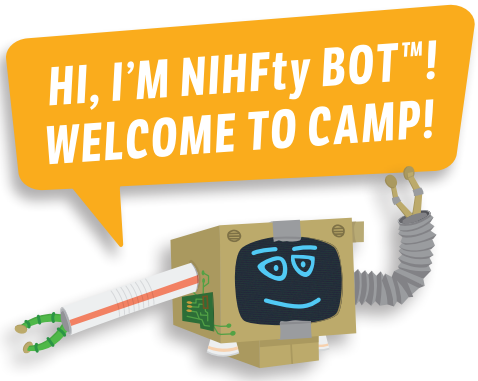
THE CAMP INVENTION DAILY
SESSION 1



WELCOME TO THE FIRST DAY OF CAMP INVENTION®

Each day, your child is entering a place where their ideas matter and anything is possible! This is a safe and fun space where your child can create, test, try, iterate, discover and explore the incredible world of invention. Look closely throughout the week — we're sure you'll see your child's ideas turning into reality!

2022 CAMP INVENTION EXPERIENCES

In **Robotic Aquatics™**, children become o-fish-al Trainees of Robotic Aquatics Academy. They get to know their fellow Trainees through fun marine life games, and then gain behind-the-scenes access at the Academy, where they must design a retrieval device to catch a fluorescent jellyfish of their choice. Next, they dive into their aquatic animal's BIO — including giving it a *sci-fun-tific* name! *Ask your child what they named their jellyfish!*

In **NIHF's The Attic™**, children discover how the invention of the paint tube and xanthan gum revolutionized how people create. Using chromatography, they separate a substance and uncover hidden colors. They explore materials science and the properties of clay and then create, name and trademark their very own color. *Ask your child to join you in thinking of all the trademarked colors you can on your way home.*

During **Spacecation™**, children receive a Galactic Ticket and an Inventor Log with an itinerary full of wowzy space excursions. Before blasting off, they design and build a Spacepack to carry their belongings and then pack their bags for a vacation among the stars at the WOW Space Hotel. *Ask your child if they could go anywhere, where would it be, and why?*

In **Marble Arcade™**, gamers roll up in the Game Lab to investigate the relationship between an object's mass, density and motion. They experiment with materials to find their unique characteristics. Then, they build their First Generation Marble Arcade and test gaming spheres, gaining a deeper understanding of potential and kinetic energy while they get the ball rolling! *Ask your child to think about objects that might roll down a hill. Imagine fantasy or funny items, like a ball of mashed potatoes racing a roll of paper towels. Which object would win? What other objects can you imagine rolling down a hill?*

CONNECTION QUESTIONS

1. What did you discover today that you didn't know before?
2. What was a challenge you faced today? How did you overcome it?
3. Which activities did you enjoy the most?

OUR CAMP INVENTION FAMILY IS GOING ON A NEW ADVENTURE!

We're so glad you're part of the Camp Invention family! It is our privilege to guide your innovator through this experience as they dream big and unlock their potential by building the Innovation Mindset™.

We believe learning should be fun, and learning environments should be supportive. So here at camp, your child is free to explore, experiment and share their ideas as they team up with friends to take on open-ended challenges where there are no "right" or "wrong" answers.

Each day, your child will engage in experiences crafted in collaboration with National Inventors Hall of Fame® Inductees — amazing role models who inspire the inventor in us all. To support your child's innovative journey, at camp and beyond:

- Use "I wonder..." statements to spark their curiosity
- Encourage creative solutions that stretch their imagination
- Cheer them on as they build their confidence and persistence

Welcome to the family — we can't wait to see what your camper achieves!

"I believe all children are inventors." — Michael J. Oister, CEO, National Inventors Hall of Fame

THE CAMP INVENTION DAILY
SESSION 2

HERE'S WHAT'S HAPPENING AT CAMP!

