



# Children's Museum *of Southern Minnesota*

## LEARNING EXPERIENCE Master Plan

Mankato, MN

Revised April 2016  
Developed in 2011

VERGERONT MUSEUM PLANNING  
MINNEAPOLIS, MN

JIM ROE MUSEUM PLANNING  
ST. PAUL, MN





*In 2016, the Learning Experience Master Plan was updated to become applicable to the current staff, board, and stakeholders. Edits were made by Ines Wingert with the guidance of Peter Olson. The majority of the original text has been saved in the appendix as a historical reference.*

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# Children's Museum of Southern Minnesota

## Learning Experience Master Plan

### Planning Context

Since 2005, a group of early childhood educators, parents, and community members have worked diligently to bring a children's museum to Southern Minnesota. Motivated by their knowledge of the long-term impact of early experience—and inspired by the promise and excitement of young children—they have been committed to a children's museum as a way to build on a strong local legacy that can contribute to future prosperity for the region.

In laying the foundation for what has become the Children's Museum of Southern Minnesota (CMSM), the group has actively pursued two strategies that have interacted with and built on one another. They have delved into and learned about all aspects of starting, operating, and growing a children's museum. Through visits to other children's museums, attending national conferences, and researching children's museums across the country, they have gathered best practices, identified lessons learned, and clarified their hopes and dreams for Southern Minnesota.

Over the same period, they have built awareness and support in the region around a children's museum and what the play-based, family-centered experiences characteristic of these museums can contribute to local children and families, and the greater community. CMSM has engaged children and families in hands-on activities at locations across the region, brought *The Amazing Castle* exhibit to Mankato, and opened Play Lab to share the kind of experiences children and families will enjoy in a permanent facility. CMSM has delighted children by inviting them, their parents and grandparents to play, imagine, and explore. And they have tested interest in a wide range of programs and exhibits.

In five years, this active group of educators, parents, grandparents, and community members has made friends, found new partners, and built a growing community around a children's museum. Through listening and active engagement of parents, educators, artists, and business people in their learning and planning, the group has started to shape a children's museum that reflects its home in southern Minnesota.

Growing evidence of community support prompted CMSM leadership to launch a master planning process in late 2010. To provide a foundation for the programs and interactive exhibits and environments it could offer on a regular basis in a permanent home, the Museum began development of a comprehensive learning master plan.

Working with Jeanne Vergeront of Vergeront Museum Planning from Minneapolis, a team of board, staff, and community members engaged in a three-part planning process that expanded, at the gallery concept phase, to include Jim Roe of Jim Roe Museum Planning from St. Paul. These three components together comprise the Museum's Learning Experience Master Plan:

- A **Learning Framework** consolidates CMSM's learning interests related to its audience, learning, and impacts.
- An **Exhibit Experience Approach** builds on the Framework and distills the experiential nature of the Museum's exhibits and environments.
- **Gallery Concepts**, based on the Exhibit Experience Approach, identifies and describes a set of concepts for interactive exhibits and environments.

The Learning Framework positions CMSM as a robust resource for play that contributes to the well-being of children and the community. With an understanding of children's development, recent research on brain development, the role of play in children's optimal development, and deep familiarity with southern Minnesota, the Framework orients the Museum towards irresistible experiences that get everyone into the act with play and make its value visible.

The Exhibit Experience Approach focuses on the first-person engagement that involves all the domains and senses and that is at the core of compelling exhibits and environments. A set of Essential Experiences that all children in the Museum's age range, regardless of background, should enjoy regularly with family, friends, and peers, identifies the variety of opportunities and experiences. Unifying these experiences, providing coherence among them, inspiring ideas, and expressing a resounding commitment to play is a basic assertion: **play = possibilities**.

Gallery Concepts present both narrative and visual descriptions of the environments and activities where children, their parents, grandparents, caregivers, and educators will play, explore and share moments of discovery. Seven galleries including one outdoor gallery area and a rooftop gallery will animate the building and grounds. They are based on local settings and landmarks with play potential for children, their parents, grandparents, caregivers, and teachers to explore, think, discover, learn, and enjoy.

**Building Central** is about *playing with the possibilities of building with different materials, at various scales, and to meet building challenges.*

**Coughlan Quarry** is about *playing with the possibilities of place: natural resources and materials, transformation of materials, stories embedded in stone, and moving through space.*

**Dakota Culture and History** is about *playing with the possibilities of expression through Dakota art, language, heritage, and stories.*

**Dotson Back Forty** is about *playing with the possibilities of exploring nature: natural materials, open space, and inspiration.*

**Farmyard** is about *playing with the possibilities of the soil, seed, sun and water that help plants and animals thrive.*

**Grow It Gallery** is about *playing with the possibilities of farms, fields, and family.*

**Infant/Toddler Play Porch** is about *playing with the possibilities of an inviting and expanding world.*

**Mankato Clinic Tree of Forts Climber** is about *playing with the possibilities of the new: new ways of moving and way-finding; and new views and perspectives.*

**Cecil's Imagineering Loft & Kato Engineering Explorers Lab** are about *playing with the possibilities of creating, constructing, experimenting, and investigating.*

**Mni Wiconi (Water Gives Life)** is about *playing with and respecting the possibilities of water: sensing and exploring the beautiful and life-giving ways that water moves in our world.*

Since its founding, the Children's Museum of Southern Minnesota has been thorough and energetic in its planning for a child-centered and family-friendly venue to serve the region. Consistently, its planning has been sound and solid. Further evidence of this conscientious approach and the commitment to being a recognized and reliable resource on the value of play is CMSM's work observing and studying the play activities and conditions of children and adults in Play Lab. Such diligence promises an exciting and successful addition to the educational and cultural landscape of Southern Minnesota.

# Learning Framework

## Overview

A Learning Framework is a strong set of foundational ideas consistent with a museum's mission, vision, and values. It translates these ideas into a platform to guide planning and evaluation of all learning services including, but not limited to, exhibits and programs. It focuses, sets priorities, creates emphasis and defines key relationships for concentrating energies on exemplary learning experiences and environments. CMSM's mission is to:

*Spark a life-long love of learning by engaging our children's natural curiosity in an interactive, hands-on environment.*

## Learning Purpose

A learning purpose defines a museum's broad learning interests. Recognizing the powerful connection between learning and play, CMSM's Learning Purpose focuses on play and its benefits. CMSM's Learning Purpose is to:

*Make the joy and value of play, and its connections to learning and well-being, visible to children, parents, teachers, and the community.*

## Learning Principles

Learning Principles emerge from the Learning Purpose and address the basic conditions that support children's learning, particularly in informal learning settings. They are grounded in theory and research on play, learning, growth, and development.

- **Play is essential for the optimal development of all children.** It is essential to the cognitive, physical, social emotional well-being of children and youth. <sup>i</sup>
- **Play is a research activity.** Motivated by their natural curiosity and desire to learn, children explore, ask questions, gather information, and make connections. <sup>ii</sup>
- **Children are active participants in their own learning,** exploring the environment, learning to communicate, and building relationships. <sup>iii</sup>
- **Play builds active, healthy bodies.** Children's play facilitates their sensori-motor development and increases activity levels. <sup>iv</sup>
- **Learning is a social activity.** Children learn in relationship with others, through talk, interaction, sharing information and finding out together with family and peers. <sup>v</sup>
- **Rich imaginative play** provides not only social-emotional but also cognitive advantages to children. <sup>vi</sup>
- **Children require direct experience with varied and real objects and materials.** Children explore, manipulate, and elaborate using real objects in order to engage in symbolic forms of learning such as reading and writing. <sup>vii</sup>
- **Children's learning is made visible through many forms.** Children's language, imaginative and constructive play, and movement allow them to discover themselves and the world; and integrate the two. <sup>viii, ix</sup>
- **Adults add a level of richness and variety to children's play.** By supporting and extending a child's exploration, imaginary situations, or problem solving, adults play a critical role in guiding and nurturing children's development. <sup>x</sup>



## Learner Profile

Serving an audience well relies on describing it in meaningful ways so that important characteristics, especially those most salient to planning experiences, are readily apparent. Fundamental to CMSM's planning for its audience is its target audience; a view of its audience as learners; age groupings based on age-related development; and the priority among groups based on their presence at CMSM.

CMSM's target audience is:

- Children 9 years and under
- Their parents, caregivers and teachers
- In Southern Minnesota

CMSM views its audiences as **learners**. Reflecting a natural disposition to learn, children display remarkable feats of learning early in life. Even before going to school, children learn to walk, talk, dress themselves, and get along with others.

How a museum views its learners influences how it shapes learning experiences for them. Making its view of learners explicit, guides a museum in deliberately selecting and shaping settings and situations to engage with the key attributes that learners, both young and experienced, bring to the museum.

CMSM sees its learners as:

- Social, learning with and from others
- Active and engaged
- Curious and inquisitive
- Creative and imaginative
- Responsive and open to opportunities and experiences

Learners can also be tired, demanding, distracted, all of which are qualities that can interfere with learning. These, however, are best managed through architecture and wayfinding, through amenities such as seating and food service, through exhibit maintenance, and through staff training and customer service.

Planning learning experiences relies on a solid understanding of the audience that will engage with and benefit from. The Museum defines learner groups by the age of child, since age-related development drives other important considerations: how children of different ages explore, play with, and learn from objects, activities, and spaces; how they interact with family and peers; and what appropriate supporting roles for adults are.

Intended end users, who the Museum must serve to accomplish its mission and vision, are children and their learning families in Southern Minnesota.

**Primary audiences, served most fully and continuously:**

- All children 9 years and under
- Family groups
- Regions: Blue Earth, Le Sueur and Nicollet county

**Secondary audiences, served well and episodically:**

- Children 9 – 12 years old
- School and community groups
- Parents, teachers, caregivers
- Regions: Southern Minnesota

**Emerging audiences – served well and through targeted offerings:**

- Children 12 – 15 years old
- Children and families underserved by play opportunities
- Regions: Minnesota and Northern Iowa

## Cornerstones and Processes

Cornerstones help define the territory from which a museum will draw topics and subjects to explore in its exhibits and programs. Serving a young audience in an informal learning environment, CMSM's Cornerstones are broad, flexible, and enduring areas of interest to children. While they connect with school subjects and support school curriculum, they are not defined or limited by subject areas. They reflect the naturally interdisciplinary world of children's wonder, play, friendships, and investigations.

Cornerstones help concentrate a museum's learning interests and resources by identifying priority areas. They assist in:

- Distinguishing CMSM from other organizations in the area that serve a similar audience;
- Providing a consistency and coherence among CMSM's play and learning experiences;
- Cultivating organizational expertise and resources;
- Locating potential exhibit topics, programs, and initiatives.

The Museum's social, active, curious, creative, and open learners inspire its five Cornerstones that, in turn, inspire a wide range of activities and opportunities presented in exhibits, environments, and programs:

- **Building Relationships.** Children play and explore in the back-and-forth of relationships with people, places, and time. As they grow, their social relationships expand from caregiver and family, to friends and neighbors, to the community, and the world. In play, children try on different roles, explore relationships, and help others.
- **Investigating Our World.** Children gather sensory information and are fascinated by the processes and phenomena of light, motion, and sound. Through repetition, they construct and reconstruct understandings. They are eager to know about their world, measuring it with their bodies and voices, with tools and instruments.
- **Exploring Creativity.** Using their bodies, materials, sounds, and language, children draw, move, point to, and play out ideas and possibilities. Inspired by what they notice, imagine, wonder about and love, children shape clay, rhyme words, act out stories. In the fluid and joyous expressions of their play, children make their thinking visible.
- **Connecting with Nature.** Children are fascinated by the smells, textures, sounds, plants, critters, and beauty of nature. Sensing and observing their surroundings, mucking about, following ants, pretending to be animals, gathering stones, and building with sticks, children explore connections in the natural world, including their own.
- **Experiencing well-being.** As children play, they move actively, take risks, problem solve with peers, and work at getting along. A sense of well-being is evident in a baby's joyful kicking; a toddler's shout, "I did it!;" and a new reader's delight in reading a sign. This experiential basis for well-being is supported by learning about the human body systems, healthy choices, and nutrition.

For young children, the process of using imagination, practicing skills, and learning about themselves and their world is more important than the end product. Process skills serve as tools for children to explore, discover, and learn. Six process areas<sup>xi</sup> reinforce the Cornerstones and are adapted here for the Museum's age group and the informal learning setting. For each of the skill areas, three related practices that will be emphasized in CMSM's learning experiences are listed. A full list is included in Appendix D:

- **Collaboration:** Working together, drawing on individual strengths, sharing knowledge, and co-constructing towards a common goal.
  - Taking turns
  - Working together
  - Constructing solutions towards a common goal
- **Communication:** Being a good listener and taking the listener's perspective; communicating effectively across multiple forms.
  - Repeating and using words appropriately
  - Taking a role in a dramatic play or story
  - Telling or retelling a story or sequence of events in one's own words
- **Content Exploration:** Engaging with rich subject-matter in both depth and breadth; building on personal interests.
  - Pursuing an interest
  - Exploring materials and their properties
  - Noticing and listing salient features of an animal or object
- **Critical Thinking:** Asking questions, gathering information, evaluating sources and evidence, synthesizing data, and connecting seemingly unrelated facts.
  - Gathering information through the senses
  - Observing results
  - Making connections
- **Creativity and Innovation:** Wondering and noticing wonder; imagining new possibilities; being flexible and adaptive.
  - Wondering and asking, "what would happen if...?"
  - Trying out new ideas
  - Revising ideas
- **Confidence:** Assessing and taking risks; developing the confidence to succeed– or to fail and try again.
  - Repeating a task
  - Trying something new
  - Taking appropriate risk

*Laughter as a sign of joy and play behavior are both likely to appear under conditions of well-being.*

Catherine Garvey  
Play

## Impacts

Impacts highlight where a museum hopes to make positive contributions to the lives of the children and adults it serves and to the community. Experiences affect the learner in small and large ways, immediately and over time. Among the many possible outcomes of experiences at the children's museum, CMSM will focus on impacts for its audience of children, families, parents, teachers, for itself and for the community.

- **Children** who have enjoyed abundant play opportunities, are excited to learn, and have experienced success in a variety of settings.
- **Families** that play and learn together and with other families.
- **Teachers** recognize the importance of play in reaching and teaching all children.
- The **Museum** is recognized as a reliable source of information on the value of play.
- A **community** that understands the importance of early play and learning experiences in the lives of its children and its own future.

## Learning Experience Platforms

CMSM delivers learning value through interactive play and learning experiences to its audience across a variety of platforms. Three valued and complementary platforms make distinct contributions. Collectively, however, they provide for all of the museum's children and families with opportunities and choices to play and learn by:

- Serving the full age range, children 10 years and under, their parents, caregivers and teachers;
- Serving the audience with choice based on interests and availability;
- Connecting and deepening experiences; and
- Extending the museum's reach.

**Exhibits and Environments** provide the physical continuity of rich and flexible spaces and places that can be explored again and again. Children and adults can engage in self-directed and facilitated experiences in:

- Interior exhibits and environments
- Changing exhibits
- Outdoor environments

**Programs** offer relatively flexible experiences facilitated by skilled playworkers, educators, artists, and specialists providing special access to and exploration of media, tools, objects, and processes. Children and adults enjoy varied and customized experiences, and deeper exploration of topics through:

- School programs
- Studio programs
- Camps
- Performances
- Professional development for teachers and early childhood caregivers
- Youth volunteer service

**Resource Center on Play** is a hub for gathering and sharing information on play and its value. Journals, studies, reports, and the Museum's own research will assist in creating inviting play-based learning experiences; engaging and supporting parents and teachers in extending children's play; connecting play to community interests; and deepening its own understanding of play. The Resource Center on Play will include:

- Evidence on the value of play
- Studies of play conducted by and on behalf of CMSM
- Parent and teacher resources on play

## Learning Experience Goals

Learning Experience Goals capture how a museum intends to accomplish its Learning Purpose. Together, CMSM's three Learning Experience Platforms will help realize three goals.

1. **Create irresistible, interactive experiences and environments** that activate the learning and well-being benefits of play.
  - a. Connect with what interests, delights, and fascinates children.
  - b. Engage children in physical, social, cognitive, and creative exploration.
  - c. Provide a varied and dynamic set of offerings.
2. **Get everyone into the act with play.**
  - a. Invite parents to support and extend their children's play.
  - b. Engage people from across the community as players, playmakers, play-workers, and play observers.
  - c. Encourage connections among players, inviting input, collaboration.
3. **Make play and its value matter** to children, parents, teachers, and the community.
  - a. Make the study of play and its benefits a core practice of the Museum.
  - b. Make it easy for parents and teachers to discover play's connection to home, school and the community.
  - c. Relate play's benefits to community issues and interests.

*Play is equal to formal education in terms of its fundamental role in enabling children and young people to engage positively with the complexities of the world around them.*

*PLAYLINK Play Policy*

## Learning Framework

### EXPERIENTIAL SPIRIT & STYLE

Engaging

Enriching

Creative

Imaginative

Authentic

### LEARNING EXPERIENCE GOALS

**Create irresistible, interactive experiences and environments** that activate the learning and well-being benefits of play.

**Get everyone into the act with play.**

**Make play and its value matter** to children, parents, teachers, and the community.

### IMPACTS

- **Children** who have enjoyed abundant play opportunities, are excited to learn, and have experienced success in a variety of settings.
- **Families** that play and learn together and with other families.
- **Teachers** who recognize the importance of play in reaching and teaching all children.
- The **Museum** recognized as a reliable source of information on the value of play.
- A **community** that understands the importance of early play and learning experiences in the lives of its children and its own future.

### CORNERSTONES

- Building relationships
- Investigating the world
- Exploring creativity
- Connecting with nature
- Experiencing well-being

### LEARNERS

Learners who are: social, active, curious, creative, and responsive  
Children ten years and under, their parents, caregivers, and teachers

### LEARNING PURPOSE

Make the joy and value of play, and its connections to learning and well-being, visible to children, parents, teachers, and the community.

### VISION

The Children's Museum of Southern Minnesota is the catalyst for building a stronger, more vibrant community around play so that all children in our region share in a bright future of opportunity and well-being.

### MISSION

Ignite the natural curiosity of every child through the power of play in a dynamic, awe-inspiring environment.

# Exhibit Experience Approach

## Overview

The territory between *intending* to put the great benefits of play into action and *creating* irresistible play-based experiences is significantly larger than it appears. The terrain easily collapses into selecting an exhibit topic, choosing some activities, and designing a space for both. Such a process, however, does not place the child—or the person—at the center of planning and making choices. A truncated process is unlikely to create experiences that engage children in extended and elaborate play and exploration.

An Exhibit Experience Approach opens the territory between the idea-driven Learning Framework and the experience-driven heart of exhibits and environments. It highlights what is most central to the rich set of exhibit (and program) experiences the Museum will invite children, their parents, caregivers, grandparents, and teachers to engage in, enjoy, and take away with them. Drawing on the Framework, it sets a direction for CMSM’s exhibit experiences on which exhibit and gallery planning will build.

Experience is the first-person engagement in a setting or situation, with someone or something, in social, emotional, physical, and cognitive ways. Placing experience at the heart of exhibit planning requires thoughtful consideration of the expectations and previous experiences that children and adults bring with them through the museum doors. Attention to experience highlights how families talk, share observations, stories and memories; and considers the impressions, questions, and memories they carry away when they return to their lives outside the Museum’s walls.

In museums, experiences are often delivered through exhibits and environments. Topics and content are presented through text, images, activities, and context. They are enriched with props, objects, and tools. The result is a richly woven and layered set of experiences.

The Children’s Museum’s Exhibit Experience Approach gets at the experiential core of its exhibits. It places the visitor at the center, focusing on the interests and capabilities of children birth through ten years and their relationships with their parents, caregivers, and teachers. It is aligned with where the Museum intends to have an impact on children, families, educators, and the community. Finally, the Approach serves as a long-term tool for both planning exhibit experiences and assessing and improving them.



