



MANUFACTURING
Institute

The Manufacturing Institute

Carolyn Lee, President & Executive Director



Our Mission: Building and strengthening the manufacturing workforce of today and tomorrow.

- The 501(c)3 nonprofit workforce development and education affiliate of the National Association of Manufacturers
- A trusted advisor to manufacturers, equipping them with solutions to address the toughest workforce issues

Innovation Unlocked:

Connecting Students to Manufacturing One Quest at a Time

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Jen White
Director, Student Engagement



MFG Workforce: The Challenges

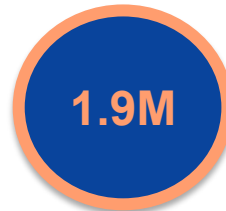
Manufacturers may need to hire 3.8M new workers by 2033

The U.S has averaged about 500,000 open manufacturing jobs over the past 12 months.

Perception Gap

- 64% believe US manufacturing jobs are creative, innovative, and require a highly talented workforce literate in STEM skills
- 40% are likely to encourage their child to pursue a career in manufacturing

The Skills and Applicant Gap



Possible jobs unfilled

Exposure Gap

The difference between students' interests and aptitudes

Advanced Manufacturing – 66%

Computers & Technology – 75%

**TODAY'S 4TH GRADE STUDENTS
COULD BE YOUR EMPLOYEES IN 2033**

Key Considerations

- Designed for use **by manufacturers with 4th-9th grade students** in their local communities, as a fun introduction to manufacturing concepts, skills and careers
- **Manufacturing employees facilitate the activity and serve as the connector** between Innovators Quest and real-world manufacturing
- A great tool for partner organizations to share locally in support of inspiring the future manufacturing workforce.

NOTE: Not intended as a tool for schools to use without manufacturer support



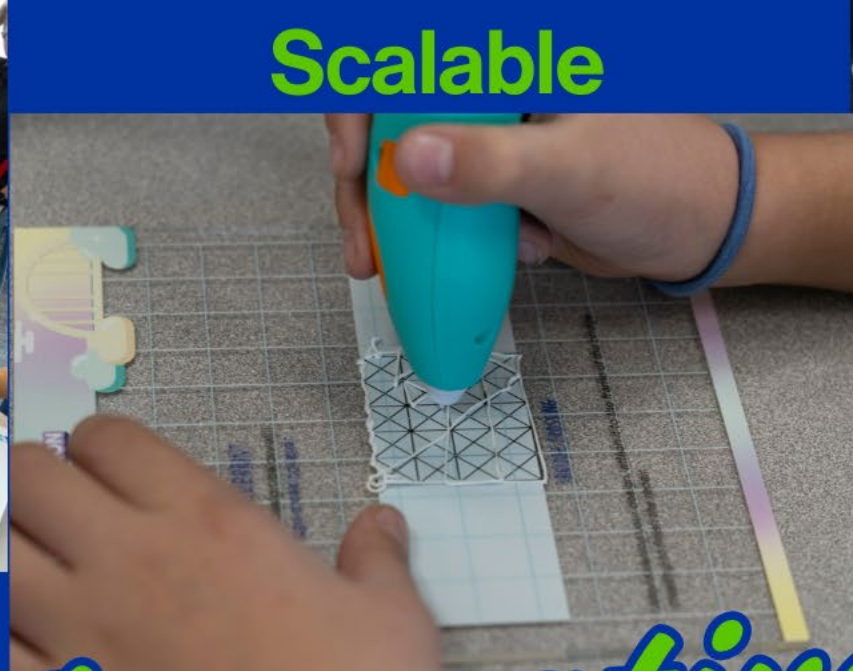
THE QUEST FOR THE

CRYSTAL OF INNOVATION

Mi MANUFACTURING
Institute



Durable



Scalable



Innovative

Accessible



Adaptable

Gamified Learning

Engages students in grades 4-9 with interactive, real-world manufacturing challenges in a fun, age-appropriate way.



