

REIMAGINING

the danville science center

MASTER PLAN



roto



OUR VISION

This plan represents the strategic and creative vision of The Danville Science Center staff, the DSC Foundation Board, community leaders and select volunteers, working collaboratively with leading museum design experts to build upon the success of the existing facility and invest in new experiences for the next generation of visitors.

our **COMMUNITY**

This exciting new vision builds upon the momentum within our community to reinvest and redevelop the Danville River District. The Science Center has long been recognized as an anchor of the district as well as the surrounding Dan River Region and will continue to grow its reputation as a relevant resource for all.



Inspiring pride in all Danvillians.



The enhanced Danville Science Center will forge and celebrate partnerships throughout the city and state both on campus and off.



key AUDIENCES

The enhanced museum experiences will be developed around the needs of the Dan River Region. This inclusive approach will engage multigenerational families, school-age children, and even those visiting our facility for a private event or corporate function.



1. School groups



2. Early learners



3. Multigenerational families



4. Families of modest income



Our plan calls for enhancing the ways multigenerational families use and interact with the exhibits. Parents and caregivers are encouraged and given tools to help them interact with and enhance the learning experience of the children they bring to the museum.



the science of our **BRAND**

Compelling science inspires, and our brand is a catalyst for inspiration. To make science compelling, we create experiences that are relevant and real on a multitude of levels. We spark curiosity, inspire creativity, and compel our visitors to enrich their lives and brighten their futures. Our brand is fun, exciting, and vibrant - just like we are!



As part of the reimagining and transformation of The Science Center, the brand identity will receive a refresh, likely still leveraging the well known butterfly icon that has been a staple of the identity to date.

Vibrant · Exciting · Fun



Inspiring · Curious · Creative

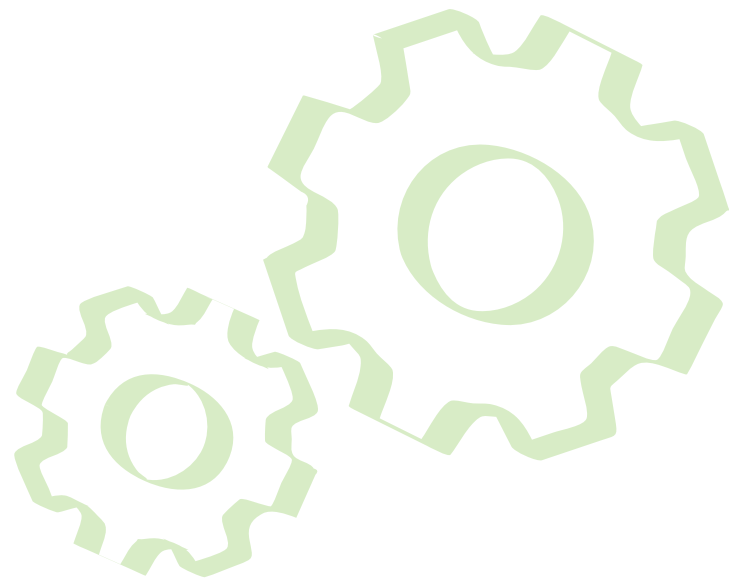


VALUES of our experience

Values are lenses that we use to define the central components of The Danville Science Center experience. These will influence decisions about content, exhibit activities, and design direction. They are criteria used to filter ideas and determine which ones best represent what The Science Center stands for and resonate with the visitors who experience our institution.



Values are who we are.



Inspirational, future-minded

The Science Center inspires a sense of discovery in the youth of the Dan River Region to seek out a future rich with possibilities, opportunities and knowledge.

STEM focused

The processes, methods, outcomes and insights of science are at the forefront of the experience.

Locally relevant, community integrated

The Science Center strives to forge partnerships with like-minded people and organizations committed to the empowerment and education of the Dan River Region.

Hands-on, interactive, tactile

Engaging activities provide a setting for visitors to have memorable experiences that they helped to create.

Flexible, open-ended

Danville's changing landscape calls for institutional flexibility in our programming, experiences and use of space.

Clever, resourceful

From our historic venue and location to the dome theater and butterfly garden, we celebrate our resources and find new ways for them to engage our visitors.

key **GOALS**

A clear set of goals serve as the foundation for the re-imagining of The Science Center. These aspirations establish the intended outcomes that we are working to achieve and provide a metric to evaluate the final outcomes.

Goals are what we do.

- 1** Develop open-ended activities that encourage repeat visits and personal investment from visitors
- 2** Establish a unified campus that provides a singular experience for visitors and integrates DSC with its neighbors at The Crossing
- 3** Develop family-oriented galleries that engage multiple age groups within the same space
- 4** Provide a dedicated space for families with very young children
- 5** Include collections in support of a broader science story
- 6** Create an iconic center piece for the institution