In **Robotic Aquatics™**, Trainees receive a mini tank for their fluorescent jellyfish and then take a Tank Scenes Quiz to receive a suggested theme for the design of their tank environment. Will their fluorescent jellyfish glow in the open ocean or on the coral reef? After choosing their tank design, children create and patent an aquatic plant for their habitat! *Ask your child, "If you could invent a new fruit, what would it look and taste like?"*

In **NIHF's The Attic™**, children uncover an invention that played a part in a favorite form of entertainment — the motion picture projector. Children assemble a thaumatrope to create their very own moving pictures and discover how information is received through their senses. Inspired by animated movies, they create a script and act out their own short film. *Ask your child about their mouse character!*

In **Spacecation™,** children assemble an Astro-Arm in preparation for their experiences in outer space. They lift off and go up, up, up, and up some more as they travel beyond Earth's atmosphere. Children must use their Astro-Arm to securely dock their spacecraft with the WOW Space Hotel! Upon arrival, they visit the hotel laboratory and see a mystery animal egg they will gather data on each day. *Ask your child what animal they think will hatch from their egg.*

In **Marble Arcade™**, gamers get the ball rolling by continuing to explore engineering design as they start up their Marble Arcade using the mechanical means they designed in Session One. As they explore inclined planes and break down barriers to success through trial and error, they propel themselves into a cascade chain reaction of fun! Then, they dream up big themes and designs as they add personalized skins to their Marble Arcades. *Ask your child if their Marble Arcade will be smooth and stretched out, or have tiny spirals full of twists and obstacles — the sky's the limit!*

Making Connections

Throughout the week, campers are encouraged to investigate nature for inspiration as they design one-of-a-kind inventions.

This type of investigation can continue at home! Make it a fun challenge to take everyday household objects and toys and point out features that may have been inspired by nature!

CONNECTION QUESTIONS

1. What did you find challenging today? How did you handle it?
2. Which materials have you been using to create your inventions?
3. What materials do you like to use most?

YOUR CAMPER IS BUILDING THE INNOVATION MINDSET

As we have fun at camp, we're also building a powerful mindset that puts lessons from great inventors into action! Each Camp Invention® experience helps your child develop and strengthen the essential skills and traits that make up the Innovation Mindset™, preparing them to reach their full potential, now and in the future.

Robotic Aquatics

Through **design thinking** and **innovation**, we created a one-of-a-kind aquatic habitat, complete with a new plant worthy of **intellectual property** protection. Soon, we'll use **entrepreneurship** skills to lure in and hook investors.

NIHF's The Attic

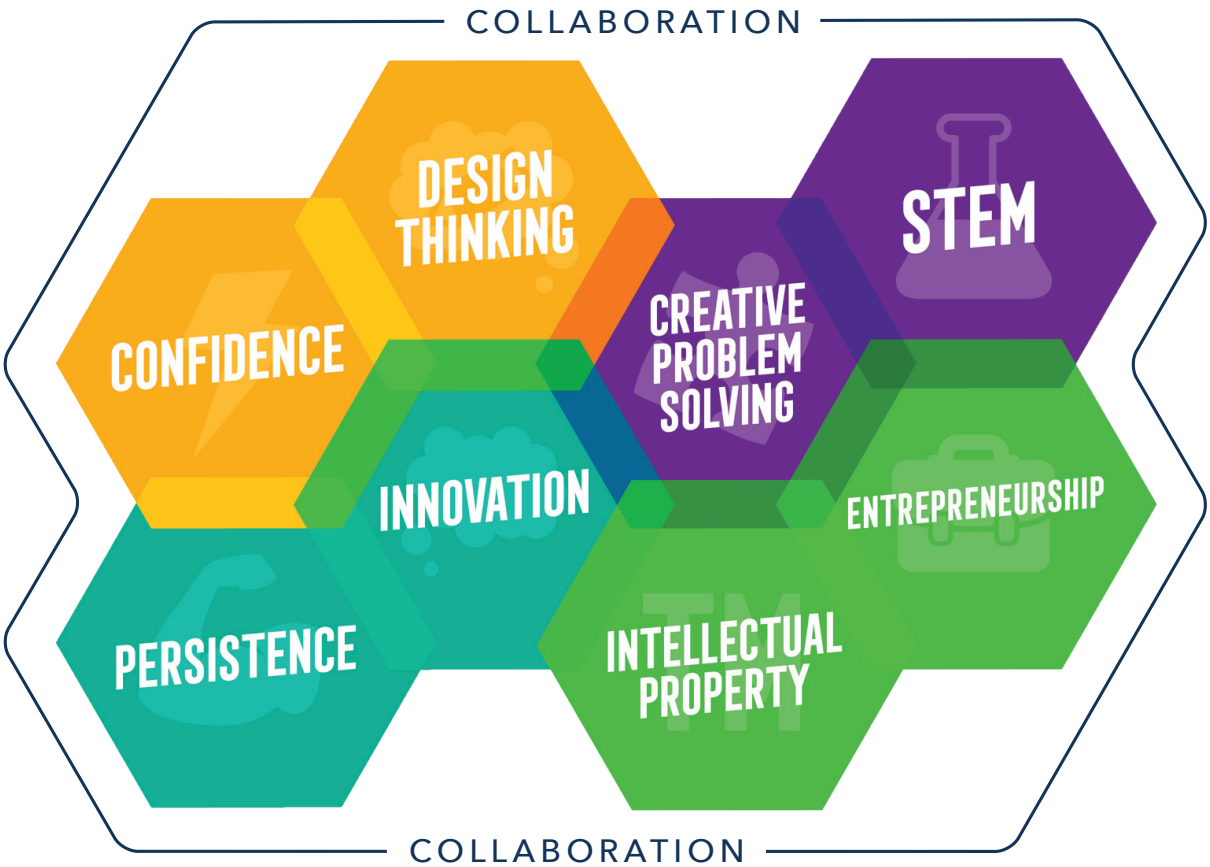
We used **design thinking** to bring our artistic ideas to life! We'll also learn how to protect our ideas through **intellectual property** and grow our **confidence** as we promote our inventions.