Community Engagement

Helps manufacturers inspire local students and spark interest in manufacturing careers through accessible, turnkey programming.



Versatile Use

Adaptable for a variety of ages, groups & event types to increase manufacturing career awareness & talent pipeline development.



Volunteer-Friendly

Designed for company employees & volunteers to easily & effectively lead activities and bring modern manufacturing to life.



Skill Development

Encourages teamwork, communication & problem-solving while introducing essential manufacturing concepts like robotics, electronics & quality control.



Portable Solution

Easy to transport, set up & facilitate, making it ideal for classrooms, family days, summer camps, community events & MFG Day.



Hands-on Exposure to Key Concepts

Age-Appropriate 4th - 9th Grades

- Additive manufacturing
- Prototyping
- Welding/soldering
- Aerospace engineering
- Schematics
- Testing
- Precision measuring
- Electromechanics
- Teamwork
- Communication
- Problem solving
- Organization
- Materials management
- Robotic controls
- Reading manuals
- Wiring, connections, electricity and more

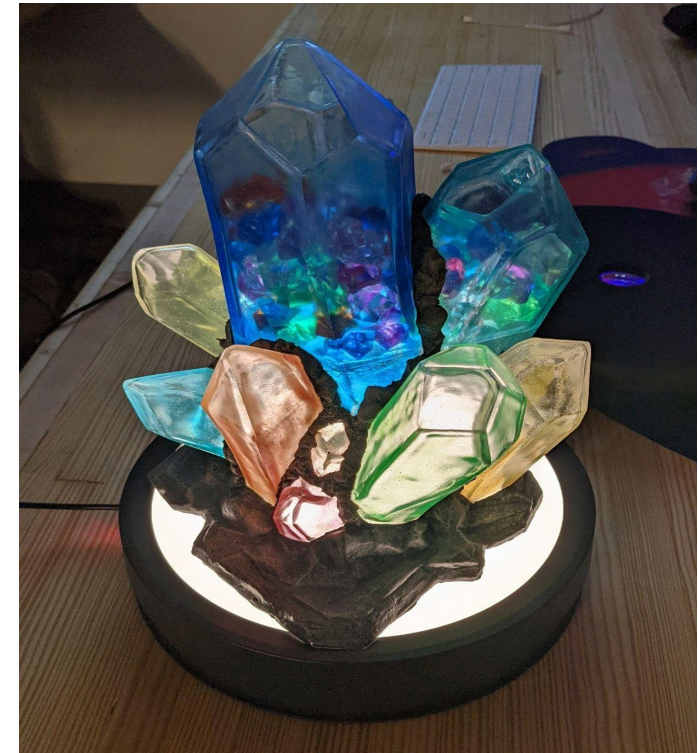


Game Concept

On the continent of Creatoria, the Crystal of Innovation has shattered and innovation has stalled.

Students will each take on the role of a specific innovator archetype and must work in teams, visiting the four realms and completing each challenge to collect the crystal shards.

Once all crystal shards have been collected by each of the teams and combined into the colorful crystal, the Crystal of Innovation is repaired and innovation is restored.



Meet the Innovators

Grades 6+



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THE CHAMPION

The Champion is a people person who always knows the right thing to say. Like a mind reader, they have the power to identify people's needs, strengths and intentions.

Home Realm:
THE CHANNEL OF UNITY

Strengths:

- ANALYTICAL
- VISUAL
- INTUITIVE
- STRATEGIC
- EXTROVERTED

Grades K-5



secret letter A

THE CHAMPION

The Champion is a trustworthy friend with the power to bring people together. They are the first to arrive when there's a problem.

Home Realm:
THE CHANNEL OF UNITY

Strengths:

- THINKING
- ARTISTIC
- SENSITIVE
- LOGICAL
- OUTGOING

Meet the Innovators

Grades 6+



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THE ARTISAN

The Artisan is a technician who wields their hands-on skills to create and fix. They have the power to manifest physical objects.

