About Galileo Learning

Galileo Learning (Galileo) creates and operates Innovation Camps for kids. Their mission is “to develop innovators who envision and create a better world” and this mission comes to life each summer at nearly 60 imagination-sparking locations (40 in the Bay Area, 15 in SoCal locations and 4 in Chicagoland.) They also train and employ more than 2100 educators and aspiring educators as summer staff. Galileo’s programs serve campers from pre-K through 8th grade.

In all of Galileo’s programs, the curricula focuses on helping campers (and staff) develop 21st Century skills and mindsets through understanding and applying the Galileo Innovation Approach (GIA). The GIA is inspired by the Stanford d.school’s design thinking process and mindsets and fine tuned for 5-14 year old campers who are especially open to absorbing new ways to think, explore and create. Click here for more information about Galileo Learning.
The Galileo Innovation Approach

The Galileo Innovation Approach (GIA) is our unique approach to teach and learning. It is designed to develop Galileo Innovators – campers and staff who imagine and create a better world. Galileo Innovators approach their work with an Innovator’s Mindset, do their work with an Innovator’s Process, and seek/leverage Innovator’s Knowledge.

Galileo Innovator’s Mindset
Galileo Innovators have dispositions that support breakthrough thinking and creative work. The Galileo Innovator’s Mindset has five elements:

BE VISIONARY
• I envision a better world.
• I imagine things that don’t yet exist.
• I believe that it is my place to turn ideas into reality.

BE COURAGEOUS
• I freely share my creative thoughts.
• I stretch myself to try new things.
• I embrace challenges.

BE COLLABORATIVE
• I value the unique perspectives of others.
• I build on the ideas of others.
• I use my strengths to support the work of others.

BE DETERMINED
• I persever e until I achieve my goal.
• I recognize setbacks as opportunities to learn.
• I know that innovation and mastery require effort.

BE REFLECTIVE
• I take time to think about what is and isn’t working in my design.
• I think about how my work impacts other people and the world.
• I seek feedback to improve myself and my work.

Galileo Innovator’s Process
Galileo Innovators learn and practice an iterative process to bring the best ideas to fruition. The diagram below shows the Galileo Innovator’s Process:

Galileo Innovator’s Knowledge
Galileo Innovators require subject-specific knowledge to creatively solve problems and make their visions a reality. Galileo Innovator’s Knowledge lies in the following four categories:

CONCEPTS AND FACTS
Galileo Innovators understand the big ideas, principles, and facts relevant to their work.
Examples: Adding more tension to a rubber band creates a higher pitch when it’s plucked

HISTORICAL CONTEXT
Galileo Innovators understand the contributions, objectives, and processes of relevant movements, artists, scientists, designers, and other experts who came before them.
Examples: Kandinsky uses a variety of brushstrokes and line types to represent music visually

SKILLS AND TECHNIQUES
Galileo Innovators understand how to use relevant materials, tools, and technology so they can effectively build, test, and share their ideas.
Examples: Manipulating cardboard by cutting, curling, bending, folding, scoring, tabbing, and fastening; taping techniques; watercolor resist

AUDIENCE AND ENVIRONMENT
Galileo Innovators understand the needs, beliefs, and circumstances of their users and the physical context in which their work will be received.
Examples: Engineers need to design buildings in a specific way when constructing in an earthquake prone area

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Galileo Innovation Approach and the Curriculum

Our curriculum is designed to support you in teaching the Galileo Innovation Approach and nurturing Galileo Innovators. Below are some ways in which the curriculum fosters your development as an Innovation Educator.

First, you’ll find that the components of the GIA literally leap off the page.
- The GIA terms are emphasized throughout the curriculum in ALL CAPS to help you easily identify opportunities to integrate the GIA.
- An overview of the **key Innovator’s Knowledge, Process, and Mindset** for each lesson appears in the Instructional Priorities & Supporting Innovation section. Think of these as the blueprint of a successful lesson. Starred sections in the curriculum are connected to these priorities and should not be skipped.

Second, the curriculum includes a daily **Innovator’s Mindset Challenge**. The Mindset Challenge helps campers focus on developing a different part of the Innovator’s Mindset each day and shows how practicing this element can help them develop as innovators. The challenge is introduced near the beginning of the lesson, supported with details in the facilitation notes and debriefed as part of the lesson wrap up.

Third, each day concludes with a **Lesson Wrap Up** that provides a forum for you to go deep on innovation themes with campers. Prompts are provided to support project sharing, reviewing key Innovator’s Knowledge and debriefing the day’s Mindset Challenge. Use this time to help campers solidify what they learned, notice how practicing the mindset helped them with their project and recognize the innovator in themselves and in others. Familiarize yourself with the discussion questions before each lesson so you can best guide campers to develop as innovators throughout the rotation.

Additionally, these general practices can help you to bring the GIA to life:
- Think about what it means to you to be an Innovation Educator and find ways to realize that vision.
- Pace your class to allow time for campers to engage with each project, giving ample time for the TEST, EVALUATE and REDESIGN phase so that campers can thoughtfully evaluate how they can improve their designs, and then implement the modifications.

- Model the Mindset in your teaching. When you make a mistake, celebrate it! Tell the campers that your teaching or the project didn’t go as planned, and that you’ll learn from that and try it a different way in the next rotation.
- Help campers understand what it means to be a Galileo Innovator and strive to shape their self-images as such.
- Recognize campers as they exhibit the Innovator’s Mindset as relevant throughout the day—in addition to this focus during the Wrap Up. (E.g., *I see that you’re BEING REFLECTIVE, thinking about what is and isn’t working with prosthetic hand design. That’s a great way to start developing an innovative solution!*)
- Refer to the steps of the Innovator’s Process (and your Galileo Innovator’s Process Poster) as you describe the day’s activities and as campers work.

Finally, the curriculum supports your own innovations for how to integrate the GIA in your classroom. Please apply the Innovator’s Mindset and Process to this end and SHARE your learning with your colleagues!
Galileo Makers – Star (Grades 1-2)

DIY Art

Project Overviews

Galileo Makers Day 1 – Cardboard Seat, Part 1 of 3

Project Description
Makers find ways to create things themselves that they would normally buy. Today campers embark on making a functional seat, starting with creating a stamp and printing on fabric that will become the cushion.

Instructional Priorities and Supporting Innovation
Demo & Discussion: Creating a Stamp Intro
★ Demonstrate the TECHNIQUE for creating the foam stamp, emphasizing the importance of filling the space and trying a few arrangements before adhering the shapes.
★ Demonstrate how to TEST and EVALUATE the stamp.
★ Introduce the CONCEPT of gradients and demonstrate the TECHNIQUE to create them with paint.

Throughout the Lesson
★ Support the Innovator’s Mindset Challenge: BE REFLECTIVE – Campers take time to think about the best printing techniques and make sure they are happy with the designs and colors they’ve created.
Galileo Makers Day 2 – Cardboard Seat, Part 2 of 3

Project Description
Campers continue with adding paint to the cardboard base using a tape masking technique.

Instructional Priorities and Supporting Innovation
Demo & Discussion: Painting with a Tape Mask Intro
★ Use your pre-made sample to demonstrate the TECHNIQUES campers need to be successful in this project: using the tape dispenser, creating patterns with tape, and painting carefully.
★ Show examples to help campers GENERATE IDEAS about tape designs.
Camper Work Time: Painting with a Tape Mask
★ Use the sample cushion to demonstrate the TECHNIQUE of how the cushion materials will be arranged, adhered and checked.
Throughout the Lesson
★ Support the Innovator’s Mindset Challenge: BE VISIONARY – Campers imagine and design four distinct panels to turn their cardboard seat bases into unique, personalized creations.

Galileo Makers Day 3 – Cardboard Seat, Part 3 of 3

Project Description
Campers assemble the cardboard seat and add trim and tassels.

Instructional Priorities and Supporting Innovation
Do-With-Me: Generating Ideas for Trim
★ Support campers in GENERATING IDEAS. Demo or draw trim/embellishment possibilities.
Demo & Discussion: Assembling the Seat
★ Demonstrate the SKILLS AND TECHNIQUES needed for all steps of assembling the seat.
Throughout the Lesson
★ Support the Innovator’s Mindset Challenge: BE VISIONARY – Campers find creative ways to manipulate the materials available to create unique embellishments.
Galileo Makers Day 4 – Animal Night Light, Part 1 of 2

**Project Description**
Rachel Weber is a maker who creates night lights with specially designed silhouettes. Today campers each design a custom silhouette for night lights they can really use at home!

**Instructional Priorities and Supporting Innovation**

*Demo & Discussion: Silhouettes*

- ★ *Use your sample to ensure campers understand the CONCEPTS of night lights and silhouettes.*
- ★ *Demo and discuss TECHNIQUES for drawing big and using simple shapes.*
- ★ *Demo and discuss cutting TECHNIQUES.*

*Throughout the Lesson*

- ★ *Model and support TESTING and EVALUATING designs throughout the process, from sketching to gluing.*
- ★ *Support the Innovator’s Mindset Challenge: BE REFLECTIVE – Campers notice how they want to change their designs through ongoing evaluation and make changes accordingly.*

Galileo Makers Day 5 – Animal Night Light, Part 2 of 2

**Project Description**

Campers add secret scenic elements and other designs that only show up when the light is illuminated.

**Instructional Priorities and Supporting Innovation**

*Demo & Discussion: Adding Scenic Elements Overview*

- ★ *Use your sample to ensure campers understand the CONCEPT of adding silhouettes/scenic elements on the reverse side of the paper.*
- ★ *Lead campers through a brainstorm to help them GENERATE IDEAS for scenic elements.*

*Throughout the Lesson*

- ★ *Support the Innovator’s Mindset Challenge: BE VISIONARY – Campers imagine elements around the existing animal silhouette to create a fun/surprising/interesting scene.*

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This Week’s Story

Each week at camp a story will unfold through a series of skits done at opening and closing ceremonies. The story provided to your Camp Director for this theme has been included here so that you can incorporate the story into your classroom this week. We’ve provided some suggestions in the curriculum for how to tie activities into the storyline, and we also encourage you to bring the story to life in your own way!

Galileo Makers Story Overview

Website Teaser

*Galileo Makers: DIY Art and Real-World Inventions*

Flex your maker muscle and put a creative spin on everyday objects. Design a personalized stool, clock or pillowcase for your room. Build useful inventions to take home like a vacuum or a secret lock box with an alarm that really works. Harness your innovative energy and join the marvelous maker movement as you transform intriguing ideas into functional, faire-ready reality.

Characters

- **Storyteller**
  Our narrator, who reads Monday’s story and parts of Wednesday’s and Friday’s—this role can be played by anyone who is a clear-spoken, engaging read of stories

- **Lucy**, a girl who lives in Land Land
  *A curious, potentially creative human stuck in a world of dull sameness—a situation that has resulted in a state of constant restlessness, as she never quite knows what to do with herself*

- **Finn**, a boy who lives on Cardboard Island
  *A super-enthusiastic kid who’s always up for a challenge and has ideas to spare—an I-have-an-awesome-idea-so-what-are-we-waiting-for kind of guy*

- **Lucy’s parents**
  *Formerly creative folks who have lived in Land Land so long they don’t remember what it’s like to make things themselves*

- **The makers of Cardboard Island**
  *Assorted creative folks—including our Camp G campers—who live and make on Cardboard Island*

Setting

- **Land Land**: A place where everyone is the same—everyone dresses the same (in dull colors), decorates the same (minimally, also in dull colors), has the same haircut and says all the same things (e.g.: Person 1: "Welcome to Land Land"; Person 2: "Welcome to Land Land")

- **Cardboard Island**: An alternate world that’s covered in cardboard as far as the eye can see—its inhabitants spend their days transforming its vast cardboard reserves into awesome hand-made gizmos, gadgets and pieces of furniture, all wildly colored and wonderfully personalized

Plot

Restless in her Land Land existence (and dreading an upcoming move to a new house that’s just like her current house), Lucy draws a doorknob on the back wall of her closet, which opens a portal to Cardboard Island, a land covered in cardboard and inhabited entirely by marvelously creative makers. There she meets Finn, who introduces her to the fabulous, fearless creativity of the Cardboard Islanders. They offer to help her make items to personalize her new room. When Lucy gets stuck back in Land Land, she and the Cardboard Islanders work together to reopen the portal and stage a mini-Maker Faire featuring items for Lucy’s new room.

Conflict

Lucy’s dad paints over the "doorknob" in Lucy’s closet, sealing the portal and locking her in Land Land before she can realize her vision for her new room. She and the Cardboard Islanders need to reopen the portal and stage their Faire before Friday’s move and without upsetting Lucy’s parents, who might not approve of such un-Land Land-like creations.

Resolution

Lucy and the Cardboard Islanders reopen the portal between the lands and put on an awesome Maker Faire on the island. Lucy’s parents follow her through the portal to the Faire, but instead of being upset, as Lucy feared, they’re impressed and inspired by her VISION.

What We Want Campers to Learn

- **The Maker Movement** is all about making things and getting people together to learn and create.
• Maker Faire is an all-ages gathering of makers who come together to collaborate, get inspired and share what they’ve made and learned.
• As long as you have an imagination (and a little cardboard) you never have to be bored.
• Innovators are VISIONARY and COLLABORATIVE.

Galileo Makers: Monday

The storyteller reads:
Once upon a time, so long ago that nobody but the storytellers remember, there lived a girl named Lucy. Lucy lived in a place called Land Land where everything was the same. In Land Land, everyone wore the same clothes, ate the same food, drove the same cars and lived in rows of identical houses. And this is how it had been in Land Land for generations. Year after year, it was the same, and that sameness had been the same for Lucy’s parents, her grandparents and her great-great grandparents, all the way back as long as anyone could remember.

It wasn’t such a bad place to live, but Lucy couldn’t help but feel a little tired of all the sameness. Sure, it made it easy to pick out her clothes in the morning and decide what to eat for lunch, but she couldn’t help but feel like there was something... missing.

On the day our story begins, Lucy was sitting in her room doodling, thinking about her family’s big move to a new house later that week. She wanted to be excited about moving, but she just couldn’t muster up any enthusiasm, because in Land Land, new houses were pretty much just the same as old houses. Which meant that her new room would look pretty much the same as her old room, which, in turn, looked exactly the same as her brother’s room... and her best friend’s room... and her best friend’s brother’s room...

"UGH!" Lucy exclaimed, rising to her feet. She was suddenly so fed up with the dreary, tedious BORINGNESS of it all. "Why does EVERYTHING I own have to look exactly the same as everything everyone else owns?" she wondered out loud, waving her pencil around for emphasis. Throwing open her closet door, she scanned racks and shelves stuffed with identical shirts, shoes, toys, books and sports equipment, all in drab, sensible colors. Pushing them aside, she stood considering the back wall of her closet. "Well," she said, looking at the pencil in her hand, "maybe I there's SOMETHING I can make look a little different."