## Serving the Museum's Audience

Targeted audience groups for the Museum's exhibits are consistent with the priority groups established for the entire the Museum.

### Primary audiences, served most fully and continuously:

- All children 9 years and under
- Family groups
- Regions: Blue Earth, Le Sueur and Nicollet county

### Secondary audiences, served well and episodically:

- Children 9 – 12 years old
- School and community groups
- Parents, teachers, caregivers
- Regions: Southern Minnesota

### Emerging audiences – served well and through targeted offerings:

- Children 12 – 15 years old
  - Children and families underserved by play opportunities
- Regions: Minnesota and Northern Iowa

Four exhibit planning guidelines relate to age groups:

- **High priority groups will be served fully.** All age groups will be served well while groups with the highest presence will enjoy more activities across more of the exhibits.
- **Multi-age exhibits will serve a wide age range.** Because children learn from and help each other and because families visit the Museum with children of various ages, all exhibits will serve multiple age groups.
- **A designated area will be planned for the youngest children.** Children birth through 3 years will have an exhibit area specifically for them and their adults. Children older than 48 months will have limited access to the area.
- **Problem solve around safety.** Problem solving through design and operations will maximize both safety and access.

## Exhibit Experience Objectives

All of the three Learning Experience Platforms—Exhibits and Environments, Programs, and Resource Center on Play—contribute towards the Museum’s accomplishing its three Learning Experience Goals. The following objectives focus specifically on how Exhibits and Environments help make progress towards these goals.

1. **Create irresistible, interactive experiences and environments** that activate the learning and well-being benefits of play.
  - a. Provide varied experiences that are familiar and novel, active and reflective, and developmentally engaging and challenging.
  - b. Invite extended engagement in exhibits and environments that children and adults can change through interaction.
  - c. Use the building, environment, materials, and objects in open-ended, unusual, and surprising ways.
2. **Get everyone into the act with play.**
  - a. Provide many, varied invitations to play and be playful: accessible starting points, props, costumes, and Play Workers.
  - b. Inspire adults to play by awakening and sharing play memories.
  - c. Highlight opportunities for and evidence of community participation in making and contributing to exhibits.
3. **Make play and its value matter** to children, parents, teachers, and the community.
  - a. Link activities and experiences with play messages using multiple interpretive methods such as text, facilitation, images, examples of children’s work, etc.
  - b. Connect experiences and environments with everyday activities and places.
  - c. Prepare staff and volunteers to model, reinforce, and set an example of playfulness for all.

## Experience Builders

Experience Builders are important experiences that all children in the Museum's age range, regardless of background, should enjoy regularly with family, friends, and peers. Drawn from early childhood studies and research, these experiences are based in activity and span indoor and outdoor settings where children spend time, at home, in the yard, at camps, and at school. Too many children, however, do not enjoy enough of these experiences often enough. By building exhibit experiences with them, the Museum also contributes to the value of play.

These experiences easily cluster around the five Museum's Cornerstones. In exhibit planning, they can be combined, like ingredients, in multiple ways to create a rich mix of experiences that offer choices, variety, and abundant play opportunities.

- **Building Relationships**
  - Pretend, imagine, and assume various roles in a group, a story, a project.
  - Combine skills, experiences, and ideas with others to accomplish something together.
  - Notice and appreciate similar and different perspectives, ideas, and abilities among friends, family members, neighbors, and members of the community.
  - Incorporate and build on local knowledge, connections, and relationships.
- **Investigating Our World**
  - Observe and explore materials and phenomena, their properties, and processes in multiple ways.
  - Manipulate the flow or movement of materials and media to solve problems, meet challenges, or achieve multiple effects.
  - Recreate the effect of something that happens by accident using objects, tools, and materials.
  - Shape and change spaces: build, un-build, and rebuild structures; enclose and divide space.
- **Exploring Creativity**
  - Explore, combine, and transform materials, media, words, symbols, and images to find, capture, and express possibilities.
  - Interact with features and dimensions of the environment in unique, inventive, and (mostly) safe ways.
  - Imagine a new place or world or re-imagine stories, songs, or family adventures.
  - Move to greater complexity in expressing or representing an idea.
- **Connecting with Nature**
  - Enjoy frequent and positive encounters with nature.
  - Sense, observe, and explore surroundings, following clues—tracks, water, sounds, light, etc.
  - Gather, shape, and arrange, natural objects and materials: pebbles, sticks, leaves, seeds, bark, dirt, leaves.
- **Experiencing Well-Being**
  - Move with exuberance, in many directions, conquering space.
  - Build on experience, refine ideas and persist to overcome challenges and set-backs.
  - Display contributions, mastery, efficacy, humor, and joy using multiple media, forms, and languages.
  - Discover new things about one's abilities and preferences and about the world; and integrate the two.

## Play Conditions

Play Conditions are factors in the physical and social environment that CMSM can vary to enable, encourage, and extend children's play and exploration. They support the Exhibit Experience Objectives, providing practical ways for the Museum to both plan and assess exhibit experiences and environments. Not all Play Conditions will be present everywhere; they should, however, have a significant presence throughout the exhibits and environments and be well integrated into the experiences and activities. The list of Play Conditions below includes examples of how they might be found or expressed. Additional examples will undoubtedly emerge through planning, developing, designing, and fabricating exhibits.

- **Novel materials and media.** Familiar materials used in new ways, familiar materials used in unusual combinations, or novel materials available for exploration and use.
- **Loose parts.** Objects, tools, pillows, containers, paper, boxes, etc., that can be moved, carried, lined up, combined and re-combined, taken apart and put back together in various ways; found objects, natural and manufactured.
- **Props and costumes everywhere.** Varied, expressive, open-ended, and suggestive objects, clothing, fabric, purses, and bags incorporated into every area to inspire imagination and spark possibilities.
- **Traces of activity.** Fragments of activities that are by-products; making evidence of the activity and the child's creativity and thinking tangible and visible; allowing the child's involvement to be re-visited, recognized, and described.
- **Repeatedly modifiable.** Materials, applications, or situations that invite repetition, transformation, or multiple changes; and encourage "what else can happen if...?"
- **Enclosure.** Defined, contained, or separated space; clear boundaries; feelings or qualities of a space that can create a sense of place and differentiate spaces.
- **Different levels, different scales.** Changes in heights for reaching, climbing; changeable levels and inclines to vary movement and speed; big and small versions of objects for comparisons.
- **Changing through use.** Materials that are easily modified or change form or condition through use, pressure, interaction, portability, etc. Objects or materials might harden, soften, loosen, stick, fall apart, etc., and offer new possibilities in their changed form.
- **Balance safety and risk.** Finding the widest possible territory for secure exploration by selectively combining a variety of protective factors such as barriers, boundaries, reach, access, etc. to allow safe trial-and-error.
- **Authenticity.** Real stuff, genuine materials, and accurate relationships that provide a high correspondence with real world information; materials, machines, tools and processes. (*See Balance safety and risk.*)
- **Multiple positions.** Places, roles, or seating, for two or more players or partners: stools, places at the table, multiple controls, multiple sets of materials or props.
- **Place-based.** A sense of place created by contextual and sensory clues, landmarks and features; highly realistic or abstract, they support orienting or relating to, or way-finding.
- **Local connections.** Familiar signs, sights, sounds, views, and images with personal and local relevance.
- **Facilitated experience.** Incidental or planned demonstrations, modeling, questions, scaffolding, or graphic images to encourage or extend play and exploration.
- **Children's work on display.** Abundant evidence that children are actively and creatively investigating, playing, and creating here: their constructions, inventions, and creations captured in drawings, words, photos, and projects.
- **Integrated seating.** Abundant seating incorporated into areas for adult comfort and easy participation in activities.

## Experience Thread

An Experience Thread is an overarching image or concept that often imperceptibly unifies and brings coherence to a wide range of activities and experiences across multiple exhibits or galleries. An Experience Thread may inspire the development of ideas or bring a fresh twist to a tried-and true activity. CMSM's Experience Thread expresses its solid commitment to the value of play.

## PLAY = POSSIBILITIES

The possibilities in play tap every child's potential. Play's possibilities embrace a range of ages, activities, discoveries, and settings. Imagining what might happen if...; extending play with an adult's lightly offered suggestion; finding opportunities to shape and reshape a space with blocks and boxes; coloring a surface with paint, light, or rose colored lenses; carrying the spark of play home are just a few of the ways in which **Play = Possibilities** every day at the Children's Museum of Southern Minnesota.

# Gallery Concepts

## Overview

One of the persistent challenges of selecting and developing concepts for a museum's galleries is to hold fast to the very heart of the museum's thoughtfully articulated learning interests and core experiences. CMSM has done this by:

- Keeping children at the center of planning;
- Building on what is successful at other children's museums;
- Staying grounded in what is local and relevant;
- Being open to reframing ideas; and
- Insisting on testing all ideas against the Learning Framework and Exhibit Experience Approach.

Consequently, the Framework and Experience Approach comes through strongly as an experiential mix that is *irresistible* in its rich variety, makes the *value of play* visible, and *gets everyone into the act*.

*Irresistible* exhibits and environments will attract and engage children with the colossal size of a quarried block of stone, the amazing tree fort climber, and live bunnies on the roof. They will be intrigued by the mysteries of crawling through caves and willow tunnels and the excitement of climbing the two-story tree. They will relish the multi-sensory delights of scooping sand, digging dirt, swishing and splashing in water, and blowing bubbles. The variety and abundance of loose materials and tools give children opportunities they seldom have to shape and change places and spaces.

The variety of play experiences in CMSM's galleries is central to *making the value of play visible*. Children bring their thinking, creativity, and exuberance to play. In the physical challenges of tree climbing or crossing the bouldering wall, they rely on both their physical and spatial skills. In the story-making of the Spoon Theater they invent scripts and characters. In coordinating the movement of giant blocks or navigating the ladders and narrow pathways of the tree climber, they invent, test, and practice negotiation skills that will be valuable throughout their lifetimes.

CMSM is a museum that wants to *get everyone into the act with play*. This will extend the play message, make play richer, and strengthen community connections. With thoughtful attention to varied gallery experiences, children find ways to work together, move quarry stone, and build something grand. Parents and grandparents remember their own play experiences as children. Community members stop by, bring in materials to reuse and repurpose, and stay to play.

Seven galleries including one outdoor gallery area and a rooftop gallery will animate the CMSM building and grounds. (A non-gallery program space closely integrated with the galleries is included in Appendix G.) A gallery is a space that supports both exhibit and program activities with exhibits occupying most of the space and incorporating at least one small programmatic spot. Usually one or more exhibits on a related topic form a gallery concept. CMSM's gallery sizes range from approximately 800 square feet to 2,500 square feet.

The galleries, described more fully in the following pages, express in the varied ways that **Play = Possibilities**.

- **Building Central** is about *playing with the possibilities of building with different materials, at various scales, and to meet building challenges.*
- **Coughlan Quarry** is about *playing with the possibilities of place: natural resources and materials, transformation of materials, stories embedded in stone, and moving through space.*
- **Dakota Culture and History** is about *playing with the possibilities of expression through Dakota art, language, heritage, and stories.*
- **Dotson Back Forty** is about *playing with the possibilities of exploring nature: natural materials, open space, and inspiration.*
- **Farmyard** is about *playing with the possibilities of the soil, seed, sun and water that help plants and animals thrive.*
- **Grow It Gallery** is about *playing with the possibilities of farms, fields, and family.*
- **Infant/Toddler Play Porch** is about *playing with the possibilities of an inviting and expanding world.*
- **Mankato Clinic Tree of Forts Climber** is about *playing with the possibilities of the new: new ways of moving and way-finding; and new views and perspectives.*
- **Cecil's Imagineering Loft & Kato Engineering Explorers Lab** are about *playing with the possibilities of creating, constructing, experimenting, and investigating.*
- **Mni Wiconi (Water Gives Life)** is about *playing with and respecting the possibilities of water: sensing and exploring the beautiful and life-giving ways that water moves in our world.*

Integrated into each gallery are five elements as illustrated in the following Gallery Taxonomy. Highlighting these elements provides additional guidance to exhibit developers and designers to accommodate these important aspects of the gallery experience.

*Tod Pods* are activities or small activity areas appropriate for toddlers that are distributed throughout each gallery to better serve families with children of multiple ages. *Tod Pods* include a low water table, wood pushcarts, large soft building blocks, and objects to stack and carry.

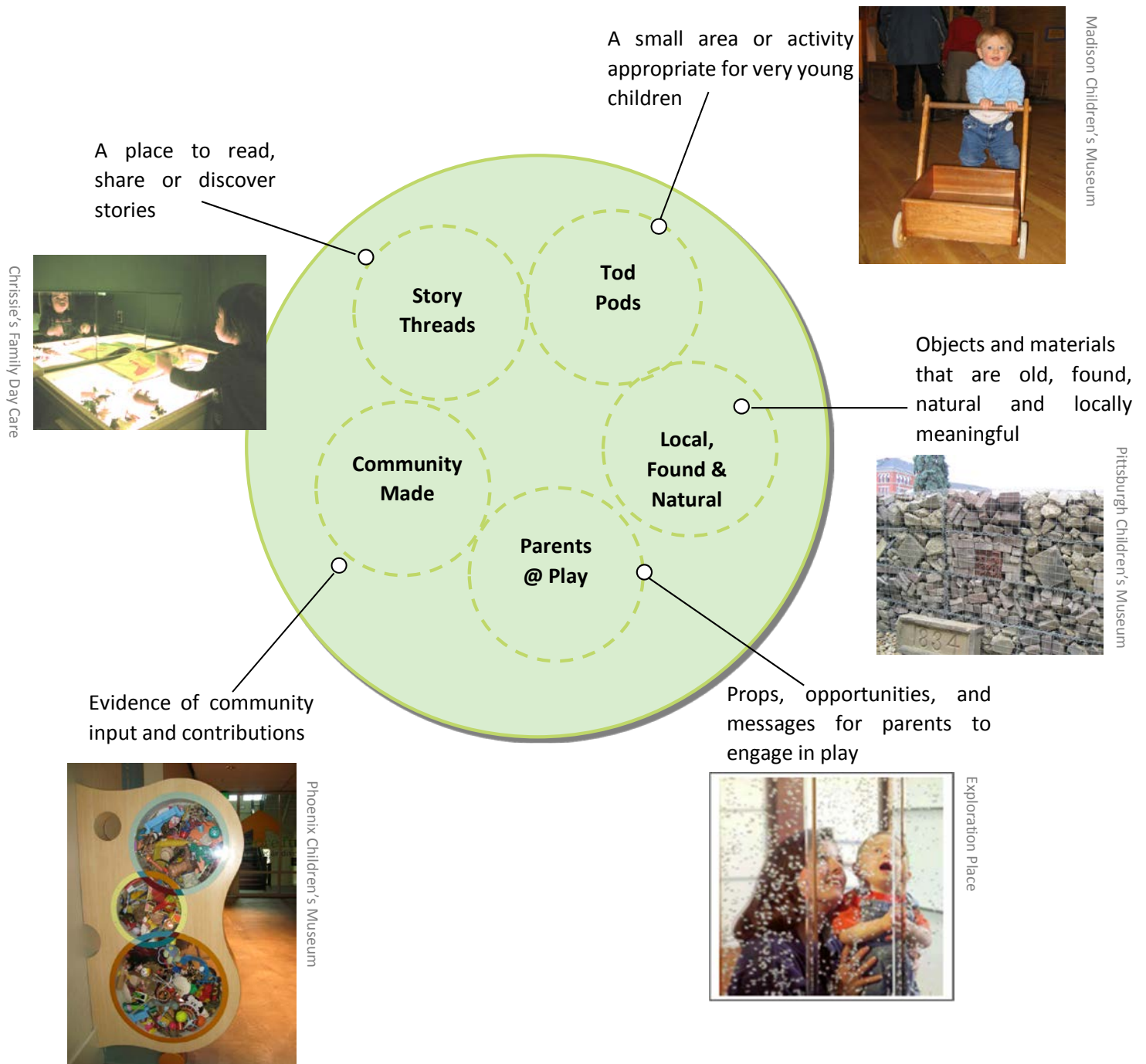
*Local, Found, and Natural* characterize the distinct mix of materials used in the galleries from local quarry stone, to repurposed architectural elements, to local plant materials for weaving, and even kitchen spoons as the stars of Spoon Theater.

*Parents @ Play* engages parents, grandparents, and caregivers in their child's play and alerts them to its value. *Parents @Play* offers: play tips, places for side-by-side play, authentic tools and materials, and classic play experiences from childhood.

*Community Made* highlights the varied contributions community members have and can make to gallery activities for children. The Toy Monument will be filled with toys brought in from anyone and everyone. Inspiration for the forts in the Mankato Clinic Tree of Forts Climber will come from children's fort designs. And an annual mission project in the Make-It Factory will be facilitated by a local group.

*Story Threads* suggest, invite, and support storytelling and story making, range from the recognizable silhouette of one of Wanda Gág's famous cats, to Spoon Theater, to fossils as story starters in stone.

## Gallery Typology



## Play = Possibilities

Connect galleries with different interpretations of this thread.



## Building Central

This area is about playing with the possibilities of building with different materials, at various scales, and to meet building challenges. (Building Center does not inhabit a gallery, but is a transportable set of activities.)

In Building Central, children build with Imagination Playground blocks, with wooden blocks, and with cardboard boxes. They make towers, construct cities, create patterns, and erect forts. As children work in front of the big window in the atrium, their love of building, and the enormous potential of their imaginations become a fascinating exhibit for passersby and for the community to enjoy and learn from.

Someone stepping out to get a cup of coffee or someone waiting for the bus may pause at the window and watch. Looking in they may be struck by how much is happening between children as they build: talking, pointing, measuring, stepping back to admire, and showing delight. They may remember the building they did when they were young. Building Central conveys the value of play to the community—everyday.



## Exhibit Walk-through

Located in the Museum's atrium, Building Central is a flexible, open place building space that serves the Museum as well as serving its audience. Children work in pairs and solo, with parents and friends on a variety of building platforms that support construction with a range of different materials and at varying scales. During busy times, especially around holidays and school vacations, Building Central is active. These building platforms also roll away to clear the atrium for special events.

**Cornerstones** with a strong presence in this gallery are:

- Investigating our World
- Exploring Creativity

## Target Audience

- Primary Audience: Children 3 – 7 years
- Secondary Audience: Children 7 – 10 years

## Experience Builders

- This gallery will be developed to encourage the following:
- Shape and change spaces: build, un-build, and rebuild structures; enclose and divide space.
- Build on experience, refine ideas, and persists to overcome challenges and setbacks.
- Move to greater complexity in expressing or representing an idea.
- Imagine a new place or world or reimagine stories, songs, or family adventures.