ORGANIZATION & WAYFINDING

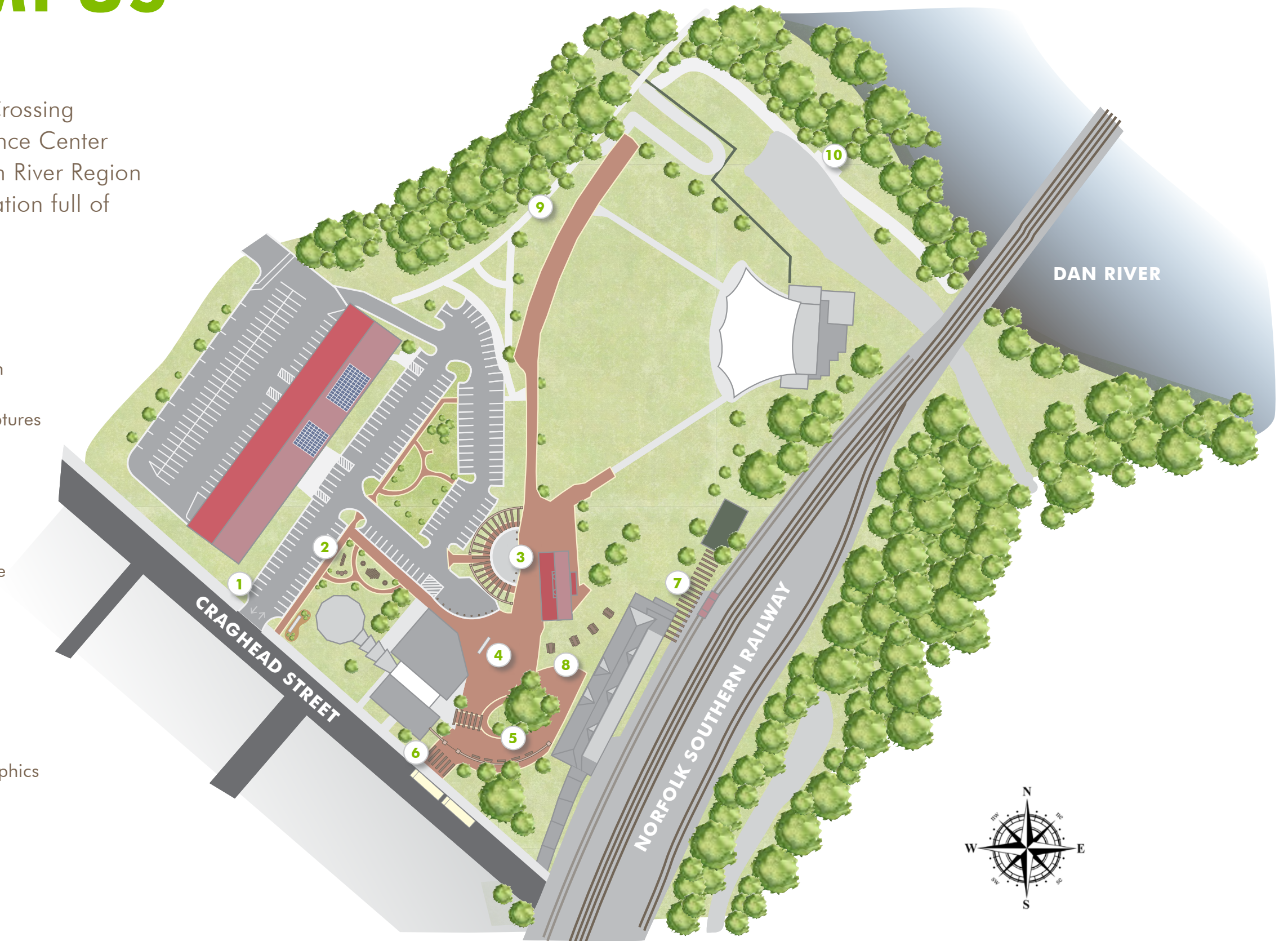
Our vision celebrates our unique campus of buildings, enhancing a visitor's sense of place, and helping us evolve from a primarily collection based experience, to a fully interactive, engaging exploratory adventure.

a unified **CAMPUS**

Creating a unified campus at The Crossing anchored around The Danville Science Center will provide all members of The Dan River Region with an even more enriching destination full of new experiences within a pedestrian-safe setting.

Site Enhancements

- 1 New main entrance and monument sign
- 2 New music garden with interactive sculptures
- 3 New physics splash pad
- 4 New campus directory signage
- 5 New pedestrian plaza with water feature
- 6 New school bus drop-off
- 7 New trellis covered walk-way
- 8 New outdoor picnic area
- 9 New Riverwalk Trail science content graphics
- 10 Existing River Lab



SCIENCE CENTRAL organization

First Floor

Being a newer building with more modern infrastructure than the train station, the first floor is seen as the best potential location for a new water gallery space.

Second Floor

The second floor is home to a second large gallery concept being reimagined under the overarching theme of motion. The current computer lab is expanded and transformed into the Creativity Lab.



