

Reclaiming Learning, Curiosity and Wonderment through Design and Research

Pathfinder Kindergarten Center

North Kansas City Schools Early Education Center

A large, light-colored wooden play structure designed to look like a boat. The side of the structure is labeled "S.S. DISCOVERY" in bold, black, sans-serif capital letters. A tall wooden pole with a red sail featuring white polka dots is attached to the structure. Children are seen interacting with the structure: one is kneeling on the floor with a yellow toy, two are leaning over the side, and another is in the background near a circular mirror.

S.S. DISCOVERY

Cast of Characters



Dr. Katie Lawson

Executive Director of
Special Programs
North Kansas City Schools



Todd Ferking, AIA

K-12 Design Leader
DLR Group



Ian Kilpatrick, AIA

K-12 Design Leader
DLR Group



Dr. Marilyn Denison

Teaching and Learning Designer
DLR Group

Brain Smart[®] Start

Unite

Increase Energy
Decrease Energy

Connect

Increase Attention
Increase Motivation
Organized Energy



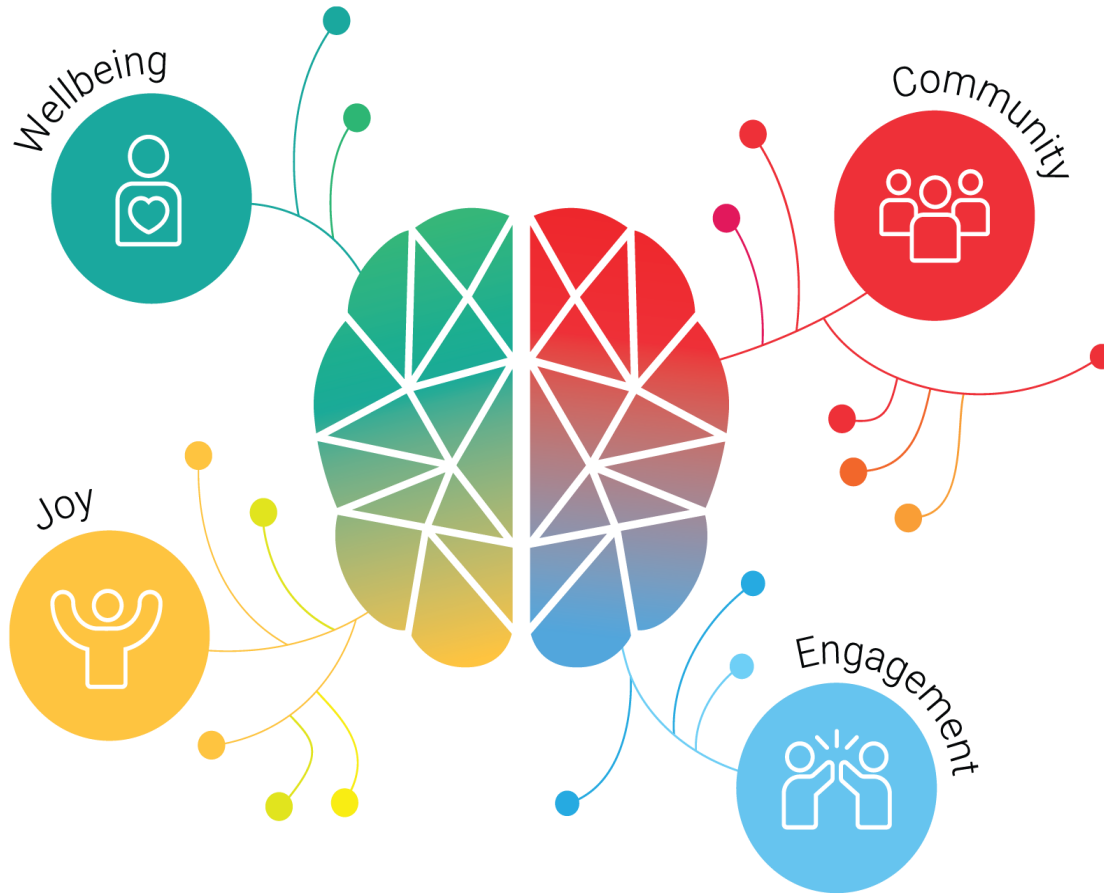
Disengage Stress

Calm Down Classroom
Organized Quiet
Shift Gears / Transitions

Commit

Activate Frontal Lobes
Focus on Attention
Increase Success

Early Learning Development



We know that **90% of brain growth** happens before Kindergarten.

The research shows a multifaceted learning environment is critical to this development.



Wellbeing

- Safe
- Healthy
- Comfort
- Support
- Nutrition
- Trauma Informed





Community

Relationships

Learners

Educators

Parents

Diversity

Identity

Welcoming

Inclusive

Enduring





Engagement

Creativity
Collaboration
Inspiration
Sensory
Variety
Movement
Flexibility
Transparency