## Supported by Adults

- Respond to play activities and expand with conversational dialogue
- Make connections to relevant concepts and contexts
- Collaborate with and guide a child's activity

## Promising Activities

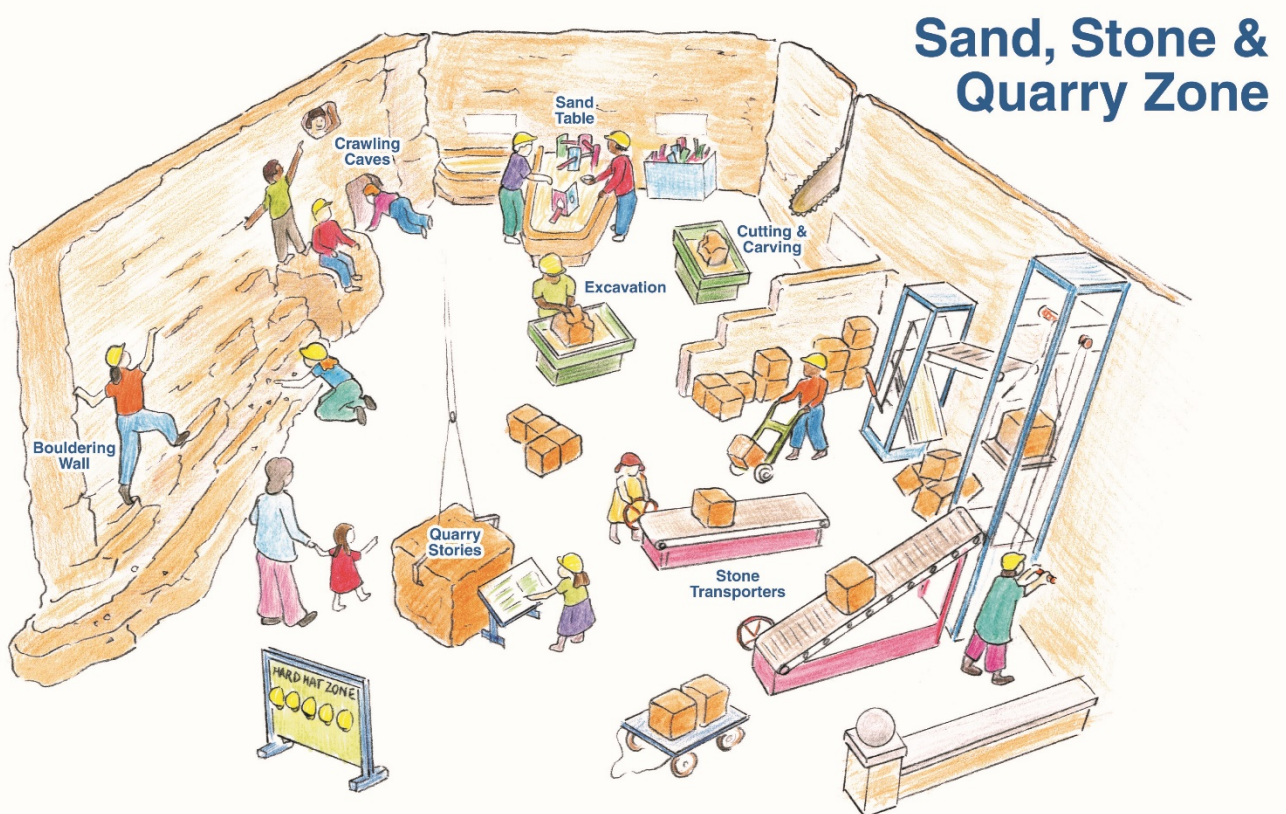
- **Building Platforms:** Easy to build on, sturdy to stand on, multiple Building Platforms are the centers of building activity. Children cluster around platforms that can be supplied with different building sets. Crouching down, they reach for a great supply of the small maple keva planks, versatile in their uniformity and their usefulness in building tall towers as well as intricate designs. Children can view their construction from different views in mirrors cantilevered overhead. They can use paper and pencil to draw their designs. But keva planks are not the only building blocks around. Some weeks LEGO bricks are featured and Imagination Playground blocks rotate in as well.
- **Building Challenges:** Just as real life building projects have to contend with real life challenges, so do building projects in Building Central. A tipping table presents the challenge of building on an unstable surface while the lumpy landscape challenges even accomplished builders to navigate the ups-and-downs of an uneven building surface.
- **Occasional Play Lab:** Using the model that has evolved for Play Lab—a changing menu of activities and experiences that allows the Museum to *study how children and adults play and to learn about what plays with them*, can be rotated in seasonally. Projects might include a new TapeScape, constructing a box city, or building marble runs out of foam swimming noodles.
- **Programs Here-and-there:** Building Central is a little like a program itself, changing with the introduction of new textures and surfaces and drawing materials.



## Coughlan Quarry

This gallery is about playing with the possibilities of place: natural resources and materials, transformation of materials, stories embedded in stone, and moving through space.

Sometimes the most familiar scene or material can also be highly mysterious. Giant stone quarries cut into the landscape seen from a moving car on a drive, an errand, or a visit to grandmother's are a well-known part of the southern Minnesota scenery.



### Exhibit Walk-through

The entrance to the tough and work-hard Quarry Zone is surprisingly beautiful – a stone archway draped in green foliage that looks a little elegant and a little ancient. Once in the Quarry Zone, children put on their hardhats and step into a high-walled quarry and find themselves surrounded by real stone. They touch its hardness, observe its color variations, and feel its layers, cuts and breaks, and the setting and activities here connect the material to its source.



The Quarry Zone is all about getting material from here to there. Children at work use rollers, gears, wheels, and slopes to move “stone” blocks from source to structure. Parents, who might feel that they already know enough about sand and stone, will be intrigued as they see children move blocks, create piles of sand, and find architectural stone elements throughout the quarry. A real, 9-foot stone cutting blade lends the Quarry an oversized sense of scale; the blade gives a nod to the power behind cutting through real stone, and makes the work at hand feel that much more important.



**Cornerstones** with a strong presence in this gallery are:

- Building Relationships
- Investigating Our World
- Exploring Creativity

### Target Audience

- Primary Audience: Children 3 - 7 years
- Secondary Audience: Children 18 months - 3 years and 7 - 10 years

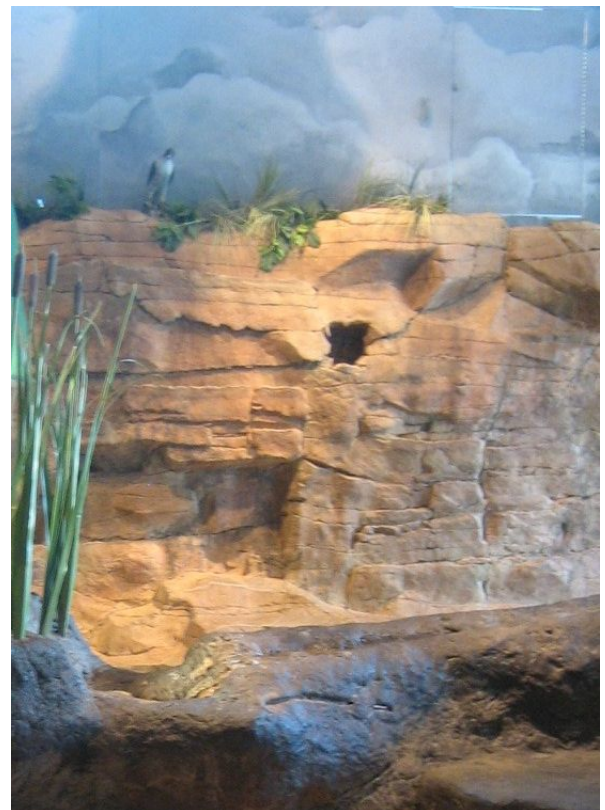
### Experience Builders

This gallery will be developed to encourage the following:

- Manipulate the flow or movement of materials and media to solve problems, meet challenges, or achieve multiple effects.
- Combine skills, experiences, and ideas with others to accomplish something together.
- Recreate the effect of something that happens by accident using objects, tools, and materials.
- Explore, combine, and transform materials, media, words, symbols, and images to find, capture, and express possibilities.

### Supported by Adults

- Make connections to relevant concepts and contexts
- Extend with open-ended questions
- Selectively support and extend a child’s investigation
- Foster problem solving



## Promising Areas and Activities

- **Stone Transporter:** The object here is to move blocks from the quarry to moving carts. Children load lightweight, sandstone-colored blocks onto a conveyor belt. They turn cranks to move the blocks up an incline. When those reach the end of the first conveyor, children use a lever to dump the blocks 90 degrees to a roller conveyer. This second conveyer is almost 8' up, high enough that people of all sizes can go underneath the conveyer to watch the blocks move along. Occasionally a block gets stuck, at which point a child volunteers to ascend stairs to a platform alongside to dislodge it and keep the flow moving. At the end of the second conveyer, blocks are sent into a chute, below which a child has maneuvered a cart to catch the blocks and send them on their way.
- **Vertical Sand Play:** Sand has weight, it flows, and it piles. Sand does what you want it to—most of the time. That's what makes it so good for experiments. At the multi-level sand table, children scoop and pour sand into multi-tiered tubes, tipping tracks with holes, and curving chutes. Available sand tools are made from a variety of materials, resulting in different sounds, speeds, and weights.
- **Horizontal Sand Table:** A variety of boxes, funnels, holes, and scoops makes for a flexible and surprisingly endless array of configurations for gathering and moving sand.
- **Quarry Crane:** Machines require skill and care to operate. Sometimes, two people need to team up to get the best result. One child stands atop a low wall, manipulating a set of levers and cranks to lift one block a time from a cart. With some help from another child below, the crane operator guides the block along a track in the crane, pivots it slowly about 90 degrees, and lowers the block into an open spot in a wall's structure.
- **Quarry Face and Cave:** Quarries are all about getting at the unseen by carving away at stone faces. A cave is an invitation for a child to crawl in to feel the stone close up. Ample cracks between the stones offer views into the Quarry, or, going further, she can look out at children in a gallery nearby. Along the way she might find an animal fossil imbedded in the stone, thanks to natural light from a hole overhead – a hole just large enough for a friend to pass a block down for the start of a wall inside the cave. The friend is on a walkway on the quarry wall, and got there via some tough, clanky metal stairs. There's plenty to do up here too; a backdrop of oversized blueprint drawings shows arches to be filled in and columns to be built. A drop chute delivers extra blocks to workers below.
- **Digging It (Tod Pod):** Real stone from a local quarry lines the area's perimeter. The sand that fills this area is a place to sit with vehicles that push, scoop, dump, and transport sand from here to there. Switchback ledges along the edge offer levels of delight for little workers.



## Dakota Culture and History

### Project Goal

The Dakota term “*mitakuye oyasin*” can be understood as “we are all related” or “all my relations.” In this spirit, the Children’s Museum of Southern Minnesota is bringing a “ribbon” of Dakota experiences to its exhibits and facility. Our goal is that through these experiences, visitors will understand that Dakota culture and stories are still present amongst the people, culture, and landscape of Minnesota.

### Target Audience

- Primary Audience: Children 4–8 years
- Secondary Audience: Children 0–3 and 9–12

### Key Learning Goals

Visitors will understand that:

- Dakota people are and have always been here in Minnesota;
- Dakota cultural practices and language have importance today;
- The tipi is a physical expression that is the key to many aspects of Dakota culture; and
- Children are bearers of culture just as adults are

### Key Messages

- Literacy/Dakota language
- Cultural knowledge as survivance (Dakota people continue to grow and thrive)
- Seasonal practices
- Wellness through native plants

### Key Stories & Content Threads

- *Dakota: Living Language*, Dakota language and literacy as carrier of culture and traditions, language preservation, and reemergence as essential for wellness and healing from generational trauma. The Dakota Welcome at the Museum entrance will ensure all visitors hear and learn to recognize the Dakota language.
- *Dakota: Living Art*, especially floral designs and Dakota beadwork providing connectedness to history, wellness, and generational healing, such as the textile art installation by Gwen Westerman.
- *Dakota Tipi*, as carrier of history and contemporary culture, “as above so below,” the tipi’s place in cosmos, star knowledge.
- *Dakota term, mitakuye oyasin*, “We are all related,” anchor for exhibits and programs, connects all of us with plants, animals, birds, and landscape.
- *Dakota music and drumming*, “Language is the song,” Dakota Friendship Song, traditional music as carriers of culture.
- *Winter Count*: Symbols printed on a bison hide tell the stories of a Dakota people. This artwork made by Fern Cloud replicates the historical winter count by Lone Dog from 1800 – 1871.
- *Mni Wiconi (Water Gives Life)* is a key thread in this exploration of Dakota people, language and culture. It will encourage children to see, hear, and know water in a variety of open-ended ways.



## Dotson Back Forty

This outdoor gallery is about playing with the possibilities of exploring nature: natural materials, open space, and inspiration.

Children tap into a kind of natural magic in the grassy spaces, filtered light, and leafy immersion of outdoor places whether they are in a field, tucked in a sand dune, along a stream, or under the low branches of a giant pine tree. They drag and arrange branches, find a stick that feels just right in the hand, pick up stones, define boundaries, and solemnly name places in the landscape.

### Exhibit Walk-through

Even though it is right outside the door of the Museum and tucked in amongst other buildings downtown, The Back 40 has the overgrown and brushy feel of a field that adults have forgotten and children have made their own. All the elements for nature play are there: tree stumps and tree hollows, arching branches, water to pump, and knolls to climb and roll down. Crisscrossed with the well-worn pathways of eager young explorers, the area is rich with the sticks, stones, leaves, nuts, bark, and seeds that inspire building, stories, and designs.

With a natural-looking wall surrounding the area, edible plants growing throughout, and water produced by children activating a hand-pump, The Back 40 offers fenced-in freedom. Seating is everywhere, and it has to be for play, comfort, and side-by-side friendship. There are tree-stump seats for perching and gathering together, and big stone blocks for parents and grandparents to play on the side or recall their own nature play. Café tables and chairs at the building's edge overlook The Back 40, giving adults easy visual access as children, playing below, feel they are in their own world.

A sun-and-shade mix makes the area comfortable year round. When the weather gets cold children don lined overalls, barn jackets, and heavy boots and head outside.

**Cornerstones** with a strong presence in this gallery are:

- Building Relationships
- Investigating Our World
- Connecting with Nature

### Target Audience

- Primary Audience: Children 3 - 7 years
- Secondary Audience: Children 7 - 10 years

### Experience Builders

This gallery will be developed to encourage the following:

- Enjoy frequent and positive encounters with nature.
- Sense, observe, and explore surroundings, following clues—tracks, water, sounds, light, etc.
- Gather, shape, and arrange, natural objects and materials: pebbles, sticks, leaves, seeds, bark, dirt, and leaves.
- Discover new things about one's abilities and preferences about the world and integrate the two.

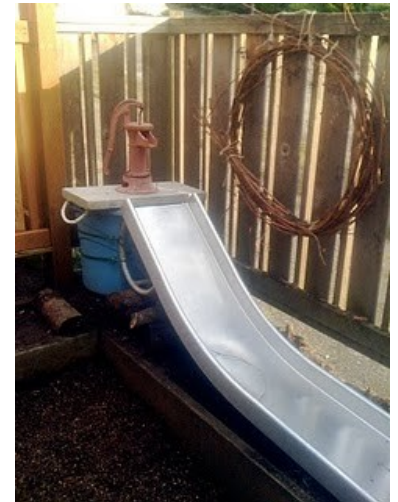


### Supported by Adults

- Monitor setting for safety
- Make connections to relevant concepts and contexts
- Support child's play and exploration

### Promising Areas and Activities

- **Stumps, Logs, and Hollows:** children clamber up and across and sit on fallen logs. They get to know trees, the feel of bark, the burls, the girth of the tree, and the arc of branches. Crawling over and squeezing under challenges them to change their body's shape to fit the curve of a log or the dip of a swale. The area is dotted with up-right logs anchored in the ground, suggesting an enclosure or the corners of a fort. Children can cover or wrap them in burlap. They can carry and stack short logs or move small stumps to make a home.
- **Pumping Station:** Building in nature requires a certain amount of water. In The Back 40, children provide the action and energy to supply the water for their activities with a hand pump. Children take turns pumping until water trickles down a pebble-lined channel where it pools, captures the sparkling sunlight, and brightens the colors of pebbles. Using tubes and plastic pipe, they engineer its flow to the adjacent sand area where it provides enough water for potions and mud pies.
- **The Digs:** Digging is essential in children's outdoor play. And while they are usually told not to dig here (it's the garden) or there (someone will trip), in The Back 40, they can dig holes, cut channels, and shape lumpy landscapes. With trowels, shovels and buckets children learn to use tools, move dirt from one spot to another, and fill holes with water or dirt, shaping and reshaping their world.
- **Rolling Knoll:** This well-mown mound of about 100 square feet—off the beaten path—is the place to lay down, stand up high, or roll sideways over and over and over.
- **Odds and Sods:** Children are intrigued by this curiously askew structure, but they know exactly what to do. They set up house and weave stories in this playhouse that is part sod house, part hobbit hole, and part abandoned feed tank.
- **Parts Pile:** Just like the real back 40, objects are found and lost and found again. They are always useful for some project or adventure. Planks, ropes, wheel rims migrate lying around the field help the imagination. Children use them to fashion forts, build a ship, make a bridge, skis, or a sled. On some days children might find twine or tarps, wooden crates or scraps of leather to inspire their activity.
- **Programs Here-and-There:** A range of program activities will take place: art with natural materials, a sculpture, or making bricks.





## Farmyard

This outdoor gallery is about playing with the possibilities of the soil, seed, sun and water that help plants and animals thrive.

Farms come in all shapes and sizes, but there are some things that all of them have in common, in Mankato and throughout the world. Nature provides the basic resources, energy and nutrients for plants, animals and humans to grow and survive. When we explore and understand soil, seed, sun and water, we better understand and appreciate what nature gives humankind.

### Exhibit Walk-through

Families enter the Farm Yard from the Grow-It Gallery. On really nice days, a big sliding door opens to the planting beds and animal pens outdoors. The slab threshold which reaches into both the indoor and outdoor farm areas may be busy with people transplanting seedlings, visiting with newly hatched chicks, or cleaning carrots just pulled from the planting beds. This area provides an inviting transition to paved paths that lead children and families out to the planting beds and play features. In summer, a sampling of tomatoes, peppers, greens, herbs, and much more hint at the bounty of vegetable crops a home garden or vegetable farm might produce. A stand of sweet corn is both a boundary and path to The Back 40, especially when they are at their full, towering height. Chickens are a constant presence and attraction, with their scratching, clucking, and egg-laying! Even more impressive is the female hog; children gather at the fence to get as close to her as they can, while, oblivious, she wallows in mud to keep cool. Some activities in the Farm Yard are seasonal operations of the farm—from planting and watering to harvesting. There are always ways to help and get dirty.

**Cornerstones** with a strong presence in this gallery are:

- Building Relationships
- Investigating Our World
- Connecting with Nature

### Target Audience

- Primary Audience: Children 3 - 7 years
- Secondary Audience: Children 18 months - 3 years and 7 - 10 years



### Experience Builders

This gallery will be developed to encourage the following:

- Incorporate and build on local knowledge, connections, and relationships.
- Observe and explore materials and phenomena, their properties, and processes in multiple ways.
- Discover new things about one's abilities and preferences about the world and integrate the two.

### Supported by adults

- Make connections to relevant concepts and contexts
- Respond to play activities and expand with conversational dialogue
- Selectively support and extend a child's investigation

## Promising Areas and Activities

- **Chicken House:** Clucking and pecking, egg-producing chickens add an element of liveliness to the Farm Yard. Peeking into the chicken house, children see hens laying eggs up close.
- **Pig Pen:** A low house on one end of a generous enclosed pen is comfortable quarters for a young female hog. She moves into her quarters at the Museum in May, and moves out in October when outdoor areas are closed to visitors. Feeding and watering times are exciting moments for visitors, and on very hot days children can help spray her with a light mist from the hose to help keep her cool.
- **Raised Planting Beds:** These beds really produce—with a lot of help from children. In season, children plant vegetables, tend them, and watch them grow. At harvest time they dig, pluck, and pull peas, carrots, tomatoes, and many other tasty edibles.
- **Sunflower Madness:** Sunflowers of all types dot the fence line. At their full summer height, they watch the sun as it crosses the sky, and in winter, they are picked clean by hungry town birds.
- **Corn Rows:** Rows of corn offer a chance to explore this amazing plant up close. Children can touch the soft tassels, check to see if the corn is ready for picking, and glimpse the strong roots that keep such tall plants standing straight. Careful, the leaves have sharp edges!
- **Wind Craft:** The same wind that whistles in the eaves and flies kites can turn wheels- great for power, and for fun! The Wind Craft is a traditional windmill, modern turbine, and artful whimsy, somehow all wrapped up in one.
- **Wheel Wall:** The exterior east wall of the Grow-It Gallery is lined with wheels and tires of all types and sizes, inviting balancing and climbing. Looming large is the outline of one really huge truck tire.
- **Story Stoop:** The threshold to the Grow-It Gallery serves as a program space, with benches for seating and plug-ins for programs and group activities.
- **Tractor Play:** Children pick up loose toys and play in the dirt wherever they like!
- **Service Shed:** This is a work shed, no doubt, but it has a playful appearance in keeping with all the fun to be had! The Shed stores livestock food, potting soil and amendments, garden tools, hoses- anything staff and volunteers need to maintain the Farm Yard and its inhabitants. Alongside, a spinning composting bin holds café scraps; staff are happy when an energetic child want to give it its daily turn.
- **Temporary Animal Pen:** Livestock and exotic animals come for visits to the Museum from time to time, and need comfortable quarters during their stay. A generous pen and shade structure offers a safe, comfortable, and weatherproof setting for short stays. Concrete pad and housing are all easy to clean, to maintain a sanitary environment for rotating visitors. And the pen is located very close to a Farm Yard gate for easy vehicle access.