① Water Gallery

② Go! Gallery

③ Creativity Lab

SCIENCE STATION organization

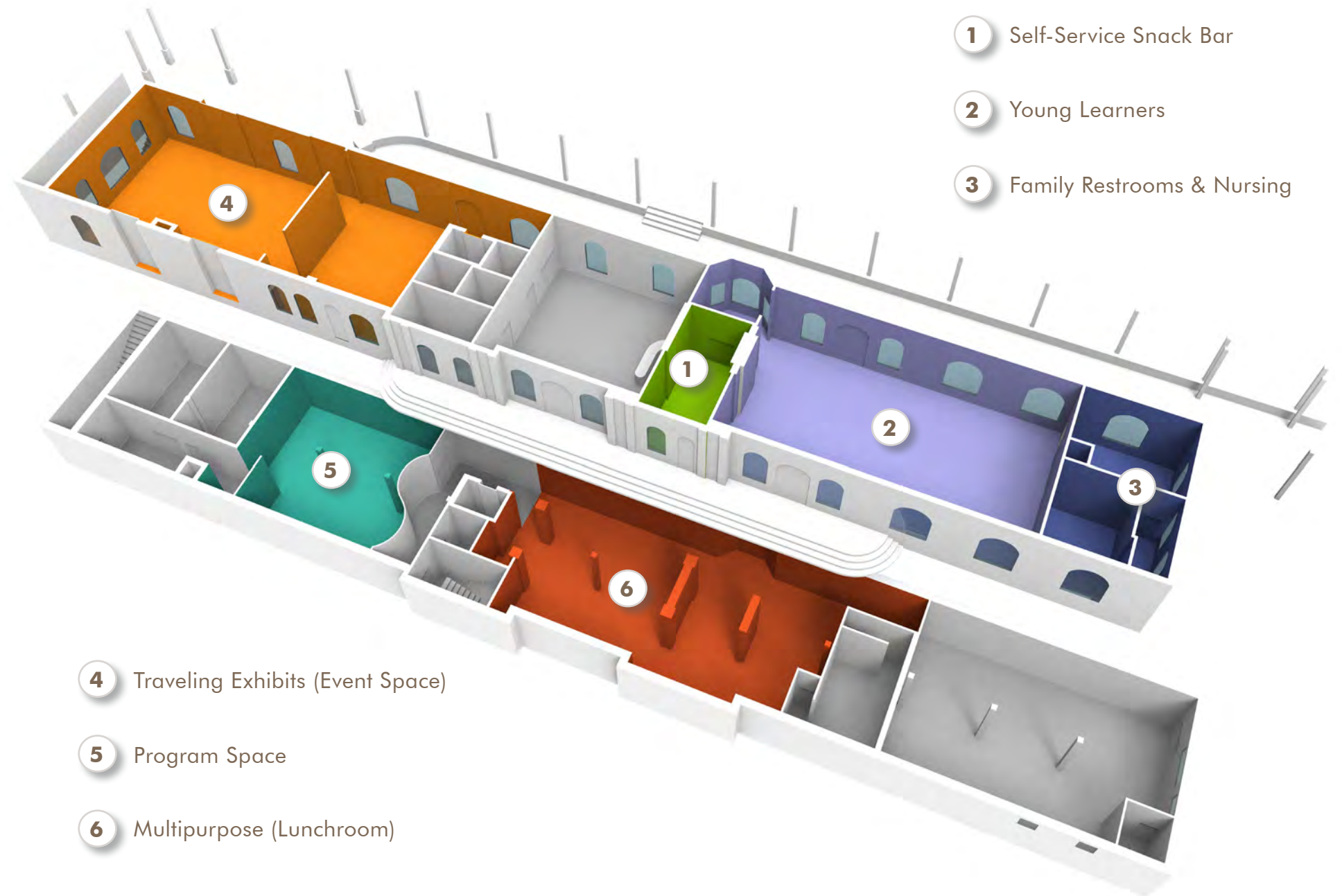
First Floor

The Self Service Snack Bar finds a centrally located home adjacent to the entry and becomes a nearby amenity for the Young Learners gallery. The Young Learners gallery takes advantage of the open space and natural light of the south gallery space, and is further enhanced with amenities like family restrooms and a retreat for nursing moms.

The opposite end of the station is reserved for Traveling Exhibits, allowing it to be easily closed off when not in use, or even set aside to host special events.

Basement

The basement becomes a flexible-use space, housing a program space and a multipurpose room, which can function as a lunch room for large school groups.



NEW EXPERIENCES





WATER

"Water is the principle, or the element, of things.
All things are water."

- Thales of Miletus

WATER gallery

Water connects visitors to their local surroundings and unlocks a world of scientific possibilities.

Water is an interdisciplinary experience that weaves a thread through the physical and biological sciences. Visitors to the gallery will interact with water through a collection of activities clustered around three topic areas:

- Water and Industry
- Water and Life
- Water and Earth

These wide ranging topics provide a flexible platform for a huge variety of different experiences, suitable for multiple age ranges. More than a water play area, Water is a robust gallery of STEM interactives that elevate water from a single chemical compound to an interpretive tool that unlocks a multitude of scientific experiences. Selections of taxidermy from the current Womack Natural History Collection create a backdrop that reinforces this gallery's connection to the amazing world just outside of The Science Center's doors.



WATER and industry

Humans have learned to harness the power of water in a multitude of ways. It is used to generate electricity, it serves as a critical component of manufacturing techniques both modern and historic and it has carried us around the world for generations. Water and Industry explores the methods and processes through which humans have put water to work.



Putting water to work

Water Works

A network of tubes, chutes and reservoirs provide water to a suite of activities featuring dams, locks, hydro-power stations and other gizmos that allow visitors to put water to work.



Toddler Splash Table

This pint sized play area provides a dedicated space for younger visitors to splash.



Build-a-Boat

A tinkering table prompts visitors to build and test boats in a flowing stream.



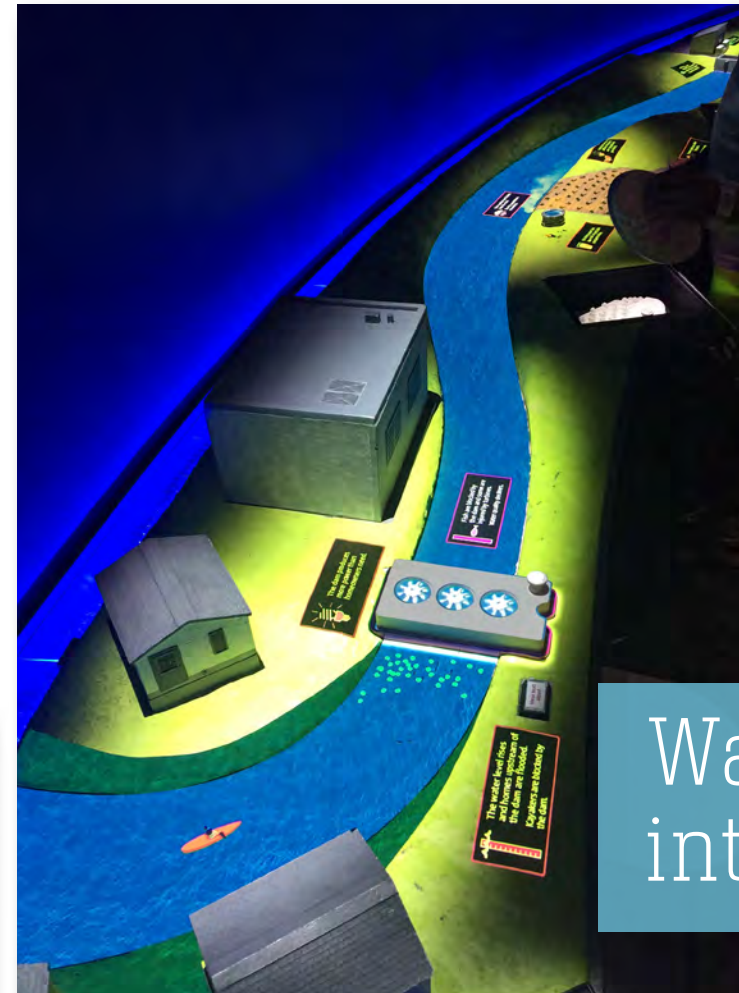
WATER and life

Water and life are integrally linked. Wildlife flocks to water, towns are settled near water. Water is the principle ingredient of living things. With the Dan River flowing through the heart of the city, this integral connection to water is especially powerful for the Dan River Region. This activity area seeks to forge even stronger connections between the Dan and the people who live around it.



Water Scale

Stepping onto a large scale using gallons as the standard of measurement, visitors can see the amount of water found within their bodies.



Living River

An interactive model where visitors explore different ways for a town to use the resources provided by a river. Pieces of the model can be swapped and projection mapping shows the impacts of these choices.

Water and life are integrally linked.



Taxidermy Displays

A portion of the Womack Natural History Collection, featuring local fauna, is spread throughout the gallery.

WATER and earth

Water defines our planet. Water vapor is responsible for our robust and powerful atmosphere, full of complex cloud patterns and intricate weather phenomena. Rivers slowly carve through eons of rock formations, leaving vast canyons in their wake. Long gone glaciers are remembered by the vast scars they have left behind. These activities invoke the amazing power of water to shape and then reshape our world.