Home Realm:
AT HOME ON EVERY REALM

Strengths:

- ANALYTICAL
- VISUAL
- INTUITIVE
- STRATEGIC
- EXTROVERTED

Grades K-5



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M

THE MAKER

The Maker uses their hands like a builder or an artist. They have the power to make new things from parts and materials.

Home Realm:
AT HOME ON EVERY REALM

Strengths:

- THINKING
- ARTISTIC
- SENSITIVE
- LOGICAL
- OUTGOING

Meet the Innovators

Grades 6+



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THE MASTERMIND


The Mastermind is an analytical truth seeker who strives to understand. Their deep knowledge gives them the power to determine how things should work.

Home Realm:
THE LABYRINTH OF MACHINES

Strengths:

- ANALYTICAL
- VISUAL
- INTUITIVE
- STRATEGIC
- EXTROVERTED

Grades K-5



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P

THE BRAIN

The Brain is a wise seeker of knowledge. They use their knowledge to improve how things work.

Home Realm:
THE LABYRINTH OF MACHINES

Strengths:

- THINKING
- ARTISTIC
- SENSITIVE
- LOGICAL
- OUTGOING

Meet the Innovators

Grades 6+



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THE ORACLE

The Oracle doesn't just see the future—they shape it. They have the power to change how we live through technology.

Home Realm:
AT HOME ON EVERY REALM

Strengths:

- ANALYTICAL
- VISUAL
- INTUITIVE
- STRATEGIC
- EXTROVERTED

Grades K-5



secret letter
U

THE MAGICIAN

The Magician transforms how we live. But instead of a magic wand, they use technology.

Home Realm:
AT HOME ON EVERY REALM

Strengths:

- THINKING
- ARTISTIC
- SENSITIVE
- LOGICAL
- OUTGOING

Meet the Innovators

Grades 6+



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THE ORIGINATOR

The Originator lives in the realm of imagination, *dreaming* up new things that make our lives better. They have the power to manifest the things they visualize.

Home Realm:
THE CITY OF IMAGINATION

Strengths:

- ANALYTICAL
- VISUAL
- INTUITIVE
- STRATEGIC
- EXTROVERTED

Grades K-5



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THE DREAMER

The Dreamer has a HUGE imagination. They use it to invent and design new things.

Home Realm:
THE CITY OF IMAGINATION

Strengths:

- THINKING
- ARTISTIC
- SENSITIVE
- LOGICAL
- OUTGOING

Meet the Innovators

Grades 6+

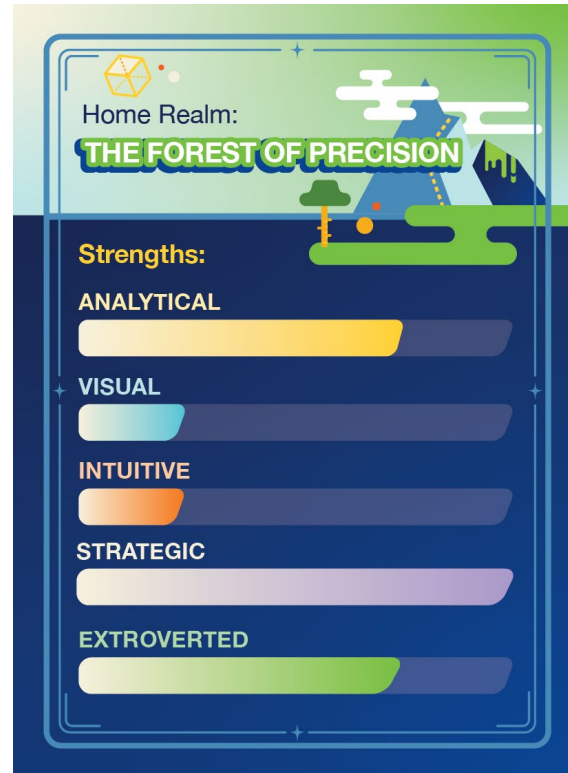


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THE TACTICIAN

The Tactician knows how to find and deliver the right resources to the people who need them. They have the power to manage time, and no detail escapes their notice.

