo

SOS: Endangered Earth aligns to Common Core and Next Generation Science Standards.

TRASH ISLAND: A GARBAGE PATCH JOURNEY

GRADES 1-6

SUBJECTS

- Oceanography
- Animal Science
- Mathematics
- Environmental Science
- Geography
- Engineering Design
- Speaking and Listening

UNIT OVERVIEW

In Trash Island: A Garbage Patch Journey™, children investigate the extreme buildup of trash in the North Pacific Ocean Gyre between California and Hawaii. They must determine what has contributed to this area, known as Trash Island, and develop solutions to keep it from growing. Children are immersed in ecological topics including ocean conservation and pollution control as they collaborate, conduct research and tap into their creativity to clean up the ocean and secure a brighter, healthier future.

CURRICULUM HIGHLIGHTS

THIS UNIT EMPHASIZES THESE INNOVATION MINDSET HABITS:

INNOVATION — Practicing innovation to develop ideas that promote sustainable living and environmental conservation.

DESIGN THINKING — Applying design thinking to build devices that collect trash and remove contaminants through water filtration.

CONFIDENCE — Building confidence while taking on ocean research challenges that connect to real-world issues.

UNIT PROTOTYPES

IN THIS UNIT, CHILDREN CREATE:

- Boat Logs
- Waterproof Cases
- Trash-Collecting Trawls
- Fishing Poles
- Egg-Marines
- Robotic Arm for a Remotely Operated Vehicle (ROV)
- Fantasy Clean-Up Machine

Trash Island: Garbage Patch Journey aligns to Common Core and Next Generation Science Standards.

WHAT'S INCLUDED

CURRICULUM GUIDE

- Step-by-step instructions for eight hours of programming, aligned to national and state standards
- Activity objectives, subject background, vocabulary, guiding questions and discussion

CREATIVE COLLABORATION

- Start-to-finish program support from dedicated team members at NIHF
- Flexible implementation, customized to meet school or district needs

MATERIALS KIT

- Hands-on materials for up to 25 students
- Posters and preprinted handouts for an immersive experience

EXTENSION RESOURCES

- Tech addendum for flexible in-school and afterschool implementation options
- Literacy and science extensions

PRICE

$1,000	$900	$800
(1-5 Units)	(6-11 Units)	(12+ Units)

Note: Sample of product only.
See unit curriculum for full product list.

Learn more about Club Invention here.

CUSTOMIZE A SOLUTION FOR YOUR DISTRICT TODAY!

TO LEARN MORE, CONTACT:

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National Inventors Hall of Fame®

Inspiring Future Innovators®

In partnership with uspto UNITED STATES PATENT AND TRADEMARK OFFICE

The National Inventors Hall of Fame provides STEM education programs for young innovators from PreK through grade 12.