## Grow It Gallery

This indoor exhibit gallery is about playing with the possibilities of farms, fields, and family.

Agriculture is all about connections and relationships. Farms are a well-known part of the Minnesota landscape and at the heart of family stories for parents, grandparents, and great-grandparents. Farms connect us by providing the products at the grocery store and many items in our homes. They also connect us to the rest of the world through agricultural commerce, seasonal pollinators, plant varieties, technological developments- even migrant workers. Experiencing crops next to a kitchen, near a farmscape, by a historic tractor, and alongside information about bees and Dakota plant varieties, we see how all of these elements are intertwined, and how they connect us to the land and one another. When we make these connections, we become better and smarter producers, consumers, and citizens.

### Exhibit Walk-through

An invitation to explore the farm begins with a playfully painted mural showing an artist's version of farm animals, actual size! Stepping inside, the Grow It Gallery feels familiar somehow- somewhere between a machine shop, a laboratory, and a well-used outbuilding. The centerpiece is a lovingly cared-for Little Giant vintage tractor, with a chance to climb aboard, take photos, and swap stories about machines from the past and today. There is always equipment to repair, and children are busy alongside the Little Giant in Machine Play, attaching wheels to axles and replacing missing bolts. All these machines inspire families to get to work in the Field! Children pick some produce to bring into the Kitchen, and others pack a crateful to deliver to the Marketplace in an adjacent gallery. Children begin to imagine what their own farm might look like, and they pause at a low table to lay out field, fences, and buildings. There's so much to learn here about agriculture in Minnesota: families are entertained and inspired by a dynamic short film that highlights the long-lived, many-sided interrelationship between the region's people and land, and a wall gallery of native and imported Minnesota plants offers a dizzying array of choices (and challenges- weeds!). You can't have plants without seeds, and my, how many types there are. A display holds a multitude of seeds, skinny, small, round, and large- a child smushes and squishes seed-filled bags to guess what's inside. She wonders if they have any seeds at home to play with later. Nearby, a tray of kidney beans is sprouting pale yellow-green through potting soil, and alongside, newly hatched chicks, bees, and worms lead to conversations about all the things a farmer might call friends. Curious children press noses to cases to get a closer look at moving, emerging, living things, and suddenly feel ready to get their hands dirty planting sunflower seeds in The Shed.



**Cornerstones** with a strong presence in this gallery are:

- Building Relationships
- Investigating Our World
- Connecting with Nature

### Target Audience

- Primary Audience: Children 7-10 years
- Secondary Audience: Children 18 months to 7 years
- Tertiary Audience: Children 10 years +





## Experience Builders

This gallery will be developed to encourage the following:

- Pretend, imagine, and assume various roles in a group, a story, or a project.
- Incorporate and build on local knowledge, connections, and relationships.
- Observe and explore materials and phenomena, their properties, and processes in multiple ways.
- Discover new things about one's abilities and preferences about the world and integrate the two.



## Supported by Adults

- Make connections to relevant concepts and contexts
- Respond to play activities and expand with conversational dialogue
- Selectively support and extend a child's investigation

## Promising Areas and Activities

- **Little Giant:** A vintage tractor is the heart of the whole gallery. Children and adults walk around looking carefully and checking it out, gently touching it. Grandparents recall hearing how powerful it was for its time. Children climb up into the seat and imagine the feeling of riding through the fields. Happy to wave for the camera, children quickly return to their fieldwork. Seniors with stories to share occupy the ample seating with grandchildren on their laps. A display emphasizes the increased production that comes with a century of machinery innovation. Beyond this handsome, real machine, stretches a vista of real cornfields.
- **Machine Play:** Machines are so important to farms- and there is always maintenance to be done. Children are fascinated by farm machinery with its size and multitude of linked-together working parts. Several pieces of real machinery along with an array of nuts, screws, wheels and widgets invite children to step up and sort through the hardware and parts. They tinker, assemble and repair, working from all sides and sometimes laying underneath to work on the machine. Machines are fixed and sometimes taken apart again. Children and adults use the images and text above the workbench to figure out what these parts and machines are and how they work.
- **My Little Hands Farm:** At a low table with farm buildings, animals, vehicles, and "miles" of fencing young children build and farm their way. They put the horses in the barn. They move the tractor into the pretend field powering it with sounds of vroom. Plenty of seating and books close by enhance a cozy play spot. A beautifully crafted quilted farm mat hangs on the wall, with a label telling its story as one of the original elements of the Museum. Nearby, children explore miniature model tractors from every decade and observe how technology has changed over the past century.
- **The Field:** The crops are ready to be picked! Children reach into rows and pick carrots, onions, and soybeans. Some of the busiest workers in the garden pick the corn and apples in a farm panorama. Families collect crates full of produce to place on the conveyer belt bound for the Marketplace- or, it's just a hop and skip to take goods in to the Kitchen.

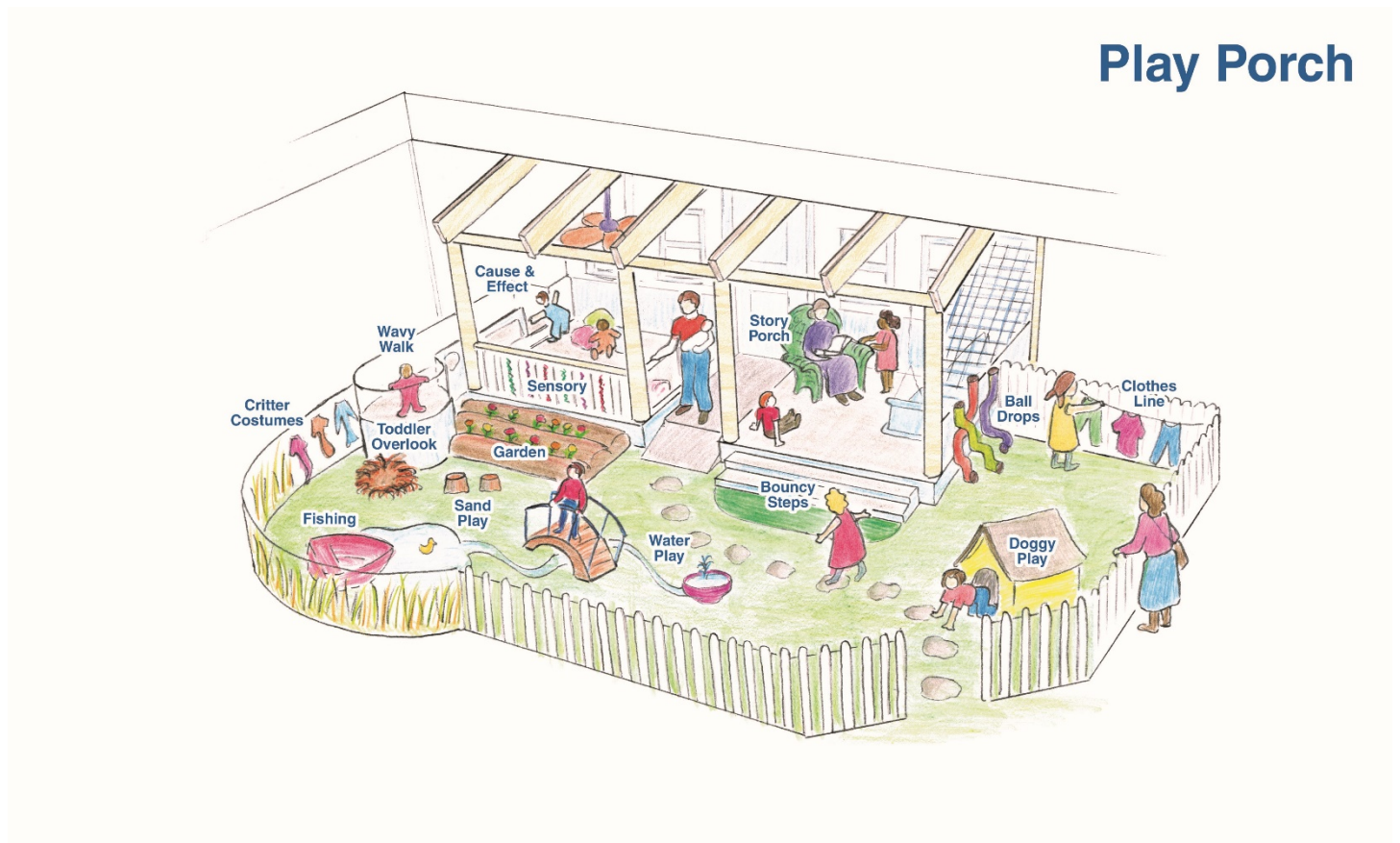


- **Farm Kitchen:** The vegetables and fruits children have gathered from the Garden make their way to the Kitchen for supper. Using the biggest pan, a child throws some root vegetables in the pot on the stove, adds seasoning, and stirs! Messages about how food end-use—from field to table—are revealed inside cabinet doors and under placemats. Children read the labels with their parents, and take the milk carton from the Kitchen fridge with a new sense of understanding. Dad sets the table, then pulls up a chair while wondering if there might be some apple pie for dessert...
- **Minnesota Grows:** Families sitting in three or four tractor seats of various styles enjoy a 5-6 minute film revealing the diversity of farming in Minnesota and answering the question: where do our agricultural products come from? With a dynamic narrator, fast pacing, and humorous twists, the movie zooms from aerial views to crop and livestock close-ups. Dairy, corn, and soy are just a couple stars of the show! A nearby artist-made map depicting how Minnesota agriculture impacts the world stirs local pride.
- **Beezzzz:** Visitors check out an actual beehive in the Grow-It Gallery. By opening the cabinet doors, they peek to see if they can find the queen. Putting an ear close, they listen for a buzz buzz. As they watch the bees come and go through a clear tube that leads from the hive to the outside, children remind their parents they want to check the Farm Yard's flowers for honeybees.
- **Good to Grow:** At a row of tables and terrariums, children view real plants, ants, worms, chicks, and other important but "unsung" players in the productivity of farm fields and gardens. A tray of bean seeds planted during a second grade school visit is beginning to sprout! A worm box elicits lots of comments from visitors who peer inside. Children touch the egg-hatching case and feel the warm glass, and the sense of anticipation for the unhatched chicks. This display changes frequently with the seasons, with ongoing programs and activities, and with the natural growing and changing of what's inside.
- **What's in a Plant?:** Commodity crops, vegetables, garden flowers, and even weeds make for a beautiful wall array. Young gardeners as well as experienced farmers check out seed packets, printed burlap, brochures, paintings, and real samples, all ways plants are collected, sold, studied, and protected. A child points and looks at the roots and thinks hard when his mom asks, "What makes a leaf?" He answers more readily when she asks, "What's your favorite flower- and would it smell good?" He assembles all of the parts on a "build-a-plant" board and checks again to find the pistils! The whole family is interested in learning about plants with special purpose and significance among Dakota people.
- **Squishy Seeds:** Children are delighted to discover how different seeds feel. At one station, sealed bags hold seeds—dried corn kernels, tiny thistle, soy, and more. Touching and squeezing the sacks, children try to match each to the sample seeds in the display case. Nearby children busily sort and sift seeds using a simple mechanical device. At a third spot, children work to "plant" seedlings as quickly as the field rolls out in front of them.
- **The Shed:** This is where the real work happens! In a generous program space alongside the garage door to the gardens, visitors repot seedlings, meet newly hatched chicks, and clean vegetables from the Museum garden. At a hydroponics station, they discover how vegetables can be grown year-round in Minnesota's cold climate. Work aprons and supplies are near at hand, with ample program storage/staging and a sink. In beautiful weather, staff opens the garage door and The Shed becomes one with the Story Stoop, just outside the door.
- **Pasture Path:** Children and families follow the mural of animals into the Grow-It Gallery; the subject is playful, but the work shows the hand of an accomplished artist.

## Infant/Toddler Play Porch

This gallery is about playing with the possibilities of an inviting and expanding world.

From their earliest moments in life, babies are explorers—noticing their hands, turning towards sounds, or kicking their feet to move the mobile. An exciting milestone like turning over is about a baby repositioning her body to engage with more of the world. So it goes with peeping, creeping, crawling, standing, cruising, and walking. Small children are on the move to explore an expanding world, one that is beyond the crib, into the kitchen, over the threshold, and out into an expanse of unlimited possibilities.



### Exhibit Walk-through

**Play Porch** is where the front door meets the front yard, where inside meets outside, and where the familiar meets the new. It's the perfect place to explore. Step through the gate into the front yard. Spaces and places unfold into one another and toddlers discover them, following a path, crossing over a bridge, climbing a hill, and dancing on the changing textures of the pathway. Deeper in the yard children creep into a log, share a house with a dog, and peer through a willow tree's fronds, happy to share their discoveries with appreciative parents.

The inviting porch seems right out of the Betsy-Tacy books. A couple steps up (and down, and up!), and a child's on the front porch. Movements and sounds, shapes and colors beckon and invite babies to watch, reach, touch, and clap. The porch is a cozy place for babies to sit, sway, smile, and snuggle with parents and grandparents. Deep in moments of shared discovery, babies point to objects, say words, repeat rhymes, look at books.

**Cornerstones** with a strong presence in this gallery are:

- Building Relationships
- Investigating Our World
- Connecting with Nature

### Target Audience

- Primary Audience: Infants, toddlers, and preschoolers – 3 years (i.e. 48 months) and under
- Secondary Audience: Parents, grandparents, and caregivers

### Experience Builders

This gallery will be developed to encourage the following:

- Incorporate and build on local knowledge, connections, and relationships.
- Observe and explore materials and phenomena, their properties and processes in multiple ways.
- Move with exuberance, in many directions, conquering space.

### Supported by adults

- Monitor setting for safety
- Follow baby's lead
- Extend baby's exploration with responsive language, gestures

### Promising Areas and Activities

- **Infant Play Porch:** Infants, young toddlers, and their parents and caregivers explore textures and sounds and soft ups-and downs on one ell of a corner porch inside a gate. Soft cushions of different sizes invite laying, rolling, crawling, and pulling up. The only "work" here is waving, clapping, smiling, and laughing. Overhead a fan slowly turns swirling sparkly streamers and spinners, and sounding wind chimes.
- **Story Porch:** Stories sound better if you're sitting in the pillowy softness of a big chair or crowded together on the big porch swing. Along the porch ledge, sits a black cat in silhouette straight out of Wanda Gág's *Millions of Cats*. Every toddler stops to notice.
- **Rambling Walk:** Delighted with increasing mobility, cruisers and walkers follow the stepping stones across the front yard. Paths wind and diverge over a variety of textures and surfaces- a bumpy root here, a grassy mound there. Children enjoy the challenging journey towards the Crawl-Through Log, the Willow Tree, and other destinations.
- **Willow Tree:** The perfect place for tea is at a tree-stump table with seats under the cascading branches of the willow. If tea is not being served, there are natural materials to sort and pile.
- **Wavy Walk with Toddler Overlook:** Eager toddlers follow a ramp and cross a low arched bridge. They head out along the wavy walk and pause on the overlook to observe activities going on both in the front yard, and even in the adjacent H2Go and Greenway. The Wavy Walk is a vantage spot for a wave- to family and friends! On the way back, children are astonished by a unexpected puff of air from an opening at their feet.





- **Tactile Elements:** Just by the front gate is the mailbox where toddlers put letters in and take them out. On the porch, babies and toddlers reach through railings to touch bouncy plants, push wooden rings up the banister posts and let them clatter down, and brush their hands across a hanging bristly set of brushes. Children will note the differences and likenesses of the spindles and come to realize that some can be manipulated for cause and effect. Small fingers are busy ringing the doorbell and turning the porch light on-and-off (and on-and-off).
- **Jumpin' Stump:** A mini trampoline with a handle added for safe jumping is enclosed in 3 circular metal bands that are padded on the inside and faced with real wood on the outside - to resemble a tree trunk. One child at a time enter the "tree stump" and jumps on the trampoline.
- **Dog House:** A wooden dog house, food bowl and large plush dog occupy a space in the backyard. Children care for the dog and perhaps take it for a walk in the yard.
- **Crawl-Through Log:** A fallen log is a place to crawl in, through and out. The light gets a little less inside, and it's worth stopping and looking around halfway in. What does the inside of a log feel like? Is it like the outside? And where did it come from?
- **Bird Nest:** A bird nest large enough for several people is situated in the back yard. Parents and their children or groups of children climb into the bird nest to read books, chat, pretend and/or play with any of the props that rotate in and out of the nest from day to day. There might be plush birds, simple costumes, books, some sort of worm game or prop, etc.

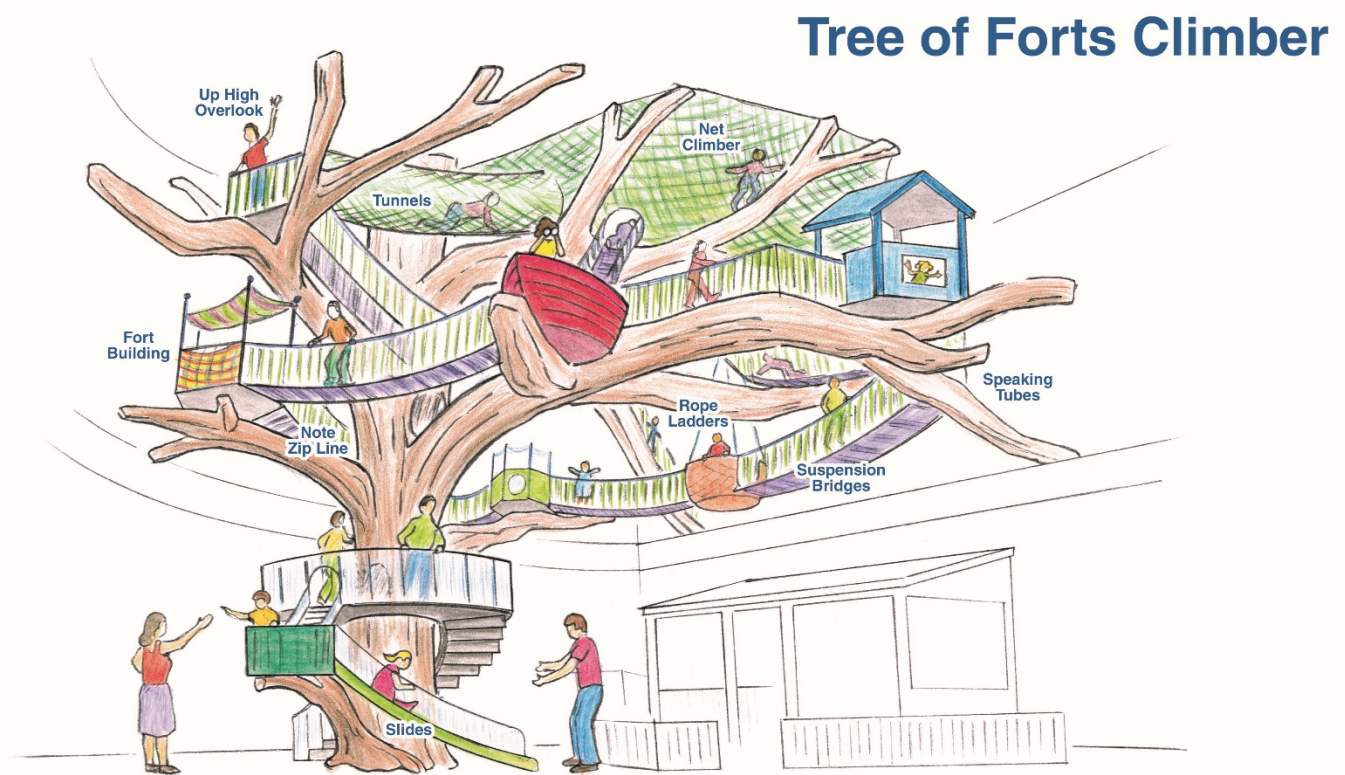




## Mankato Clinic Tree of Forts

This gallery is about playing with the possibilities of the new: new ways of moving and wayfinding; and new views and perspectives.