Joy

Creativity
Curiosity
Wonderment
Beauty
Nature
Celebration
Pride

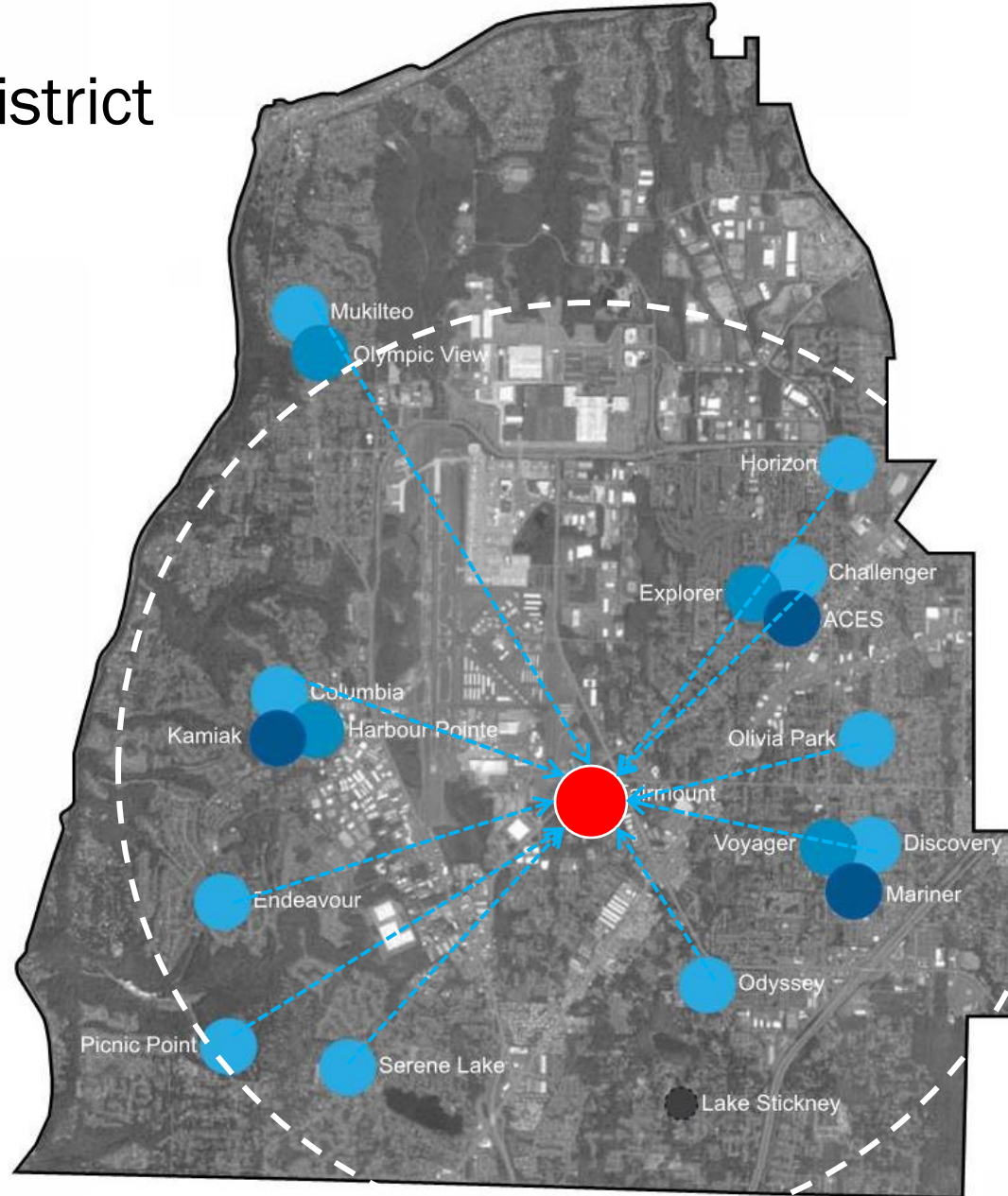


RECLAIMING LEARNING, CURIOSITY AND WONDERMENT THROUGH DESIGN AND RESEARCH

Case Study Pathfinder Kindergarten Center



Mukilteo School District



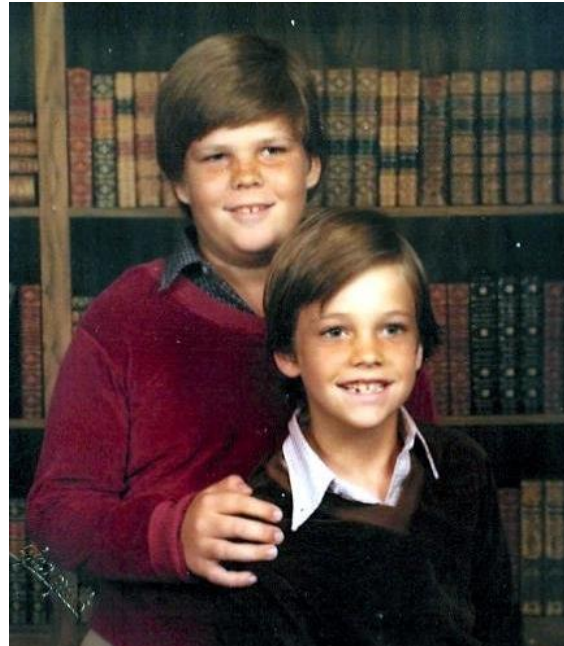
“The idea that everything is leveled for kids, empowers 5-year olds. That empowerment then allows them to grow not only academically, but socially and emotionally which is even bigger than the academics.”
- Educator

- 600 Student Kindergarten
- Draws students district-wide
- 65,000 SF

My Day in Kindergarten



Lisa Johnson
Principal in Charge



Todd Ferking
Lead Designer



Craig Mason
Educational Designer



Todd Bishop
Project Manager



**Meet Students
Basic Needs**



**Maximize
Learning Time**

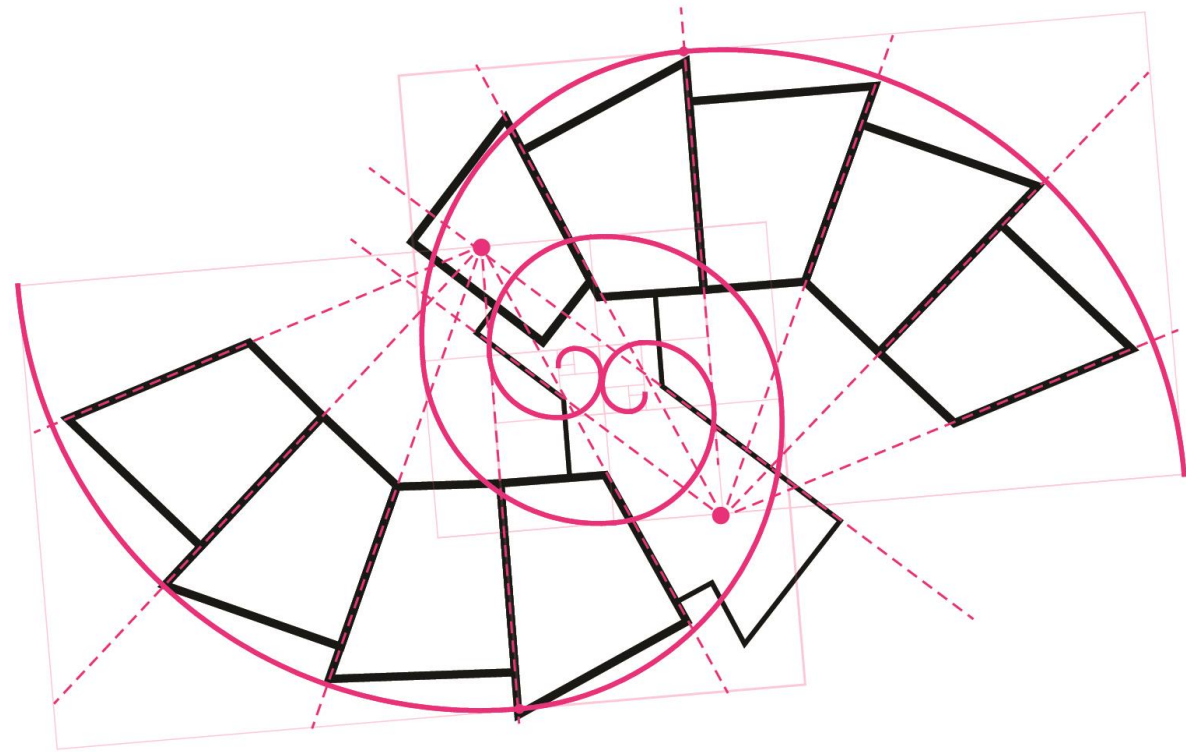
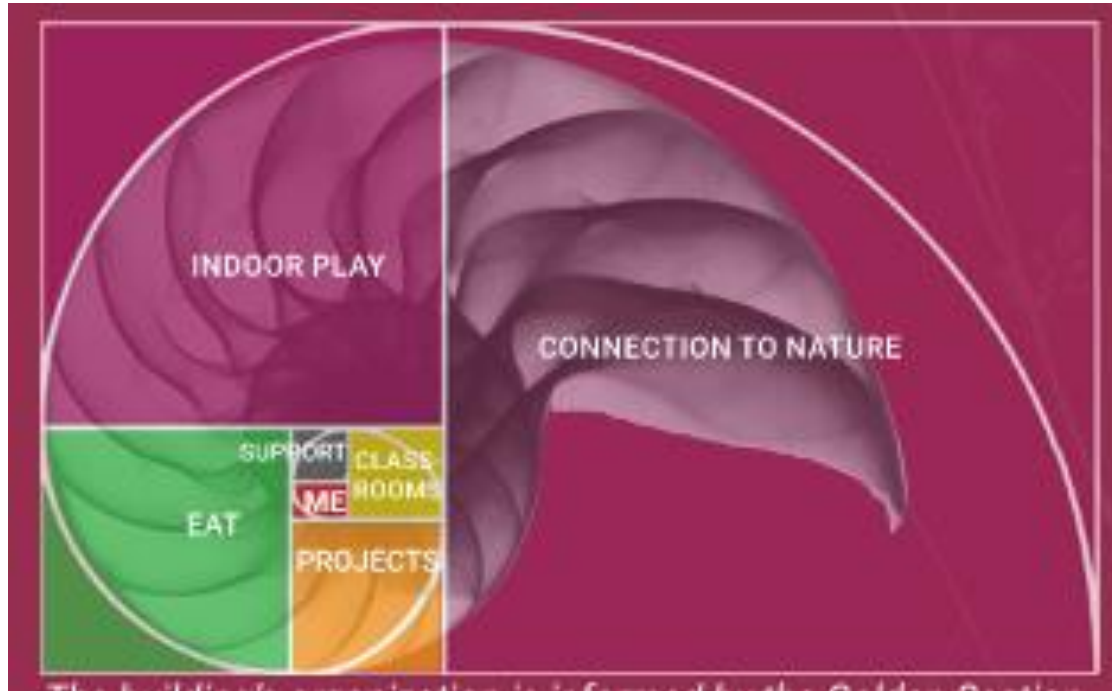