Spacecation

We applied **innovation** and **design thinking** as we imagined the ultimate galactic vacation. We practiced **persistence** and put **STEM** concepts to the test as we constructed our Astro-Arm to accomplish specific tasks.

Marble Arcade

We rolled into **STEM** exploration as we learned about chain reactions. By applying **persistence** and **creative problem solving**, we can make our machines longer, with more twists and turns!



THE CAMP INVENTION DAILY
SESSION 3

At Camp Invention®, your child is given the freedom to think of new, innovative ideas. Throughout the week, children are reminded of their rights as creators. They receive valuable insights and encouragement from world-changing inventors — National Inventors Hall of Fame® Inductees — to embrace creative thinking and to problem solve their way to success!

HERE'S WHAT'S HAPPENING AT CAMP!

In **Robotic Aquatics™**, Trainees explore the power of symbiosis as they discover that even inventors team up to benefit each other's invention process! They create a symbiotic friend for their jellyfish and then complete the design of their tanks with an underwater enrichment feature and a light to make their habitat glow! *Ask your child why they think inventing in teams is important. Give them your own advice about collaboration!*

In **NIHF's The Attic™**, children are successful in finding the next invention, the sewing machine, that forever changed the textile industry. They discover the flare behind their favorite shoes and what makes their soles unique. Realizing the importance of protecting their ideas, they patent their unique design, print it and showcase their new wearable trend. *Ask your child if they could invent a new type of shoe inspired by an animal, what would it be?*

In **Spacecation™**, the vacationers head to Ceres, the Queen of the Asteroid Belt! The itinerary for the day includes mining an asteroid with a modified Astro-Arm and a scenic spacewalk. After checking in and taking data on their egg, they conduct a well-visit with their hatched animal, recording its growth and to prepare for the trip back to Earth. *Ask your child to consider a fantasy vacation destination. Would they rather voyage to a desert of brown sugar or an ocean of glitter?*

In **Marble Arcade™**, gamers hold up in the Game Lab as they experience the anticipation of slow motion while maneuvering their marble to exciting, danger-defying lows and gravity-challenging highs. They explore the impact of forces and interactions, like friction, as they test a variety of building materials, make observations, and then experiment with how to slow down the action in their Marble Arcade. *Ask your child why it can be important for their marble to slow down.*

CONNECTION QUESTIONS

1. What is fun about solving challenges?
2. What are you looking forward to tomorrow?
3. Which activities did you enjoy the most?