Shake Table

Visitors construct buildings from geometric blocks and see if their creations can withstand the seismic forces of our fluid Earth



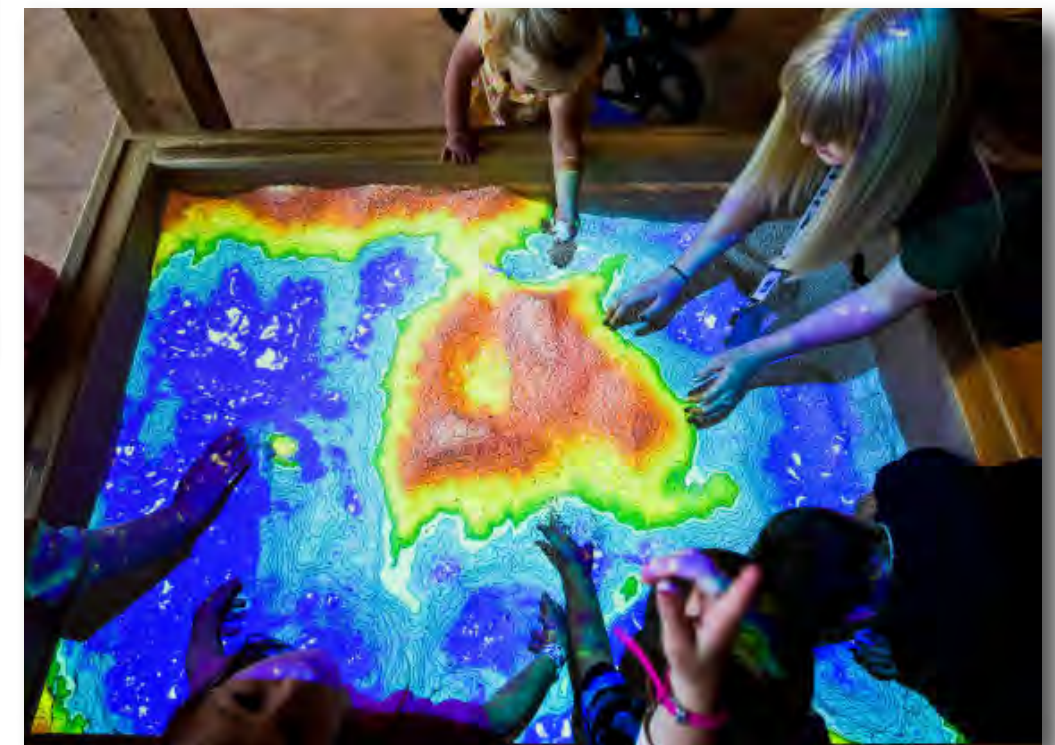
Giant Tornado

A large, swirling tornado dances within a cylindrical display. Visitors can reach inside to disperse the funnel cloud and then watch as it reforms before their eyes.

Water defines our planet

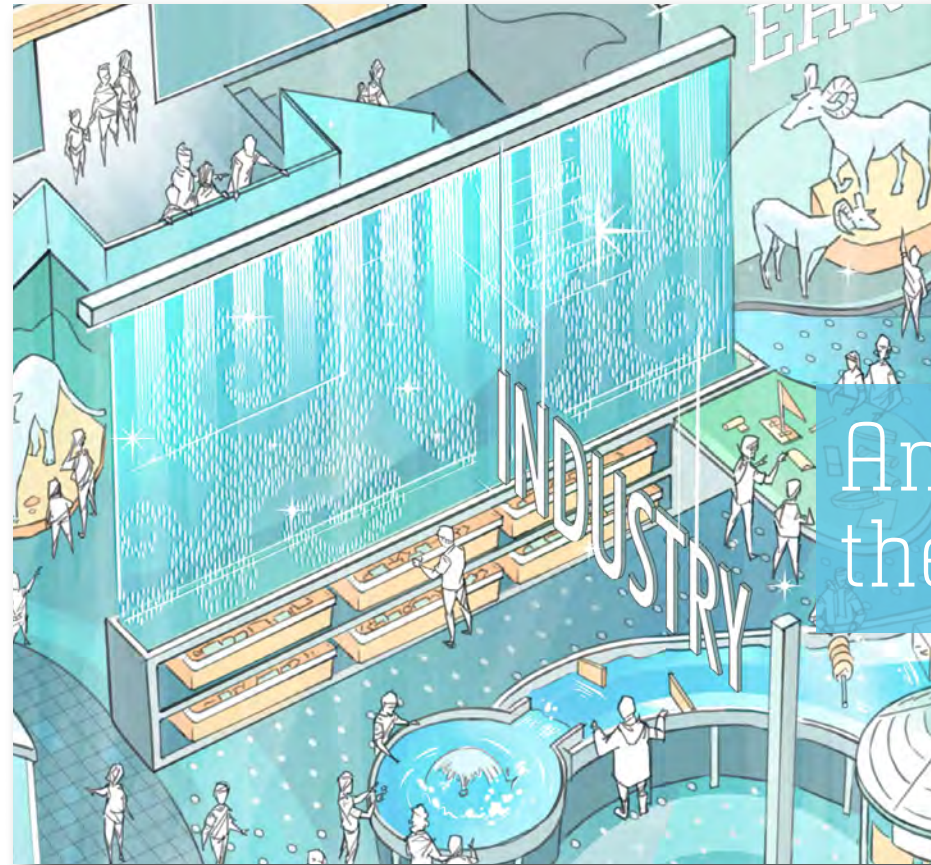
Augmented Reality Sandbox

A large open top sand box allows visitors to shape their own landscape. A sensor detects the height of the material and projects color and landscape lines on top. Holding a hand above the sand box causes rain to fall and course through the landscape.



an **ICON**

The central location and content of the Water gallery creates the perfect setting for The Science Center's new signature icon, a dynamic Water Wall. Positioned at the front of the gallery, this display activates the space, whether viewed from the mezzanine vista or within the gallery itself, and establishes a unique iconic gesture for the institution at large.



Water Wall

As it falls, the water that forms this iconic wall will create a variety of animations ranging from simple patterns to complex shapes and words. Animations will be programmed to maximize visual impact without limiting the view of the space from the mezzanine above.

Animated water brings the gallery to life





GO!

"Life is like riding a bicycle. To keep your balance,
you must keep moving."

- Albert Einstein

GO gallery

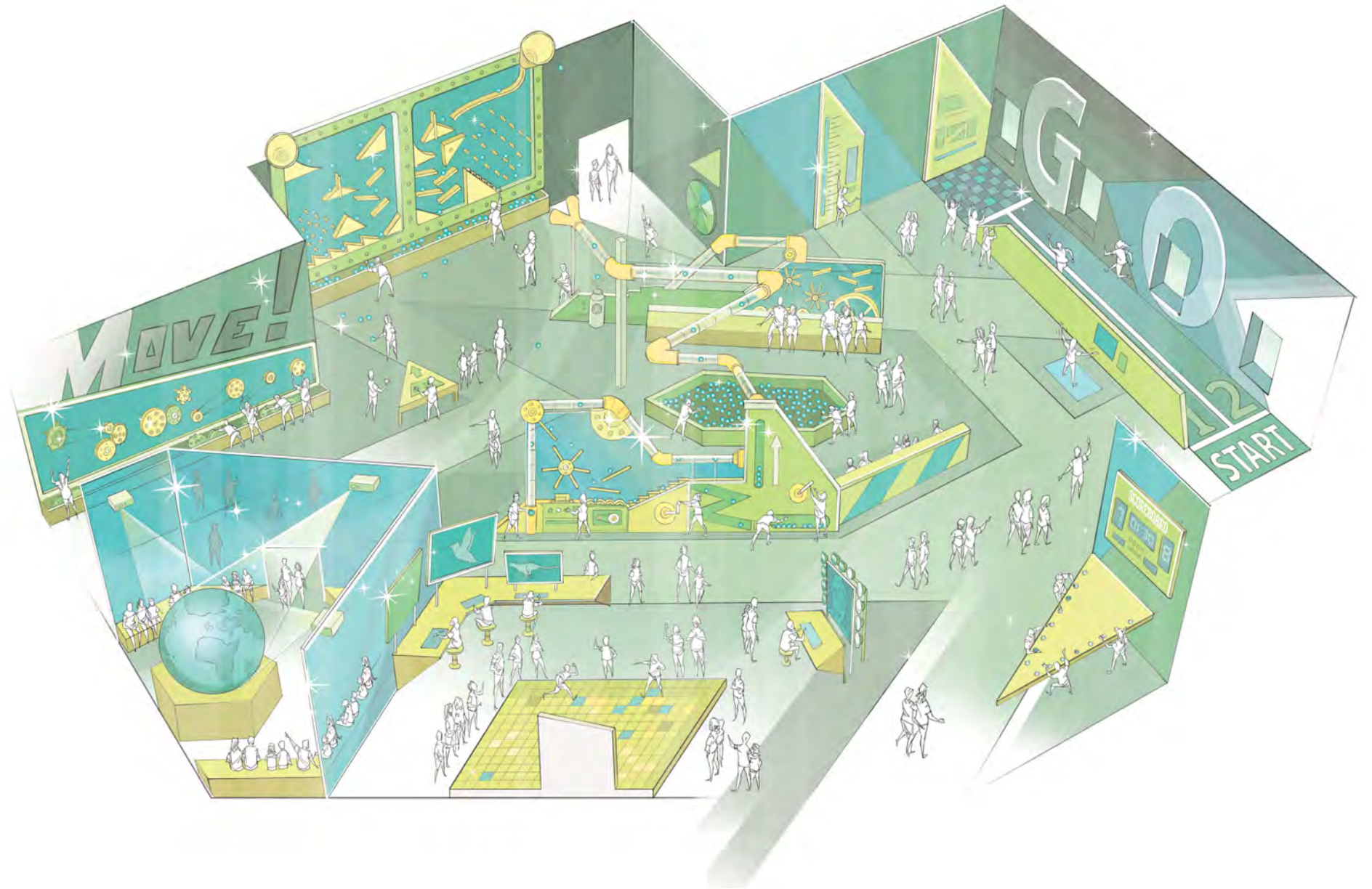
On your marks, get set...

Motion is a universal constant. It permeates nature from the steady, minute vibrations of the tiniest atoms to the slow, ponderous rotation of vast galaxies. We witness it in the perpetual activity of the towns in which we live and feel it in the ever present pulse of the heart in our chest. Motion signifies the continuous change of all physical systems, great or small and provides a lens to investigate the universe around us and within ourselves. GO is more than a gallery, it is a call to action that embodies the drive for discovery and growth that suffuses The Danville Science Center experience.

Visitors to GO will experience motion through distinct themes:

- Human Motion
- Energy in Motion
- Extreme Motion

These themes are rich with science content that spans multiple disciplines, from simple physics, to health and nutrition. While this is a critical component of the gallery, the real strength lies in the opportunity for creating experiences that are highly repeatable.



GO human motion

The best way to appreciate motion is to get moving. Human Motion encourages movement through a collection of physical activities that challenge visitors to compete with their friends or themselves. Each trip to The Science Center offers a new opportunity to witness their own growth as they strive for a new record.

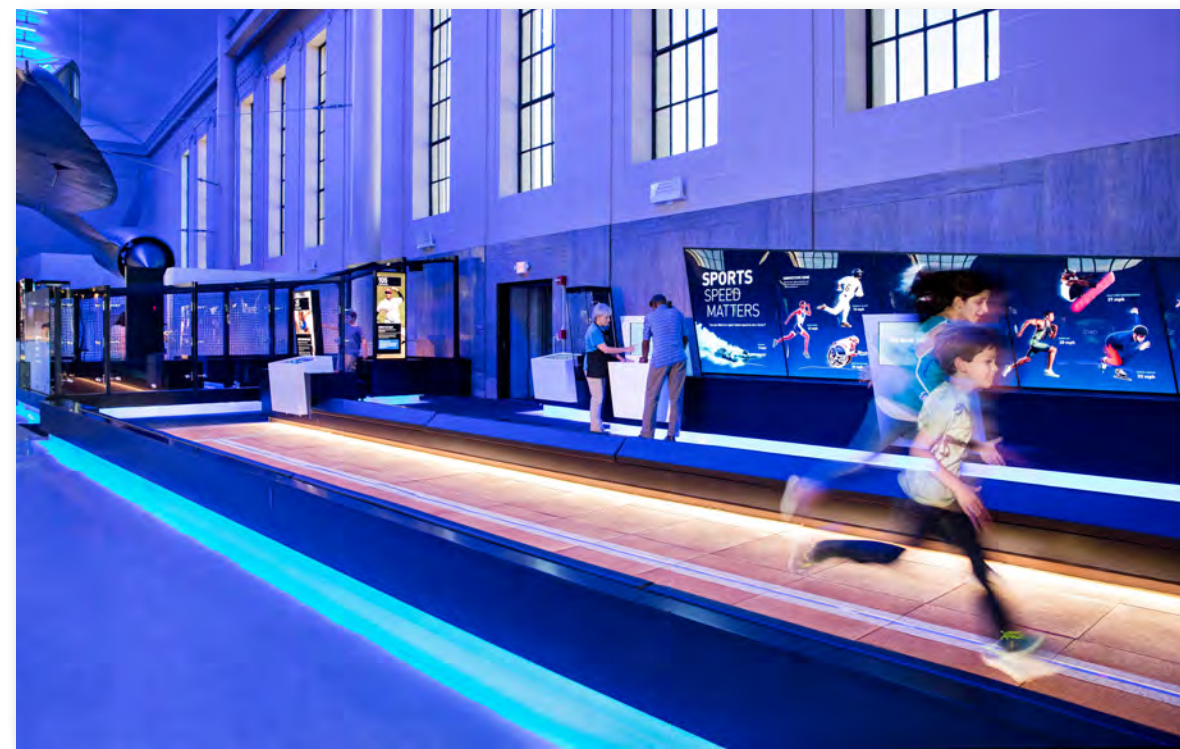
Frog Leap

A tall vertical backboard beckons visitors to jump. A sensor detects the height of each jump and displays it on a nearby scoreboard.



Sprint Track

Visitors can go head to head against each other, themselves or choose from a list of different people or animals to race.



Challenge Yourself

Reaction Time

A giant "whack-a-mole" style game tests visitors' speed and accuracy.

GO energy in motion

Everything that is in motion contains kinetic energy. How moving things get that kinetic energy is a complex question that lies at the heart of basic physics. Energy in Motion will trace the path of energy as it moves through a variety of physical systems, inspiring visitors to experiment with energy in the world around them and within their own bodies.



Calorie Counter

Visitors spin a large wheel and perform fun and silly physical activities selected at random. Graphics show how many calories each activity burns.



Ball Launcher

A large cannon launches balls at a wall covered with chutes and tubes that show the power of potential energy. A magnetic surface allows visitors to create new pathways for the balls to travel. Adjacent interactives in the space will utilize the same balls, creating a flexible platform for visitors to play and experiment using a single familiar tool.

Experiment with energy



Gear Wall

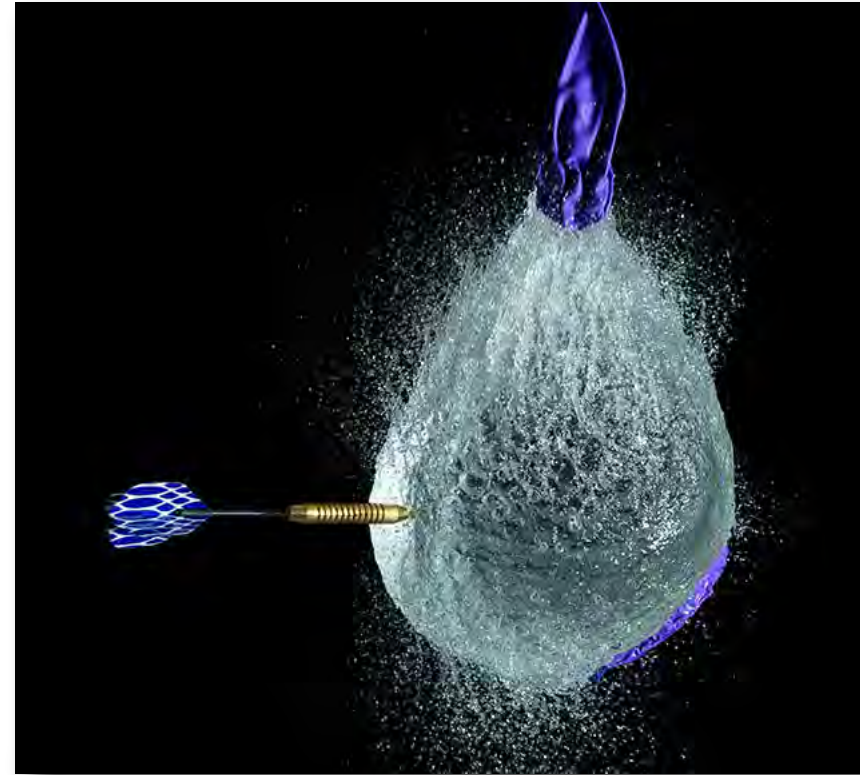
A magnetic wall is covered by a collection of gears of varying size and shape. Visitors can assemble an elaborate gear train.

GO extreme motion

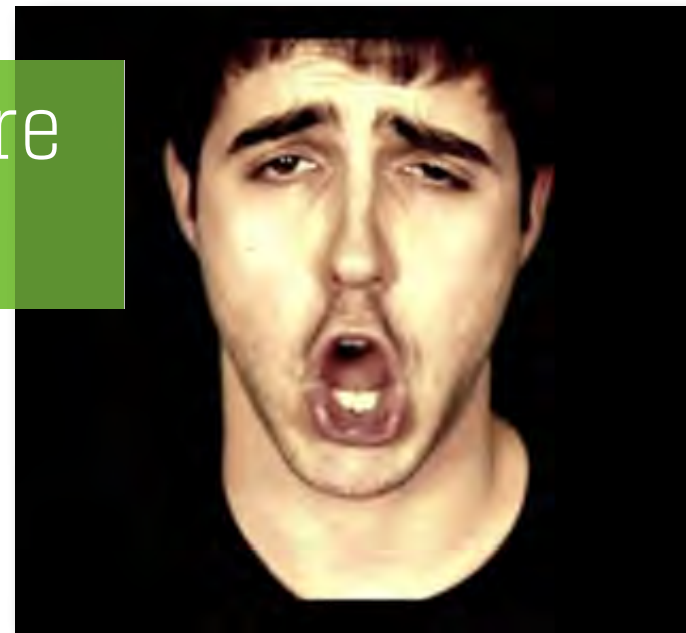
Motion occurs at many different scales throughout the universe, many of which fall well beyond the realm of our human comprehension. These activities will reveal examples of this extreme motion to visitors through clever media based experiences.

Extreme Motion Theater

An array of monitors are arranged above a large dial. As visitors turn the dial, footage of extremely fast or slow events plays at variable speeds. The faster the dial is turned, the faster the footage plays and visa versa.




Fast and slow are relative terms



Slow Motion Studio

Visitors record a short movie of themselves using a high speed camera. A monitor plays back the footage at an extremely slow rate, revealing details the human eye could never catch on its own.



YOUNG LEARNERS

“Education is teaching our children to
desire the right things.”

– Plato

YOUNG LEARNERS gallery

This play area takes little visitors on a trip through America aboard the Danville Express. All aboard!

A critical piece of creating a multigenerational exhibit experience is providing dedicated spaces for visitors in need of particular learning environments. Devoted to young visitors, the Young Learners gallery encourages experience-based play and discovery using both fine and gross motor skills as well as interactive elements that are right-sized for little learners. Young explorers will climb over, under, and around obstacles, lift themselves up, and open, close, push, pull, fasten, and loosen a wide variety of intriguing objects. Different play zones are themed to resemble stops made by the Danville Express, a train-themed climber that serves as the center piece of the gallery. A sensor positioned near the tracks outside alerts visitors when a train is approaching, creating a fun event each time the train rumbles by.



YOUNG LEARNERS experiences

This area, designed especially for infants and toddlers, will engage their senses all while signage and other resources help parents learn just what's going on inside those amazing young brains.



Touch and Feel

Walls and floors clad with materials of contrasting textures transform the simple act of touching into an interactive science experiment. Visitors compare the warmth of wood to the coolness of stone and metal, or contrast the cushiony softness of velvet with the scratchy grit of sandpaper.



Cause and Effect

Balls roll down ramps, switches trigger sounds and lights and blocks tumble down when pushed. Young visitors activate their directed groping skills, learning to grasp, pull, tilt, and otherwise affect the world around them.

Engage the senses



Danville Express

Young visitors climb, crawl and explore the Danville Express, a train-themed climbing structure full of hills, ramps, steps, and pull-up bars. Small "discovery boxes" hidden throughout the train contain natural objects from the world for kids to discover.



CREATIVITY LAB

"You can't use up creativity. The more you use, the more you have."

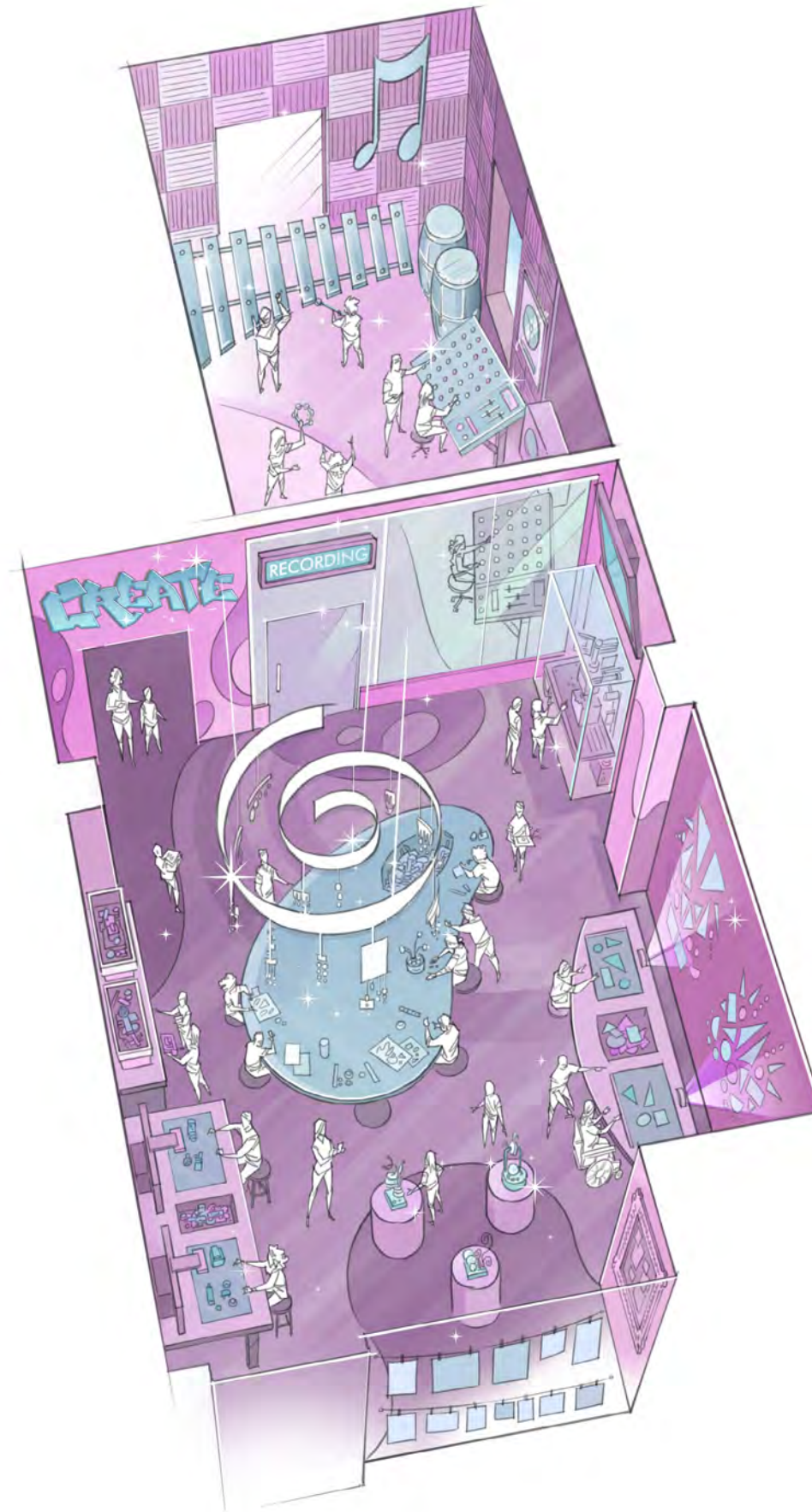
- Maya Angelou



CREATIVITY LAB

From solving engineering problems to inventing elegant equations, creativity lies at the heart of many STEM disciplines

The Creativity Lab is a small but well-invested space where visitors can explore their own creative potential and abilities, including both the concrete skills that are employed to make things and the personal components of self-awareness that visitors can use to begin defining themselves as “creative individuals.” In so doing, visitors will be expanding parts of their brains that are critical to other related STEM endeavors, like problem-solving and pattern-finding, expanding their perspectives to look at science in a broader, more compelling way. The act of “play”, which promotes creative thinking and collaboration, is so intrinsic to major segments of our audience (primarily, but not exclusively, our children) and this inventive capacity of play can be directly harnessed in highly repeatable STEM exhibits and programs within this exciting new space.