And with that, she drew a big, round, ornate-looking doorknob on the wall in front of her, right where a doorknob would go if the back of her closet were a door instead of a wall. When she was done, she stood back, pleased with her handiwork. In fact, her doorknob looked so real, she almost felt like she could reach out and grab hold of it... so she did. And to her surprise, the knob turned in her hand and her closet wall swung open in front of her like a big door. Speechless and more than a little curious, she took a deep breath and stepped through it.

Lucy blinked in the bright sunlight. As her eyes started to adjust, she noticed three things about her surroundings:

Number one: She wasn’t inside her closet anymore. The warm, dazzling sun and fresh, salty-smelling air made that part pretty obvious.

Number two: She was surrounded by cardboard as far as the eye could see. But not just cardboard boxes and tubes and scraps—cardboard EVERYTHING. There were cardboard trees and flowers, cardboard benches and streetlights, cardboard houses and bicycles... and they were all so DIFFERENT. Every last flower petal and bicycle spoke was different from the one next to it—brightly painted, adorned with trims and tassels, some even wired with lights and switches. She’d never seen anything so intriguing or beautiful in her whole life... certainly not in Land Land.

And the third thing she noticed was the people—because there were plenty of people in this strange new place, and they had started to notice this new, drably dressed visitor. The people here were a little like the place itself: decked out in a variety of colors and cool embellishments, every one totally, marvelously different from the last. There was even a whole batch of kids about her age, sitting right in front of her, who seemed to be campers of some kind...

One of these utterly unique individuals—a boy about her age, wearing a wildly cool, totally wacky cardboard hat and a backpack covered in buttons and lanyards—walked right up to her and stuck out his hand. "Finn's the name," he announced cheerfully, "it's awesome to meet you!" Lucy took his
hand tentatively. "Hello, hello. I'm Lucy," she said, nodding her head twice, as was traditional in Land Land. And then, before she could stop herself, she blurted out, "Um... I'm sorry, but I... I'm just a little confused. Where am I?" Finn laughed. "Oh, how silly of me," he said, "where are my manners? Lucy, welcome to Cardboard Island!"

Galileo Makers: Wednesday

1. Lucy and Finn learn about each other's homes
The storyteller reads: "Now, where did we leave off? Ah yes! There Lucy was, on the other side of a mysterious door in the back of her closet, surrounded by bright people and their bright creations, talking to a boy named Finn..."
- Finn tells Lucy about Cardboard Island, a place covered in cardboard and inhabited by makers, including this group (i.e., the campers), who only just arrived Monday.
- Lucy explains how different this place is from her home and tells Finn what led her here: She's tired of everything being so same-y in Land Land, especially the idea of her not-so-new "new" room in the house she's moving to.

2. Finn and his Cardboard Island friends offer to help
- Excitedly, Finn says that he and his friends are experts at personalizing special spaces—they can help her make stuff for her room!
- Lucy gets excited too, confessing that she sometimes sketches ideas for inventions.
- The pair makes a plan: On Friday, Lucy, Finn and the Cardboard Islanders (including the campers) will put on a Maker Faire (an event Finn has to explain to Lucy) on the island, full of creations she can use in her new room.
- Lucy is thrilled, but she muses that she probably shouldn't tell her parents yet, since she's not sure how they'll feel about all these unique creations in their Land Land home.

3. Lucy gets stuck back in Land Land
The storyteller reads: "A few days passed, with Lucy traveling back and forth between Land Land and Cardboard Island, sharing her sketches and starting to learn how to bring them to life. But one day, when she came rushing home from school, excited to head to the island with a new batch of ideas, she got an awful shock..."

- Lucy finds her dad in her closet, just having painted over her doorknob (an innocent mistake—he saw something out of order and thought he'd fix it).
- Once her dad leaves, Lucy confirms that the door is, in fact, gone.
- She tries redrawing the doorknob but it's no use—she bangs on the door helplessly.

4. The Cardboard Island folks reopen communication
- Just then, a note arrives through the closet wall (the Cardboard Island gang heard her banging and fashioned a quick mail slot), which Lucy reads aloud: "Pretty cool mail slot, huh? We think we can figure out a new door, too. We just need a little time..."

5. The Cardboard Island folks convince Lucy to stay the course
- Lucy is skeptical, but then she hears Finn calling faintly through her wall: He tells her that nothing is impossible if they COLLABORATE—they'll keep planning and making for the Friday Faire (sending plans through the mail slot), plus work on ideas to help them reopen the portal between the two lands.

Galileo Makers: Friday

1. Lucy wraps up the finishing touches on her Maker Faire project
The storyteller reads: "It had been a busy few days since the door in Lucy's closet—the one between her home in Land Land and Finn's home on Cardboard Island—had been accidentally sealed shut. Lucy had been spending that time hard at work, communicating with her friends on Cardboard Island, sending plans back and forth as they generated ideas and creating her own project for Friday's Maker Faire..."
- Lucy finishes her project and holds it up to inspect it, looking proud, then sighs, wondering aloud if she'll ever be able to go to Cardboard Island again—was this all a big waste of time?

2. Lucy reopens the door to Cardboard Island
- Just then, she hears something coming from her closet and walks over to check it out.
- "Is that you, Finn?" she asks.
- "Yup," he responds, and then: "Draw a new doorknob!"
• She doesn’t hear him clearly at first, and once she does, she has to remind him that she already tried redrawing the doorknob with no luck.
• Finn explains that they figured out the secret to unlocking the portal: She can’t just draw the same doorknob again: “We’re makers—it has to be a totally reimagined thing... something the world has never seen before!”

3. Lucy attends her first Maker Faire
The storyteller reads: “Lucy picked up her pencil and studied the wall for a moment, then began to draw a completely new kind of doorknob, this one square and modern-looking with broad stripes running across it. When she was done, she picked up her project, took a few steadying breaths and reached out to turn her new doorknob. And once again, there she was, standing in the dazzling sun of Cardboard Island. But before she could celebrate her successful arrival, she was stopped in her tracks by what she saw: Everywhere she looked, there was a different maker with a different incredible thing—chairs and beds and beanbags; nightlights and desk lamps and fairy lights; clocks and door hangings and murals. It was all so overwhelmingly, astonishingly amazing that she almost couldn’t take it all in... but she wanted to try…”
• Lucy runs around the Faire delightedly, meeting makers, hearing about their projects and sharing her own.

4. Some unexpected visitors show up
• As Lucy begins to run to another booth, she runs smack into her mom and dad.
• Lucy is at a loss for words, but begins to stammer an excuse for what she’s doing and why she’s there, trying to hide her project behind her back.
• Her parents (a little speechless themselves) slowly explain that they’re not mad... they’re impressed—in fact, they remember a time, long ago, when they used to make things, too...
• They ask to see Lucy’s project and marvel at it—they’re inspired by her VISION.
• Overjoyed, Lucy says that she couldn’t have done any of it without the COLLABORATIVE efforts of Finn and her other Cardboard Island friends—the community of makers that welcomed her.

5. The storyteller wraps things up
The storyteller reads: "Lucy, her parents, Finn and the rest of the Cardboard Island makers spent hours together at the Faire that day, showing each other what they made and sharing what they learned making it. The Land Landers started to truly understand the power of creating things the world has never seen before and of working together with interesting, innovative people. And they learned a lesson that Cardboard Islanders, Galileo campers and makers all over the world have known for many years: As long as you have an imagination—and maybe a little cardboard—your life will never be boring.

By the end of the day, Lucy and her parents were so utterly inspired and full of ideas for what else they could make—objects to decorate their new house, to solve everyday problems, to give as gifts—that they couldn’t wait to show everyone back home in Land Land. And that’s exactly what they did. And from that day forward, to their delight, Land Land was never the same again.”

Notes and Additional Ideas
• Your other actors can act out the read-out-loud scenes as the storyteller reads them.
• As inhabitants of Cardboard Island, campers can submit their own ideas/plans for a new door between their land and Land Land.
• Lucy and Finn not being able to hear each other through the wall can be played for comedy: They can stand directly next to each other (with either a cardboard or an imaginary wall between them), shouting as loud as they can, but barely able to make each other out.
• Lucy's project for the Faire can be anything—a camper project or something entirely different.
• On Wednesday or Friday, Lucy can meet real makers (played by staffers) that campers have been learning about, who can share their projects with her.
• On Friday, campers can stage the Maker Faire that Lucy discovers on the other side of her door.
• Feel free to turn Friday's Faire into a deeper exploration of campers' work throughout the week—look at each project and call out (or have campers identify) the Mindset elements and Process steps they used in making it.
Preparation for the Week

This section contains preparation of materials such as cutting paper and cardboard. Give this list to Summer Interns (SIs) who have some time to help Lead Instructors (LIs) or to Team Leaders (TLs) who help LIs do prep work after camp. It also helps you get a sense of the prep needed for the week. It does not include tasks such as setting out materials or preparing a place to store projects. Those suggestions are in the prep section of each lesson.

Day 1 – Cardboard Seat, Part 1 of 3
Days earlier

✏️ Cut pillowcases for the cushion fabric. Cut along the seams to open up the pillowcase and create two separate pieces of fabric. Then, cut those in half to make 15" x 20" pieces of fabric (1 per camper).
✏️ Tape the 15" x 20" fabric to the 16" x 20" cardboard using masking tape so it is pulled taut and is easy to print on.
✏️ Cut the 6" x 6" cardboard in quarters to make 3" x 3" squares for the stamp base (1 per camper).
✏️ Create your own stamp and prepare a sample of printed fabric.
✏️ Assemble one cardboard base to give campers an idea of how the cushion will be used.

Day 2 – Cardboard Seat, Part 2 of 3
Days earlier

✏️ Prepare a sample cushion using the foam, your sample fabric and the 12" x 12" cardboard. You will use this sample for all three rotations, un-taping and re-taping as part of the upholstery demo.
✏️ Prepare a sample of how to use the tape mask on one panel of your sample cardboard base. Apply the tape, paint it, and keep the tape on. You will peel off one piece of tape for each rotation so they can get an idea. As your demo for each rotation you will also apply tape and paint to the remaining three panels (1 per rotation).

Day 3 – Cardboard Seat, Part 3 of 3
Days earlier

✏️ Cut foam into 3" x 12" strips for trim (4 per camper).

✏️ Set out yardsticks for measuring lengths of yarn. Poke one dowel through the middle of each yarn skein so campers can easily unravel the yarn without the skein rolling all over the place. Set one skein next to each yardstick.
✏️ Prepare strips of glue dots to use for assembling the cardboard panels, 7-8 glue dots per strip. Campers will just place the entire strip on the small flap that extends from one of the panels.
✏️ Additionally, prepare glue dot gardens for general glue dot use for embellishments, etc. (20 per camper).

Day 4 – Animal Night Light, Part 1 of 2
Days earlier

✏️ Cut 1.5" x 18" cardboard strips into 1.5" x 4" pieces (1 per camper).
✏️ Create the silhouette light testing stations (4 per classroom).
  • Cut a large rectangle from the center of the 24" x 36" cardboard sheets, leaving about a 3" border on all sides.
  • Borrow butcher paper from Nebbie art. Cut the butcher paper into 24" x 36" sheets and tape them to the cut cardboard, securing the edges.
  • Set up four stations around the room with the cardboard and butcher paper propped upright and the lamp behind it.
收割一个完成的样本为一个夜晚灯。就像我们制作的动物主要形状一样,不要添加这个场景细节为今天的样本。
✏️ Cut copy paper into 6" x 11" sheets (1 per camper).
✏️ Cut black cardstock into 6" x 8" sheets (1 per camper).
✏️ Cut newsprint in half to make 6" x 9" sheets (2 per camper).
✏️ Set up workstations with the following:
  • 6" x 9" newsprint (2 pieces per camper)
  • pencils (1 per camper)
  • scissors (1 per camper)
  • glue sticks (1 per camper)
✏️ Set aside the following to hand out once you’ve checked campers’ sketches:
  • 6" x 11" copy paper (1 piece per camper)
  • 6" x 8" cardstock (1 piece per camper)
✏️ Arrange the classroom so the silhouette testing stations are accessible.
Advance prep

Get a head start on assembling the cardboard strips on the night lights to create the base for attaching the silhouetted shade tomorrow (1 per camper plus a few extras).

Hot glue the 1.5" x 4" cardboard strip to the front of the night light, making sure it doesn’t cover the ON/OFF switch. It also shouldn’t rest on the bulb itself.

Day 5 – Animal Night Light, Part 2 of 2

Days earlier

Assemble the cardboard strips on the night lights to create the bases for attaching the silhouetted scenes (1 per camper, plus a few extras). Hot glue the 1.5" x 4" cardboard strip to the front of the night light, making sure it doesn’t cover the ON/OFF switch. It also shouldn’t rest on the bulb itself.

Cut the black cardstock in half to make 5.5" x 8.5" sheets for the scenic elements (1 per camper).
Day 1

Cardboard Seat, Part 1 of 3

Fabric Pattern

Makers find ways to create things themselves that they would normally buy. Today campers embark on making a functional seat, starting with creating a stamp and printing on fabric that will become the cushion.

The Big Picture

Lesson Breakdown

<table>
<thead>
<tr>
<th>Activity</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Welcome to Art</td>
<td>10 min</td>
</tr>
<tr>
<td>Introduction</td>
<td>5 min</td>
</tr>
<tr>
<td>Demo &amp; Discussion: Creating a Stamp Intro</td>
<td>10 min</td>
</tr>
<tr>
<td>Camper Work Time: Creating a Stamp</td>
<td>30 min</td>
</tr>
<tr>
<td>Clean Up</td>
<td>5 min</td>
</tr>
<tr>
<td>Wrap Up</td>
<td>10 min</td>
</tr>
</tbody>
</table>

GIA Focus

Innovator’s Process Focus: EVALUATE

Innovator’s Knowledge Focus: SKILLS AND TECHNIQUES

Innovator’s Mindset Focus: BE REFLECTIVE – I think about what is and isn’t working in my design.

What’s Next: Tomorrow (Day 2) campers will continue with adding paint to the cardboard base using a tape masking technique. On Day 3, campers will assemble the cardboard seat and add trim and tassels.
How to Create Today’s Project

**Step-by-Step Pictorial**

This is intended to help you understand how to create today’s project. It doesn’t describe how you’ll facilitate this lesson for campers. You’ll need to read the “Play-by-Play” section for this information.

Creating the Stamp

Choose sticky back foam shapes and arrange them on the 3” x 3” cardboard. Wait to peel off the sticky back until a few arrangements have been tested.

Test the stamp on newsprint with any paint color, and evaluate what could be improved. Make any changes to the stamp design or printing technique.