**More Movement and
Connections to
Nature**



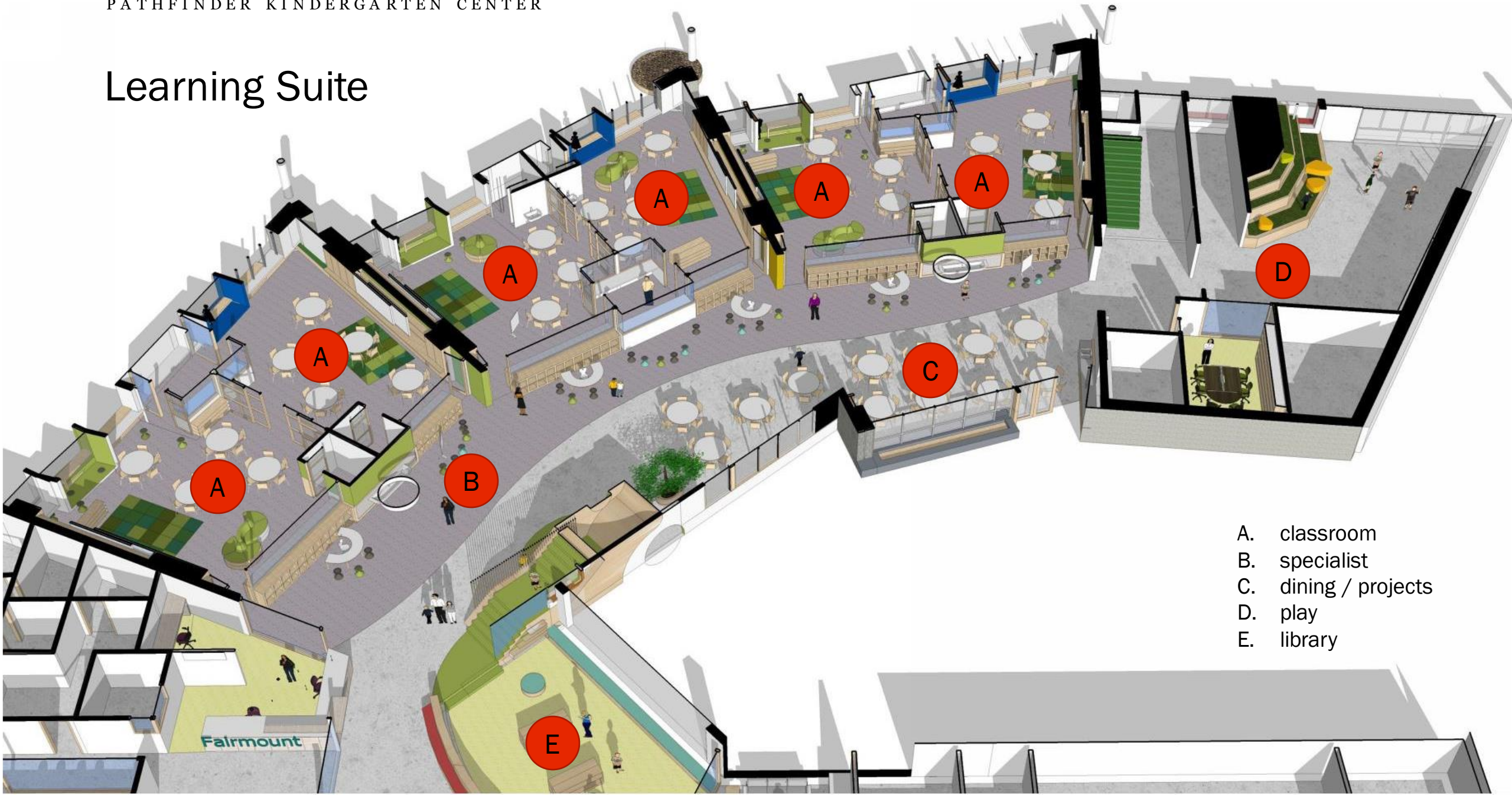
Reduce Anxiety

PATHFINDER KINDERGARTEN CENTER





Learning Suite



- A. classroom
- B. specialist
- C. dining / projects
- D. play
- E. library

Fairmount



multi-modal classrooms



specialist support



dining and projects

Indoor Environmental Quality



thermal comfort



acoustics



daylighting



Wonderment and Discovery



LADYBUG



BUMBLEBEE



GRASSHOPPER



CATERPILLAR

Wonderment and Discovery



Play and Kinesthetic Learning



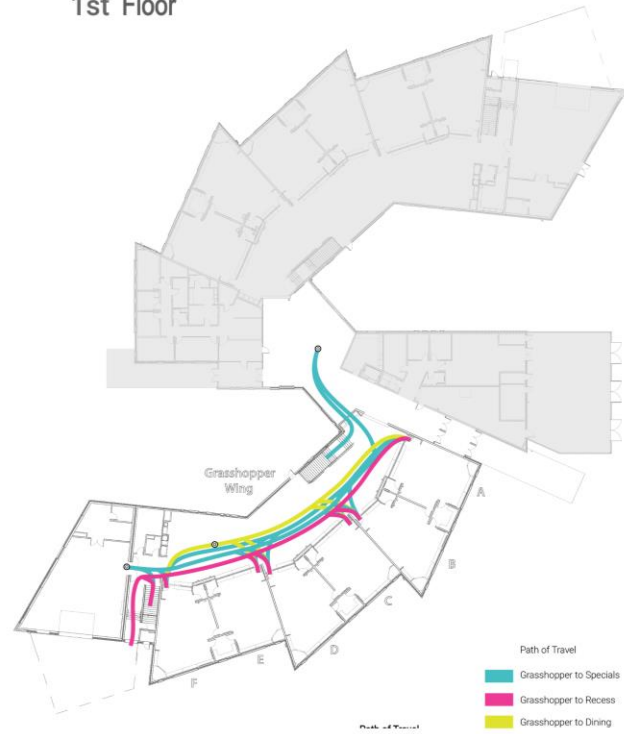




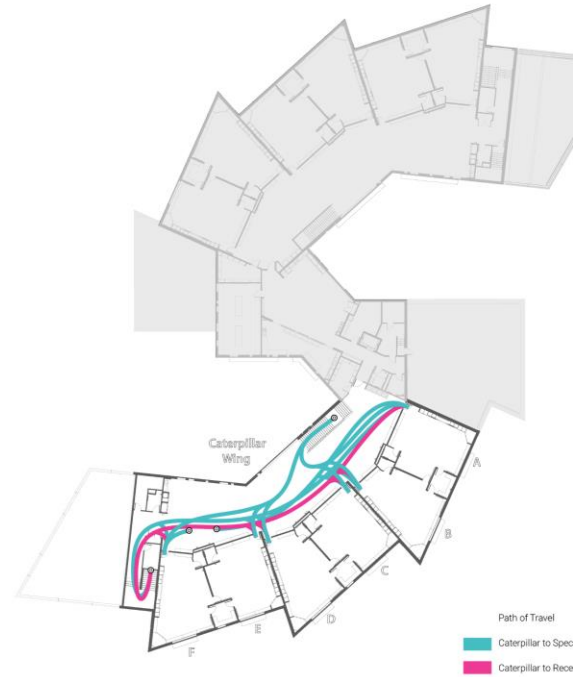


Post Occupancy Research on Transition Reduction

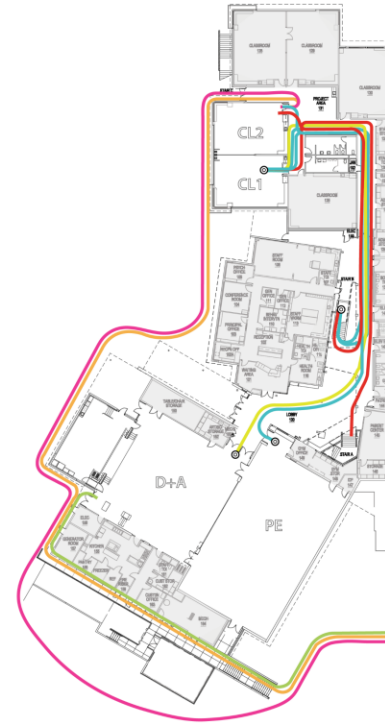
Pathfinder Kindergarten Center
1st Floor



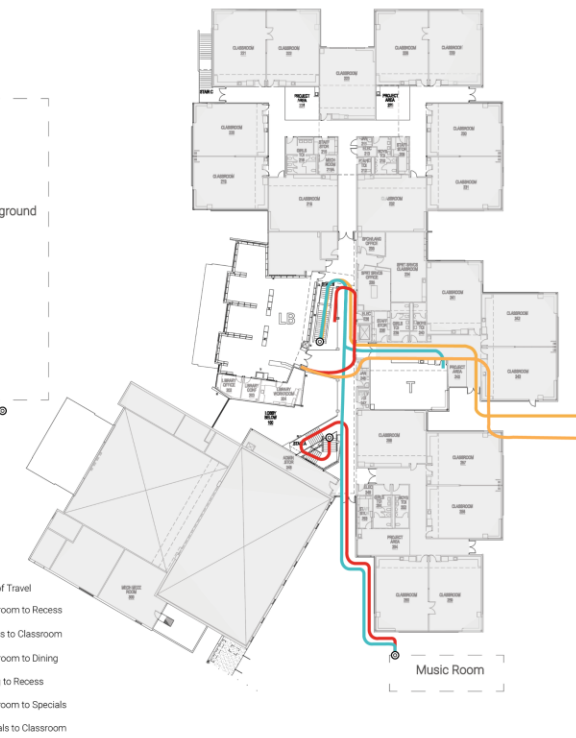
Pathfinder Kindergarten Center
2nd Floor



ODYSSEY ELEMENTARY SCHOOL
FIRST FLOOR

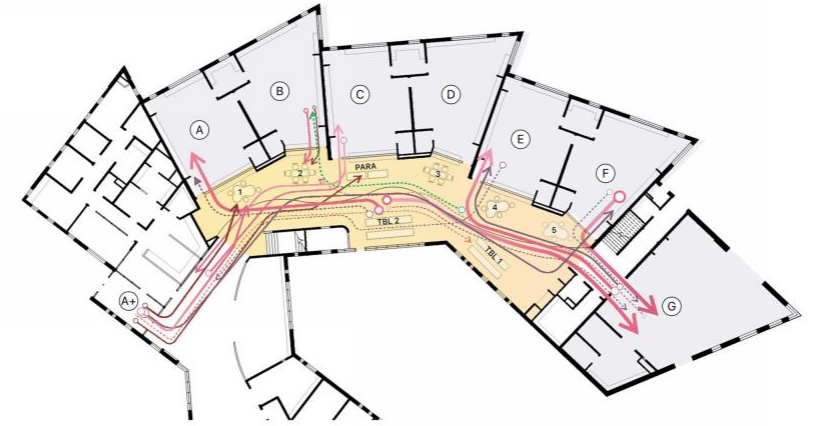


ODYSSEY ELEMENTARY SCHOOL
SECOND FLOOR





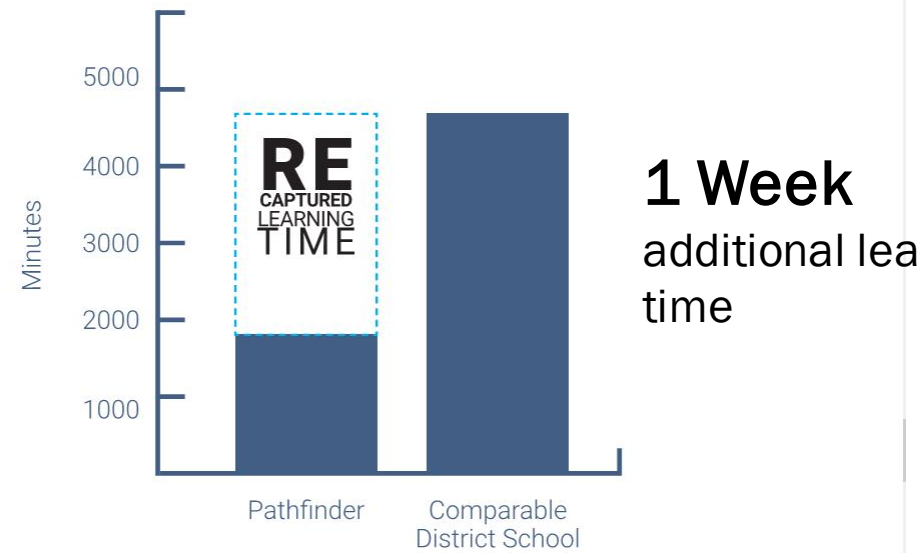
TOTAL MOVEMENT AT CLASSROOM POD



Time of Observation 9:30am - 10:55am Location Typical Pod at Caterpillar

TYPE OF USERS Student Instructor Teacher Food Service Visitor
 NUMBER OF USERS >20 Users 15-20 Users 5-10 Users 2-5 Users 1 User

MINUTES SPENT IN TRANSITION (PER YEAR)



*This study is an immediate classic!
It's accessible and educational
-- should be taught in research
and design classes.*



**2021 Certificate of Research Excellence (CORE) Merit
Certification**

Transforming the Kindergarten Experience by Design: A Comparative Research Case Study

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Abstract

Kindergarten education is becoming a priority throughout the USA as research shows its importance on later in life outcomes. The State of Washington instated full-day kindergarten for all public-school students beginning in 2016-2017. It "...is part of the state's constitutionally protected definition of 'Basic Education'" (Reykdal, n.d., n.p.), working to support all children in the state. Acting on this new state requirement, one school district chose to design and build a center dedicated solely to kindergarten education, housing approximately 600 kindergarteners. The school was divided into four 'neighborhood pods' each with immediate access to specific activity programs (i.e., dining, interventionists, elective functions) reflecting a new 'expanded push-in' model and reduce transition times. This model was compared with a 'traditionally' operated kindergarten where learners travel to activity programs throughout a campus (i.e., dining, interventionists, electives). A human-centered research design using mixed-methods for this comparison study between an 'expanded push-in' and a 'traditional' model was used to understand the impact of this new architectural solution particularly focused on timing transitions between the classroom and activity program settings. Findings discovered a reduction in the length of transitions between accessing the programs by recaptured seven school days of learning time (approximately 45 hours), when compared to the traditional one, and more positive connections between students/students, teachers/teachers, and students/teachers to build community.