CREATIVITY LAB | music

This experience space breaks down the components of music into constituent parts and allows visitors to experiment with them in ways that do not require prior musical training. Music concepts like pitch, interval, scale, timbre and rhythm all have excellent rudiments in the physics of sound and human perception. Visitors will experience these ideas through simple, mechanical as well as wonderful technology-enhanced installations that provide an intimate creative relationship with music that they never knew they could possess.



Giant Xylophone

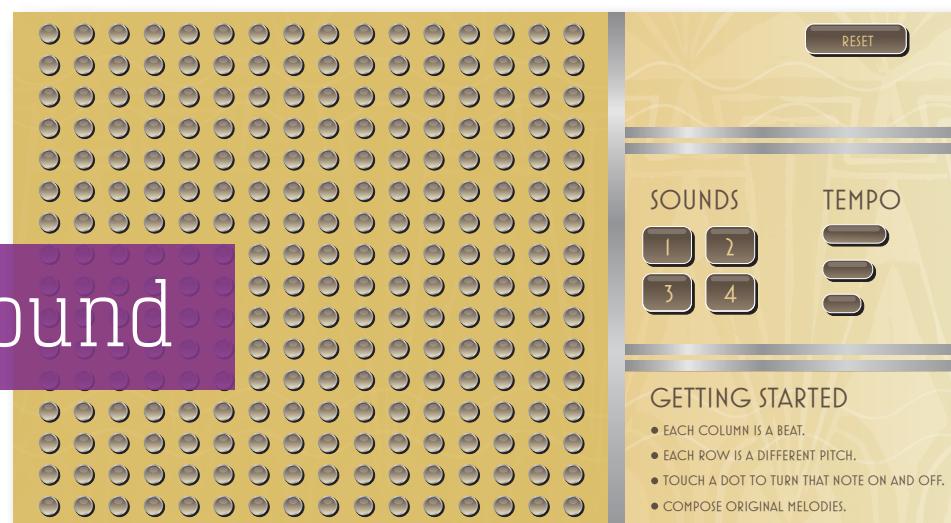
Where visitors create melodies by manually arranging the order of resonant tubes.



Music Matrix

Visitors can explore musical patterns by instantly composing musical loops through touch-sensitive media.

Experiment with sound



Live Instruments

Visitors are free to experiment and collaborate with various hand percussion instruments as they explore rhythm, pattern, and sound.

CREATIVITY LAB | art

Here, visitors can experiment with different techniques for making art rooted in STEM, allowing for the free-flow of creative expression mediated by science and technology. The key to these experiences is allowing the STEM attributes to rise to the top of the encounter, the way that fancy easter egg coloring tricks all seem to depend on the particulars of chemistry. Visitors are creatively exploring “art,” but never more than a thought away from what makes the art work.



3-Axis Mill

A simple 3-axis mill allows visitors to shape blocks of wax into artistic creations. A simple control interface and robust enclosure allows young and inexperienced visitors to use this amazing tool.



Creative expression



DIY Wallpaper

Visitors combine geometric shapes to produce a whole gallery wall of pleasing patterns.



Animation Station

Visitors create their own stop motion animation using a simple interface and collection of props and backdrops.

OTHER EXPERIENCES



other **EXPERIENCES**



The Digital Dome Theater

The iconic Digital Dome Theater transports visitors to unreachable places, from the distant stars to a trip through history. A flexible digital hardware platform allows for a multitude of different content making it the perfect addition to a field trip, an exciting location for an off-site corporate event or a venue to showcase local digital artwork.

This immersive multimedia experience will remain a highlight of a trip to The Science Center and provide an exciting location for creative local events.



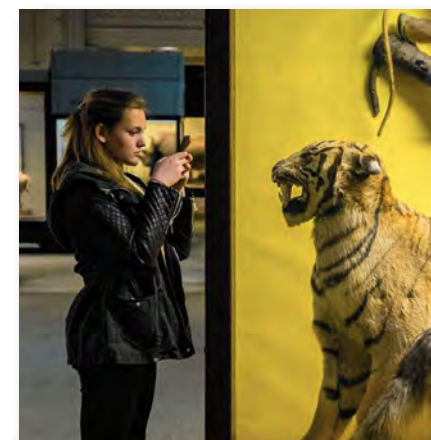
Science on a Sphere

The existing Science on a Sphere infrastructure will assimilate into the Go Gallery, connecting visitors to the movement and changes of our planet.



Butterfly Station

As a beloved feature of The Science Center, the Butterfly Garden will be revitalized. New signage and clever infographics will guide visitors through the garden and provide deeper insights into the many amazing species of butterflies living there.



The Womack Natural History Collection

The Womack Natural History Collection represents the longstanding heritage of The Danville Science Center and the dedication of its donors and supporters. This powerful display of natural beauty will take on new life and meaning as it is integrated into the newly reimagined exhibits throughout The Science Center.

other **EXPERIENCES**



Multipurpose Space (Lunch Room)

The currently less frequented basement of the train station building is given new purpose by being transformed into a multipurpose room capable of hosting large groups for various functions. The primary role of the room will be providing a venue for large school groups to eat lunch.

The flexibility of this space to host large school groups is currently a need of The Science Center. Infrastructure will be added to make this space flexible for other programs as well.



Program Space

The current program space will be refreshed to create an inviting, collaborative learning environment outfitted with all the necessary tools to execute STEM-focused programs for a wide variety of audiences.



Self Service Snack Bar

A brand new self-service snack bar, complete with cafe seating and high-end vending machines, will offer visitors a variety of food and beverage options and a place to recharge.



Flexible Event Space (Traveling Exhibits)

The Flexible Event Space will provide The Science Center with a blank slate for showcasing temporary exhibits or rotating portions of the center's current collections with full control over the central focus of the gallery.

THANK YOU

Feeling inspired to help make this master plan come to life? You can get involved with this project and make a difference! Contact us to learn more.

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