Once a final design is chosen, peel off the sticky back on the foam and adhere the shapes to the cardboard.
Fig. 5
Choose one main paint color. Mix three to five tints and shades of the color by adding white and black to it in increments.

Fig. 6 – Testing gradient colors

Fig. 7 – Testing gradient colors
Test out the mixed colors by printing with the stamp on newsprint. Also practice printing the stamp repeatedly close together.

Fig. 8 – Printing the gradient on fabric
Print the stamp on the 15" x 20" fabric. Print in a gradient to cover the fabric completely.
Get Ready!

Lesson Materials
* (starred) items are choice materials; un-starred items are required for each camper

Pre-Assembly
(You’ll need to cut the fabric and tape it to the cardboard for printing.)
- pillowcase, standard, white, 20" x 30", for printing/cushion fabric (1 per 4 campers)
- cardboard, corrugated, 16" x 20", taped to fabric for printing support (1 per camper)
- tape, masking, 1" (12" per camper)

Intro Materials
- example of assembled box, for demo (1 per LI)
- example of printed fabric, for demo (1 per LI)

Demo & Discussion: Creating a Stamp Intro
- copy, color, Patterns on Fabric (4 per classroom)
- materials from Camper Work Time, for demo (1 set per LI)

Camper Work Time: Creating a Stamp
creating and testing the stamp
- foam, geometric shape, asst. colors, sticky back, for creating stamp design (10 per camper)
- cardboard, corrugated, 6" x 6", for stamp base (one 3" x 3" piece per camper)
- paint, acrylic, turquoise (2 tsp. per camper)
- paint, acrylic, green (2 tsp. per camper)
- paint, acrylic, yellow (2 tsp. per camper)
- paint, acrylic, red (2 tsp. per camper)
- paint, acrylic, magenta (2 tsp. per camper)
- paint, acrylic, black (2 tsp. per camper)
- paint, acrylic, white (2 tsp. per camper)
- cup, plastic, 9 oz., for holding paint (7 per 4 campers)
- spoon, plastic, for spooning paint onto palette (7 per 4 campers)
- plate, paper, coated, 6", for palette (1 per camper)
- container, plastic, deli, 16 oz., for water (1 per 2 campers)

- paintbrush, flat, 1" (1 per camper)
- paper, newsprint, 9" x 12", for test prints (2 per camper)
- towel, paper, roll, sheet (2 per camper)

Printing on fabric
- prepared 15" x 20" fabric taped to 16" x 20" cardboard (1 per camper)
- all paint/paint supplies from above

Preparation

Days earlier
- Cut pillowcases for the cushion fabric. Cut along the seams to open up the pillowcase and create two separate pieces of fabric. Then,...
- Tape the 15" x 20" fabric to the 16" x 20" cardboard using masking tape so it is pulled taut and is easy to print on.
- Cut the 6" x 6" cardboard in quarters to make 3" x 3" squares for the stamp base (1 per camper).
- Create your own stamp and prepare a sample of printed fabric.
- Assemble one cardboard base to give campers an idea of how the cushion will be used.

Day before
- Think about how you want to set up your classroom. Depending on the size of your class, it might be a good idea to move some or all of the campers to the floor. If you do this, be sure to clearly set up groups on the floor with paint in a central location.

Morning of
- Set up table groups/stations on the floor:
  - Set up paints in 9 oz. plastic cups at the table groups (all 7 colors per group of 4 campers).
  - Place plastic spoons in the paint cups for spooning paint onto the paper plate palettes.
  - Fill 16 oz. deli containers with water (1 per 2 campers) and place them at the table groups.
  - Have brushes (1 per camper) and paper plate palettes (1 per camper) at the stations.
Suggested Materials Management

- If there are some paint palettes with perfectly good color mixes left over at the end of the rotation, set them aside as an option for campers who might want to use those colors.
- Remind campers not to use too much paint, as they don’t need that much to do a few prints of each color they create.
- The paint cups and spoons will need to be reused for the same paint colors tomorrow.
- Save the spoons for the next time you teach this lesson.

Suggestions for Large Classes
None

Check In With Your TL
Make sure your TLs are clear about their role in helping today’s lesson run smoothly. Specific ways TLs can help today are listed in the dotted overview boxes throughout the lesson.

On the Board
EVALUATE and BE REFLECTIVE

- How do you like the arrangement of shapes on your stamp?
- How clearly is your stamp printing? How might you change your printing technique?
- How closely are you printing each stamp? Are you filling the space?
- How do you like the colors you’ve mixed?

Vocabulary

pattern – repeated shape, color, or design
functional – usable

Teaching the Lesson: Overview

Instructional Priorities & Supporting Innovation

These are the key lesson elements you’re expected to communicate/support today. Think of this as the blueprint of a successful lesson. When applicable we’ve included details about why an element is important for innovation.

Demo & Discussion: Creating a Stamp Intro
★ Demonstrate the TECHNIQUE for creating the foam stamp, emphasizing the importance of filling the space and trying a few arrangements before adhering the shapes.
★ Demonstrate how to TEST and EVALUATE the stamp.
★ Introduce the CONCEPT of gradients and demonstrate the TECHNIQUE to create them with paint.

Throughout the Lesson
★ Support the Innovator’s Mindset Challenge: BE REFLECTIVE – Campers take time to think about the best printing techniques and make sure they are happy with the designs and colors they’ve created.

Why – Supporting campers to notice how each print is coming out will help them recognize when and how they can change how they’re working to achieve a better result.
Teaching the Lesson: Play-by-Play

Welcome to Art (10 min)
It’s important to set clear expectations for the whole week. Go over daily procedures you’ll want campers to be familiar with (what they do when they first come in, what materials they can and can’t touch, where they put projects, etc.). Have campers come up with agreements about how they can respect you, one another, and the space and materials.

Introduce the idea of being an innovator. Say: We’ll be learning about art all week, but we’ll also be practicing being Galileo innovators. Being an innovator is a really important job. Innovators think of really great ideas and can turn them into something real!

Point out your Innovator’s Process poster. Say: These are the steps that good innovators follow to help them make amazing creations. They come up with a lot of ideas, test them out, and redesign to make them better.

Point out your Innovator’s Mindset poster. Say: This is how good innovators think and act. They try new ideas, they work together, and they don’t give up!

Say: Are you ready to innovate?! Let’s get started!

Introduction (5 min)
Welcome campers and make a quick story connection
Did you all hear a story about Lucy this morning? How’s she feeling? (She’s frustrated that her room looks exactly the same as everyone else’s in Land Land.) Well, maybe we can cheer her up by creating some totally original designs to make her bedroom – and yours – stand out.

Introduce the week’s theme
• Explain that week’s theme is all about Making, which means creating things oneself.
  ▪ This includes tools, things for games and play, and totally new inventions.
  ▪ This week, campers are making things that are useful for every day.
  • Explain that people who make things are called makers. The maker community is a space where makers can come together to share ideas.
  • Tell campers they’ll be learning about some current-day makers who are creating things similar to the things they’ll be making at camp.
  • If this is your second or third rotation you can ask campers to tell you what they know about making and makers, since they will have gotten this introduction in science.

Build excitement for today’s project
• Explain that this week campers are going to make objects that they can use in their rooms. Often people think of art as decoration, but many products created by designers are also functional!
• Tell campers that for the first three days this week they’ll be making their very own seat with a cushion!
• Show campers the sample printed fabric you’ve made, and show them a cardboard base.
• Explain today’s focus: creating the pattern for the fabric cushion that will go on the top, and printing on the fabric with a stamp.

Introduce the Innovator’s Mindset: BE REFLECTIVE ★
• Point to this on your Innovator’s Mindset poster.
• Define the Mindset element in the context of today’s lesson. Say: Today we’re going to practice being reflective, which means thinking carefully about our work. Today we’ll do that by testing the designs we make for our stamps and making changes until we like them. We’ll also be reflective by testing out the colors we mix for printing, and adjusting them until we like all of them.

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Demo & Discussion: Creating a Stamp Intro (10 min)

What You’ll Need to Cover: Overview
- Introduce and discuss the ideas of patterns and of patterns on fabric.
- Demo how to create a stamp using the foam shapes.
- Demo how to test the stamp and support BEING REFLECTIVE.
- Demo creating and evaluating additional test prints.
- Introduce color gradients.
- Demo how to mix and evaluate color gradients.

What You’ll Need to Cover: Details
Introduce and discuss the ideas of patterns and of patterns on fabric
- Ask: What is a pattern? Can you find any patterns in the room?
  (A pattern is something repeated – shape, color, or design. Artists use patterns a lot, especially with fabric.)
- Explain that campers will be stamping a pattern on the fabric by printing their stamps over and over again.
- Show the Patterns on Fabric color copy (below) to give campers an example of how this concept is used in furniture.

- Emphasize that today their stamp designs don’t have to be created in a pattern. The design will become a pattern when campers print the stamp over and over.

Demo how to create a stamp using the foam shapes ★
- Show your sample of a stamp on cardboard. Explain that campers will make a fun and funky pattern using all kinds of foam shapes.
- The foam shapes have sticky backs, so campers can just peel them off.
- Emphasize that campers will want to try out a few designs first before they stick anything on.
- Introduce the idea that the goal for the design on cardboard is to fill the space in an interesting way.
  ▪ Arranging the pieces is almost like doing a puzzle; you have to see how the edges and angles fit.
  ▪ You can try to make a design that is the same on both sides, or has the same shape going all the way around, or you can just find an interesting way to put all the shapes together.
- Review the Mindset Challenge ★ – Point out that this is a great time to practice being reflective by thinking about how they like their designs and what they might want to change. Taking this extra time now will pay off later, since it’s trickier to change the design once the foam shapes are stuck to the cardboard.
- Demo arranging some shapes first, and then peeling the sticky backs off the foam pieces and sticking them to the cardboard.

Demo how to test the stamp and support BEING REFLECTIVE ★
- Explain that they will be testing the stamps with paint on newsprint paper until they’ve got everything ready to go for the final printing on fabric.
- For the first test, they can just use any color, and carefully coat the stamp with paint.
- Have campers share what they notice about how you are applying paint (carefully, evenly, not too gloppy, not too thin).
- Have campers share how they think you should print – try out their suggestions.
- Make sure you arrive at the following insights about the best way to get a clear print:
  ▪ Start with an even coat of paint.
  ▪ Place the stamp down carefully.
  ▪ Press all over the stamp (you don’t have to press too hard).
  ▪ Pull up carefully.
Demo creating and evaluating additional test prints ★
- Demo wiping the stamp off.
- Let campers know that if they want to they can add or remove some shapes before reprinting. (Removing shapes is easier than adding them.)
- Support BEING REFLECTIVE ★ – Model reflection and have campers help you reflect on how your print came out and what you might do differently or again for your next test print.
- Do a few more test prints.
- Emphasize that campers should practice lining the stamps up as closely as possible to fill the space and make it look like a pattern.
- Support BEING REFLECTIVE – Continue to model evaluating and reflecting on each print. Remind campers to think of the following as they work:
  - How clearly the stamp is printing
  - How they like the arrangement of shapes
  - How closely they’re printing each stamp/how they’re filling the space

Introduce color gradients ★
- Once they are happy with their stamps, they will mix paint colors.
- Announce that part of today’s challenge is that the stamped design is a gradient.
  - A gradient is when color changes from light to dark or dark to light.
  - This is also called creating tints and shades. Tints are lighter and shades are darker.
- Explain that tints and shades are created by adding a little bit of white or black to a base color.

Demo how to mix and evaluate color gradients ★
- Pick a color (e.g., green). Show campers how to just spoon a little bit onto the plate palette. They will be mixing three to five colors on the plate.
- The green color straight from the bottle is going to be like the middle shade.
- Demo how to pull paint from the original puddle and add a tiny bit of white to it. Add more for an even lighter color.
- Do the same on the other side, but with black, to create a darker color. Add more black to make it even darker.
- Review the Mindset Challenge ★ – Let campers know that this is another good time to be reflective. They should take the time to make sure they like the colors they’ve mixed before they print on their fabric.
- Let campers know they’ll do a few more test prints in color.
- When they’re happy with their stamps and colors they’ll raise their hands to get their final fabric.
- Review the Mindset Challenge ★ – Emphasize that it’s important to take as much time as they need to test and evaluate their printing techniques, designs, and colors. Once they press the stamp down on the final fabric there’s no undoing it.

Camper Work Time: Creating a Stamp (30 min)

<table>
<thead>
<tr>
<th>During Work Time Campers Will…</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DESIGN (stamp design) ★</strong></td>
<td></td>
</tr>
<tr>
<td>1. Choose foam shapes and try out some arrangements on the 3&quot; x 3&quot; cardboard for a stamp design.</td>
<td></td>
</tr>
<tr>
<td>2. Once happy with the design, peel off the sticky backs on the foam and adhere the shapes to the cardboard.</td>
<td></td>
</tr>
<tr>
<td><strong>TEST AND EVALUATE (stamp design) ★</strong></td>
<td></td>
</tr>
<tr>
<td>3. Test the stamp on newsprint with any paint color, and evaluate what could be improved.</td>
<td></td>
</tr>
<tr>
<td><strong>CREATE AND TEST (paint gradients) ★</strong></td>
<td></td>
</tr>
<tr>
<td>4. Once the stamp design is final, choose a paint color to make a gradient.</td>
<td></td>
</tr>
<tr>
<td>5. Mix three to five tints and shades of a particular paint color by adding white and black.</td>
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<tr>
<td>6. Test out the mixed colors by printing on newsprint.</td>
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<tr>
<td><strong>CREATE (final printed fabric)</strong></td>
<td></td>
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<tr>
<td>7. Once happy with the colors, print the stamp on the 15&quot; x 20&quot; fabric.</td>
<td></td>
</tr>
</tbody>
</table>

**Extension**
Layer a second color on top of the stamps, being careful to line up the stamps as closely as possible.

**How Your TL Can Help**
- Work with campers who are having a hard time getting clear test prints.
- Help hand out fabric as campers are ready.
Facilitate the Project Steps

**DESIGN (stamp design) (Steps 1-2) ★**
- Really make sure campers are trying out arrangements before peeling off the sticky backs. If you notice this is a problem, you can even make a rule that no one can peel off the sticky backs until you say the magic word, and until that time, everyone should just be trying out different arrangements.
- Support campers who might be having a hard time figuring out how to fill the space for the stamp.

**TEST AND EVALUATE (stamp design) (Step 3) ★**
- Remind campers to wipe down their stamps before they make changes.
- Help campers refine their testing techniques to achieve better prints.
- Ask the Guiding Questions that support evaluating stamp designs and prints.