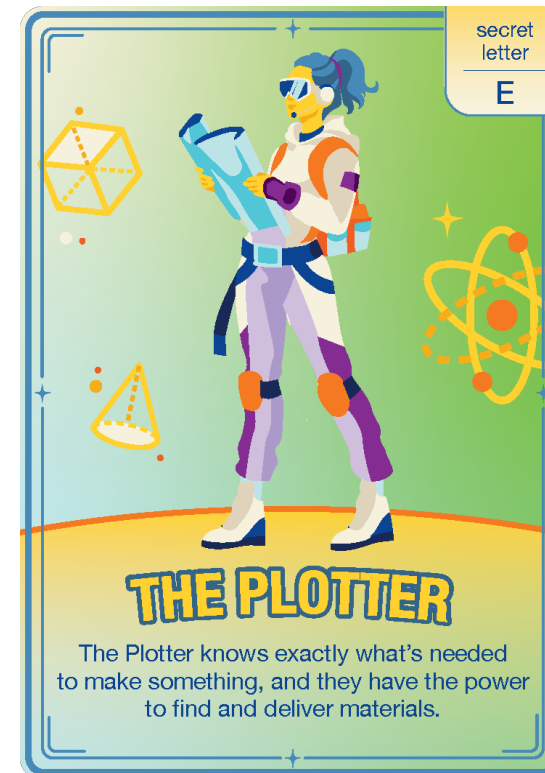


Home Realm:
THE FOREST OF PRECISION

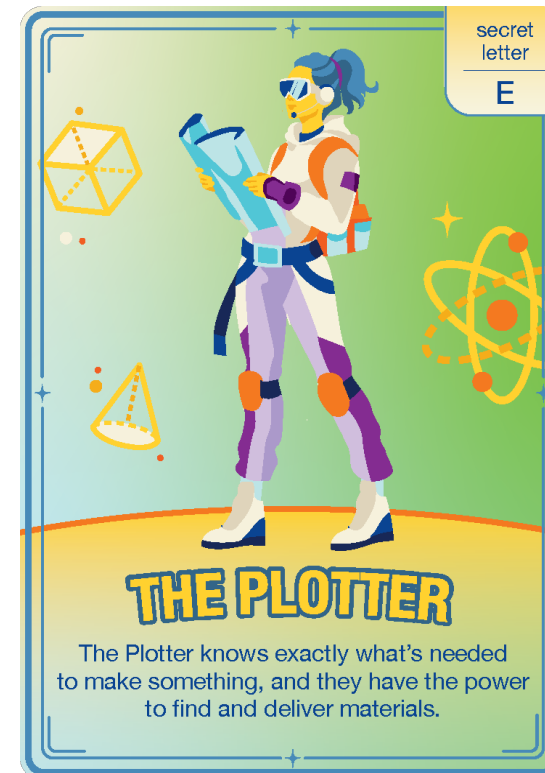
Strengths:

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Grades K-5

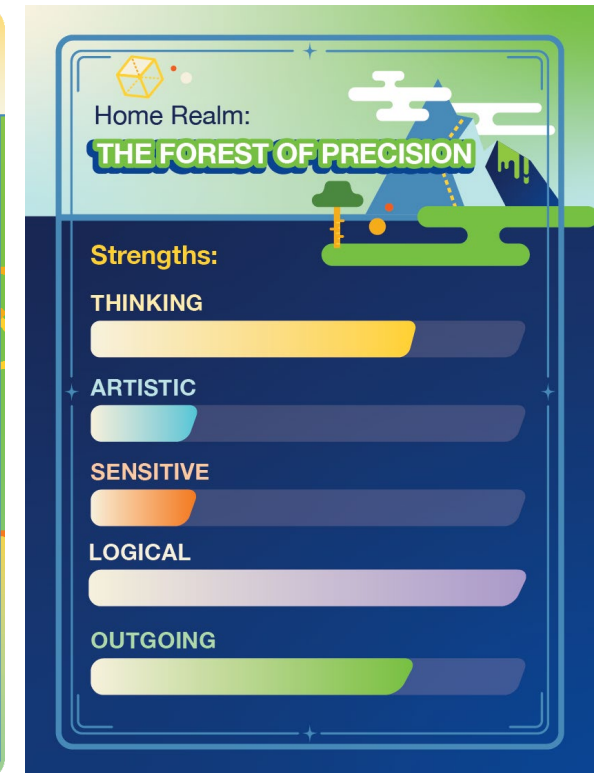


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THE PLOTTER

The Plotter knows exactly what's needed to make something, and they have the power to find and deliver materials.



Home Realm:
THE FOREST OF PRECISION

Strengths:

- THINKING
- ARTISTIC
- SENSITIVE
- LOGICAL
- OUTGOING

The Realms



The Realms of Creatoria

The City of Imagination

Teams use 3D pens to create new structural parts and repair the Cloud Bridge.

- MFG Connections: Additive Manufacturing, Prototyping, Welding/Soldering,

The Forest of Precision

Teams create an electrical circuit to power an airplane launcher and follow blueprints to build and fly paper airplanes.

- MFG Connections: Aerospace engineering, Schematics, Testing, Precision, Assembly Lines, Electromechanical components, Measuring, Quality Control

The Labyrinth of Machines

Teams assemble a snake robot and wire the controller, then maneuver the robot to collect crystal shards.

- MFG Connections: Robotic controls, Reading manuals, Wiring, Connections, Electricity

The Channel of Unity

Teams use a cipher to crack a code.

- MFG Connections: Problem Solving, Communication, Attention to Detail, Teamwork

Realm Contents

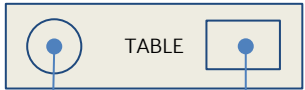
- **Each realm contains the following:**
 - Box with realm overview and innovator hints on inside lid
 - Realm map with “setup,” “how to retrieve the shards,” and “did it work” instructions
 - Foam insert with labeled cutouts for correct placement and organization of all realm materials
 - Detailed task cards for step-by-step instructions where necessary
 - Bag of crystal shards
 - All materials needed to successfully complete realm

Beginning the Quest

DESK	DESK	DESK
DESK	DESK	DESK

Desks pushed together to situate groups of 6

DESK	DESK
DESK	DESK
DESK	DESK



Crystal of Innovation

Box of Mysteries

DESK	DESK
DESK	DESK
DESK	DESK

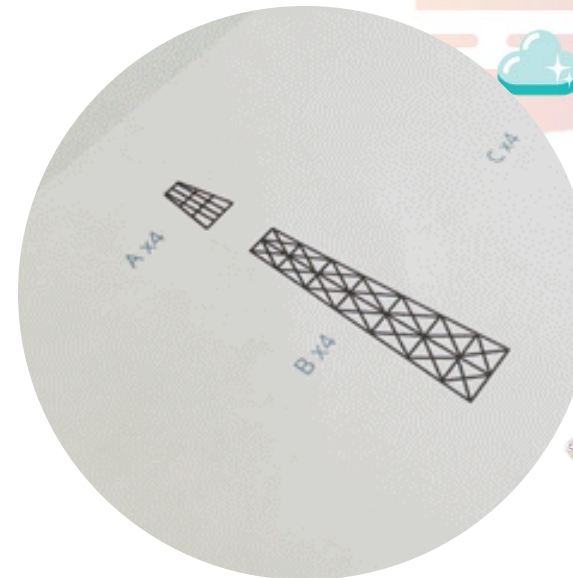
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The City of Imagination

Home of the Originator: You've landed in the city of imagination where the famous Cloud Bridge has collapsed! You can see the coveted crystal pieces shimmering in the sun just on the other side of the bridge, but they're out of reach...



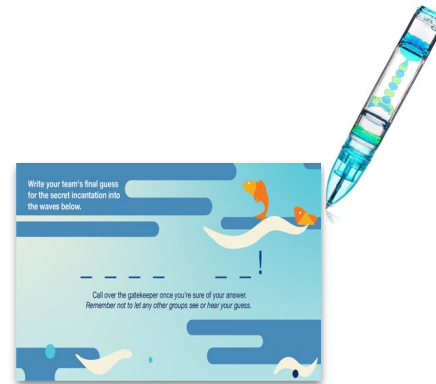
The Labyrinth of Machines

Home of the Mastermind: You land in the Labyrinth of Machines; a vast space network of floating rocks, dead robots...and coveted crystal shards! The silence is eerie as you assess your surroundings. There's way too much terrain to cover; you'll never be able to navigate to the shards yourself.



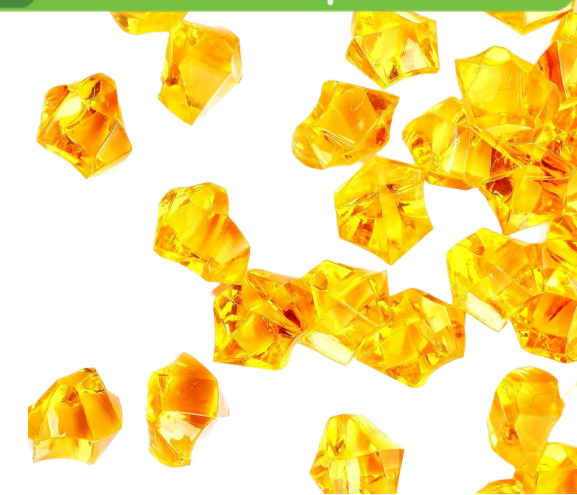
The Channel of Unity

Home of The Champion: Your team comes across a circular river and you spot the crystal pieces on the center bank. Easy! You jump in and after a few second of wading, you start to feel yourselves being pulled sideways. You quickly realize that the river is flowing around itself and picking up speed. The current is too strong to swim out of the Channel of Unity!

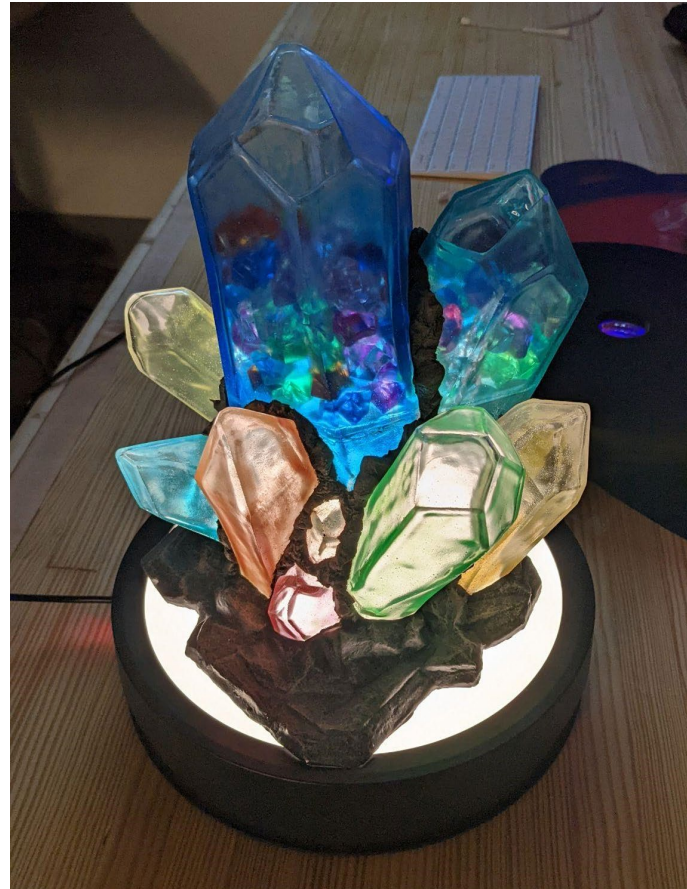


The Forest of Precision

Home of The Tactician: You've found yourself deep in the Forest of Precision when you come to a clearing filled with crystal pieces. But these crystal shards are so heavy the only way to transport them back is by flying them - and they'll each need their own plane.