Keywords: design, education, post-occupancy, case study, kindergarten, ethnographic research

1. Introduction

Evidence suggests a kindergarten experience is a critical path for all children. "Students who attend school from kindergarten through secondary school typically spend more than 13,000 hours of the developing brain's time in the presence of teachers" (Desautels, 2016). Clearly, kindergarten is important, but putting 600 students in one building is unusual and perhaps unprecedented for this level of cohort. This situation necessitated a new design vision to support the state's new mandate.

The vision for the design team began by first understanding why 'it' (a kindergarten center to host 600 children) was needed. And then, and perhaps more importantly, how it would function for all of these children along with the host of educators and staff who would be working here. The design team also spent time at different kindergarten sites throughout the district to understand first-hand how learning was currently experienced.

The new design vision resulted in the development of community bringing all of the typically spread out activity program areas into what is now referenced as 'neighborhood pods.' This vision was to support the building of community and facilitate less time for students transitioning from their classroom to the activity programs (i.e., gym, or dining, or playground, or other specific activity program areas). A design hypothesis was generated suggesting a change from a more 'traditional' model (students moving across a campus to access activity programs) to this 'expanded push-in' model (activity programs accessed within a neighborhood) would amount to approximately 15 extra days of learning without having to add any extra days to the school calendar. Once the building was built and 'lived in' for almost one year of occupancy, the architectural firm's K12 education design team decided to vet their design hypothesis using a case study research method. The comparative research case

Educator's Experience



"This is incredible. I've never sat next to a spec teacher. We were always in our own little island, and we would never talk." – Specialist
I think that the design really lends itself to a family-kind of community and I think that has a huge impact." - Educator

RECLAIMING LEARNING, CURIOSITY AND WONDERMENT THROUGH DESIGN AND RESEARCH

Case Study North Kansas City Early Education Center





21,000
Students
Grades PreK-12



*Largest district in
Kansas City*



*Second largest
district in Missouri*



*More new home
construction permits*

120+

*Languages spoken
in the district*

48.6%

*Students receive free
or reduced lunch*

45%

*Student population is
non-white*



Framing Thoughts

Kansas City, Missouri Mayor James wanted to create a tax for pre-K
NKC Schools agreed, but had a different strategy

- Inclusion of all 14 municipalities
- A sustainable funding source requiring no new taxes
- Curriculum with continuity into K-12 learning
- Best equip some of our students with greatest need for success in kindergarten and beyond

Research suggests that success in Pre-K equates to success throughout a K-12 career and into life.

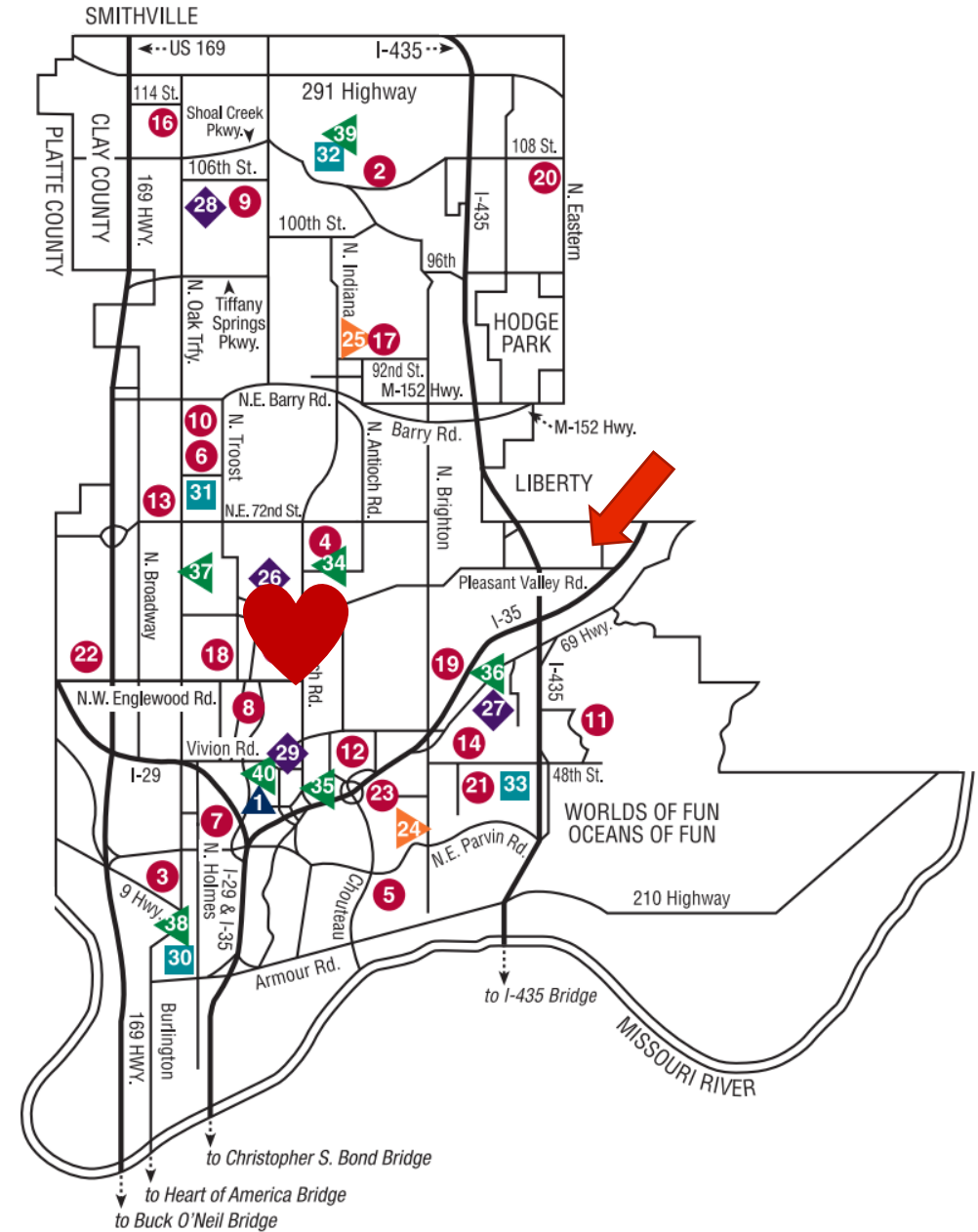
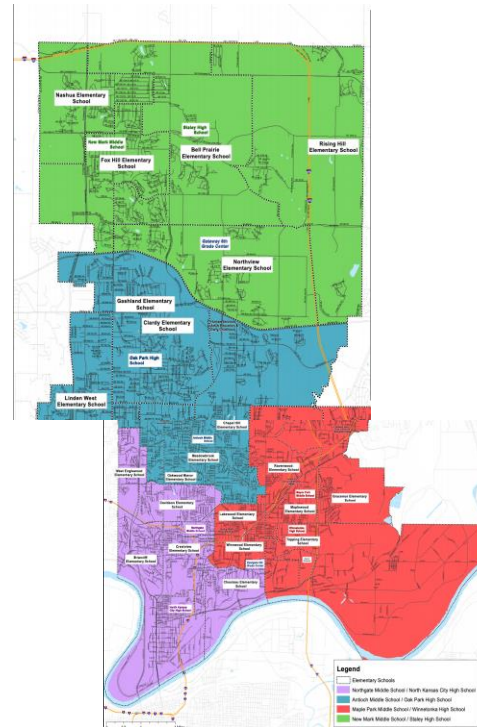
Where We Came From



Aging converted elementary school on eastern edge of the district with a capacity of 9 classrooms

Dispersed classrooms throughout the district-22 classrooms

All half-day programming



**hobby
lobby**

45,000 SF

**price
chopper**

55,000 SF



The Before

PROVOCATION

How do we repurpose two big box stores into a cohesive, engaging and future ready learning environment while also reinvigorating a local community?