Children are fascinated with being up high. The spreading branches of a giant tree call to them to climb, stretch, reach, pull their bodies up to perch and rest, and get ready to climb some more. They relish the sense of physical accomplishment from climbing to the top of their world. Children also love small cozy places where they can be with a friend or two. It's as if these places allow them to open the door to secret or imaginary worlds. Arranging a piece of fabric, propping up scraps of wood, and bunching small pillows together, children can make a fort, find a refuge, and give themselves a new perspective on the world outside.



### Exhibit Walk-through

People will wonder when they hear that forts grow on trees at the Children's Museum of Southern Minnesota. They will just have to go, see, and explore for themselves. And they will be delighted! An amazing tree grows up from the Museum's atrium. Children climb and scamper up ladders and follow suspension bridges that crisscross the tree as it reaches upwards and spreads its branches towards high adventure. High above the atrium the broad ropy tree brings together great childhood favorites: climbing trees and making forts. Children scramble and clamber up ramps and ladders sometimes as high as the ceiling. They crisscross the spreading branches, following suspension bridges, and rest (only periodically) in the great expanse of a cargo net. As they move, crouch, change body positions, and readjust their balance, they are bringing together both physical and spatial problem solving skills. Tucked among the branches are forts to explore. Keeping scramblers and climbers safe, a tree canopy-like mesh wraps the tree and forts.

**Cornerstones** with a strong presence in this gallery are:

- Building Relationships
- Investigating Our World
- Experiencing Well-being

### Target Audience

- Primary Audience: Children 3 - 7 years
- Secondary Audience: Children 7 - 10 years

### Experience Builders

This gallery will be developed to encourage the following:

- Move with exuberance, in many directions, conquering space
- Interact with features and dimensions of the environment in unique, inventive, and (mostly) safe ways.
- Imagine a new place or world or re-imagine stories, songs, or family adventures.
- Shape and change spaces: build, un-build, and rebuild structures; enclose and divide space.

### Supported by Adults

- Monitor setting for safety
- Make connections to relevant concepts and contexts
- Selectively support and extend a child's investigation
- Foster problem solving

### Promising Areas and Activities

- **Tree Climber:** Aspiring to the highest point in the whole building, children climb, reach hand-over-hand, stretch, and pull themselves up into the canopy of a giant tree. They clamber up and up the massive trunk and start to explore its branches. They practice balance and coordination as they follow the network of suspension bridges that lead up, down, and around. They bend, twist, and scramble to reach new destinations. The swaying movement of the bridges adds to the challenge and to a child's sense of accomplishment at managing it well. A child considers a chase or realizes she is being chased. With these climbing feats children enjoy the thrill of heights, the pleasure of movement, and a feeling of freedom. The view to the areas below is amazing. Straddling a tree branch, they imagine they are off on a horse or riding a dragon. On foot or on dragon back, children find their way to new destinations using the spatial mapping of landmarks—*go through the hole in the tree, or pass the red door.*





- **A Settlement of Forts:** Children can start from scratch to build and re-build forts on a platform balcony in the tree. Arranging and stacking pillows, cushions, and pads, and stretching and tying blankets and sheets, children create places to crawl into, find friends, or play hide-and-seek with mom or dad. Small forts perched in the spreading branches of this husky tree are destinations, shelters, and opportunities to build. Inspired by children's drawings and models, every fort is an original: perhaps a rustic fort, a converted boat, a traffic-sign covered shack, or even a TapeScape-inspired fort. Made of novel and re-used materials, forts are visually open and open to possibilities. On each return to the Museum, a child is likely to find the Settlement of Forts has changed in some interesting way.
- **Life in the Tree:** Forts are stocked with supplies for building and exploring place and pathways, and meeting and connecting with other children. Children modify forts with blankets and fabric that they hoist up from below in buckets. They can write and pass notes clipped to a zip line. They can chat back-and-forth through a talking tube.



## Cecil's Imagineering Loft & Kato Engineering Explorers Lab

This flexible, material-rich studio space is all about playing with the possibilities of creating, constructing, experimenting, and investigating.

Children learn about their world by experimenting. From a baby's first swipe of a crayon across a blank sheet of paper to an adolescent's launching of a self-made model rocket, the process of testing, trying, and creating forges a path of life-long learning. Whether deconstructing an old TV or engineering a can-and-string walkie-talkie, young and old alike are intrinsically motivated to find out what happens when materials are combined in new ways, how they interact with each other, and to experiment for a new effect. Whiz Bang is about doing cool things with stuff! It's about the materials and tools, and it's about the doing. This hands-on gallery creates the conditions for self-directed learning with a rich variety of materials to support in-depth investigations into STEAM (Science, Technology, Engineering, Art, and Math).

In Whiz Bang, youth will build skills that support them in becoming inquiring, confident, and successful citizens in our technologically complex society by focusing on materials exploration, confidence with tools, safety, multi-generational experiences and passing on of knowledge and traditions, step-by-step reasoning and problem-solving.

### Exhibit Walk-through

The lively sounds of children's activities invite visitors into a multi-use, multi-dimensional area promising a Whiz Bang experience! The mezzanine STEAM Loft beckons, reached by ascending a puzzler of a staircase whose twisting shapes and joints are somehow both industrial and organic. There's always something happening in the Loft. A scout group is wrapping up a weeklong parachute project. Sliding doors to the overlook balcony are open, offering a spot where scouts test their projects. Scouts are up and down the stairs, dropping their projects or holding out waiting hands below. Some scouts return to the main floor to spend time in The Garage. Visitors make a beeline for the Supply Central workbenches, and from the variety of materials and real tools they choose a hand drill, saw, wood plaques, and dowel bits. They're not sure what they'll make yet, but are inspired by finished projects displayed on shelves under the studio staircase. Bringing the materials to a table, they begin to plot out a project using pencils and paper available at the tables. The two toddlers at the table don't need any further direction: the two year old starts practicing with a paint brush, and the three year old is already hammering nails into a bit of two by four. Another family seated at the next table is creating a collage "stained glass" mural together, using cellophane and recycled materials. Two other families are at a larger table nearby, trying to maneuver a watering can using ropes and pulleys. They all agree, not spilling is harder than it looks! Three children are working alone at yet another table, assembling fabric, twine, and cups into something artful that'll also catch the wind in the vertical turbine alongside them. A volunteer from the Rotary Club circulates among visitors, observing their endeavors and asking open-ended questions about how things work. He keeps art materials stocked from the built-in cabinets near the Tinker Tables. As the day warms up, staff opens a garage door to allow families to make and test activities outdoors. The possibilities of this area are endless, and every day looks a little different!



**Cornerstones** with a strong presence in this gallery are:

- Exploring Creativity
- Investigating Our World
- Experiencing Well-being

### Target Audience

- **Primary Audience:** Children 5-10 years
- **Secondary Audience:** Children 3-5 years and 10+ years

### Experience Builders

This program space will be developed to encourage the following:

- Observe and explore materials and phenomena, their properties and processes in multiple ways.
- Explore, combine, and transform materials and found objects.
- Use tools to find, capture and express possibilities.
- Build on experience, refine ideas and persist to overcome challenges and set-backs.
- Wondering and imagining new possibilities, being flexible and adaptive.
- Move to greater complexity in expressing or creating a new idea or form.
- Display contributions, mastery, efficacy, humor and joy using multiple materials, forms and tools.
- Combine skills, experiences, an ideas with others to accomplish something together.



### Supported by Adults

- Make connections to relevant concepts and contexts
- Foster problem solving
- Extend with open-ended questions
- Skill-building with mentors



### Promising Areas and Activities

#### STEAM Loft – Mezzanine Level

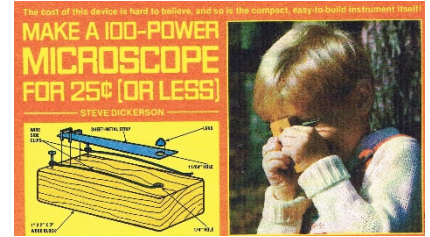
- **STEAM Loft:** A friendly, intriguing, durable, and safe work area encourages children to spread out and delve into projects; they observe, experiment, invent, create, build, and explore. Depending on their projects, children push worktables together into one larger table, or create smaller work areas. They pull up stools to work solo or in pairs and multi-age groups. Plenty of storage accommodates supplies, as well as “project parking” for in-progress work. When the space isn’t occupied by a program, or at publicized times, the space is open to general visitors for exploration, testing, and creating. Natural light is supplemented by generous task lighting, and ceiling electrical and data supports activities of all kinds. Limited volatile odors are used in a tabletop vent hood.

#### The STEAM Studio also includes:

- **Materials warehouse:** Visitors check out moveable bins and tubs containing an irresistible array of (mostly recycled) materials, such as pieces of wood, cardboard boxes, paint, brushes, palettes, wheels, dowels, cardboard rolls, egg cartons, string, tin cans, paper, aluminum foil, glue and tape, clay, tile, dyes, pastels, rubber bands, clips, fabric, and more. Materials are easily accessible. Shelves and drawers contain batteries, wires, bulbs, screws, nails, measuring devices, chains, and sprockets. The “vintage” boxes from the Bus Barn find a new life in this space.

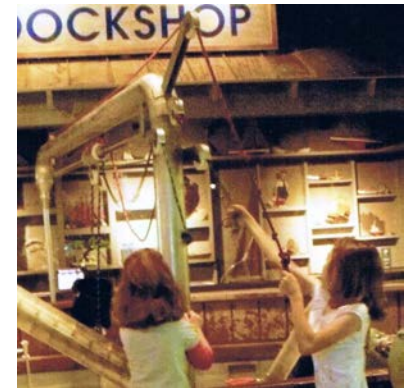


- **Microscopes:** Because sometimes a project requires getting a closer look, visitors can use one of 3-4 microscopes.
- **Tool station:** Depending on what their particular project requires, children and adults look for the tools they need on the wall-sized pegboard which holds vise grips, saws, wrenches, punches, scissors, magnifying glasses, magnets, pliers, screwdrivers, rulers, and more.



### The Garage – Main Level

- **Supply Central:** Curious children pore through the hanging tools and bins on open shelves. The array of real equipment and supplies is fascinating. Children can reach the hammers and nails, saws and wood, paints and brushes they need. Returning visitors notice that new materials appear at different times – wire, fabric, glue, paper – offering new directions for creation and exploration. In a large bin of “odd parts,” children find various items in all stages of assembly and disassembly: an old dial phone, a jack-in-the-box, and more. Supplies related to circuit building, such as wires, alligator clips, LEDs, and batteries, as well as *LittleBits* (an open source library of electronic modules that snap together with magnets), are all organized in one area for easy access.
- **Tinker Tables:** Families bring items from Supply Central to one of several open tables surrounded by stools to work together on their own projects. The work that happens here might be building something up, taking something apart, or ornamenting a contraption that’s headed for the wind tunnel. To welcome all visitors, two tables are lower for toddlers to work at and one is higher for wheelchair access. Durable work surfaces stand up to hammering, painting, screwing, sawing, or whatever comes their way. Ample storage underneath accommodates additional supplies aplenty.
- **Turn-Table:** Children and adults rush up to a large table that holds a beautiful and amazing wooden gear table. With its 2044 holes, it accommodates various size gear wheels for curious and inventive hands to configure and reconfigure and turn in endless combinations and series. As activities require, the gear table is covered to provide a large open platform for changing activities or prototyping. Curious visitors, teen volunteers, and school groups may produce an air cannon, pendulum, or tile mosaic; activities here often emerge or connect with whatever’s “cooking” in the STEAM Loft.
- **Vertical Wind Tunnel:** Visitors test the effects of air speed and wind drag on flyers and floaters that they have made themselves. Some children design and build their own airborne contraption from a selection of pre-cut parts while others build something from scratch starting with paper, tape, and recycled materials. Flyers and floaters of all design are placed in the clear plastic test tunnel. Children vary the fan speed to see if they can make their aircraft spin, rotate or hover in one spot; lift a payload; or fly up out of the tunnel and descend slowly to the ground. Observing how their craft flies, floats or drops, children continue to design, build, test, and repeat.





- **Ball Wall:** This wall panel is pulled out on occasion and installed upright on a Tinker Table, to the delight of visitors. Children choose from the array of pipe joints and segments, position them in series, and drop balls into the top again and again to see how they roll. *(Moveable)*
- **Paint Panel:** A clear Plexiglas “A-frame” can be mounted on a Tinker Table. A child brushes red paint on one side, squeegees the paint away, then picks up the blue paint, or mixes the colors and adds more. On the other side, another child applies yellow, noticing how the red and blue shows through from the other side. A spray of water and the paint breaks up to make an entirely new effect. *(Moveable)*
- **Building Central:** Soft blue blocks can be stacked and coupled for safe but exciting major motor play. Blue blocks alternate with “giant Jenga” for variety. Load them into a net and hoist to clear the space, or bundle up the net to bag the blocks to take outside or offsite. *(Moveable/temporary)*
- **Project Expo:** Children and adults enjoy viewing the varied visitor creations displayed in innovative ways; perched on shelves, mounted on walls, hung on wires, and framed by reused windows. This ever-changing gallery is a destination for proud young creators.



## Mni Wiconi (Water Gives Life)

This gallery is about playing with and respecting the possibilities of water: sensing and exploring the beautiful and life-giving ways that water moves in our world.

Even if the children visiting the CMSM were not growing up along the Minnesota River, crossing it on bridges and hearing talk of spring floods, they would be drawn to Mni Wiconi. Children love to play in and with water. Water feels delightful; it sparkles and captures light; it moves in waves and splashes in response to moving hands. Children love to make water move faster or slower, let it drop-drop, or watch it swirl. And in the context of experiences at CMSM, *Mni Wiconi* will provide sensory delight and focused play for a range of ages as well as opportunities for programs that connect across content areas, especially the ribbon of Dakota-themed culture and history present throughout the Museum.

**Cornerstones** with a strong presence in this gallery are:

- Building Relationships
- Investigating Our World
- Connecting with Nature

### Target Audience

- Primary Audience: Children 4 - 7 years
- Secondary Audience: Children 6 months - 3 years and 8 - 12 years



### Experience Builders

This gallery will encourage children to:

- Observe and explore materials and phenomena, their properties, and processes in multiple ways.
- Manipulate the flow or movement of materials and media to solve problems, meet challenges, or achieve multiple effects.
- Discover new things about one's abilities and preferences about the world and integrate the two
- Recreate the effect of something that happens by accident using objects, tools, and materials.
- Pretend, imagine, and assume various roles in a group, a story, or a project.

### Supported by Adults

- Make connections to relevant concepts and contexts
- Respond to play activities and expand with conversational dialogue
- Selectively support and extend a child's investigation
- Take away ideas on how they can support further learning and respect for water in everyday life



## Promising Areas and Activities

- **Paint on Slate:** As visitors enter the *Mni Wiconi* gallery, they will encounter a towering and elegant waterfall built of natural slate stone. The sound of gently trickling water fills the area. Here, children can pick up a paintbrush and write or create drawings on the large stone “canvas” with a water trough below. They can also use their fingers to trace the pleasing movement of water against the slate.
- **Ramp Play:** At the base of the waterfall, children can team up or play solo to arrange stackable Community Playthings weathered wood ramps to capture the water flowing off stone. Just like creating a moat in beach sand or directing water around twigs in a stream, the play here is open-ended, focused and creative. An extensive floor drain gives children plenty of room to spread out. They may get a little wet, but the fun will be worth it.
- **Riverway:** Behind the stone waterfall, a sloped riverway invites play with boats and experiments with water pressure, speed and direction. Children can arrange a sluiceway to widen or narrow the channel for their boats. Farther downstream, a waterfall spills into an open basin that features wave and bubble effects.
- **River Diverter and Turbulence Tube:** By turning a handle in the lower open basin, children can spin the river diverter, which triggers air bubbles from the turbulence tube below to create rippling waves. As they play, children and their parents can experiment with how the boats—or their hands—act and feel as turbulence increases.
- **River Basin:** In an open basin of the water table accessible to both younger and older children, there’s room to experiment with loose props that encourage the always-popular activities of filling, tipping, measuring, and pouring water. Props can be added or changed out over time.
- **Toddler Play Table:** At a lower height than the riverway, the toddler play table is perfect for young children ages 18-36 months, as well as babies held in their parents’ arms. Here, the activity is all about feeling and moving water: splashing, making waves, filling up containers, figuring out how much water is needed until the container tips over, watching water pour from spouts and fountains, directing where it falls and fills. Moveable props include: tippy handles and cups and small water wheels. Children can also turn a crank to create a wider and larger water ‘umbrella’ at the bell fountain; fill containers with plastic tubes that they direct from the waterfall trough, and capture water flowing through the flute that has several holes in its sides.



## Context within Dakota Culture and History

The Dakota term “*mitakuye oyasin*” can be understood as “we are all related” or “all my relations.” In this spirit, the Children’s Museum of Southern Minnesota is bringing a “ribbon” of Dakota experiences to its exhibits and facility. *Mni Wiconi* is a key thread in this exploration of Dakota people, language, and culture. Much of this connection comes through the values that will shape and guide design.

These includes the ideas that:

- Water is the first medicine, the source of all life.
- Water is powerful and beautiful, with its own ways—sounds, reflections, and movements.
- Water teaches us, if we choose to listen.
- We can’t control water; instead, we can experience and be in relationship to it.
- Children begin their lives with an innate appreciation of water.
- We need clean water for life.



With these values in mind, design of *Mni Wiconi* will encourage children to see, hear, and know water in a variety of open-ended ways. The primary tool is their hand. Rather than pumping, spraying, or manipulating wheels and pulleys, children will guide and move water across a central riverway and connected play basins. The setting will be more naturalistic than human-made, though without the need to recreate a literal Minnesota waterway. Unlike many water environments, the area as a whole will feel peaceful and calm. For example, instead of a crashing waterfall of tippy buckets and chimes or water “shooters” aimed at targets, children will:

- Experience, lead and move water with their hands, through water flutes and lightly spraying fountains, tipping clear basins or other containers they can fill and release.
- Dip their hands in and observe the flow of water down a waterfall.
- Move wooden boats or other simple props along a riverway.
- Set up a sluiceway in the sloped riverway that changes the water flow/speed.
- Paint with water against a stone surface, see how water runs across or through stone.
- Play with a hook-on science interactive, such as a vortex tube.

All of these experiences will encourage focus and support solo and group play. Parents will be drawn in to play with their kids, but may also enjoy sitting on a comfortable bench by the gallery’s wide windows where they can admire the sparkle of sunlight on water.

## Dakota Content and Storytelling

If Dakota values guide the basic principles of interaction, additional Dakota content may layer into activities, programs, signage or wall muraling. Specifically, a commissioned art piece by a Minnesota-based Dakota artist will span the back wall of the gallery and may include a painted mural or wall-mounted element. At the entrance, a large graphic panel designed into the low barrier wall announces the gallery name and includes Dakota words associated with water, including the names of Minnesota rivers, streams, and lakes. Artwork or quotes from Dakota children may be integrated into the entrance graphic. Both of these elements will be further developed with the consult of Dakota project advisors.

Additionally, *Mni Wiconi* will support science content as well as connections to the Ag Lab or other agriculture content. These portable play experiences may hook up to the water tables and include a small vortex, a plant life interactive, or another element that comes out for specific programs, such as a modular unit demonstrating how a municipal water system works.

# Appendix

## Appendix A

### Master Plan Participants

**Dr. Kyle Chambers**, Gustavus Adolphus College Professor

**Dr. Brenda Flannery**, Children's Museum of Southern Minnesota Board Member

**Mary Jo Hensel**, Children's Museum of Southern Minnesota Co-founder

**Eric Lennartson**, Children's Museum of Southern Minnesota Board Member

**Peter Olson**, Children's Museum of Southern Minnesota Executive Director

**Jean Peterson**, Children's Museum of Southern Minnesota Board Member

**Karen Wahlstrom**, Children's Museum of Southern Minnesota Board Member

**Pam Willard**, Children's Museum of Southern Minnesota Board Member



## Appendix B

### Terms and Definitions

A Learning Framework is a strong set of foundational ideas consistent with a museum's driving principles such as its mission, vision, and values. A Framework translates these ideas into a platform to guide planning and evaluation of all learning experiences including exhibits, programs, interpretation, etc. It focuses, sets priorities, creates emphasis and defines key relationships for concentrating the museum's learning interests on exemplary learning experiences.

#### Typical elements of a Learning Framework:

- **Learning Purpose** defines a museum's broad learning aspirations.
- **Learning Principles** emerge from the Learning Purpose and address the basic conditions that support learning, particularly in informal learning settings. They are grounded in child development, learning theory, and research.
- **Learner Profile** summarizes important information about segments within the entire audience, based on significant characteristics (such as age) that must be addressed to make progress towards the Learning Purpose.
- **Cornerstones** help define the territory from which a museum will draw topics and subjects to explore in its exhibits and programs. They reflect an organization's mission and Learning Purpose and designate how it intends to distinguish itself from other organizations serving the same audience, produce significant learning value for the community, and build internal capacity.
- **Impacts** highlight where a museum hopes to make positive contributions to the lives of the children and adults it serves and to the community.
- **Learning Experience Goals** define what an organization hopes to accomplish through its primary learning experiences.
- **Spirit and Style** express the personality of exhibit and program experiences and is consistent with the Learning Purpose and Learning Focus.

An **Exhibit Experience Approach** highlights the nature of the experience that is central to the rich set of exhibit experiences a museum will create for children, their parents, caregivers, grandparents, and teachers.

- **Experience Builders** are important experiences that all children in a museum's age range, regardless of background, should enjoy regularly with family, friends, and peers.
- **Play Conditions** are factors in the physical and social environment a museum can vary to enable, encourage, and extend children's play and exploration.
- **Experience Thread** is an overarching image or concept that often imperceptibly unifies and brings coherence to a wide range of activities and experiences across multiple exhibits or galleries.



## Appendix C

### Learner Profile

Five age groups CMSM uses for planning are:

- Birth – 18 months
- 18 months – 3 years
- 3 – 5 years
- 5 – 7 years
- 7 – 10 years

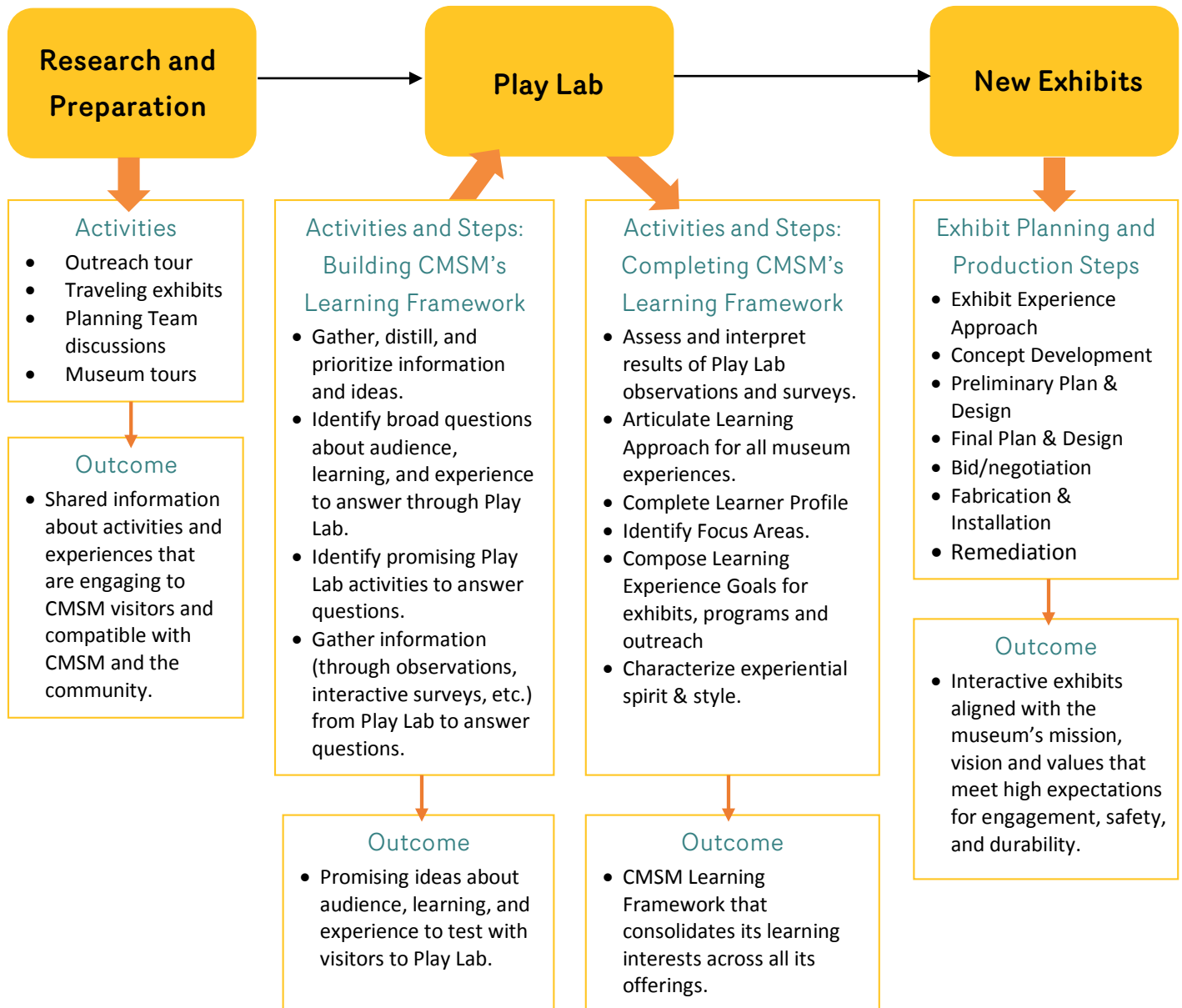
While valuing all these groups, the Museum must also make distinctions among them to be able to fully serve its high priority groups. Priority is based on the presence of groups at the Museum *currently* and *potentially*; a group's likely presence in the future depends on Museum offerings or demands on an age group's time, etc. Presence considers visitation and participation in Museum programs and events. Assessing the current and potential presence of age groups at CMSM as *high*, *medium* or *low* establishes three priority learner groups:

- 1<sup>st</sup> Priority: Children 18 months – 5 years who are expected to have high presence.
- 2<sup>nd</sup> Priority: Children birth – 18 months and children 5 – 7 years who are likely to have a medium presence at the Museum.
- 3<sup>rd</sup> Priority: Children 7 – 10 years with an anticipated low presence.

Groups	Current Presence (H/M/L)	Potential Presence (H/M/L)	Developmental Snapshot	Adult Roles
Birth – 18 months Infants & Toddlers	M	M	<ul style="list-style-type: none"> <li>• Sensory-motor exploration near caregiver</li> <li>• Repetition to find out about objects</li> <li>• First words</li> <li>• Peeping, creeping, crawling and cruising</li> </ul>	<ul style="list-style-type: none"> <li>• Monitor setting for safety</li> <li>• Follow baby's lead</li> <li>• Extend baby's exploration with responsive language, gestures</li> </ul>
18 months – 3 years Toddlers & Preschoolers	H	H	<ul style="list-style-type: none"> <li>• Active manipulation of objects to discover properties.</li> <li>• Simple symbolic dramatic play</li> <li>• Combining words</li> <li>• Refined walking skills; running, climbing added</li> </ul>	<ul style="list-style-type: none"> <li>• Respond to play activities and expand with conversational dialogue</li> <li>• Make connections to relevant concepts and contexts</li> </ul>
3 – 5 years PreK – Kindergarten	H	H	<ul style="list-style-type: none"> <li>• Things and people named and classified</li> <li>• Engaging in increasingly complex dramatic roles and scenarios</li> <li>• Imaginative play to explore familiar places, roles and relationships</li> <li>• Concepts related to print</li> <li>• Playing simple games based on matching, imitating, etc.</li> </ul>	<ul style="list-style-type: none"> <li>• Support child's play and exploration</li> <li>• Elaborate on their language</li> </ul>
5 – 7 years Kindergarten – 1 <sup>st</sup> Grade	M	M/H	<ul style="list-style-type: none"> <li>• Trying out ideas on objects to see how things work</li> <li>• Questioning for information</li> <li>• Engaging in role play that is more accurate imitation of life and often with rules</li> <li>• Increased muscle coordination with greater variety of activity</li> </ul>	<ul style="list-style-type: none"> <li>• Collaborate with and guide child's activity.</li> <li>• Extend with open-ended questions.</li> </ul>
7 – 10 years 2 <sup>nd</sup> – 4 <sup>th</sup> Grade	L	L	<ul style="list-style-type: none"> <li>• Experimenting with the expressive properties of materials</li> <li>• Taking another perspective</li> <li>• Making predictions based on experience</li> <li>• Differentiating between fact and fantasy</li> </ul>	<ul style="list-style-type: none"> <li>• Selectively support and extend child's investigation</li> <li>• Foster problem solving</li> </ul>

## Appendix D

### Experience, Exhibits, and Environments Planning Process



## Appendix E

### 6-C's Process Skills

Learners engaged in...	...as practices...	...with adult support
Collaboration	<ul style="list-style-type: none"> <li>• Watching others</li> <li>• Taking turns</li> <li>• Working together</li> <li>• Learning about other members of the group</li> <li>• Constructing solutions towards a common goal</li> </ul>	<ul style="list-style-type: none"> <li>• Following the child's leads and cues</li> <li>• Modeling how an exhibit component or material or medium is to be used</li> <li>• Introducing the exhibit and helping to describe the tasks/components</li> <li>• Simplifying the task for child to accomplish it on her own</li> <li>• Providing relevant words and terms</li> <li>• Encouraging child to persist, to continue</li> <li>• Offering non-specific instructions and questions</li> <li>• Offering ideas to extend the child's thinking</li> <li>• Reinforcing appropriate limits</li> <li>• Describing the child's activities and actions in words</li> <li>• Offering motivational praise</li> <li>• Showing an interest in child's activity</li> <li>• Modeling a willingness to explore and test new materials, tools, activities</li> <li>• Asking and answering questions</li> <li>• Making relevant connections to content and context</li> <li>• Letting an activity come to a natural end</li> </ul>
Communication	<ul style="list-style-type: none"> <li>• Pointing</li> <li>• Imitating another's behavior</li> <li>• Listening</li> <li>• Repeating a word or phrase spontaneously</li> <li>• Using a word or phrase in an appropriate context</li> <li>• Taking a role in dramatic play or a story</li> <li>• Taking another perspective</li> <li>• Expressing personal feelings with language and materials</li> <li>• Repeating information</li> <li>• Requesting or providing an explanation of word meanings</li> <li>• Retelling in one's own words</li> <li>• Sharing a story</li> <li>• Constructing a meaningful narrative</li> </ul>	
Critical thinking	<ul style="list-style-type: none"> <li>• Carrying out directions</li> <li>• Asking for clarification</li> <li>• Asking questions</li> <li>• Remembering experiences</li> <li>• Gathering information through senses</li> <li>• Comparing</li> <li>• Causing something to happen by accident; trying to recreate the effect</li> <li>• Making connections</li> <li>• Making a hypothesis</li> <li>• Using a strategy to remember something</li> <li>• Observing results</li> <li>• Interpreting evidence/information</li> <li>• Explaining one's intentions or thinking</li> <li>• Supporting with details or evidence</li> <li>• Thinking about one's own thinking</li> </ul>	
Content exploration	<ul style="list-style-type: none"> <li>• Noticing a personal interest</li> <li>• Pursuing an interest</li> <li>• Developing an area of expertise</li> <li>• Exploring materials and their properties</li> <li>• Listing salient features (of an animal, etc.)</li> </ul>	
Confidence	<ul style="list-style-type: none"> <li>• Repeating a task</li> <li>• Making appropriate choices</li> <li>• Trying something new</li> <li>• Testing boundaries</li> <li>• Taking appropriate risks</li> <li>• Changing outputs, conditions</li> </ul>	
Creativity and innovation	<ul style="list-style-type: none"> <li>• Expressing wonder</li> <li>• Trying out ideas</li> <li>• Revising ideas</li> </ul>	

## Appendix F

### Aligning for Impact

<p><b>Mission:</b> Ignite the natural curiosity of every child through the power of play in a dynamic, awe-inspiring environment.</p>	<p><b>Learning Purpose:</b> Make the joy and value of play and its connections to learning and well-being visible to children, parents, teachers, and the community.</p>	The learner is...	...and engages in these processes...	...across CMSM's platforms...	...explores cornerstones...	...towards these impacts
		Social, learning with and from others	Collaboration	<b>Exhibits and environments</b> <ul style="list-style-type: none"> <li>• Interior exhibits and environments</li> <li>• Changing exhibits</li> <li>• Outdoor environment</li> </ul> <b>Programs</b> <ul style="list-style-type: none"> <li>• Programs</li> <li>• Youth volunteer service</li> </ul> <b>Resource center</b> <ul style="list-style-type: none"> <li>• Documentation and study of play</li> </ul>	<ul style="list-style-type: none"> <li>• Building Relationships</li> <li>• Investigating the World</li> <li>• Exploring Creativity</li> <li>• Connecting with Nature</li> <li>• Experiencing Well-being</li> </ul>	<p><b>Children</b> who have enjoyed abundant play opportunities, are excited to learn, and have experienced success in a variety of settings.</p> <p><b>Families</b> that play and learn together and with other families.</p> <p><b>Teachers</b> who recognize the importance of play in reaching and teaching all children.</p> <p>The <b>Museum</b> recognized as a reliable source of information on the value of play.</p> <p>A <b>community</b> that understand the importance of early play and learning experiences in the lives of its children and its own future.</p>
		Active and engaged	Communication			
		Curious and inquisitive	Content exploration			
		Creative and imaginative	Critical thinking			
		Responsive, open	Creativity and innovation			
			Confidence			

## Appendix G

### Gallery Concept Description Terms

**This gallery is about *playing with the possibilities of*:** The core opportunity the gallery offers.

**Significance of these Possibilities:** Relevant considerations on the concept and its meaning in children's lives and the life of the community.

**Cornerstones:** Strong Cornerstone connection and related interests.

**Exhibit Walk-through:** A description of the general look, feel, and outstanding features of a gallery.

**Target Audience:** Identifies a primary and secondary audience for whom the gallery and its activities are best suited using the age groups identified in the Exhibit Experience Approach (Birth – 18 months; 18 months - 3 years; 3 – 5 years; 5 – 7 years, 7 – 10 years).

**Experience Builders:** In particular, this gallery will be developed to encourage the following Experience Builders. (Three or four Experience Builders.)

**Supported by Adults:** Relevant types of support from the Learning Framework, i.e. make connections to relevant concepts and contexts.

**Promising Activities:** A beginning list of activities that characterize the experiences children and adults will enjoy



## Appendix H

### Gallery Concept Descriptions as Written by Jeanne Vergeront in June 2011

#### The Studio

This space is about playing with the possibilities of materials, their expressive properties, and the processes that transform them.

Children are constantly exploring their world through their senses. They are fascinated by spots and shadows; attracted to what is shiny and shimmers; and intrigued by what is bendy or bristly. Where did that sound come from? Can I make that noise too? These investigations start very early in life and grow in depth with the variety of materials children encounter. They involve extended time for personal and shared exploration that uncovers new possibilities.

#### Exhibit Walk-through

A versatile hands-on space for material exploration, children play with art and science without noticing the difference. Somewhat like an atelier (with a bit of hardware store added in), The Studio is a sensory-rich space with surfaces to work on, access to varied materials, sinks for adding water and cleaning up, and abundant examples of children's work displayed in compelling ways.

Children may mix liquids of different viscosities, paint with unconventional brushes such as toothbrushes or dried teasel, make paper, or build kaleidoscopes. Using recycled materials from the Art Bin they may create mail art and then deliver it to Market Square.

Activities in The Studio are sometimes structured, sometimes facilitated by an artist or Playworker, and sometimes they are self-directed. But they are always inspiring.

**Cornerstones** with a strong presence in this gallery are:

- Investigating Our World
- Exploring Creativity

#### Target Audience

- Primary Audience: Children 3 – 7 years
- Secondary Audience: Children 7 – 10 years

#### Experience Builders

This program space will be developed to encourage the following:

- Explore, combine, and transform materials, media, words, symbols, and images to find, capture, and express possibilities.
- Move to greater complexity in expressing or representing an idea.
- Observe and explore materials and phenomena, their properties, and processes in multiple ways.
- Build on experience, refine ideas and persist to overcome challenges and set-backs.
- Display contributions, mastery, efficacy, humor, and joy using multiple media, forms, and languages.

### Supported by Adults

- Make connections to relevant concepts and contexts
- Extend with open-ended questions
- Foster problem solving

### Promising Areas and Activities

- **Work Tables:** Friendly and durable work surfaces encourage children to spread out, observe, draw, build, measure, and take things apart. Reconfiguring tables allows children to work at large or small scales; and work solo, in pairs, or on group projects.
- **Material Exploration Stations:** Opportunities for exploring materials and their properties are always available at the light table, working with moon sand, or painting on a clear plastic wall.
- **Inspiration:** Inspiration comes in many forms: maps and globes, books and old postage stamps, found objects and natural objects, hardware and utensils, new and old photos, prisms and magnifying glasses, small architectural artifacts, shells and stones, samples of industrial materials, lenses and scopes, mirrors, etc., etc., etc. Display of these inspirational pieces animates The Studio.
- **Utility Station:** Sinks at two levels; easy access to water, soap, buckets, brushes, and sponges.
- **Storage:** There is never enough space in shelves and drawers overhead and under the counter to hold all the supplies: paper of all kinds including sand paper and parchment paper; screens and mesh; glue, starch, tape; paint, chalks, markers, pencils, rulers and straight edges; clothes pins and toothpicks; rubber stamps and stamp pads; nails, screws, and washers; extension cords, etc.; materials: clay, wire, seeds and grasses, sand, marbles, fabric, yarn, etc.; and tools: scissors, glue guns, pliers and screw drivers, hammers; and supply carts on wheels.
- **Display:** Children see their work displayed in many, varied and inventive ways: on walls, hanging on wires, as documentation panels.
- **Art Bin:** A community workspace and creative reuse store that shares tools and knowledge about materials.

## Play Porch

This gallery is about playing with the possibilities of an inviting and expanding world.

From their earliest moments in life, babies are explorers—noticing their hands, turning towards sounds, or kicking their feet to move the mobile. An exciting milestone like turning over is about a baby repositioning her body to engage with more of the world. So it goes with peeping, creeping, crawling, standing, cruising, and walking. Small children are on the move to explore an expanding world, one that is beyond the crib, into the kitchen, over the threshold and out into an expanse of unlimited possibilities.

## Exhibit Walk-through

Play Porch is where the backdoor meets the backyard, where inside meets outside, and where the familiar meets the new. It's the perfect place to explore.

Step onto the porch, a friendly, sheltering porch with oh-so-much for infants and toddlers to notice, explore, and discover. Movements and sounds, shapes and colors beckon and invite babies to watch, reach, touch, and clap. The porch is a cozy place for babies to sit, sway, smile, and snuggle with parents and grandparents. Deep in moments of shared discovery, babies point to objects, say words, repeat rhymes, look at books.

The backyard opens out from the porch. Spaces and places unfold into one another and toddlers discover them, following a path, crossing over a bridge, climbing a hill, and dancing on the changing textures of the pathway. Deeper in the yard children dig in the sand, plant flowers, and splash in the water, happy to share their discoveries with appreciative parents.

**Cornerstones** with a strong presence in this gallery are:

- Building Relationships
- Investigating Our World
- Connecting with Nature

## Target Audience

- Primary Audience: Infants, toddlers, and preschoolers – 3 years (i.e. 48 months) and under
- Secondary Audience: Parents, grandparents, and caregivers

## Experience Builders

This gallery will be developed to encourage the following:

- Incorporate and build on local knowledge, connections, and relationships.
- Observe and explore materials and phenomena, their properties and processes in multiple ways.
- Move with exuberance, in many directions, conquering space.

## Supported by Adults

- Monitor setting for safety
- Follow baby's lead
- Extend baby's exploration with responsive language, gestures

## Promising Areas and Activities

- **Peep and Creep:** Peepers, creepers, cruisers, and their parents and caregivers explore textures and sounds and soft ups-and downs at one end of a long porch enclosed by railings. Reaching a hand through the railings, babies touch bouncy plants, push wooden rings up the banister posts and let them clatter down' wave to a sister or brother, and brush their hands across a hanging bristly set of brushes. Eager crawlers head out along the *wavy walk* and pause on the *overlook* above the garden. Overhead a fan slowly turns swirling sparkly streamers and setting off wind chimes.
- **Porch Steps:** Toddlers love steps. The Porch Steps are deep and low and run halfway across the very long porch. The Steps are a busy place. There is a *jumping* place on the steps where toddlers can jump down a step and bounce on the soft, squishy landing pad. Mounted on the post is the mailbox where toddlers put letters in and take them out. They hang laundry on the line, feed the soft and cuddly dogs asleep around the doghouse, and tuck baby dolls into strollers. At the corner, downspouts crisscross crazily, carrying balls that children drop and watch as they roll out. Small fingers are busy ringing the doorbell and turning the porch light on-and-off (and on-and-off).
- **Story Place:** Stories sound better if you're sitting in the pillowy softness of a big chair or crowded together on the big porch swing. Along the porch ledge, sits a black cat in silhouette straight out of Wanda Gág's *Million's of Cats*. Every toddler stops to notice.
- **Little Squirt Fountain:** Near the center of the backyard is a small but refreshing fountain. It bubbles and spills into a shallow basin, then trickles and flows across sparkly stones and disappears under the bridge.
- **Rambling Walk:** Delighted with increasing mobility, cruisers, and walkers leave the steps and follow the stepping stones across the back yard. They toddle up a ramp and cross the arched bridge over the meandering stream. At the foot of the bridge, the path divides. Follow the stream or walk on the texture walk?
- **Pond:** If they follow the stream to the pond, toddlers will find a small boat. Climbing aboard they can set sail to new adventures. They can also dig in the sand box that arcs around the pond creating a sandy beach.
- **Garden Corner:** A garden surrounds the *overlook* at the end of the *wavy walk*. Here there are plants to tend, a giant bird's nest to explore, and bird and critter costumes to don. The perfect place for tea is at a tree-stump table and seats under a tree with soft green leaves that flutter as the wind blows. If tea is not being served, there are chestnuts and acorns, buttons and sticks to sort and pile.
- **Programs Here-and-there:** In addition to Story Place, brief programs will take place in the Backyard.

## Play Prairie

This outdoor gallery is about playing with the possibilities of exploring nature: natural materials, open space, and inspiration.

Children tap into a kind of natural magic in the grassy spaces, filtered light, and leafy immersion of outdoor places whether they are in a field, tucked in a sand dune, along a stream, or under the low branches of a giant pine tree. They drag and arrange branches, find a stick that feels just right in the hand, pick up stones, define boundaries, and solemnly name places in the landscape.

### Exhibit Walk-through

Even though it is right outside the door of the Museum and tucked in amongst other buildings downtown, Play Prairie has the overgrown and brushy feel of a field that adults have forgotten and children have made their own. All the elements for nature play are there: tree stumps and tree hollows, arching branches, water to pump, and knolls to climb and roll down. Crisscrossed with the well-worn pathways of eager young explorers, the area is rich with the sticks, stones, leaves, nuts, bark, and seeds that inspire building, stories, and designs.

With a natural-looking wall surrounding the area, edible plants growing throughout, and water produced by children activating a hand-pump, Play Prairie offers fenced-in freedom. Seating is everywhere, and it has to be for play, comfort, and side-by-side friendship. There are tree-stump seats for perching and gathering together, and big stone blocks for parents and grandparents to play on the side or recall their own nature play. Café tables and chairs at the building's edge overlook the Prairie, giving adults easy visual access as children, playing below, feel they are in their own world.

A sun-and-shade mix makes the area comfortable year round. When the weather gets cold children don lined overalls, barn jackets, and heavy boots and head outside.

**Cornerstones** with a strong presence in this gallery are:

- Investigating Our World
- Experiencing Well-being
- Exploring Creativity
- Connecting with Nature

### Target Audience:

- Primary Audience: Children 3 - 7 years
- Secondary Audience: Children 3 and under and 7 - 10 years

### Experience Builders

This gallery will be developed to encourage the following:

- Enjoy frequent and positive encounters with nature.
- Sense, observe, and explore surroundings, following clues—tracks, water, sounds, light, etc.
- Gather, shape, and arrange, natural objects and materials: pebbles, sticks, leaves, seeds, bark, dirt, and leaves.
- Discover new things about one's abilities and preferences about the world and integrate the two.

### Supported by Adults

- Monitor setting for safety
- Make connections to relevant concepts and contexts
- Support child's play and exploration



## Promising Areas and Activities

- In **Stumps, Logs, and Hollows** children clamber up and across and sit on fallen logs. They get to know trees, the feel of bark, the burls, the girth of the tree, and the arc of branches. Crawling over and squeezing under challenges them to change their body's shape to fit the curve of a log or the dip of a swale. The area is dotted with up-right logs anchored in the ground, suggesting an enclosure or the corners of a fort. Children can cover or wrap them in burlap. They can carry and stack short logs or move small stumps to make a home.
- **Pumping Station:** Building in nature requires a certain amount of water. In Field Play, children provide the action and energy to supply the water for their activities with a hand pump. Children take turns pumping until water trickles down a pebble-lined channel where it pools, captures the sparkling sunlight, and brightens the colors of pebbles. Using tubes and plastic pipe, they engineer its flow to the adjacent sand area where it provides enough water for potions and mud pies.
- **The Digs:** Digging is essential in children's outdoor play. And while they are usually told not to dig here (it's the garden) or there (someone will fall), in Field Play, they can dig holes, cut channels, and shape lumpy landscapes. With trowels, shovels and buckets children learn to use tools, move dirt from one spot to another, and fill holes with water or dirt, shaping and reshaping their world.
- **Willow Tunnel:** The slightest suggestion of a brush or willow tunnel invites children to get down on their knees, crawl, and look to see where this promising opening leads. When two parallel lines of thin willow branches are buried in the ground and bound together at the top, they form a tunnel. Being persistent, as willows are, the branches keep growing, filling in, and creating a fuller, and more interesting, tunnel to explore.
- **Shady Canopy:** In a somewhat more civilized corner of the Field a vine-covered canopy made from trees and branches spreads overhead and provides cool green light and shade. Children find stumps to sit on, display the stones they found in the stream, and serve mud lattes. They can watch the birds at the birdhouses and bird feeders, at least those brave enough (or hungry enough) to perch. At a simple *Weaving Wall*, children add leaves and sticks they have found on their searches. They might gather around a (pretend) fire pit right nearby. This is a natural place for stories. Carved into the stones around the fire ring are the words, *Once upon a time*.
- **Rolling Knoll:** While not very high, the grassy, round-topped knolls invite climbing, looking out, and rolling back down. For new walkers, climbing up even a low knoll is a great adventure and accomplishment.
- **Programs Here-and-there:** A range of program activities will take place: art with natural materials, a sculpture, or making bricks.

## Sand, Stone, and Quarry Zone

This gallery is about playing with the possibilities of place: natural resources and materials, transformation of materials, stories embedded in stone, and moving through space.

Sometimes the most familiar scene or material can also be highly mysterious. Giant stone quarries cut into the landscape seen from a moving car on a drive, an errand, or a visit to grandmother's are a well-known part of the southern Minnesota scenery.

### Exhibit Walk-through

In Quarry Zone, children put on their hardhats and step into a high-walled quarry and find themselves surrounded by real rock. They feel its stony hardness and its sandy texture as blocks of limestone and sandstone get scraped and worn. Children know sand, but here they discover its source and even get to make it.

The quarry, they discover, has more surprises: color variations in the stone, imbedded sea-creature fossils, and an actual stone saw that children can see and touch. Big teeth of a quarry saw protruding into the stone-carving area—as if it were cutting through the very wall of limestone—dramatizes the monumental task of cutting stone. The big steel teeth are dull and round to the touch, prompting good questions about the character of stone and what it takes to cut and change its shape. Parents, who might feel that they already know enough about sand and stone, will be intrigued as they see children carve stone, create piles of sand, and find fossil puzzles throughout the quarry.

**Cornerstones** with a strong presence in this gallery are:

- Building Relationships
- Investigating Our World
- Exploring Creativity

### Target Audience

- Primary Audience: Children 3 - 7 years
- Secondary Audience: Children 18 months - 3 years and 7 - 10 years

### Experience Builders

This gallery will be developed to encourage the following:

- Manipulate the flow or movement of materials and media to solve problems, meet challenges, or achieve multiple effects
- Combine skills, experiences, and ideas with others to accomplish something together.
- Recreate the effect of something that happens by accident using objects, tools, and materials.
- Explore, combine, and transform materials, media, words, symbols, and images to find, capture, and express possibilities.

### Supported by Adults

- Make connections to relevant concepts and contexts
- Extend with open-ended questions
- Selectively support and extend a child's investigation
- Foster problem solving

## Promising Areas and Activities

- **Stone Transporter:** The object here is to move blocks from the quarry over to a construction worksite. Children load lightweight, sandstone-colored blocks onto a conveyor belt. They turn cranks to move the blocks a short distance. At the end of the first conveyor they transfer the blocks to another conveyor that carries them up a slight incline where they are dumped onto wooden pallets. At this point in the quarrying process, children can either hand-truck the blocks to where builders are laying stonewalls or use a small pincher crane to pick up the blocks and set them into the wall.
- **Cutting and Carving:** While children may not be using giant saw blades to cut stone, they can cut and shape the soft stone with the sawing motion of wooden sticks and hard rocks. Loose sand settles in the table where children can scoop, sift, weigh, and pour it into bags. This is the sand that eventually fills the sand table. For variation, different hardnesses and colors of sandstone are provided for comparison.
- **Sand Table:** Sand has weight, it flows, and it piles. Sand does what you want it to—most of the time. That’s what makes it so good for experiments. At the multi-level sand table, children scoop and pour sand into multi-tiered tubes, tipping tracks with holes, and curving chutes. Available sand tools are made from a variety of materials, resulting in different sounds, speeds, and weights.
- **Bouldering Wall:** Real stone from a local quarry lines the area’s perimeter. Children climb up on a ledge. They feel their toes gripping the stone, carefully balancing, and moving slowly. They pause, look around to see if anyone is noticing their brave feat, and boulder on.
- **Caves:** Some children will find the small caves and will crawl in for a caveside view of the quarry. If they push on through the tunnels, they can peek out into the quarry or, going further, they can look out at children in a gallery nearby. Along the way they might find an animal fossil imbedded in the rock. Once spotted, they can examine it closely with a magnifying glass and do a rubbing.
- **Programs Here-and-there:** When too much sand accumulates, it’s time for a sand art program. Take-away creations hold children’s sandy expressions—mementos of a great visit to CMSM.

## Market Square

This gallery is about playing with the possibilities of community through gathering, helping, and transacting.

Children are fascinated with the bustle of sidewalks and stores. The very interesting mix of packages, objects, and foods; the back-and-forth as people look, talk, and shop; and the mysteries of what's inside bags and boxes offer endless opportunities for pointing, touching, naming things, asking questions, and peeking inside. The interesting view from high atop a shopping cart or pushing a just-the-right-size cart make shopping even more interesting.

### Exhibit Walk-through

The stores, services, and attractions at Market Square bring people together to meet, shop, and pick up supplies. As in towns and cities everywhere, these shops and services are interdependent, serving town residents and shoppers as well as serving each other. For children the errands and shopping tasks that take place in town build a network of community relationships. It's more than just a shopping experience.

Buy groceries and have the dog groomed; meet a friend and pick up mail; check out the shows that are coming to the theater, and pick-up some flowers for a friend. Look at the gleaming produce, brilliant flowers, and colorful umbrellas. Which local farmers are growing these vegetables this year?

Wait at the stoplight for it to turn green and, just to be safe, look both ways before stepping onto the Greenway. This great arc of a walking path hugs the edge of Market Square. It's a place to stroll, play hopscotch, pick up the newspaper, or push the stroller. Morning walkers might be counting their steps with a pedometer.

**Cornerstones** with a strong presence in this gallery are:

- Building Relationships
- Investigating Our World
- Experiencing Well-being

### Target Audience

- Primary Audience: Children 3 - 7 years
- Secondary Audience: Children 18 months - 3 years and 7 - 10 years

### Experience Builders

This gallery will be developed to encourage the following:

- Pretend, imagine, and assume various roles in a group, a story, or a project.
- Notice and appreciate similar and different perspectives, ideas, and abilities among friends, family members, neighbors, and members of the community.
- Incorporate and build on local knowledge, connections, and relationships.
- Interact with features and dimensions of the environment in unique, inventive, and (mostly) safe ways.

### Supported by Adults

- Make connections to relevant concepts and contexts
- Support child's play and exploration
- Elaborate on their language

## Promising Areas and Activities

- **Toy Monument:** The heart of Market Square is a tall toy column filled with toys brought in by children and adults and anyone who has loved a toy or plaything: marbles or pick-up sticks, a yo-yo, or playing cards, a doll shoe, or LEGO block. Everyday shoppers and visitors will gather around the Monument and point to and wonder about the wind-up toy, single doll shoe, Slinky, or Pick-up Stick and who chose it for Toy Monument.
- **Food Market:** Children know how to shop for their favorite foods at the market and deli. As they look for familiar favorites, they will also find international specialties, fresh bread, and local produce. While some children shop for a picnic, others stock the shelves, and still others check out customers at the cash register and make change. Everyone stops to read the daily specials on the board. Some stop at the counter to watch pizza being made and decide to take one home for dinner. Forgot your shopping list? Pick one up and fill a basket with ingredients for lasagna, fruit salad, or tacos. Other shoppers stop at the *to go* window to pick up a deli sandwich and take it next door to the umbrella tables. Market Café: Children don aprons and pick up pads of paper to take orders at the Café. Their parents love to be greeted with a friendly, “May I help you?” They give their order and patiently wait to be served. Some are wondering how their child knew how to take orders.
- The **Make-it Factory** can always use helpers to fold boxes, build with boxes, and assemble them into an amazing construction. When new orders come in, helpers might start building marble runs using swimming noodles; they may invent and test egg drops; or make more flowers for the flower shop. Once a year, the Factory invites townspeople to come in and help; they fold baby blankets, pack them in a box to go to a mission or shelter.
- **Changing Scene.** Like any vibrant town center, the businesses at Market Square change and offer new services. The pet groomer might make way for the flower shop, a bike store, or shoe store which children help set up. They hang a sign to announce the new tenant and stock the shelves with boxes, or flowerpots, or dog cages. When the flower shop opens, they make flowers in the Make-It Factory to sell next door.
- **Spoon Theatre:** Everyone is invited to stop by Spoon Theatre to put on or watch a show. The fantastic array of spoons is the cast of characters for stories known and new.
- **Post Office Window:** Running errands? Stop at the post office window to pick up mail. Children have been delivering and picking up letters all day at each of the businesses.
- **Parking Spot.** Vehicles are a part of town life. So climb aboard the motorcycle, or climb on the bike and pedal, pedal, pedal (in place) to light up the marquee for Spoon Theatre.
- **Programs Here-and-there:** Facilitated experiences in the Make-it Factory will support children’s constructions, group projects, making flowers, or service projects like folding and packing blankets.



## Tree of Forts Climber

This gallery is about playing with the possibilities of the new: new ways of moving and way-finding; and new views and perspectives.

Children are fascinated with being up high. The spreading branches of a giant tree call to them to climb, stretch, reach, pull their bodies up to perch and rest, and get ready to climb some more. They relish the sense of physical accomplishment from climbing to the top of their world. Children also love small cozy places where they can be with a friend or two. It's as if these places allow them to open the door to secret or imaginary worlds. Arranging a piece of fabric, propping up scraps of wood, and bunching small pillows together, children can make a fort, find a refuge, and give themselves a new perspective on the world outside.

## Exhibit Walk-through

People will wonder when they hear that forts grow on trees at the Children's Museum of Southern Minnesota. They will just have to go, see, and explore for themselves. And they will be delighted! An amazing tree grows up from the Museum's atrium. Children climb and scamper up ladders and follow suspension bridges that crisscross the tree as it reaches upwards and spreads its branches towards high adventure.

High above the atrium the broad ropy tree brings together great childhood favorites: climbing trees and making forts. Children scramble and clamber up ramps and ladders sometimes as high as the ceiling. They crisscross the spreading branches, following suspension bridges, and rest (only periodically) in the great expanse of a cargo net. As they move, crouch, change body positions, and readjust their balance, they are bringing together both physical and spatial problem solving skills. Tucked among the branches are forts to explore. Keeping scramblers and climbers safe, a tree canopy-like mesh wraps the tree and forts.

**Cornerstones** with a high presence in this gallery are:

- Building Relationships
- Investigating Our World
- Experiencing Well-being

## Target Audience

- Primary Audience: Children 3 – 7 years
- Secondary Audience: Children 7 – 10 years

## Experience Builders

This gallery will be developed to encourage the following.

- Move with exuberance, in many directions, conquering space
- Interact with features and dimensions of the environment in unique, inventive, and (mostly) safe ways.
- Imagine a new place or world or re-imagine stories, songs, or family adventures.
- Shape and change spaces: build, un-build, and rebuild structures; enclose and divide space.

## Supported by Adults

- Monitor setting for safety
- Make connections to relevant concepts and contexts
- Selectively support and extend a child's investigation
- Foster problem solving

## Promising Areas and Activities

- **Ropes and Ladders:** Starting in the bright open space of the atrium, children climb, reach hand-over-hand, stretch, and pull themselves up into the canopy of a giant tree. They clamber up and up the massive trunk and start to explore its branches. They practice balance and coordination as they follow the network of suspension bridges that lead up, down, and around. They bend, twist, and scramble to reach new destinations. The swaying movement of the bridges adds to the challenge and to a child's sense of accomplishment at managing it well. A child considers a chase or realizes she is being chased. With these climbing feats children enjoy the thrill of heights, the pleasure of movement, and a feeling of freedom. The view to the atrium below is amazing. Straddling a tree branch, they imagine they are off on a horse or riding a dragon. On foot or on dragon back, children find their way to new destinations using the spatial mapping of landmarks—*go through the hole in the tree, or pass the red door*.
- **A Settlement of Forts:** Small forts perched in the spreading branches of this husky tree are destinations, shelters, and opportunities to build. Inspired by children's drawings and models, every fort is an original: perhaps a rustic fort, a converted boat, a traffic-sign covered shack, or even a TapeScape-inspired fort. Made of novel and re-used materials, forts are visually open and open to possibilities. On each return to the Museum, a child is likely to find the Settlement of Forts has changed in some interesting way.
- **Life in the Tree:** Forts are stocked with supplies for building and exploring place and pathways, and meeting and connecting with other children. Children modify forts with blankets and fabric that they hoist up from below in buckets. They can write and pass notes clipped to a zip line. They can chat back-and-forth through a talking tube.
- **Tree-side Views:** Children enjoy many and varied views. They can peer down a story from high above the atrium or look through the peephole in the floor of a fort. They can change their view through a window by adding a plastic Fresnel lens. They can peer across to the next fort through scopes and make shadows with flashlights.
- **Fort Building:** Children can start from scratch to build and re-build forts around the base of the tree in the atrium and where it pushes up through the second floor. Arranging and stacking pillows, cushions, and pads, and stretching and tying blankets and sheets, children create places to crawl into, find friends, or play hide-and-seek with mom or dad.
- **Programs Here-and-there:** Map the pathways throughout the tree; build suspension bridges; and draw new forts and build models.

## Rooftop Farm Park

This rooftop gallery is about playing with the possibilities of fields and food, past, present, future.

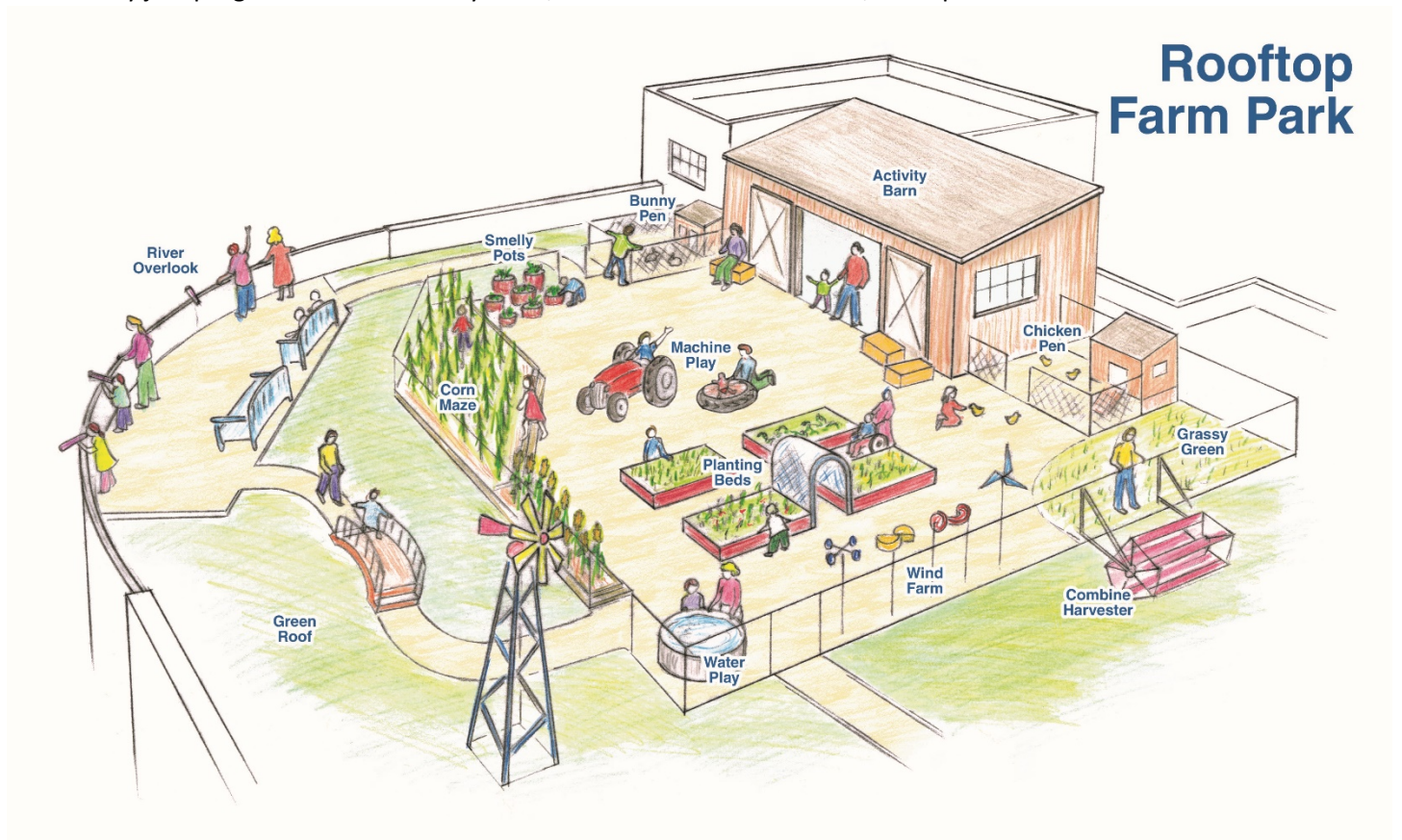
Farms are a well-known part of the southern Minnesota landscape and at the heart of family stories for parents, grandparents, and great grandparents in the region. Farms are not only about family connections, but also about the connections between food raised in fields across the region and eaten at the dinner table, crops turned into products and shipped to the world, and the important role agriculture has in our region's rich cultural heritage. Connecting kids to farming is more important than ever!

### Exhibit Walk-through

When families head up the stairs or take the elevator to the roof, they immediately step into a barn-like structure, as if they snuck in through the back door. During the summer, a big sliding door opens to the planting beds and animal pens outdoors. Here they take part in the seasonal operations of the farm—from planting to harvesting. This isn't old McDonald's farm, but hands-on examples of how farming and the Ag industry really works in southern Minnesota today.

An open patio-like area provides an inviting transition between the barn and paved paths that lead children and families out to the planting beds and play features. Most of the cultivated greenery will be grown in raised beds, including a good-sized stand of sweet corn. To as great an extent as possible, all of the trees, shrubs, and annuals will produce something edible—just pick, wash, and eat. Beyond the Barnyard is a green roof that visitors can pass through on pathways to reach a scenic overlook to the Minnesota River.

Visitors may join programs around the hay bales, do seed art inside the barn, or help with the chores in the barn in winter.



**Cornerstones** with a strong presence in this gallery are:

- Building Relationships
- Investigating Our World
- Connecting with Nature

### **Target Audience**

- Primary Audience: Children 3 – 7 years
- Secondary Audience: Children 18 months – 3 years and 7 – 10 years

### **Experience Builders**

This gallery will be developed to encourage the following:

- Pretend, imagine, and assume various roles in a group, a story, or a project.
- Incorporate and build on local knowledge, connections, and relationships.
- Observe and explore materials and phenomena, their properties, and processes in multiple ways.
- Discover new things about one's abilities and preferences about the world and integrate the two.

### **Supported by Adults**

- Pretend, imagine, and assume various roles in a group, a story, or a project
- Incorporate and build on local knowledge, connections, and relationships
- Observe and explore materials and phenomena, their properties, and processes in multiple ways
- Discover new things about one's abilities and preferences about the world and integrate the two

### **Promising Areas and Activities**

- **Agriculture Multi-Media Experience:** With the aid of technology, an immersive multi-media area within the Barn will attract visitors to learn about the diversity of contemporary agriculture in Minnesota. CMSM is working with producer groups and other content partners to showcase the people, processes, and products of agriculture today.
- **Agriculture Heritage Displays:** Agriculture is central to the rich cultural heritage of southern Minnesota and deserves to be celebrated. Inside the barn, photos and displays of products, processes, and producers flank the walls describing the importance of agriculture to our daily lives and the hard work and innovations that got us here.
- **Chores:** the barn is filled with fun chores, such as moving grain from storage bins into the feeders, stacking straw bales for bedding, counting the vegetables in storage, and changing the wheel on a tractor.
- **Barnyard:** Just outside the barn is a paved area with seating and plug-ins for programs and group activities. Children expect to see animals on a farm, so as the seasons allow, animals might also show up for a visit. It's here that temporary pens can be set up for those special-event visitors.
- **Chicken House:** Clucking and pecking, egg-producing chickens will add an element of liveliness to the rooftop farm. Peeking into the chicken house, children see hens laying eggs up close and later get to use the fresh eggs in cooking projects at the Museum.

- **Raised Planting Beds:** This rooftop farm really produces—with a lot of help from children. In season, children plant commodity crops, tend them, and watch them grow. At harvest time they dig, pluck, and pull potatoes, carrots, tomatoes, and many other tasty edibles.
- **Machine Play:** Farm machinery—its scale and multitude of linked-together working parts—is fascinating to children. While a full-size combine is probably not available, children can climb on a giant tractor wheel, sit on tractor seats, and turn a crank that makes the paddlewheel-like reel from a harvester go around. Sculptures made of machine parts provide fun exploration of unusual pieces and parts.
- **The Grassy Green:** This well-mown mound of about 100 square feet—off the beaten path—is the place to lay down, stand up high, or roll sideways over and over and over.
- **Green Roof:** Beyond the planting beds and public spaces of the farm, visitors see a field of green that continues out to the edges of the roof. Conventional green-roof plantings absorb precipitation and attract summertime pollinators.
- **Smelly Pots:** This quirky arrangement of pots and garden containers supports a rich variety of aromatic herbs to pinch and flowers to taste. Put on a blindfold; pinch, smell and guess. Is it mint? Rosemary? If it's sage, they may say, "yuck" and run away.
- **Wind Farm:** The roof can be a windy place. That makes it a good place for a thought-provoking array of small wind turbines—from traditional to experimental.
- **Programs Here-and-there:** Part of the barn serves as a program space. Children can make pinwheels to test in the wind and compare with the traditional and experimental windmills. They can plant seeds and make salads. Outdoor seasonal programming will make the most of our changing seasons even in the cold of winter.



## Whiz Bang! Full STEAM Ahead!

This flexible gallery with studio, workshop, and laboratory spaces, is all about creating, constructing, experimenting, investigating, and playing with the possibilities of “doing it yourself”.

Children are natural creators. From a baby’s first swipe of a crayon across a blank sheet of paper to an adolescent’s launching of a self-made model rocket, the process of creating drives our natural curiosity to a life-long love of learning. Young and old alike are innately motivated to want to know what happens when materials are combined in unique way, to test how they relate to each other, and to experiment for a new effect. From deconstructing an old TV to engineering a can-and-string walkie-talkie, in Whiz Bang we learn from “doing” and from each other. This hands-on gallery sets the conditions for self-directed learning through a rich variety of materials supporting in-depth investigations into STEAM (Science, Technology, Engineering, Art, and Math).

### Exhibit Walk-through

Walking up the stairs to the second floor, visitors discover a multi-use, multi-dimensional gallery that can only be described as Whiz Bang. This large gallery filled with natural light overlooking the two story atrium includes a laboratory for immersive science exploration, a workshop for building projects, and studio space for a variety of art and media creations. Experimental exhibits and prototypes help visitors explore the function of tools and simple machines, investigate the properties of air, light, and sound, and practice scientific inquiry as they question and solve how things work. Whiz Bang’s environmental features include artifacts of local inventions, accessible storage cabinets, shelves, and containers with vast supplies of materials, mostly recycled, and tools and equipment ready for small hands.

**Cornerstones** with a strong presence in this gallery are:

- Exploring Creativity
- Investigating Our World
- Experiencing Well-being

### Targeted Audience

- Primary Audience: Children 5 – 7 years
- Secondary Audience: Children 7 – 10 years and 3 – 5 years

### Experience Builders

This program space will be developed to encourage the following:

- Observe and explore materials and phenomena, their properties and processes in multiple ways.
- Explore, combine, and transform materials and found objects.
- Use tools to find, capture and express possibilities.
- Build on experience, refine ideas and persist to overcome challenges and set-backs.
- Wondering and imagining new possibilities, being flexible and adaptive.
- Move to greater complexity in expressing or creating a new idea or form.
- Display contributions, mastery, efficacy, humor and joy using multiple materials, forms and tools.

## Supported by Adults

- Make connections to relevant concepts and contexts
- Foster problem solving
- Extend with open-ended questions

## Promising Areas and Activities

- **Work space:** Friendly, intriguing, durable and safe work area encourages children to spread out, observe, experiment, invent, create, build and explore. Moveable work tables and benches allow children the flexibility to work solo or in pairs and multi-age groups. Spaces are designed for investigating, experimenting, testing, building, and creating.
- **Material station:** Moveable bins and tubs of irresistible materials mostly recycled such as pieces of wood, cardboard boxes, wheels, dowels recycled cardboard rolls, egg cartons, string, tin cans, paper, aluminum foil, glue and tapes rubber bands, clips, fabric, and other materials are easily accessible. Shelves and drawers contain items such as batteries, wires, bulbs, screws, nails, measuring devices, chains, and sprockets.
- **Tool Station:** A vice to hold materials, saws, wrenches, punches, scissors, microscopes, magnifying glasses, magnets, pliers, screwdrivers, rulers is a sampling of items to be used as needed.
- **Display:** Children see their work displayed in many, varied and imaginative ways; on shelves, walls, hanging on wires as well as take home inventions.
- **Material Reuse Co-op:** A community reuse center that shares tools and knowledge about materials with re-claimed materials for purchase to take home or to use in Whiz Bang. Mentorship, cross-generation modeling, and safety supervision are lead through the Co-op.
- **Exhibit Prototypes and Experiments:** Homemade or community-made exhibits and activities will move in and out of the gallery. Most exhibits will be prototypes or experimental exhibits made by local volunteers.

## Other Activity Ideation Notes:

- Work bench with wood and cardboard to cut, saw, nail put screws into.
- The floor air tubes.
- Chair and pulleys to pull child up sitting in chair
- Fiber Optic lab to work with how waves move through air and water
- Car and ball tracks
- Gear activity
- Fix it shop with things to take apart
- One child may be designing butterfly wings from soft paper and string before transforming into a Monarch. Space to role play and books about butterflies are in a rack for further research. Paint, chalk, marker and crayons are available to reflect and express the experience.
- At another workbench a child and her parent are building a found materials race car with a shoebox frame and bottle cap wheels. Inquiry techniques are put use when testing the right size wheels on the “How far how fast” tracks along the wall.
- Other children experimenting with static electricity while another group is building a yet-to-be discovered project with batteries, bulbs and wires. The materials are available and the opportunities unlimited.
- In a Build it Yourself area a child and his parents are working on a bird feeding station together.

- Two children are pulling another up in a chair with two pulleys, at a table others are making balance pans with recycled milk cartons, and further down table younger children looking at leaves through a magnifying glass, all enticing to young experimenter/explorers.
- The activities in Whiz Bang are sometimes structured, sometimes facilitated by an adult and most often self-directed. Special programs and activities will be presented from time to time. Children will find the opportunity to use real material and tools in ways they invent themselves
- There is a staff helper available to teach about tools and their safe use, provide help and materials as the children need them and offer encouragement and support. Some tools are stored in a curiosity cabinet to provide for safety for younger children.
- This gallery is where children learn to trust their own ideas. For younger children there is practice in manual dexterity and eye-hand co-ordination. This area incorporates math, physics, and science, working together and testing out, with a diverse and changing assortment of materials available for unlimited creative exploration. The feeling of well being when using real tools and materials is exhilarating and supports self confidence.

## Water Ways

This gallery is about playing with the possibilities of water: sensing, moving, and creating worlds around water.

Even if the children visiting CMSM were not growing up along the Minnesota River, crossing it on bridges, racing pool sticks, and hearing talk of spring floods, they would be drawn to Water Ways. Children love to play in and with water. Water feels delightful; it sparkles and captures light; it moves in waves and splashes in response to moving hands. Children love to *control* the water, making it move faster or slower, letting it drip-drip, and watching it swirl faster and faster.

### Exhibit Walk-through

Children pass a large window where fine bubbles rise and they find a set of water tables where they can swish, splish, and splash. In their playful exploration they conduct small experiments with water and its properties, understandings they apply to the river, animal habitats, and the bathtub.

Children sidle up along and around the tables where special water features offer particularly pleasurable and playful ways to explore water. Turning faucets and spouts, they explore the on-and-off of water and how it moves faster around obstacles. They explore how water lifts and carries some objects while others sink. With cups, funnels, sieves, and tubes, they dump and fill, sometimes creating the excitement of near overflows.

Water's presence in life flows through Water Ways. Colorful umbrellas and puffy clouds float overhead and an oscillating fan flutters Mylar streamers.

**Cornerstones** with a strong presence in this gallery are:

- Building Relationships
- Investigating Our World
- Experiencing Well-being

### Target Audience

- Primary Audience: Children 3 - 7 years
- Secondary Audience: Children 18 months - 3 years and 7 - 10 years

### Experience Builders

This gallery will be developed to encourage the following.

- Observe and explore materials and phenomena, their properties, and processes in multiple ways.
- Manipulate the flow or movement of materials and media to solve problems, meet challenges, or achieve multiple effects.
- Recreate the effect of something that happens by accident using objects, tools, and materials.
- Imagine a new place or world or re-imagine stories, songs, or family adventures.

### Supported by Adults

- Make connections to relevant concepts and contexts
- Extend with open-ended questions
- Selectively support and extend a child's investigation
- Foster problem solving

## Promising Areas and Activities

- **Water Dome:** The soft curvature of a water dome spreads water out to touch many small hands around the water table. Curious fingers magically separate the dome's soft sheet of water. Beneath the falling water, young children place ping-pong balls, corks, and rubber ducks and watch them bobble, dip, and float. Here they find a perfect spot for placing water wheels and moving them so the falling water powers the wheel faster and slower.
- **Fill and Spill:** Inspired by the movement of a bamboo water spout that fills, tips, and then empties, children explore the relationship between filling-and-spilling, in-and-out, weight and balance, and fast-and-slow. They scoop, fill, and dump cups and pitchers of water, pour it through sieves and funnels of different sizes. Turning spigots, spouts, and valves, they continue their explorations of rate and flow. "What if?" questions inspire construction of simple water systems using the water-wall. Arranging graduated funnels, hooking up lengths of clear tubing, and opening valves, children control the flow and movement of water, and make it rain.
- **Water's Edge:** Combining two of their great loves, building and water play, children build in and around water. At the water table with a wide edge and lined with rocks, children can rest plastic trays on which they have loaded small building parts. Children collect these odds-and-ends from bins filled with sections of plastic coving, rubber gaskets, straws, plastic bottle caps, rubber stoppers, figures, small boats, Popsicle sticks, corks, and more. Using the trays as build platforms, children can construct bridges, build buildings, launch boats, arrange small figures, or prop up a miniature umbrella along the beach.
- **Bubble Table:** Who doesn't love bubbles and the feeling of making a bubble big and round and covered with rainbows? At a low round table filled with bubble solution and with hoops and wands nearby, children blow, chase, and watch bubbles drift and disappear.
- **Programs Here-and-there:** Building simple water machines.



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