**CREATE AND TEST (paint gradients) (Steps 4-6) ★**
- Watch out that campers are using an appropriate amount of paint on their palettes.
- Help campers practice aligning their stamps so they print a tight pattern with little space in between prints.
- Ask the Guiding Questions that support evaluating paint colors.

**CREATE (final printed fabric) (Step 7)**
- Hand out fabric as campers are ready.
- Talk to campers about their plans and remind them to be extra careful as they print on the fabric.

**Extension**
- If campers do want to add a second color, make sure they think about what will or won’t show up on top of whatever they have already printed.

Support BEING REFLECTIVE ★

**Suggest strategies that help and encourage campers to be reflective**

Some specific strategies for today:
- Looking at their work carefully before making any choices that will be harder to revise (like sticking the foam on the cardboard, or printing on fabric).
- Looking at their work from afar or from a different perspective (like turning it upside-down). This is a good trick artists use to help them notice new things about their pieces.
- Making small changes instead of big ones. This is a great way to really notice what’s going on in a design.

**Recognize reflective campers**

This encourages the camper and helps others see how they can be reflective as well. Recognition can be just verbal or include some kind of physical award. Be sure to be specific about how you see campers being reflective.

Some ways you might see reflection today:
- Using any of the strategies mentioned above
- Spending a few extra minutes planning their stamps
- Testing on paper several times
- Continuing to think about how each print is coming out as they print on the final fabric

**Ask the Guiding Questions that support being reflective**

**Clean Up (5 min)**

- Have campers throw out their paper palettes and place their brushes in the sink or bucket.
- Have your TL help you wash brushes for the next rotation.
- Acrylic paint dries fast. If you need to make space for this rotation’s prints, you can stack the prints from your previous rotation.
Lesson Wrap Up (10 min)

Recognition and Reflection (EVALUATE and BE REFLECTIVE)
Help campers see how they or others embraced the Innovator’s Process and Mindset, and why this is important for innovation.

Suggested recognition and reflection activity
• Have campers pat themselves on the back if they practiced being reflective in the following ways:
  ▪ Trying at least two different shape arrangements with the foam pieces before sticking them on the cardboard
  ▪ Noticing that they could make their designs/prints better in some way and making a change to do so
  ▪ Thinking extra carefully about what they were doing when printing on the final fabric
• Have campers share what kinds of things they noticed and changed about their stamp designs, the way they used their stamps, and mixing colors.
• Recognize campers for their thoughtfulness today and highlight that these prints will make their final chairs really impressive.

Application
Leave campers with a challenge or prompt to help them apply today’s learning outside your classroom.

Suggested challenges/prompts:
• Challenge campers to find three examples of pattern on fabric, particularly furniture fabric.
Day 2
Cardboard Seat, Part 2 of 3
Upholstery and Painting
Camper's continue with adding paint to the cardboard base using a tape masking technique.

Tape masking technique, without paint (above) and with paint (below)

The Big Picture

Lesson Breakdown

<table>
<thead>
<tr>
<th>Activity</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>5 min</td>
</tr>
<tr>
<td>Demo &amp; Discussion: Painting with a Tape Mask Intro</td>
<td>10 min</td>
</tr>
<tr>
<td>Camper Work Time: Painting with a Tape Mask</td>
<td>40 min</td>
</tr>
<tr>
<td>Clean Up</td>
<td>5 min</td>
</tr>
<tr>
<td>Wrap Up</td>
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GIA Focus

Innovator's Knowledge Focus: SKILLS AND TECHNIQUES
Innovator's Process Focus: GENERATE IDEAS
Innovator's Mindset Focus: BE VISIONARY – I imagine things that don’t yet exist.

What's Next: Tomorrow (Day 3) campers will add trim and tassels and do the final assembly to complete their chairs.
How to Create Today’s Project

Step-by-Step Pictorial

This is intended to help you understand how to create today’s project. It doesn’t describe how you’ll facilitate this lesson for campers. You’ll need to read the “Play-by-Play” section for this information.

Painting with a Tape Mask

Pull and cut three 12" pieces of blue tape from the table tape dispenser. Use the ruler hanging next to the tape to measure them. (Tape dispensers will be set up for campers ahead of time.)

Create patterns and designs with the blue tape on the first panel.

Repeat the process for all four panels, creating a different tape pattern/design on each one.

Above is a camper’s tape design.
Fig. 5 – Painting the panels

Fig. 6 – Painting the panels
Mix colors and paint at least two coats over each panel.

Upholstery (if time allows)

Fig. 7
Flip the fabric over so the printed side faces down.

Fig. 8
- Place the foam square in the middle of the fabric.
- Next, place the cardboard square directly over the foam. Make sure everything is lined up.
Fig. 9
Fold in two of the sides and tape them down securely. Pull the fabric tight so the edges look clean.

Fig. 10
Fold in the other two sides and tape them down. You may need two layers of tape. Ensure that the tape is flat and the fabric is flat.

Fig. 11
Flip over the folded cushion and check to see how it looks. Make sure the edges are tight.
Get Ready!

<table>
<thead>
<tr>
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<td>* (starred) items are choice materials; un-starred items are required for each camper</td>
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</table>

Pre-Assembly  
(You will need to create “tape dispensers” at each table group.)
- ruler, 12” (1 per 4 campers)
- tape, blue, 1” (1 roll per 4 campers)
- dowel, wood, ⅜” x 18”, for hanging ruler and tape (1 per 4 campers)

<table>
<thead>
<tr>
<th>Intro Materials</th>
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</thead>
<tbody>
<tr>
<td>- sample of a prepared cushion top, to use as an example for all three rotations (1 per LI)</td>
</tr>
<tr>
<td>- sample of one taped and painted panel on a cardboard base, to use as an example for all three rotations (1 per LI)</td>
</tr>
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<tr>
<th>Demo &amp; Discussion: Painting with a Tape Mask Intro</th>
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<tr>
<td>- sample of one taped and painted panel on a cardboard base, to use as an example for all three rotations (1 per LI)</td>
</tr>
<tr>
<td>- tape, blue, 1”, for creating a sample tape mask (36” per LI, per rotation)</td>
</tr>
<tr>
<td>- all other materials from Camper Work Time (1 set per LI)</td>
</tr>
<tr>
<td>- copy, color, Tape Masking Examples (1 per 4 campers)</td>
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</tbody>
</table>

<table>
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<tr>
<th>Camper Work Time: Painting with a Tape Mask</th>
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</thead>
<tbody>
<tr>
<td>tape mask</td>
</tr>
<tr>
<td>- cardboard, corrugated, box, white, 10” x 10” x 12”, unassembled, for seat base (1 per camper)</td>
</tr>
<tr>
<td>- tape, blue, 1”, for creating tape mask on panels (12 ft. per camper)</td>
</tr>
<tr>
<td>- pre-made “tape dispenser” at table groups (2 per table group)</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>painting</th>
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<tbody>
<tr>
<td>- paint, acrylic, turquoise (2 tsp. per camper)</td>
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<tr>
<td>- paint, acrylic, green (2 tsp. per camper)</td>
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<td>- paint, acrylic, magenta (2 tsp. per camper)</td>
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<tr>
<td>- paint, acrylic, black (2 tsp. per camper)</td>
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</tbody>
</table>

| paint, acrylic, white (2 tsp. per camper) |
| cup, plastic, 9 oz., for holding paint (7 per 4 campers) |
| spoon, plastic, for spooning paint onto palette (7 per 4 campers) |
| plate, paper, coated, 6”, for palette (1 per camper) |
| container, plastic, deli, 16 oz., for water (1 per 2 campers) |
| paintbrush, flat, 1” (1 per camper) |
| paper, newsprint, 9” x 12”, for test prints (2 per camper) |
| towel, paper, roll, sheet (2 per camper) |

<table>
<thead>
<tr>
<th>Extension</th>
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<tbody>
<tr>
<td>- sample of prepared cushion top, to use as an example for all three rotations (1 per LI)</td>
</tr>
<tr>
<td>- tape, masking, 1”, for upholstery demo (12” per LI, per rotation)</td>
</tr>
<tr>
<td>- printed 15” x 20” fabric (1 per camper; from yesterday)</td>
</tr>
<tr>
<td>- foam, polyurethane, 0.5” x 12” x 12”, for cushion (1 per camper)</td>
</tr>
<tr>
<td>- tape, masking, 1”, for attaching fabric and foam to cardboard (12” per camper)</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Preparation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Days earlier</td>
</tr>
<tr>
<td>- Prepare a sample cushion using the foam, your sample fabric and the 12” x 12” cardboard. You will use this sample for all three rotations, un-taping and re-taping as part of the upholstery demo.</td>
</tr>
<tr>
<td>- Prepare a sample of how to use the tape mask on one panel of your sample cardboard base. Apply the tape, paint it, and keep the tape on. You will peel off one piece of tape for each rotation so they can get an idea. As your demo for each rotation you will also apply tape and paint to the remaining three panels (1 per rotation).</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Day before</th>
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<tbody>
<tr>
<td>- Prepare two “tape dispensers” at each table group for easy tape management as campers are working.</td>
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</tbody>
</table>
  - Securely tape the dowel to the edge of the table so a little less than half of it extends off the table. Secure the end of the dowel on the table well, as otherwise it will start to come off as campers tug on the roll. |
  - Slide a roll of blue tape onto the dowel. Attach a ruler to the end of the dowel with blue tape, hanging it to where the tape starts to actually pull off the roll (following photo). |

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Morning of

Set up table groups/stations on the floor for painting:
- Set up paints in 9 oz. plastic cups at table groups (all 7 colors per group of 4 campers).
- Place plastic spoons in paint cups for spooning paint onto plate palettes.
- Fill 16 oz. deli containers with water and place at table groups (1 per 2 campers).
- Have 1" flat brushes and paper plate palettes (1 per camper) at stations.

Suggested Materials Management
- The tape dispensers are essential for tape management for this project. Be sure to set them up and test them out.
- Reuse the same paint cups and spoons that were used yesterday.

Suggestions for Large Classes
Again, be clear about where the work spaces are on the floor so space is used efficiently and campers aren’t stepping on each other’s projects or knocking over paint and water. If you need to, section off areas with a little bit of tape so it’s even more clear.

Check In With Your TL
Make sure your TLs are clear about their role in helping today’s lesson run smoothly. Specific ways TLs can help today are listed in the dotted overview boxes throughout the lesson.

On the Board

Guiding Questions
SKILLS AND TECHNIQUES and BE VISIONARY
- What colors/tape patterns do you imagine?
- What if you use smaller/longer pieces of tape? Overlap/don’t overlap tape? Place the tape all over/just in one area?

Vocabulary
upholstery – the act of giving furniture, especially seats, a cover with fabric and padding
tape mask – using tape to seal off certain parts of a painting from the paint; can be used to create a design

* Decide how you want to set up your classroom for painting. The unassembled cardboard bases are pretty large, so probably only two campers could work at the table at a time.
* Set aside materials for the upholstery Extension so they are ready for quick and easy distribution in the circle:
  - printed fabric (1 per camper)
  - 12" x 12" foam piece (1 per camper)
  - 12" x 12" cardboard (1 per camper)
  - pieces of 3" masking tape (about 6 per camper)
Teaching the Lesson: Overview

Instructional Priorities & Supporting Innovation

These are the key lesson elements you’re expected to communicate/support today. Think of this as the blueprint of a successful lesson. When applicable we’ve included details about why an element is important for innovation.

Demo & Discussion: Painting with a Tape Mask Intro
★ Use your pre-made sample to demonstrate the TECHNIQUES campers need to be successful in this project: using the tape dispenser, creating patterns with tape, and painting carefully.
★ Show examples to help campers GENERATE IDEAS about tape designs.

Camper Work Time: Painting with a Tape Mask
★ Use the sample cushion to demonstrate the TECHNIQUE of how the cushion materials will be arranged, adhered and checked.

Throughout the Lesson
★ Support the Innovator’s Mindset Challenge: BE VISIONARY – Campers imagine and design four distinct panels to turn their cardboard seat bases into unique, personalized creations.

Teaching the Lesson: Play-by-Play

Introduction (5 min)

Build excitement for today’s project
• Announce that today campers are going to design stool bases that are as amazing and colorful as the fabric they created for their stool tops.
• Tell campers they’ll be using a special tape-and-paint technique to create totally unique designs!

Introduce the Innovator’s Mindset: BE VISIONARY ★
• Point this to on your Innovator’s Mindset poster.
• Define the Mindset element in the context of today’s lesson. Say: As we work today we’re going to practice being visionary. This means using our imaginations to envision something that’s not there yet. Today we’ll practice that by imagining how we can transform the plain cardboard base into four different designs on each side.

Demo & Discussion: Painting with a Tape Mask Intro (10 min)

What You’ll Need to Cover: Overview
• Introduce the idea of using tape as a painting mask. ★
• Demonstrate how to use the table tape dispenser. ★
• Review tips and techniques for arranging the tape on the cardboard. ★
• Brainstorm tape patterns/designs as a group and support BEING VISIONARY. ★
• Give painting guidelines and demo how to paint over the mask. ★
• Review the steps before releasing campers to the paint stations.

What You’ll Need to Cover: Details
Introduce the idea of using tape as a painting mask ★
• Show campers your pre-painted, unassembled cardboard base sample to help them understand what the tape mask will look like once they are finished painting.
• Explain that a tape mask blocks the paint, so when everything is dry, you can peel away the tape and are left with clean lines in between paint sections.
• Peel away a little bit of your tape now to show the final effect.
• Announce that today’s design challenge is to create a different design on each of the four sides/panels of the box.

**Demonstrate how to use the table tape dispenser ★**
- Taping is a huge part of today’s learning. Campers are designing with tape, so it’s important they understand how to use it.
- Point out the special tape set up at each table group that they’ll use to measure and cut their own tape.
- Show how to use the tape dispenser by pulling the end of the tape until it reaches the end of the ruler that is hanging next to it. Then cut it, keeping one hand on the end of the tape.
- Emphasize not pulling too hard or the dowel will start to pull off the table.
- Ensure campers understand how to use the tape dispenser. If you have time, have one or two volunteers try it out themselves.
- Instruct them to cut three 12” pieces of tape for each panel. From there, they can create shorter pieces of tape to create interesting designs.

**Review tips and techniques for arranging the tape on the cardboard ★**
- After they’ve got three pieces of tape to work with, the next step is to place the tape on the cardboard!
- In general, they want to be careful not to get the tape all twisted.
- Encourage campers to let their pieces hang off the side of the desk, or stretch them out on the floor or paint tray, until they are ready to use them.
- Holding the tape with two hands (one on each end) helps prevent the tape from getting twisted and knotted.
- As they start to arrange the tape on the cardboard, a good practice is to place one end on the cardboard, and then cut it into smaller pieces.
- Tape is easier to work with if it’s pulled tight, and it will be easier to cut if they open the scissors wide and place the tape right up into the crease of the two blades.
- Campers should make sure the tape is smoothed on so the paint doesn’t seep underneath. It doesn’t need to be rubbed on intensely, but just make sure there are no gaps.

• Finally, let campers know they should not tape or paint on the flaps. These parts will get folded in once they assemble the box. Everyone can bend the flaps a little bit as a reminder and so they pop out a little bit more.

**Brainstorm tape patterns/designs as a group and support BEING VISIONARY ★**
- Review the Mindset Challenge ★ – Remind campers that today is all about being visionary by transforming the plain cardboard into a unique creation.
  - Cup your hands around your eyes like visionary binoculars and look at your second (blank) panel. Say: “I seeeee the future of this panel! It’s blank now, but it’s going to be covered with an amazing pattern!”
  - Emphasize that even with just three pieces of tape, there are endless design possibilities.
- Ask campers to share ideas for breaking up the space just using the three 12” pieces of tape as is. Let them know that the tape can overlap.
- Draw the ideas on the board. Get them started if they are having a hard time: for example, three vertical stripes, three horizontal stripes, diagonal stripes, a criss-cross with a horizontal or vertical line going through it, etc.
- Get a handful of ideas, and then ask campers how they could break up the space by cutting one of the pieces of tape into smaller pieces.
- Again, start simple. Draw an example on the board of two vertical lines, and a few smaller lines in between them.
- Take campers’ suggestions and/or have volunteers come up to the board and draw their ideas.
- Remind them that they do have a limited amount of tape to work with for each panel, so they probably don’t have enough tape to make lots of really tiny sections.
- Once campers have generated a good number of ideas on their own, show them the Tape Masking Examples color copy (below) for other ideas.
• Choose one design to demo and actually create it on the second (blank) cardboard space. You will also use this space to demo painting techniques.
• Emphasize that every panel should be different. Even if they want to keep their designs simple, there are lots of ways to make each panel different.

Give painting guidelines and demo how to paint over the mask ★
• Tell campers that the colors they use on the seat base can also help the panels to look different.
• Support BEING VISIONARY ★ – Put your visionary “binoculars” back on and say “I’m getting a vision of the panel being covered in a beautiful, bright green!”
• As you paint, demo and emphasize key painting techniques that are important to keep in mind.
  ▪ Use at least two coats of paint for each section they are painting to make sure the color is really solid.
  ▪ Make sure all the brushstrokes are going in the same direction. Demonstrate how to use the brush gently, and pick it up once you reach the end of the space and bring it back down on the other side.
  ▪ Paint up to and over the tape lines to get a clean edge later. Emphasize that the paint should go right over the tape.
• Support BEING VISIONARY ★ – Have campers put their visionary binoculars on and ask what other color possibilities they’re getting visions of. Some ideas:
  ▪ Create four different gradients, one for each panel
  ▪ Rainbow colors
  ▪ All warm/cool colors
  ▪ Matching the cushion

Review the steps before releasing campers to the paint stations
• Quickly review with campers how to use the tape dispenser, how much tape they need for each panel, how to handle the tape, and the goal for each panel.
• Review how the classroom is set up and anything they need to know about the paint stations, and if they need a heads-up for any clean up.

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Camper Work Time: Painting with a Tape Mask (40 min)

**During Work Time Campers Will...**

CREATE
1. Pull and cut three 12" pieces of blue tape from the table tape dispenser.
2. Create patterns and designs with the blue tape on the first panel.
3. Repeat the process for all four panels, creating a different tape pattern/design on each one.
4. Mix colors and paint at least two coats over each panel.

**Extension**
• As campers finish, give them materials to do the upholstery and give them a quick demo, following the steps shown in the pictorial.
• Make sure campers start with the fabric print-side down.
• Emphasize making sure the foam is in the center of the fabric and the cardboard is lined up with the foam.
• Encourage campers to help each other pull the fabric tight while taping so the cushion looks neat.

**How Your TL Can Help**
• Help campers struggling with tape.
• Help manage the paint stations.

**Facilitate the Project Steps**

CREATE (Steps 1-4)
• Help campers with the tape dispenser, and make sure they are only taking tape for one panel at a time.
• Keep an eye on the dispenser stations and reinforce any that are coming loose.
• Make sure campers are laying their tape flat.
• Help manage the paint stations and refill water as necessary.

**Extension**
• Circle back to any campers who need extra help with the cushions.

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Support BEING VISIONARY ★
Suggest strategies that help and encourage campers to be visionary
Some specific strategies for today:
• Doing something totally opposite from the design they just created
• Mashing up two designs to make a new one
• Using their visionary binoculars to “see” (imagine) the future designs and colors of each cardboard panel
• Taking a gallery walk to see how many different ways their teammates are making designs and using color (encourage campers to combine these ideas with their own to make brand-new ideas)

Recognize visionary campers
This encourages the camper and helps others see how they can be visionary as well. Recognition can be just verbal or include some kind of physical award. Be sure to be specific about how you see campers being visionary. Some ways you might see vision today:
• Using any of the strategies mentioned above
• Trying something they haven’t seen anyone else try
• Pushing themselves to try four really different ideas
• Talking to neighbors for more ideas

Ask the Guiding Questions that support being visionary

Clean Up (5 min)
• Use the buckets for clean up. Have campers dump their dirty paint water in one bucket, and drop their dirty brushes in another.
• You can also have one bucket set up for a hand-washing station.
• They can stack the deli containers in the sink for cleaning.

Lesson Wrap Up (10 min)

Review (SKILLS & TECHNIQUES)
Give campers a chance to review what skills and techniques they learned and used to make their awesome creations today.

Suggested review activity
• Have campers touch their noses/tap their heads/rub their bellies, etc. if they:
  ▪ Learned and practiced a new way to use tape
  ▪ Were able to make sure all the tape was smooth on the cardboard
  ▪ Learned and practiced a new way to make brushstrokes
  ▪ Used tape and paint to create four awesome designs on their cardboard seats

Recognition and Reflection (BE VISIONARY)
Help campers see how they or others embraced the Innovator’s Mindset, and why this is important for innovation.

Suggested recognition and reflection activity
• Hold up three very different bases as examples of the group’s amazingly unique visions!
• Have campers raise their hands if they were able to imagine four totally different tape designs and/or color schemes. Have a few campers share which ideas were their favorite/most visionary!
Day 3

*Cardboard Seat, Part 3 of 3*  
*Trim and Tassels*

Campers assemble the cardboard seat and add trim and tassels.

**Example of a finished seat with an upholstered cushion, assembled base, trim and embellishments**

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**The Big Picture**

### Lesson Breakdown

<table>
<thead>
<tr>
<th>Activity</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Introduction</strong></td>
<td>5 min</td>
</tr>
<tr>
<td><strong>Do-With-Me: Generating Ideas for Trim</strong></td>
<td>10 min</td>
</tr>
<tr>
<td>Brainstorm at least 15 ways to use all of the materials available to create trim and embellishments.</td>
<td></td>
</tr>
<tr>
<td><strong>Demo &amp; Discussion: Assembling the Seat</strong></td>
<td>10 min</td>
</tr>
<tr>
<td><strong>Camper Work Time: Creating Trim and Tassels</strong></td>
<td>30 min</td>
</tr>
<tr>
<td>Assemble the base with glue dots. Complete the upholstery if necessary. Create trim, tassels, and other decorative elements. Attach the cushion with tape and assemble the internal support structure.</td>
<td></td>
</tr>
<tr>
<td><strong>Clean Up</strong></td>
<td>5 min</td>
</tr>
<tr>
<td><strong>Wrap Up</strong></td>
<td>10 min</td>
</tr>
</tbody>
</table>

### GIA Focus

Innovator’s Process Focus: GENERATE IDEAS  
Innovator’s Knowledge Focus: SKILLS AND TECHNIQUES  
Innovator’s Mindset Focus: BE VISIONARY – I believe it is my place to turn ideas into reality.
How to Create Today's Project

Step-by-Step Pictorial

This is intended to help you understand how to create today’s project. It doesn’t describe how you’ll facilitate this lesson for campers. You’ll need to read the “Play-by-Play” section for this information.

Assembling the Box

Fig. 1
- Flip the panels so the painted side is face down.
- Bend the box at the creases.
- Locate the little tab that extends out from one of the panels and place a strip of glue dots there.

Fig. 2
Press down to attach the tab to the other panel.

Fig. 3
- Fold in the top flaps.
- Close and tape the bottom with a 12” strip of tape.
Adding Embellishments

Fig. 4
Use glue dots to attach embellishments around the edges of the stool to create trim.

Fig. 5
Here pom-poms are added as embellishments along the corners.

Foam can be cut into different shapes for trim.

Fig. 6
Here a wavy foam strip is attached to the top as trim.
Pipe cleaners can be twisted and added to the edge of the stool.

Here is a different way to use pipe cleaners as trim.

**Creating Tassels**

- Cut three yards of yarn.
- Wrap the entire length of yarn around a piece of cardboard.

Cut a smaller piece of yarn and slip it under the wrap near the top.
Tie it off right in the middle.

Slide scissors under the yarn on the other side and cut.

You should have two loose ends tied in the middle.

- Fold the loose ends down, and cut another small piece of yarn to tie another knot.
- Lay the yarn flat, slide the second piece of yarn under everything and wrap it close to the top.
- The tassel can be attached using a glue dot or hot glue.
If desired, trim the ends of the tassel to make them even.

**Internal Support and Hinged Seat**

Insert the cardboard support into the middle of the assembled box.

Place two pieces of tape on the inside of the base (vertically), with half of the tape extending above the cardboard.

Carefully line up the seat along the edge of the cardboard base, and smooth the tape on.
Get Ready!

Lesson Materials
* (starred) items are choice materials; un-starred items are required for each camper

Intro Materials
☐ assembled sample seat (1 per Li)
☐ sample of today’s materials (1 per Li)

Do-With-Me: Generating Ideas for Trim
☐ copies, color, Trim and Tassels (1 per 4 campers)
☐ assembled sample seat, for demoing (1 per Li)
☐ example of all materials from Camper Work Time, for brainstorming and demoing (at least 1 set per Li)

Demo & Discussion: Assembling the Seat
☐ disassembled sample seat, for demoing (1 per Li)

Camper Work Time: Creating Trim and Tassels

assembling the seat
☐ completed seat cushion (1 per camper)
☐ painted cardboard base (1 per camper)
☐ glue dots, ½", for attaching the cardboard panels (7 per camper)
☐ cardboard, corrugated, 12" x 12", with slits, for internal support structure (2 per camper)
☐ tape, masking, 1", for securing the base and attaching the hinged seat (20" per camper)

trim materials
☐ foam, sheet, asst. colors, 9" x 12" (four 3" x 12" strips per camper)
☐ pom-pom, asst. colors & sizes (20 per camper)
☐ bead, pony, metallic, asst. colors (25 per camper)
☐ bead, pony, asst. colors (25 per camper)
☐ pipe cleaner, asst. colors, 12" (8 per camper)
☐ *yarn, knitting, black (9 ft. per camper)
☐ *yarn, knitting, white (9 ft. per camper)
☐ *yarn, knitting, blue (9 ft. per camper)
☐ *yarn, knitting, green (9 ft. per camper)

☐ dowel, wood, 1/4" x 18", for mounting yarn for easy distribution (4 per classroom)
☐ yardstick, for measuring lengths of yarn (4 per classroom)
☐ cardboard, corrugated, 5.5" x 3.5", for wrapping yarn to make tassels (1 per 2 campers)

tools
☐ scissors, medium, 5”, pointed (1 per camper)
☐ pencil, #2 (1 per camper)
☐ glue dots, ½” (20 per camper)
☐ tape, masking, 1” (5” per camper)
☐ glue gun, mini, low temp, for reinforcement only (2 per classroom)
☐ glue stick, melt, mini (1 per 2 campers)

Preparation

Days earlier

☐ Cut foam into 3” x 12” strips for trim (4 per camper).
☐ Set out yardsticks for measuring lengths of yarn. Poke one dowel through the middle of each yarn skein so campers can easily unravel the yarn without the skein rolling all over the place. Set one skein next to each yardstick.
☐ Prepare strips of glue dots to use for assembling the cardboard panels, 7-8 glue dots per strip. Campers will just place the entire strip on the small flap that extends from one of the panels.
☐ Additionally, prepare glue dot gardens for general glue dot use for embellishments, etc. (20 per camper).

Day before

☐ Prepare for the Do-With-Me: Gather a sample of every material, as well as your sample stool and cushion. These materials can be reused for each rotation, or you can get new ones.
☐ Switch out the blue tape on the table tape dispensers and replace it with masking tape. You can keep the ruler on there so campers can measure out 12" pieces for securing the base of the seat.
☐ At table groups, set up tools and materials for assembling the seat:
  • painted cardboard base (1 per camper)
  • prepared strips of glue dots for adhering the cardboard sides
  • scissors (1 per camper)
  • pencils (1 per camper)
Set up materials stations:
- 3” x 12” foam strips (4 per camper)
- pom-poms (20 per camper)
- pipe cleaners (8 per camper)
- all varieties of yarn, prepped as described above
- metallic pony beads (25 per camper)
- regular pony beads (25 per camper)

Keep internal support structure pieces aside until campers are finished with everything else. Inserting the internal support and attaching the seat will be the final steps.

Suggestions for Large Classes
Keep the floor stations set up if desk space will be limited even with the assembled seats taking up less space than before.

Check In With Your TL
Make sure your TLs are clear about their role in helping today’s lesson run smoothly. Specific ways TLs can help today are listed in the dotted overview boxes throughout the lesson.

On the Board
Guiding Questions
GENERATE IDEAS and BE VISIONARY
- What if you combine ___ with ___?
- How could you use foam/pom-poms/beads/pipe cleaners in your design?
- What trim are you imagining for your seat?
- What techniques/materials can you use to create your vision?

Vocabulary
trim – material used for decoration or embellishment, usually on the borders or edges of an object
tassel – an ornament or decoration made of loose cords tied together at one end

Teaching the Lesson: Overview

Instructional Priorities & Supporting Innovation
These are the key lesson elements you’re expected to communicate/support today. Think of this as the blueprint of a successful lesson. When applicable we’ve included details about why an element is important for innovation.

Do-With-Me: Generating Ideas for Trim
★ Support campers in GENERATING IDEAS. Demo or draw trim/embellishment possibilities.

Demo & Discussion: Assembling the Seat
★ Demonstrate the SKILLS AND TECHNIQUES needed for all steps of assembling the seat.

Throughout the Lesson
★ Support the Innovator’s Mindset Challenge: BE VISIONARY – Campers find creative ways to manipulate the materials available to create unique embellishments.
Why – Innovators can find a multitude of surprising ways to use the simplest of materials. Encouraging campers to practice seeing the huge potential of a few basic materials will help them think creatively and resourcefully.
Teaching the Lesson: Play-by-Play

Introduction (5 min)

Welcome campers and make a quick story connection
How’s Lucy doing? (She’s stuck back in Land Land.) Well, remember that nothing is impossible with a little VISION and COLLABORATION. Let’s keep working on those designs to personalize your rooms so we can show them off to Lucy at Friday’s Faire.

Build excitement for today’s project
• Congratulate campers on working so hard over the past two days to get to this point.
• Explain that today they’ll assemble the chair and bring it to completion by adding trim, tassels, and other decorations!

Introduce the Innovator’s Mindset: BE VISIONARY ★
• Point to this on your Innovator’s Mindset poster.
• Define the Mindset element in the context of today’s lesson. Say: For the final day of this project we will practice being visionary again by imagining all kinds of ways to transform some basic materials into one-of-a-kind decorations to finish off our seats.

Do-With-Me: Generating Ideas for Trim (10 min)

What You’ll Need to Cover: Overview
• Look at examples of trim and tassels.
• Introduce the brainstorm challenge.
• Have campers share out their ideas about how to use the foam strips; demo or draw each idea. ★
• Repeat for pom-poms, pipe cleaners, beads and yarn. ★
• Demonstrate how to create a yarn tassel. ★
• Have campers share with a neighbor what kinds of trim and embellishments they will add to their seats. ★

Guiding Campers
Look at examples of trim and tassels
• Let campers know that the way they will pull their chairs together is by adding some trim and/or tassels.
• Show the Trim and Tassels color copy (below) and point out the trim and tassels.

• Define each:
  ▪ Trim is a material that is used for decoration to create a border around the edge of an object. Depending on the situation, trim could be paint, fabric, string, beads, paper, or even icing!
  ▪ A tassel is a decoration made of many cords tied together at one end. Tassels are often put on shoes, bags, curtains, furniture, etc. and can be made out of paper, fabric, leather, yarn, rope, etc.
• Have campers share if they own anything with trim or tassels on it.
• Have campers share how they think these elements add to the product.

Introduce the brainstorm challenge
• Let campers know that they are going to generate some ideas together so they have lots of choices for how they can add trim and tassels to their chairs.
• Their brainstorm challenge is to come up with 15 different ways to use the materials they have! (This is at least 15 ways total, not per material.)
• Quickly show campers the materials they will be working with: foam strips, pom-poms, pipe cleaners, beads and yarn.
• Tell campers that they can change or combine these materials by cutting or gluing.
• Also let them know that the trim can go around the seat, along the base of the stool, on the corners, or even on the cushion itself.
• Let campers know that you will move through all the different materials and they can share their ideas. Ask campers to think about how they could attach the materials as well.
• Have your sample seat available for the brainstorming session so campers can look at an actual seat while they think about the materials.

Have campers share out their ideas about how to use the foam strips; demo or draw each idea ★
• If they don’t realize that they can cut the foam to make a more interesting design, clue them in and see if that opens up more ideas.
• Some attaching possibilities:
  ▪ Attached to the bottom of the cushion
  ▪ Attached to the top of the seat lying flush against the side
  ▪ Attached vertically along the four corners
• Whenever possible, model how an idea would look. You don’t have to actually glue anything on.
• If you can, draw the ideas on the board. This will help campers remember what they discussed.

Repeat for pom-poms, pipe cleaners, beads and yarn ★
• Move on to the other materials and keep the ideas flowing.
• Encourage campers to think about how to combine ideas (for example, placing pom-poms or beads along zigzag foam trim).
• Again, demo ideas when you can, and/or draw them on the board.
• Some ideas for pom-poms:
  ▪ Attach them around the edge of the cushion
  ▪ As decorations on a foam border
• For beads:
  ▪ String beads through a full length pipe cleaner and attach that to the sides of the cardboard.
  ▪ String beads through shorter pieces of pipe cleaner and have them hang like fringe
  ▪ Stick beads to the cardboard itself
• For pipe cleaners:
  ▪ Twist, curl or bend to make an interesting trim design
  ▪ Cut into shorter pieces to hang like fringe

• For yarn:
  ▪ Braid or twist the pieces together for trim
  ▪ Make into tassels (you’ll show them how to do this in a minute)
• Keep track of the ideas and pump campers up about coming up with so many ideas. Keep going way past 15 if you can.
• You can even create a fun “idea counter” or something along those lines so the other rotations can try to out-brainstorm each other.

Demonstrate how to create a yarn tassel ★
• Show campers how to measure three yardstick lengths of yarn with the help of a partner. Have your TL hold the dowel while you unravel three yardsticks worth of yarn.
• Show how to wind the yarn around the 5.5” x 3.5” cardboard. Tell them if they want a longer tassel, they should wind it around the longer side.
• Demo how to cut and tie the yarn to form a tassel as show in the pictorial.

Have campers share with a neighbor what kinds of trim and embellishments they will add to their seats ★
• Give campers a minute to look over/think about all the amazing ideas they just came up with, and ask them to make a plan for how they will add trim and decoration to their chairs.
• Emphasize being specific; they should be able to name the specific materials, colors, shapes, designs, etc. they are going to create.
• Have campers put a finger on their noses or give you some other symbol when they have their ideas. Then have campers share their visions with a neighbor.
• This important step helps solidify the ideas they just came up with and gives campers an action plan for when they go to their seats.
• Thank everyone for such amazing idea-sharing and planning and let them know that you’re going to show them how to assemble the chair and then they can get started.
Demo & Discussion: Assembling the Seat (10 min)

What You’ll Need to Cover: Overview
• Use the sample to show how the seat will go together. ★
• Demo how to fold up the box and adhere the edge with glue dots. ★
• Demo how to fold in the top flaps and tape up the bottom with a partner.
• Discuss finishing the seat.

What You’ll Need to Cover: Details

Use the sample to show how the seat will go together ★
• Hold up the assembled sample that you’ve been using all week to show campers how everything will get put together.
• Point out that the panels are folded and connected, the top flaps are folded in, and then the bottom flaps are taped together.
• Show campers the internal support structure and show them how the seat is hinged so that they can open it and store things inside.
• Let campers know that if they didn’t upholster the foam cushion yesterday they’ll need to do that first. (Help campers with this in small groups or one on one instead of giving all the directions for this now. Yesterday’s pictorial shows all the steps for putting the cushion together.)

Demo how to fold up the box and adhere the edge with glue dots ★
• Use a blank, unassembled box to demonstrate this part. You won’t actually put the glue dots on this sample.
• Make sure campers know they should flip the box so that the painted side is down.
• Show campers how to fold the box as shown in the pictorial.
• Point out the tab campers need to locate.
• Demonstrate laying the strip of glue dots on the tab, but don’t actually apply them to your sample box so you can reuse it for all three rotations.
• Have a camper share with you how to use glue dots (simply rub or scratch the back of the glue dot and then carefully peel the paper off).
• Unfold your box and have campers guide you through setting up everything from the beginning to check their understanding.

Demo how to fold in the top flaps and tape up the bottom with a partner
• Use your finished box to demo the rest of the steps. Remove the seat and show how the top flaps simply get folded in.

• Show how the bottom can be taped with a 12” strip of tape after you have folded the four flaps together. Have a camper or a TL act as your partner to gently push everything together so the bottom flaps are touching.
• Place the tape right in the center, and reinforce with smaller pieces anywhere that needs it.

Discuss finishing the seat
• Instruct campers to raise their hands once they’re done with everything, and have an adult help them with the internal support and attaching the seat.
• Let campers know it’s okay if they don’t get to do all their embellishing today. The main priority should be around assembling their seats. All the embellishment materials will be available all week so they can continue working on their seats once they finish their other projects.

Camper Work Time: Creating Trim and Tassels (30 min)

During Work Time Campers Will...
CREATE
1. Carefully remove the blue tape from the cardboard.
2. Use a line of glue dots to assemble the cardboard base.
3. Fold in the top edges of the cardboard base.
4. With the help of a partner, tape up the bottom of the cardboard base.
5. Gather materials for trim/embellishments.
6. Create trim, tassels and embellishments.
7. When everything is complete, attach the seat and add internal support.

How Your TL Can Help
• Help campers who still need to upholster their foam cushions.
• Help campers measure and tie their tassels.
• Help campers finish the chair assembly when they’re ready.

Facilitate the Project Steps
CREATE (Steps 1-7)
• Make sure all campers have their cushions taped together before they start embellishing. This should be the first thing they do if they haven’t done so yet. Help with this as necessary.
• Assist campers with assembling the cardboard base. In particular, make sure they have started by folding everything up the correct way.
• Remind campers to help each other fold and tape up the cardboard base.
• Support campers in bringing their ideas to life with the trim and embellishment materials.
• Offer any necessary one-on-one support for creating the tassels.
• When campers are ready for it, show them how to add the internal support and attach the seat like a hinge as shown in the pictorial.
• Make sure the connections on both the seat and the base are super secure. Campers might want to put an extra piece of tape on the seat and base for further security.

Support BEING VISIONARY ★
Suggest strategies that help and encourage campers to be visionary
Some specific strategies for today:
• Using the same material in more than one way
• Mashing up two ideas to make a totally new idea
• Combining materials

Recognize visionary campers
This encourages the camper and helps others see how they can be visionary as well. Recognition can be just verbal or include some kind of physical award. Be sure to be specific about how you see campers being visionary.
Some ways you might see vision today:
• Using any of the strategies mentioned above
• Trying something they haven’t seen anyone else try yet

Ask the Guiding Questions that support being visionary

Clean Up (5 min)
• Be sure to save scraps and materials that can be repurposed by the next rotations. Have a scrap bin where campers can place reusable scraps.
• Be sure the Glue Dot Gardens for assembling the seat are replenished for the next rotation.

Lesson Wrap Up (10 min)

Recognition and Reflection (BE VISIONARY)
Help campers see how they or others embraced the Innovator’s Mindset and why this is important for innovation.

Suggested recognition and reflection activity
• Have a few campers share one way they transformed foam, pom-poms, yarn, pipe cleaners, or beads to into an amazing trim/embellishment for their stools.
• Campers can give a “me-too” sign if they did something similar.
• Recognize campers for their amazing vision!
• Give campers a chance to recognize teammates for any especially cool ways they saw someone using materials to create designs.
Day 4
Animal Night Light, Part 1 of 2
Animal Silhouettes
Rachel Weber is a maker who creates night lights with specially designed silhouettes. Today campers each design a custom silhouette for night lights they can really use at home!

The Big Picture
Lesson Breakdown

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<td>Clean Up</td>
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<tr>
<td>Wrap Up</td>
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GIA Focus
Innovator’s Knowledge Focus: SKILLS AND TECHNIQUES
Innovator’s Process Focus: TEST AND EVALUATE
Innovator’s Mindset Focus: BE REFLECTIVE – I think about what is and isn’t working in my design.

What’s Next: Tomorrow (Day 5) campers will assemble their night light structures, and add scenic elements around their animal silhouettes.
How to Create Today’s Project

Step-by-Step Pictorial

This is intended to help you understand how to create today’s project. It doesn’t include everything campers will do today (like the partner share). It also doesn’t describe how you’ll facilitate this lesson for campers. You’ll need to read the “Play-by-Play” section for this information.

Drawing

Fig. 1
Sketch at least two possible designs for the animal silhouette.

Fig. 2

Fig. 3
Redraw the final sketch onto the black cardstock.
Cutting and Testing

Fig. 4
Cut it out, starting by cutting around the general shape.

Fig. 5
Go back in and follow each drawn edge with the scissors. Texture can be cut into the outline at this time as well.

Fig. 6
Smaller elements, like the whiskers on this cat, can be cut separately and glued on.

Fig. 7
Hold up the silhouette against the light at the testing station. Continue to redesign until it looks just the way you want.
**Gluing**

![Image of a silhouette being glued onto paper](image)

**Fig. 8**

Glue the final silhouette to the center of the copy paper. Note that campers will not draw a guideline on their copy paper, and will just find the rough center by eye.

![Image of a silhouette being tested](image)

**Fig. 9**

Bend the copy paper to test that the silhouette is securely glued on all edges.

---

**Get Ready!**

**Lesson Materials**

* (starred) items are choice materials; un-starred items are required for each camper

**Pre-Assembly**

(You'll need to hot glue the cardboard strips to the night lights for assembly. See Suggested Materials Management for a note about the night lights.)

- [ ] cardboard, corrugated, strips, 1.5" x 18" (one 1.5" x 4" strip per camper)
- [ ] night light, plug-in, with on/off switch (1 per camper)
- [ ] bulb, 4 watt (1 per camper)
- [ ] clip, shade, night light (1 per camper)
- [ ] glue gun, mini, low temp (4 per classroom)
- [ ] glue stick, mini, melt (1 per 3 campers)

(You'll need to create 4 silhouette light testing stations per classroom.)

- [ ] cardboard, corrugated, 24" x 36" (4 per classroom)
- [ ] paper, butcher, white, 36" x 250 ft. (four 24" x 36" sheets per classroom; get from Nebula art)
- [ ] knife, utility, for cutting cardboard (2 per classroom)
- [ ] tape, blue, 1", for attaching the paper to the cardboard (6" per station)
- [ ] lamp, desk, gooseneck (4 per classroom)
- [ ] extension cord, 3 outlet, 9 ft. (2 per classroom)
- [ ] power strip, 6 outlets (2 per classroom)

**Intro Materials**

- [ ] pre-made sample of night light (1 per LI)

**Demo & Discussion: Silhouettes**

- [ ] color copies, Rachel Weber Night Lights (1 per 4 campers)
- [ ] color copies, Animal Outlines (1 per 4 campers)
- [ ] all materials from Camper Work Time, for demoing (1 set per LI)

**Camper Work Time: Creating Animal Silhouettes**

- [ ] paper, newsprint, 9" x 12", for sketching (two 6" x 9" pieces per camper)
- [ ] paper, copy, white, 8.5" x 11", for "shade" (one 6" x 11" sheet per camper)
- [ ] paper, cardstock, black, 8.5" x 11", for animal silhouette (1 per camper)
- [ ] pencil, #2 (1 per camper)
- [ ] scissors, medium, 5", pointed (1 per camper)
- [ ] glue stick, washable (1 per camper)

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Preparation

Days earlier
- Cut 1.5" x 18" cardboard strips into 1.5" x 4" pieces (1 per camper).
- Create the silhouette light testing stations (4 per classroom).
  - Cut a large rectangle from the center of the 24" x 36" cardboard sheets, leaving about a 3" border on all sides.
  - Borrow butcher paper from Nebbie art. Cut the butcher paper into 24" x 36" sheets and tape them to the cut cardboard, securing the edges (below).

- Set up four stations around the room with the cardboard and butcher paper propped upright and the lamp behind it.
- Make a completed sample of a night light. Just create a sample with the main animal shape; don’t add the scene details for this day’s sample.
- Cut copy paper into 6" x 11" sheets (1 per camper).
- Cut black cardstock into 6" x 8" sheets (1 per camper).
- Cut newsprint in half to make 6" x 9" sheets (2 per camper).

Day before
- Set up workstations with the following:
  - 6" x 9" newsprint (2 pieces per camper)
  - pencils (1 per camper)
  - scissors (1 per camper)
  - glue sticks (1 per camper)
- Set aside the following to hand out once you’ve checked campers’ sketches:
  - 6" x 11" copy paper (1 piece per camper)
  - 6" x 8" cardstock (1 piece per camper)

- Arrange the classroom so the silhouette testing stations are accessible.

Morning of
- Plug in the lamps when campers are ready to start testing.

Advance prep
Get a head start on assembling the cardboard strips on the night lights to create the base for attaching the silhouetted shade tomorrow (1 per camper plus a few extras).

Hot glue the 1.5" x 4" cardboard strip to the front of the night light, making sure it doesn’t cover the ON/OFF switch. It also shouldn’t rest on the bulb itself (below).

Suggested Materials Management
Note that the night lights will arrive pre-assembled by the warehouse, but that each light is composed of three pieces: the base with the plug and switch, the bulb, and a clip that attaches to the front and to which the cardboard will be glued. You can reorder these pieces individually if you experience breakage. If you need to reorder complete night lights, you will need to reorder all three pieces separately.

Suggestions for Large Classes
Think about the most strategic way you can set up the testing stations so it doesn’t get too crowded in one area.
Check In With Your TL
Make sure your TLs are clear about their role in helping today’s lesson run smoothly. Specific ways TLs can help today are listed in the dotted overview boxes throughout the lesson.

On the Board
Main Steps
List/draw a picture of these so campers can reference them if they forget what to do next.
• Sketch
• Ask an adult
• Draw on cardstock
• Cut
• Test and redesign
• Glue

Guiding Questions
EVALUATE and BE REFLECTIVE
• Will this be easy to cut out? If not, what can you do differently?
• Is this drawing a good size?
• If your design doesn’t look the way you want, how can you draw/cut differently? What can you remove/add?
• Can you tell what animal this is? What could you do to make it better?
• What is the best way to cut this shape out?

Vocabulary
silhouette – the solid shape of something in one solid color, with clear outlines and detailed edges

Teaching the Lesson: Overview

Instructional Priorities & Supporting Innovation
These are the key lesson elements you’re expected to communicate/support today. Think of this as the blueprint of a successful lesson. When applicable we’ve included details about why an element is important for innovation.

Demo & Discussion: Silhouettes
★ Use your sample to ensure campers understand the CONCEPTS of night lights and silhouettes.
★ Demo and discuss TECHNIQUES for drawing big and using simple shapes.
★ Demo and discuss cutting TECHNIQUES.

Throughout the Lesson
★ Model and support TESTING and EVALUATING designs throughout the process, from sketching to gluing.
★ Support the Innovator’s Mindset Challenge: BE REFLECTIVE – Campers notice how they want to change their designs through ongoing evaluation and make changes accordingly.
Why – This ensures campers take advantage of today’s unique opportunity to test and redesign their creations in a way not always possible with art projects, and will help them recognize what they need to do to get the outcome they desire.
Teaching the Lesson: Play-by-Play

Introduction (5 min)

Build excitement for today’s project
• Say: The next project we’re going to make is also something we can use – we’re going to make a night light for your room!
• A woman named Rachel Weber makes her own night lights very similar to the kind campers will be making!
• Show the Rachel Weber Night Lights color copy (below).

• Rachel is an example of a maker who had an idea and decided to make it herself instead of buying it.
• Just like Rachel’s night lights, theirs are also going to be silhouettes of animals!

Introduce the Innovator’s Mindset: BE REFLECTIVE ★
• Point to this on your Innovator’s Mindset poster.
• Define the Mindset element in the context of today’s lesson. Say: Today we’re going to practice being reflective, which means paying attention to our work and noticing what things affect how it looks.

Demo & Discussion: Silhouettes (10 min)

What You’ll Need to Cover: Overview
• Discuss and observe night lights and silhouettes.
• Give an overview of the project and show an example. ★
• Discuss the importance of drawing big, simple animal shapes. ★
• Demo sketching and evaluating an animal design on newsprint. ★
• Demo and discuss drawing the final animal silhouette on cardstock. ★
• Demo and discuss how to cut an animal silhouette. ★
• Demo how to evaluate the animal silhouette at the testing station. ★
• Demo how to adhere the final silhouette to the 6” x 11” copy paper.

What You’ll Need to Cover: Details
Discuss and observe night lights and silhouettes
• Have campers tell you what a night light is and if they one use in their rooms, or somewhere else in their homes.
• Many night lights are styled or decorated with a scene, characters, etc.
• Ask: How might a decorated night light add something to a room? How would it make you feel? (It might make them feel comfortable or less afraid, etc.)
• On the color copy, point out that you can’t see all the details of the designs, just the shapes and outlines. Ask campers if they know what this is called. (A silhouette.)
• A silhouette is just the solid shape of something in one solid color, with clear outlines and detailed edges.
• Silhouettes look great on lamps and lights since they get lit from behind.

Give an overview of the project and show an example ★
• Hold up your sample and let campers know they are going to create their own night lights with paper, cardboard, and a small light!
• To start, they will create a silhouette of an animal and attach it to the front of the night light shade.
• First they will sketch several ideas, then draw on cardstock, then cut and test their designs at the stations set up with the lamps.
• Tomorrow they will add more details to create more of a scene or environment for their animals.
Discuss the importance of drawing big, simple animal outlines ★

- Reiterate that the silhouette will go on the 6” x 11” piece of copy paper, and will be cut out of black cardstock.
- This means the shapes they draw need to be thick enough to cut out. Draw a stick figure animal and a proper outline of an animal on the board and ask campers which one would be easier to cut out. (The thicker one!)
- Take a look at the Animal Outlines copy (below) and point out this is how they need to draw their animals. In a silhouette, only the outside lines of the shape will show.

![Animal Outlines](image)

- Tell campers that the animal doesn’t need to fill the entire white space on the night light, but it should be big enough to be seen easily.

Demo sketching and evaluating a design on newsprint ★

- Tell campers they should sketch at least two ideas on newsprint before they sketch on cardstock.
- Draw a few practice rounds on newsprint with a marker so campers can see your sketches.
- Show campers that using geometric shapes is a good way to keep their drawings simple.
- Remind campers that only the outline will show. They won’t see any details they draw inside the shape when they cut it out.
- Support BEING REFLECTIVE ★ – Show campers that even the sketching phase is a good time to practice being reflective. Model asking yourself these questions as you draw:
  - Is this drawing thick enough to color in?
  - Will this be easy to cut out?

- Is this drawing a good size?
- (Ask your TL) Can you tell what animal this is just by looking at the outside line? What could I do to make it better?
- Give campers a heads-up that once everyone has had some time to sketch, you’ll have everyone stop and ask each other for feedback just like you asked the TL.
- Tell campers that once they’ve drawn at least two sketches and have a final design, they will present it to an adult.
- If the sketch is okayed, the adult will give them the 6” x 11” white copy paper and the 6” x 8” black cardstock for drawing the final design.

Demo and discuss how to cut an animal silhouette ★

- Demo how to carefully redraw the sketch on the black cardstock, and discuss cutting it out.
- Ask campers if they have any suggestions for cutting out the thinner or more complicated parts of the animal.
- Demo how to cut around the shape in a general way without getting into the little details and edges.
- Emphasize rotating the animal shape instead of the scissors. This helps to get into trickier shapes and prevents having to move your hand in weird angles with the scissors.
- Tell campers that if they want to add things like spikey fur, or tiny little details, they should do this last.
  - To add texture or details to the outline of the animal without adding anything, they can use their scissors to cut fun edges into the animal.
  - They can also cut out and glue on tiny details. For example, tiny, pointy shark teeth would be much easier to make by cutting them out and gluing them onto the shark mouth than by trying to cut that line with your scissors.
  - Other things like this could be a deer’s antlers, spikes on a dinosaur, whiskers, antennae, etc.
- Support BEING REFLECTIVE ★ – Again, the cutting step is a great time to practice being reflective. Verbalize asking yourself:
  - What is the best way to cut this shape out?
  - Is this too difficult, and if so, what can I do differently?
  - Did my design fall apart?
  - Can I create a similar design by adding pieces instead of taking them away?
Demo how to evaluate the animal silhouette at the testing station ★
• Before campers glue their designs to the copy paper night light shades, they should evaluate their designs!
• Demonstrate how to hold the animal silhouette in front of the butcher paper lit up by the lamp to see how the silhouette will look once it is actually on the night light.
• Support BEING REFLECTIVE: Evaluating their work at the silhouette testing station is a great time to think about how to improve on their designs. They should ask:
  ▪ Can I still tell what animal this is?
  ▪ (Ask other people if they can tell what animal it is.)
  ▪ Should something be bigger/smaller?
  ▪ Can I add texture or details that will make the silhouette more interesting?

Demo how to adhere the final silhouette to the 6" x 11" copy paper
• Once they are happy with the animal silhouette, campers can glue it to the 6" x 11" copy paper with a glue stick.
• Alert campers that they need to glue the design in the middle of the copy paper and leave the edges free. (These will get folded in when they assemble their night light shades tomorrow.)
• It’s important that all the edges of the silhouette are glued down. Tomorrow the paper will get curved, and anything that is not secure will start to pop off the paper.
  ▪ If there aren’t many smaller details, campers can put the glue stick on the silhouette itself.
  ▪ If there are a lot of smaller, delicate details, it’s better to rub the glue stick all over the white copy paper and then smooth the silhouette on top of it. Campers may need to add more glue if they didn’t get the exact area, but that’s okay.
• Once the animal silhouette is glued on, they can do a final test by curving the paper to see how the silhouette stays on and how it looks lit up.
• Quickly review the steps and remind campers that they can use the picture on the board to help them remember the order of things.

Camper Work Time: Creating Animal Silhouettes (40 min)

During Work Time Campers Will...

**DESIGN**
1. Sketch at least two outlines/silhouettes of an animal on newsprint.

**SHARE and EVALUATE ★**
2. As a class, show the sketches to a neighbor for feedback. Make any necessary changes.
3. Show the sketches to an adult for approval.

**CREATE**
4. Draw the animal outline on 6" x 8" black cardstock and cut it out.

**TEST AND EVALUATE**
5. Hold the cut animal up to the silhouette testing area to evaluate it.
6. Continue to refine the animal silhouette, and glue it to the center of the white copy paper when satisfied with the design.

**How Your TL Can Help**
• Help check campers’ final designs when they’re ready.
• Help facilitate testing at the testing stations.

Facilitate the Project Steps

**DESIGN (Step 1)**
• Make sure campers are actually doing this step!
• Keep an eye on how everyone is starting out, and guide campers who are drawing too small, thin, or complicated for a successful design.

**SHARE and EVALUATE (Steps 2-3) ★**
• After it seems like most campers have completed at least one sketch, stop the class for a universal reflection time. Have everyone drop their pencils and pause, regardless of where they are at with their sketching.
• Have campers show their sketches to their neighbors and ask whether they know what animal they are drawing and have suggestions for how to improve it.
• This is an important first test to see where problem areas might be, and it will also help campers practice looking at others’ work as well as evaluating what makes a successful silhouette.
• When campers check in with you or the TL before they move on to creating their designs on cardstock, reinforce the teaching about keeping their designs simple, large and without overlap.
• Pass out the cardstock and copy paper only when campers are ready for a final design.

CREATE (Step 4)
• Support campers in using the cutting techniques they learned today.
• Assure campers that pieces can be added on afterwards if they accidentally cut something off or made something too short.

TEST AND EVALUATE (Steps 5-6)
• Help monitor the testing stations and revise the system if necessary.
• Encourage campers to hold their work up to the light for each other so it’s easier for them to evaluate what changes they want to make.
• Make sure campers are doing a solid job of gluing their silhouettes to the copy paper, and really getting all those edges.
• Remind campers to test their gluing by gently curving the paper.

Support BEING REFLECTIVE ★
Suggest strategies that help and encourage campers to be reflective
Some specific strategies for today:
• Continuing to solicit advice/feedback from others
• Testing often to see what parts look good to them and what parts still need to be worked on
• Asking themselves the Guiding Questions as they work

Recognize reflective campers
This encourages the camper and helps others see how they can be reflective as well. Recognition can be just verbal or include some kind of physical award. Be sure to be specific about how you see campers being reflective. Some ways you might see reflection today:
• Using any of the strategies mentioned previously
• Making a change in how they’re working/in the design based on something they noticed

Ask the Guiding Questions that support being reflective

Clean Up (5 min)
• Have campers throw away all scraps in the recycle bin.
• Make sure campers put their names on their night light shades.
• Leave the testing stations up for tomorrow.

Lesson Wrap Up (10 min)

Recognition and Reflection (SKILLS AND TECHNIQUES and BE REFLECTIVE)
Give campers a chance to reflect on what they accomplished today and how the skills and techniques they learned and the Innovator’s Mindset helped them make their awesome creations today.

Suggested recognition and reflection activity
• Illuminate a few of the campers’ animal silhouettes. Have campers share whether they think these artists:
  • Thought carefully about their designs so their animals were recognizable
  • Used any of the new cutting techniques to create their silhouettes
  • Added any parts of the silhouette on later
  • Successfully glued the silhouette to the copy paper
• Have the artists share the things they reflected on while they were working, and invite campers to touch their noses or give snaps if they had a similar experience.
• Follow up by asking what would happen if they didn’t pay attention to that aspect while working.

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Day 5

Animal Night Light, Part 2 of 2

Scenic Elements

Campers add secret scenic elements and other designs that only show up when the light is illuminated.

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The Big Picture

Lesson Breakdown

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<td>Do-With-Me: Assembling the Night Light Structure</td>
<td>10 min</td>
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<tr>
<td>Attach craft sticks on the ends of the copy paper to create a structure for the night light.</td>
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<tr>
<td>Demo &amp; Discussion: Adding Scenic Elements Overview</td>
<td>15 min</td>
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<tr>
<td>Camper Work Time: Adding Scenic Elements</td>
<td>25 min</td>
</tr>
<tr>
<td>Working on the reverse side of the copy paper, trace the outline of the paper animal and the workspace edges. Draw, cut and paste scenic elements around the animal, testing often.</td>
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</tr>
<tr>
<td>Clean Up</td>
<td>5 min</td>
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<tr>
<td>Wrap Up</td>
<td>10 min</td>
</tr>
</tbody>
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GIA Focus

Innovator’s Mindset Focus: BE VISIONARY – I imagine things that don’t yet exist.
How to Create Today’s Project

Step-by-Step Pictorial

This is intended to help you understand how to create today’s project. It doesn’t describe how you’ll facilitate this lesson for campers. You’ll need to read the “Play-by-Play” section for this information.

Craft Stick Supports

• Place two or three glue dots down the length of each craft stick.
• Note: Some of the photos in this pictorial show the shade extending past the top and bottom of the craft sticks. The paper will be the same height as the craft sticks, as shown in Fig. 5.

Fig. 1

Adhere them to the edge of the paper shade. Make sure they’re straight and right against the edge.

Fig. 2

Fold the paper over once and crease it.

Fig. 3
Adding Scenic Elements and Designs

Fig. 4
Trace the animal silhouette from yesterday on the back side of the shade so other elements can be arranged without interfering with the original animal shape.

Fig. 5
Sketch other elements around the animal outline.

Fig. 6
Draw the shapes and designs desired on black cardstock.

Fig. 7
Cut them out and glue them to the back of the shade.
Test at the testing stations from yesterday and redesign as necessary.

**Final Shade Assembly**

To attach the shade, use binder clips to secure the bottom of each edge to the cardboard strip glued onto the night light.
Get Ready!

Lesson Materials
* (starred) items are choice materials; un-starred items are required for each camper

Pre-Assembly
(You’ll need to hot glue the cardboard strips to the night lights for assembly if you haven’t already.)
☐ cardboard, corrugated, strips (one 1.5" x 4.5" strip per camper)
☐ night light (1 per camper)
☐ glue gun, mini, low temp (3 per classroom)
☐ glue stick, melt, mini (1 per 3 campers)

Intro Materials
☐ pre-made sample of night light (1 per LI)

Do-With-Me: Assembling the Night Light Structure
☐ 6" x 11" copy paper with animal silhouette (1 per camper; from yesterday)
☐ pre-assembled night lights with cardboard (1 per camper)
☐ craft stick, large, 3/4" x 6" (2 per camper)
☐ glue dots, ½", for attaching craft sticks to paper (14 per camper)
☐ clip, binder, mini, for attaching “shade” to night light (2 per camper)

Demo & Discussion: Adding Scenic Elements Overview
☐ pre-made sample of night light (1 per LI)
☐ all materials from Camper Work Time, for demoing (1 set per LI)

Camper Work Time: Adding Scenic Elements
☐ 6" x 11" copy paper with animal silhouette (1 per camper; from yesterday)
☐ pre-assembled night light with cardboard (1 per camper)
☐ pencil, #2 (1 per camper)
☐ paper, cardstock, black, 8.5" x 11", for adding scenic elements (1/2 sheet per camper)
☐ scissors, medium, 5", pointed (1 per camper)
☐ glue stick, washable (1 per camper)
Preparation

Days earlier

- Assemble the cardboard strips on the night lights to create the bases for attaching the silhouetted scenes (1 per camper, plus a few extras). Hot glue the 1.5" x 4" cardboard strip to the front of the night light, making sure it doesn’t cover the ON/OFF switch. It also shouldn’t rest on the bulb itself (below).

- Cut the black cardstock in half to make 5.5" x 8.5" sheets for the scenic elements (1 per camper).

Day before

- Add scenic elements to your own night light sample to use as a demo in the introduction and during the discussion.

- Prepare materials for the Do-With-Me:
  - craft sticks (2 per camper)
  - tape
  - glue dots (14 per camper)
  
Campers will do this on the floor for an easier transition to the Demo & Discussion that comes after this.

- Prepare materials at table groups:
  - 8.5" x 5.5" black cardstock (1 per camper)
  - pencils (1 per camper)
  - scissors (1 per camper)
  - glue sticks (1 per camper)

- Remove the large cardboard and paper at the testing stations and just leave the lamps. Campers will test today by holding up their 6" x 11" shades to the lamps.

Morning of

- Plug in the lamps when campers are ready to start testing.

Suggestions for Large Classes

None

Check In With Your TL

Make sure your TLs are clear about their role in helping today’s lesson run smoothly. Specific ways TLs can help today are listed in the dotted overview boxes throughout the lesson.

On the Board

Guiding Questions

BE VISIONARY

- Where could your animal be? What could it be doing?
- What surprising/fun designs can you imagine around your animal?

Vocabulary

scene – place where an event or action occurs; location
Teaching the Lesson: Overview

Instructional Priorities & Supporting Innovation

These are the key lesson elements you’re expected to communicate/support today. Think of this as the blueprint of a successful lesson. When applicable we’ve included details about why an element is important for innovation.

Demo & Discussion: Adding Scenic Elements Overview
★ Use your sample to ensure campers understand the CONCEPT of adding silhouettes/scenic elements on the reverse side of the paper.
★ Lead campers through a brainstorm to help them GENERATE IDEAS for scenic elements.

Throughout the Lesson
★ Support the Innovator’s Mindset Challenge: BE VISIONARY – Campers imagine elements around the existing animal silhouette to create a fun/surprising/interesting scene.

Teaching the Lesson: Play-by-Play

Introduction (5 min)

Welcome campers and make a quick story connection
The Maker Faire is today! Do you think Lucy will get there in time? I sure hope so. Let’s put the finishing touches on the incredible creations you all designed for your rooms so we’ll be ready to show Lucy when she arrives.

Build excitement for today’s project
• Show campers your example and see if they notice anything different about the night light from yesterday. (Keep it unplugged at this point so it looks the same.)
• Then, plug it in so the scenic elements are revealed and see if campers notice the change!
• Let them know that they are going to spend time creating a little scene around the animal that is only revealed once the light gets turned on!

Introduce the Innovator’s Mindset: BE VISIONARY ★
• Point to this on your Innovator’s Mindset poster.
• Define the Mindset element in the context of today’s lesson. Say: As we work today we’re going to practice being visionary, which means imagining things that aren’t there yet. We’re going to do this today by imagining the scenes that we want to create around our animal silhouettes.
Do-With-Me: Assembling the Night Light Structure (10 min)

What You’ll Need to Cover: Overview
• Guide campers through attaching craft sticks and folding the paper.
• Demo how to clip the shade to the night light.

How Your TL Can Help
Collect night lights and put them at each desk at the end of this activity.

Guiding Campers
Guide campers through attaching craft sticks and folding the paper
• Give campers a quick overview so they have some context for what they are about to do (add craft stick supports to the shade so they can attach the shade around the actual night light).
• Demo how to attach the craft sticks to the edge of the paper shade as shown in the pictorial.
• Point out that the craft sticks go on the back side of the shade.
• Make sure to demo how to use the glue dots by placing them face down, scratching the back, and peeling up the backing.
• Emphasize making sure to keep the craft sticks straight.
• Demo folding the edges of the paper over, using the edge of the craft stick as a guide.
• Have campers do these steps. Help with glue dots as necessary.
• Ensure campers keep the craft sticks straight and along the edge of the paper.
• Make sure everyone is folding their paper in the right direction.

Demo how to clip the shade to the night light
• Show how the paper will curve around the light once it is attached to the cardboard strip.
• Demo clipping the shade to the cardboard.
  ▪ Point out that you’re wrapping the shade so it’s on top of the cardboard strip when you clip it on.
  ▪ Show that when the shade is on, the paper animal is facing the front.
• Let campers know that you’ll help them clip their shades on when they’re ready for this final step.

• Show campers how they can also help each other if they don’t want to wait for you.
  ▪ Unclip the shade.
  ▪ Have one volunteer curve the paper around the cardboard and have another volunteer clip it in place.
• Have the TL collect the projects and place them at table groups while campers get ready for the Demo & Discussion.

Demo & Discussion: Adding Scenic Elements Overview (15 min)

What You’ll Need to Cover: Overview
• Discuss adding scenic elements on the reverse side of the copy paper. ★
• Demo tracing the silhouette.
• Brainstorm ideas for details and support BEING VISIONARY. ★
• Review lessons learned about cutting and gluing from yesterday.
• Discuss testing.

How Your TL Can Help
Hold the example shade up to the light while you demo how to trace the animal silhouette on the back side of the paper.

What You’ll Need to Cover: Details
Discuss adding scenic elements on the reverse side of the copy paper ★
• Use your sample to get the discussion started. Plug in the night light again and have campers tell you how the details add to the animal.
• Ask: Are the details also silhouettes?
  (Yes.)
• Ask: What do you notice about the size and shape of the details? (They are varying sizes, but they are not bigger than the animal. The shapes are simple.)
• Make sure campers understand that anything that touches the animal will look like it’s part of the animal, since everything is in silhouette.
• Demonstrate this by moving around a few cut pieces and placing them in various locations both on and off the animal.
• Emphasize that overlapping the animals too much could prevent their animals from looking the way they intend.
Demo tracing the silhouette
- Tell campers that in order to make sure they don’t cover up the animal silhouette with their scenic details, they’ll trace the outline of the animal on the back side of the shade.
- Demo with your TL how campers will do this with the help of a partner.
  - Have your TL hold the paper nice and tight on either side, and lift it slightly toward the light so the silhouette shows through.
  - Gently trace the outline. Emphasize not pressing so hard that the pencil pokes through!
- Now you can plan your scene around the traced outline.
- Emphasize that just like yesterday they should redesign their sketches until they’re happy with them.

Brainstorm ideas for details and support BEING VISIONARY ★
- Tell campers they’ll take some time to brainstorm as a group about what details they might add.
- First have campers imagine where their animals are. Outside in a tree? Inside in a house? In the water? In a yard?
- Have campers popcorn-share their ideas.
- For each idea, have the group come up with some scenic elements they might add. Have them think about what’s above and below the animal. For example:
  - Leaves and tree branches
  - A pillow in a house
  - Grass in a yard
  - Bubbles in the water
  - Moon, stars, sun, or clouds
- Then have campers imagine what their animals might be doing. Eating something? Playing with something? Watching something?
- Have campers popcorn-share what their animals could be interacting with. Some ideas:
  - Toys
  - Other smaller animals
  - Animal treats (bones for a dog, bananas for a monkey, etc.)
- Finally, let campers know they can add small decorative shapes that don’t have to be anything in particular to the scene.
- Have campers popcorn-share some abstract decorations they could add. Some ideas:
  - Lines (zigzags, stripes, wavy lines, etc.)
  - Basic shapes (triangles, circles, squares, hearts, etc.)
- Emphasize that campers will have to imagine how their extra elements will work around their existing animals. In particular, if they don’t have a lot of space they’re going to have to imagine what small details can look cool.
- If you have time, give campers a chance to practice envisioning elements around an animal.
  - Hold an example of a camper’s silhouette from yesterday.
  - Have everyone turn on their visionary powers and imagine what could be around it. (Remind them it can’t overlap the animal too much!)
  - Have a few campers popcorn-share what they see. Highlight how many different possibilities there are!

Review lessons learned about cutting and gluing from yesterday
- Ask campers what cutting techniques worked well for them yesterday.
- Emphasize the technique of adding smaller details/pieces afterwards. This will be especially useful for today, since a lot of shapes will be smaller and harder to cut.
- Have campers share what they needed to pay attention to when they were gluing yesterday. (The paper is flat and all the edges are glued down.)
- Emphasize that campers should take their time trying several different arrangements before gluing anything on.

Discuss testing
- After spending time carefully cutting, arranging, and rearranging, campers should glue down the scene and then test it out to see how it looks.
- At the testing station, campers can hold the paper up to the light itself, or hold it up against the butcher paper.
- Things they should notice:
  - Whether their details look how they intended/are recognizable
  - If any details are obstructing/changing the way the animal silhouette looks
  - If there is room to add more details or if there are too many details
- Let campers know that once they’re happy with the final design you will help them attach the shade to the night light and they can see the final product.
Camper Work Time: Adding Scenic Elements (25 min)

During Work Time Campers Will...
CREATE, TEST, EVALUATE & REDESIGN
1. Trace the animal silhouette from yesterday onto the back side of the shade with the help of a partner.
2. Draw elements to add to the scene on the black cardstock.
3. Cut them out and arrange them around the animal outline.
4. Glue the scenic elements onto the copy paper.
5. Evaluate the details at the silhouette testing station and make any changes or additions.
6. Get an adult’s help to clip the copy paper onto the light and have the adult plug it in for a final test.

Extension
Make another night light shade or continue to embellish the cardboard seat from the beginning of the week.

How Your TL Can Help
Help clip shades onto night lights as necessary.

Facilitate the Project Steps
CREATE, TEST, EVALUATE & REDESIGN (Steps 1-6)
• Make sure campers are working together to help each other trace their animal silhouettes.
• Remind campers that it’s important to test and evaluate before gluing elements down by trying out different arrangements.
• Watch out for campers who are overlapping their animals too much and help them recognize this issue.
• When campers are ready, help them attach their shades and plug in the night lights.
• The curved surface can change how clearly certain designs appear. Encourage campers to remove the shade and redesign if the design doesn’t look the way they want when it’s on the actual night light.

Extension
• If campers are moving on to decorating their stools, make sure they’ve cleaned up all their night light materials and scraps before doing so.

Support BEING VISIONARY ★
Suggest strategies that help and encourage campers to be visionary
Some specific strategies for today:
• Thinking about the categories used in the group brainstorm (setting, objects, abstract decorations)
• Testing out several arrangements before gluing to find the scenes that best match their visions
• Taking a gallery walk to get ideas from others about possible elements and designs they could add

Recognize visionary campers
This encourages the camper and helps others see how they can be visionary as well. Recognition can be just verbal or include some kind of physical award. Be sure to be specific about how you see campers being visionary. Some ways you might see vision today:
• Using any of the strategies mentioned above
• Taking time to get a clear vision for their scenes and elements before they start working

Ask the Guiding Questions that support being visionary

Clean Up (5 min)

Have campers put all their scraps in the recycle bin. If they think the scrap could be usable to someone else, they can save it for the next rotation.
Lesson Wrap Up (10 min)

Recognition and Reflection (BE VISIONARY)
Help campers see how they or others embraced the Innovator’s Mindset, and why this is important for innovation.

Suggested recognition and reflection activity
- Have campers raise their hands if they were able to imagine some new and exciting elements that didn’t exist on their night light shades yesterday.
- Recognize them for their vision!
- Have a few campers share an idea they had that they were especially excited about or share about an idea they saw someone else trying that they thought was especially visionary.

Application
Leave campers with a challenge or prompt to help them apply today’s learning outside your classroom.

Suggested challenges/prompts
- Encourage campers to keep exercising their visionary power by looking at a scene or image and imagining what other elements, characters, or designs they might add to make the image more fun, surprising, or interesting.