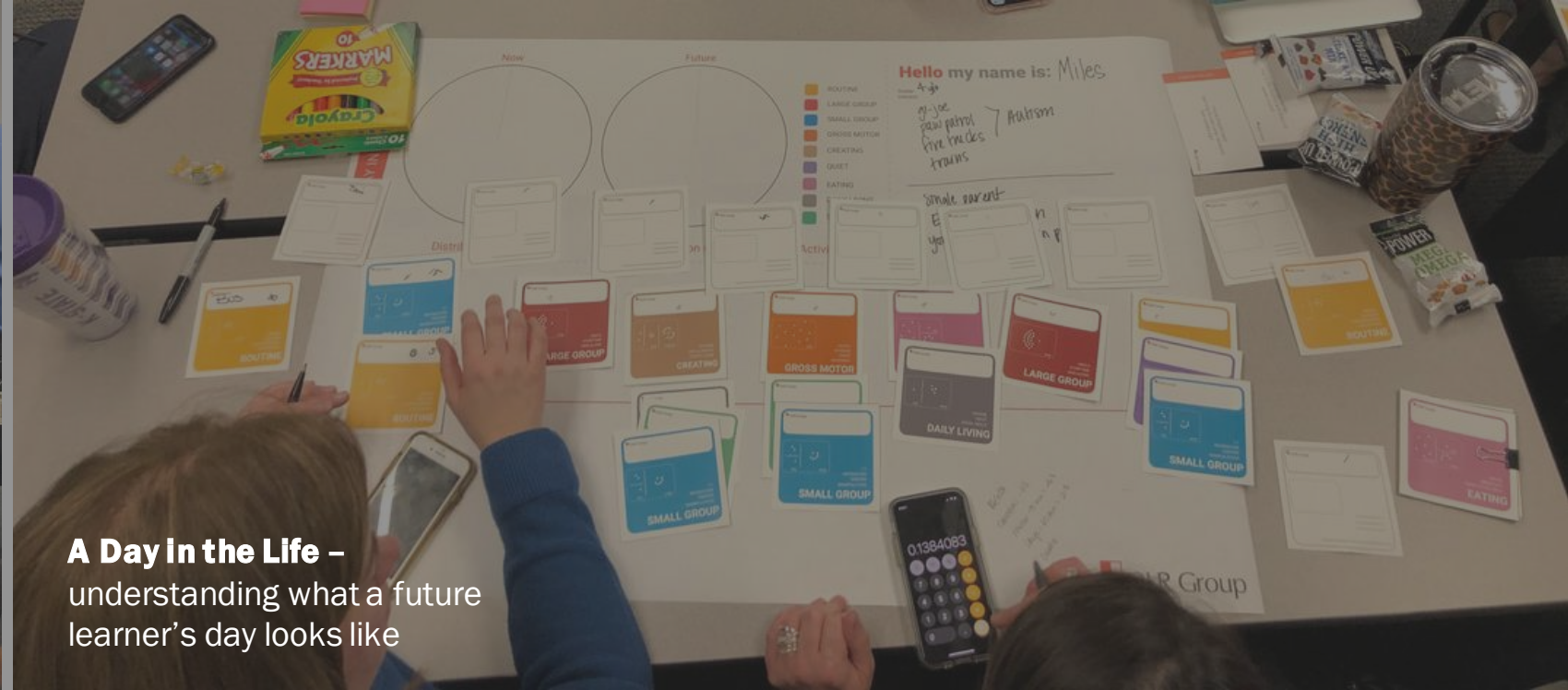
Hobby Lobby



Price Chopper



The Educator –
understanding how to
best support teachers



A Day in the Life –
understanding what a future
learner's day looks like



Draw Your Dream School –
understand what the ideal
space could be



Student Shadowing –
understanding what a
learner's day looks like now

A Continuum – Minimizing Transitions



MILES

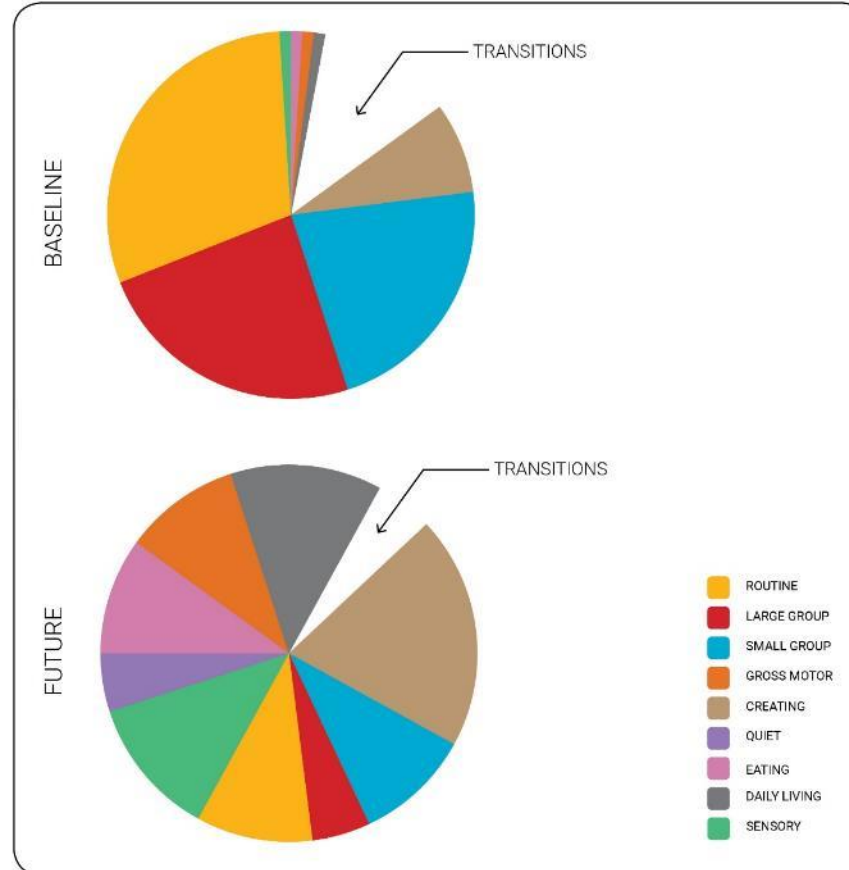
Age: 4

Interests: GI-Joe
Paw Patrol
Fire Trucks
Trains

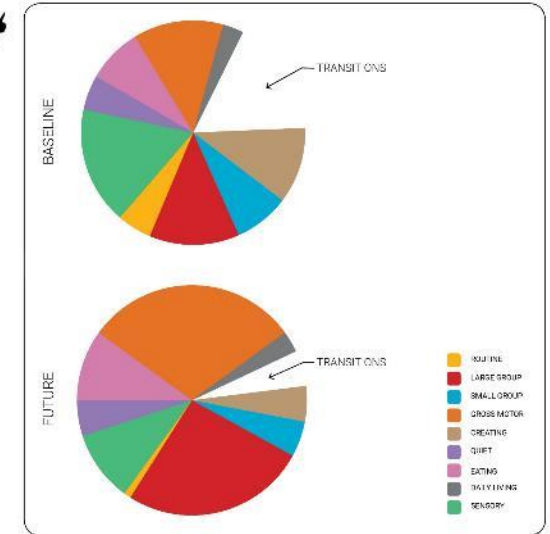
Traits: Autistic
Single parent
EL
Younger sibling - in process

Disruptors: Visual Impairment: learning to use cane, received two weeks ago

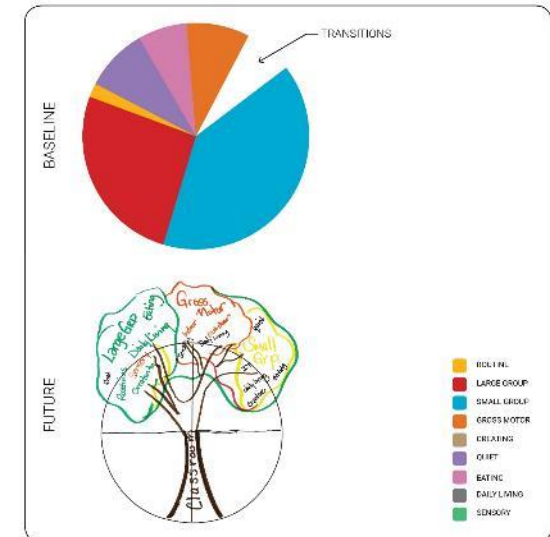
Language Barrier: new to the country and does not speak english



JEFF



MARIO



Guiding Principles

Accessibility & Inclusion

Access to learning, resources and opportunities for all while celebrating learner individuality



Flexibility & Adaptability

Opportunities for flexibility and adaptability in space, furniture, curriculum and learning



Sensory Learning & Active Play

Building visual, auditory and kinesthetic connections through active and engaging play



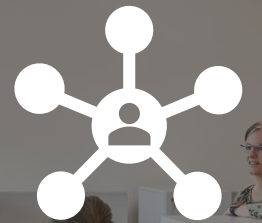
Student Health & Wellness

Social and emotional learning rooted in supportive environments to create equanimity for all learners



Support for Educators

Space for educator collaboration, mindfulness and resources





Derelict buildings with no prospect for reuse located in the center of the district

A new facility and community asset located in the center of the district that can serve as a national model for adaptive re-use of abandoned box stores



Overall Floor Plan

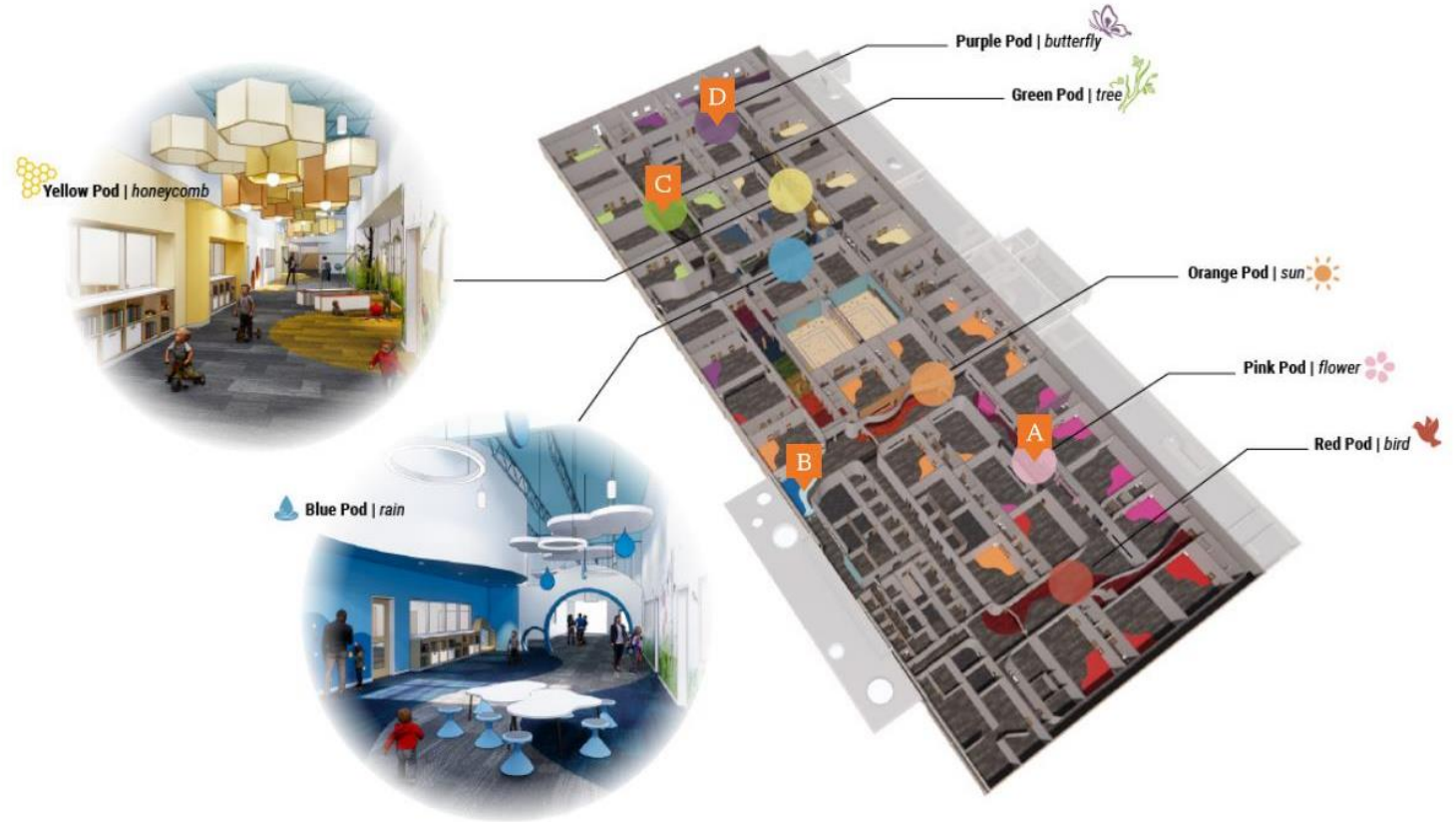
LEGEND

- 1 MAIN ENTRY
- 2 CLASSROOM
- 3 MULTIPURPOSE ROOM
- 4 BLUE POD
- 5 GREEN POD
- 6 PURPLE POD
- 7 YELLOW POD
- 8 ORANGE POD
- 9 PINK POD
- 10 RED POD
- 11 TEACHER PLANNING
- 12 NURSE SUITE
- 13 BACK OF HOUSE
- 14 KITCHEN
- 15 MAIN ADMINISTRATION
- 16 RAINBOW ROW
- 17 SECONDARY ENTRANCE
- 18 OT/PT