MEET A CAMPER WHO IS NOW AN INVENTOR!

Nicole Black is an inspiring, innovative role model. She first joined our Camp Invention family as a curious camper and later volunteered as a Leadership Intern.

While studying engineering at Harvard University, she became a Graduate Winner in our Collegiate Inventors Competition®! She and her co-inventor Michael J. Kreder created PionEar, a device designed to help with chronic ear infections using 3D-printed designs and new materials.

Check out this letter Nicole Black wrote to all our campers!

THE CAMP INVENTION DAILY
SESSION 4

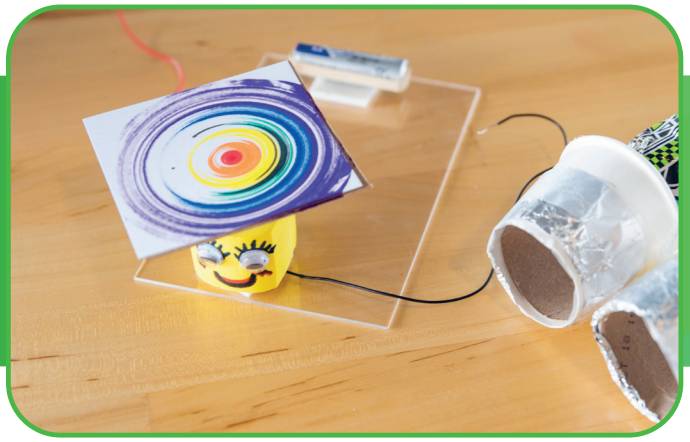
HERE'S WHAT'S HAPPENING AT CAMP!

In **Robotic Aquatics**™, children explore the diverse array of innovations that work on and under water, as well as inventions that simply use water. With their jellyfish glowing in their habitats, children find inspiration as they engage in a Think Tank and design one-of-a kind innovations that will push the frontiers on aquatic possibilities!

Discovering a mouse in **NIHF's The Attic**™, children explore how artists and innovators use computers and robots to create. They are inspired by National Inventors Hall of Fame® Inductee Lonnie Johnson and his story of how he built his first robot. Campers go for a spin as they explore geometric art and then build their own spin art machine. *Ask your child how they could use inventions in your home to create new art!*

In **Spacecation**™, children experience hot and cold, space style. First, the travelers trek near an erupting ice volcano and have a surprise glow-in-the-dark experience on Jupiter's ice moon, Europa, while being wowed by distant auroras. Children then blast off to Io, the most geologically active body in the solar system, which is nicknamed the "Pizza Moon." Using their Astro-Arms, they race to assemble a pizza while microgravity works against them and then cook their delectable dinners using the heat from Io's lava tubes.

In **Marble Arcade**™, gamers round the corner where they turn up the action in the Game Lab! They manipulate and connect materials in new ways to create incredible twists and turns for their Marble Arcades. They explore the power of pushes and pulls as they take on the challenge of adding ways to go over, under and through their machine and consider how each element adds up to a masterpiece!



Arty Bot

Continue the fun at home by experimenting with Arty Bot. What will your child create next?

CONNECTION QUESTIONS

1. When did you feel most proud of yourself today?
2. Which team member do you like working with the most? Why?
3. What's the coolest thing you saw someone create today?

DID YOU KNOW?

Your camper gets to bring home their imaginative invention prototypes! A prototype is a model of an invention, and that means your child's creations represent the big ideas they've worked hard to bring into the world. When you look closely at your camper's prototype, you're sure to find some impressive features.

TAKE A LOOK AT THIS SPACEPACK PROTOTYPE, AND YOU'LL SEE WHAT WE MEAN!

This isn't a simple button or knob. It's a camera for recording everything our campers observe!

This might just look like pipe cleaners, but it's actually wiring for a radio that allows our space travelers to communicate with one another.

Just some foil-covered tubes? No way! These are secondary oxygen tanks — essential for safely exploring the galaxy.