Restoring the Crystal of Innovation



The Innovators Quest Kit



What's Included

Innovators Quest Standard Kit:

- 5 fully assembled realm sets
 - 20 total boxes
 - 1 set includes all 4 realms
- 5+ sets of 6 Innovator Cards for each age group
- 1 Crystal and light up turntable
- 1 Bluetooth speaker and mp3 player combo
- 1 USB bulk charger w/ cables
- 1 Reward box with lock
- 2 rolling travel bags
- 1 hard rolling case
- Consumables for use with up to 750 students before needing to replenish
- Specific backup parts & pieces (Full list available)

Rewards Add-Ons



Vinyl Innovator Stickers



Pencil Pouch



Pencils



Pop Keychain



Soothe Stickers

What's Included

Innovators Quest Premium Kit:

- 5 fully assembled realm sets
 - 20 total boxes
 - 1 set includes all 4 realms
- 5 sets of 6 Innovator Cards for each age group
- 1 Crystal and light up turntable
- 1 Bluetooth speaker and mp3 player combo
- 1 USB bulk charger w/ cables
- 1 Reward box with lock
- 2 rolling travel bags
- 1 hard rolling case
- Consumables for use with up to 750 students before needing to replenish
- Specific backup parts & pieces (Full list available)
- PLUS - 250 branded & assembled rewards
 - Pencil pouch
 - 2 innovator character stickers
 - 1 set of (4) Soothies
 - 1 set of (4) pencils
 - 1 bubble pop keychain

Sponsorship Information

- Your organization's sponsorship supports the MI's continued work towards inspiring the next generation of manufacturers and the Innovators Quest initiative.
- Can be sponsored by manufacturers for individual company use
- Can be sponsored by community hub organizations (Chambers, Industry Sector Partners, Workforce Boards, Economic Development Centers, Educational Service Centers, etc) to be deployed locally in partnership with multiple community manufacturers
- Sponsorship of Innovators Quest is an investment – in your current employees (retention), your community and your talent pipeline!

Sponsorship Information

- Two types of sponsorships
 - Standard Sponsorship includes delivery of 1 Innovators Quest Standard Kit at \$15,000 per kit
 - Premium Sponsorship includes delivery of 1 Innovators Quest Premium Kit at \$19,750 per kit
 - Sponsorships can be combined to receive a combination of standard and premium kits
 - All sponsors will have access to combined virtual training sessions and materials
 - All sponsors receiving 3-4 kits will also have access to one virtual training session tailored specifically to the sponsor's selected participants
 - All sponsors receiving 5 or more kits will have access to one in-person training session tailored specifically to the sponsor's selected participants

Sponsorship Information

- Ordering window open through March 7, 2025
- Sponsorship funds due by March 15, 2025
- Process
 1. Complete interest form on MI website
 2. MI will send official order form to all interested next week
 3. Sponsorship payments can be made by credit card or ACH.
Note: credit card payments will include an additional 3% processing fee.
 4. Kits ordered by March 7 will be delivered to sponsor's specified location by June 30 – in time for summer camps and MFG Day!

Training & Preparation

- Facilitators guide and instructions are included in kit
- MI will create additional training materials that will be available to all sponsors
- MI will offer office hours for individual questions and support if needed

Next Steps

- Email students@nam.org for questions
- Follow-up email with recording, slide deck and Innovators Quest info sheet will be sent next week.
- Share information with colleagues and partners
- Complete the interest form on [MI Website](#)