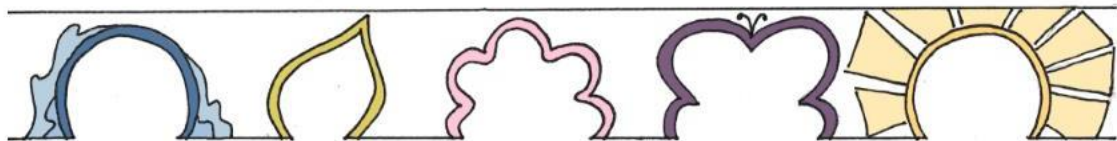
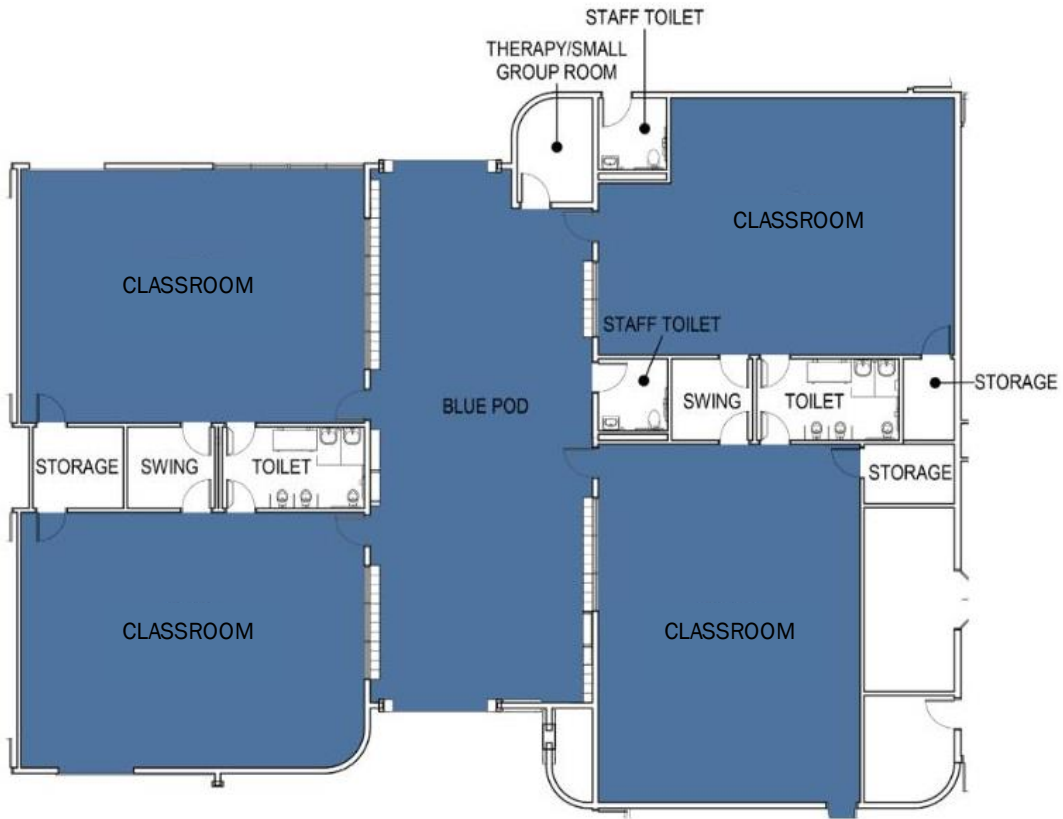


Breaking Down the Scale

Environmental psychology research shows that people have a strong, innate, unconscious response to aspects of nature, from direct elements like daylight and fresh air, to natural references like materials and colors.



The Neighborhood





Each neighborhood biophilic theme is rooted in an animal, weather pattern, plant or natural structure learners could find in their own backyard

Spatial psychology research shows that perceived “spaciousness” exerts strong influence on mood and our emotional experience of the learning environment





Colors influence working and learning behaviors, having a significant impact on students' mood, concentration and well-being

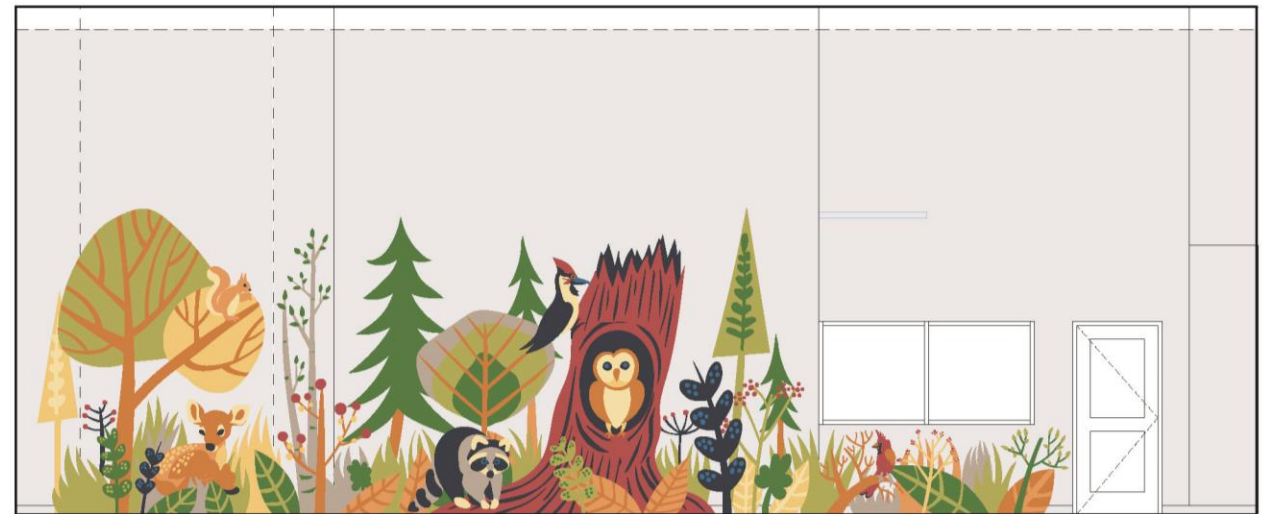
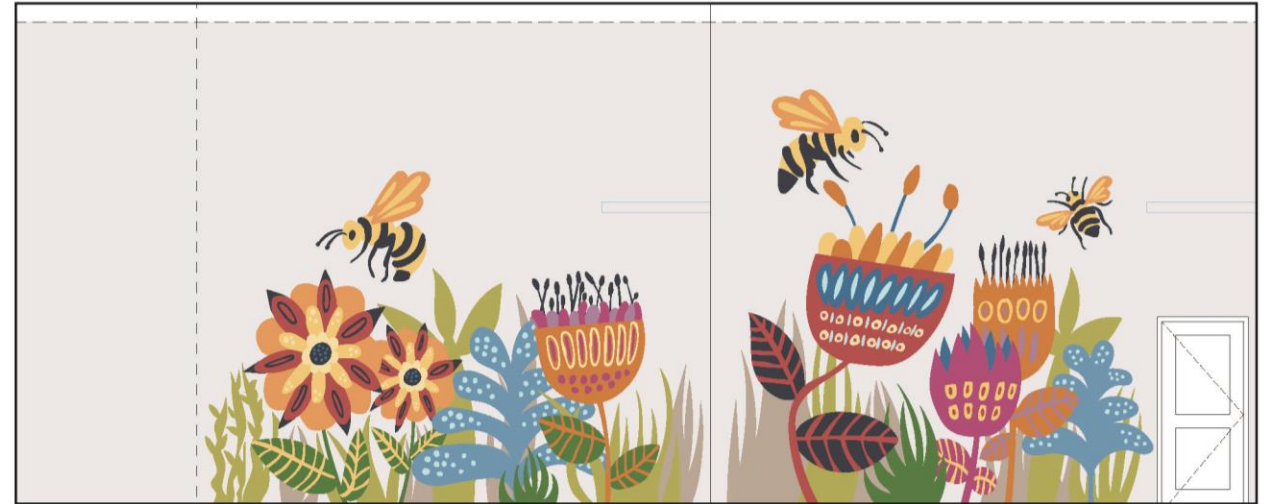
Extending Learning Outside



Equitable Play



Weaving It All Together







The Storybook





The morning sun says 'Hello, hello!'

It's time to greet your friends...let's go!

You're a brave, young explorer ready to start the day.

The SS Discovery, here for adventure and play.



THE
SS
DISCOVERY

*We're all here, now find your place,
wave hello, a smile on your face.*



RECLAIMING LEARNING, CURIOSITY AND WONDERMENT THROUGH DESIGN AND RESEARCH

QUESTIONS & DISCUSSION



Connect with Us



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