Prototyping is an important part of the Camp Invention experience because it's exactly what real-world inventors do. Our National Inventors Hall of Fame® (NIHF) Inductees have taught us that building invention prototypes allows them to turn an idea into a reality.

LET'S HEAR FROM SOME INDUCTEES!

2022 NIHF Inductee Marian Croak encourages young innovators to **create change for the greater good.**

She invented Voice over Internet Protocol (VoIP) technology, which turns voice data into digital signals to be sent over the internet, helping us stay in touch with friends and family.

2022 NIHF Inductee Lonnie Johnson not only invented the popular Super Soaker® toy, but he also developed spacecraft systems designs as a NASA engineer! He says young problem solvers should **be persistent and think big:** "If you're going to choose a problem, why not a big problem?"

***Did you know that you can find out more about Inductees at our museum in Alexandria, Virginia?**

THE CAMP INVENTION DAILY
SESSION 5

It's hard to believe Camp Invention® is coming to an end, but we're so glad you and your child were part of the fun! We hope they had an incredible time inventing, creating and collaborating with friends this week! Even though today is the last day of camp, the skills learned and memories made are sure to last a lifetime.

TIME TO CELEBRATE A WEEK OF INVENTING

In **Robotic Aquatics™**, campers brought their creativity to the surface as they completed their Aqua Innovation designs and gave their best pitch to lure and hook investors! They discovered how to turn their own habitats into Think Tanks for their imaginations! *Ask your innovator to present their winning pitch to you! Check out this website:* ***invent.org/camp-fish-take-apart*** *for instructions on how to reverse engineer their Take Apart robotic fish!*

Campers dug deeper into **NIHF's The Attic™** and further explored the idea that they are makers, artists and inventors. They took a last look in The Attic and discovered that their art and inventions were being showcased. Lastly, they created spin art using paint and their Arty Bots. *What part of The Attic did your innovator enjoy the most?*

For the last day of **Spacecation™**, campers kicked off the day performing one last data check on their animals and then headed out for their final excursion. After harnessing the power of the Sun to turn ice into rocket fuel, they fueled up their spacecrafts and grabbed snacks for the trip home at a lunar gas station, the Moon Mart! *Ask your space traveler about their favorite part of their Spacecation.*

Gamers teamed up and collaborated to create a combined machine that can continue the chain reaction. They experimented together in the Game Lab to create an incredible chain reaction Mega **Marble Arcade™**! Campers took their chain reactions to the next level by exploring how Hall of Famers have collaborated to innovate amazing new inventions. *Ask your gamer to dream what might happen if we all worked together to solve problems and invent solutions.*

STAY IN TOUCH!

We're always sharing the latest STEM-based discoveries, activities and Camp Invention photos on our social channels, so be sure to follow us today!

- facebook.com/CampInvention
- pinterest.com/InventorsHOF
- youtube.com/NationalInventorsHallofFame_NIHF
- @CampInvention

CONNECTION QUESTIONS

1. What was the most exciting activity at Camp Invention?
2. What do you hope to do at Camp Invention next year?
3. How can you keep the Camp Invention fun going?

KEEP CREATING AT HOME!

One of the best things about being part of the Camp Invention family is knowing that the fun and learning don't stop when camp ends!

To help your camper keep stretching and strengthening their awesome Innovation Mindset™, you can:

- Practice **COLLABORATION** by working on a creative project together as a family.
- Boost their **CONFIDENCE** by encouraging their big ideas and celebrating their successes.
- Inspire their **DESIGN THINKING** by pointing out how certain products have made life easier.
- Acknowledge their **PERSISTENCE** as they overcome challenges and solve problems.
- Foster **INNOVATION** by asking how you might work together to improve aspects of your family's daily routine.
- Point out the power of **INTELLECTUAL PROPERTY** when you watch your favorite movies or shop for a branded toy.
- Spark **ENTREPRENEURSHIP** by asking your child how they might turn one of their ideas into a product.
- Encourage **CREATIVE PROBLEM SOLVING** by observing nature and discussing how plants and animals can inspire invention designs.
- Explore more **STEM** fun at home with our free activities! Visit invent.org/blog/stem-activities or scan this code: