



BIRMINGHAM CHILDREN'S MUSEUM
McWANE SCIENCE CENTER

EXHIBIT GUIDE

A Comprehensive Guide to McWane Science Center's
newest early learning play space

MADE POSSIBLE BY THE JAMES M. COX FOUNDATION

Introduction

This guide to allow children, teachers and families to get the most out of a visit to Itty Bitty Magic City. This document is a collection of questions, ideas, and activities to foster children's exploratory thinking and interaction during their time at Itty Bitty Magic City.

Our goal of this exhibit guide is to provide prompts for the children to:

- Engage in imaginative play
- Reflect on the relationships between cause and effect
- Encourage higher levels of thinking
- Articulate thought processing
- Make predictions
- Build confidence

With each exhibit area, there are questions, challenges, and suggestions for getting the children engaged in that particular exhibit. The Pre-Visit Activities are to get the children ready to experience the Itty Bitty Magic City. For Suggested Exhibit Interaction Examples, try some of the ideas while exploring and playing. For follow up and continuing the learning, use the Post-Visit Activities.

In order to have a fun and safe time at the Itty Bitty Magic City:

- Remind children to ask for help if needed.
- Prepare children to work together to make certain exhibit components work.
- Help the children clean up and to understand the importance of cleaning up the space they are in before they leave it so the next group can enjoy it.
- Please keep the shopping carts in the Market area.
- Remind the children that working together on tasks and sharing is a big part of a Museum. It is a shared space.
- Remind the children that the collars and grooming tools in the Pet Vet are for the pretend animals and not to be used on themselves.
- We have a walking speed throughout the museum. Please help us with this.

Developmental Growth Opportunities

Itty Bitty Magic City will build children's sense of self through:

- developing children's gross motor skills and physical ability
- promoting perceptual motor skills and coordination
- engaging all of the senses, while also enhancing balance and confidence as well as strengthening endurance of thought and activity
- increasing concentration and focus
- strengthening hand-eye coordination, fine motor skills and perceptual skills that are important for early childhood development
- allowing children to create and recreate, a skill that refines thought processing and creativity
- using exploratory play to develop a sense of themselves, their environment, and their peers.

The exhibit demands collaborative play fostering social development and emotional growth, also encouraging self-led activities. The interactions allow for the development of resolution skills as well as building confidence as children experience the successes of their own creations.



Inquiry based Learning

The goal of inquiry based activities is to ask the children questions that lead and guide them to the next level of thinking required for the activity. As much as possible the teacher/parent asks questions and only provides enough information necessary to continue to engage the child.

In this model, the teacher/parent follows the child more than the child follows the teacher/parent and a preset outcome. A learner gathers as much information as they can on their own, and the teacher/parent asks them questions to help them reflect on what they are experiencing as they explore and investigate on their own. Ask the children: to describe their observations; to compare what they have done with that they could have done differently; to predict the outcome of an action and then reflect on whether it met their prediction or not; and to cooperate with others who might know something different.

QUESTIONS YOU CAN ASK

- What does this make you think of?
- Which one do you have more of?
- In what ways are they different?
- In what ways are they the same?
- What do you call the things you are using? *
- What if we changed xxxx to yyyy?
- What materials did you use?
- What can you tell me about the things you have?
- What would happen if you...?
- Tell me what it looks like.
- What might you try instead?
- How are you going to do that?
- Tell me about your...
- What do you feel, see, hear, smell?
- What does it look like?
- How did you do that?
- What does it remind you of?
- What will you do next after you finish that?
- What does it feel like?
- What else could you do/use?
- What can you do next time?
- How do you know?
- What can you tell me about it?
- What are some different things you could try?
- Tell me what happened.
- What could you do instead?
- What is it made of?

General Map

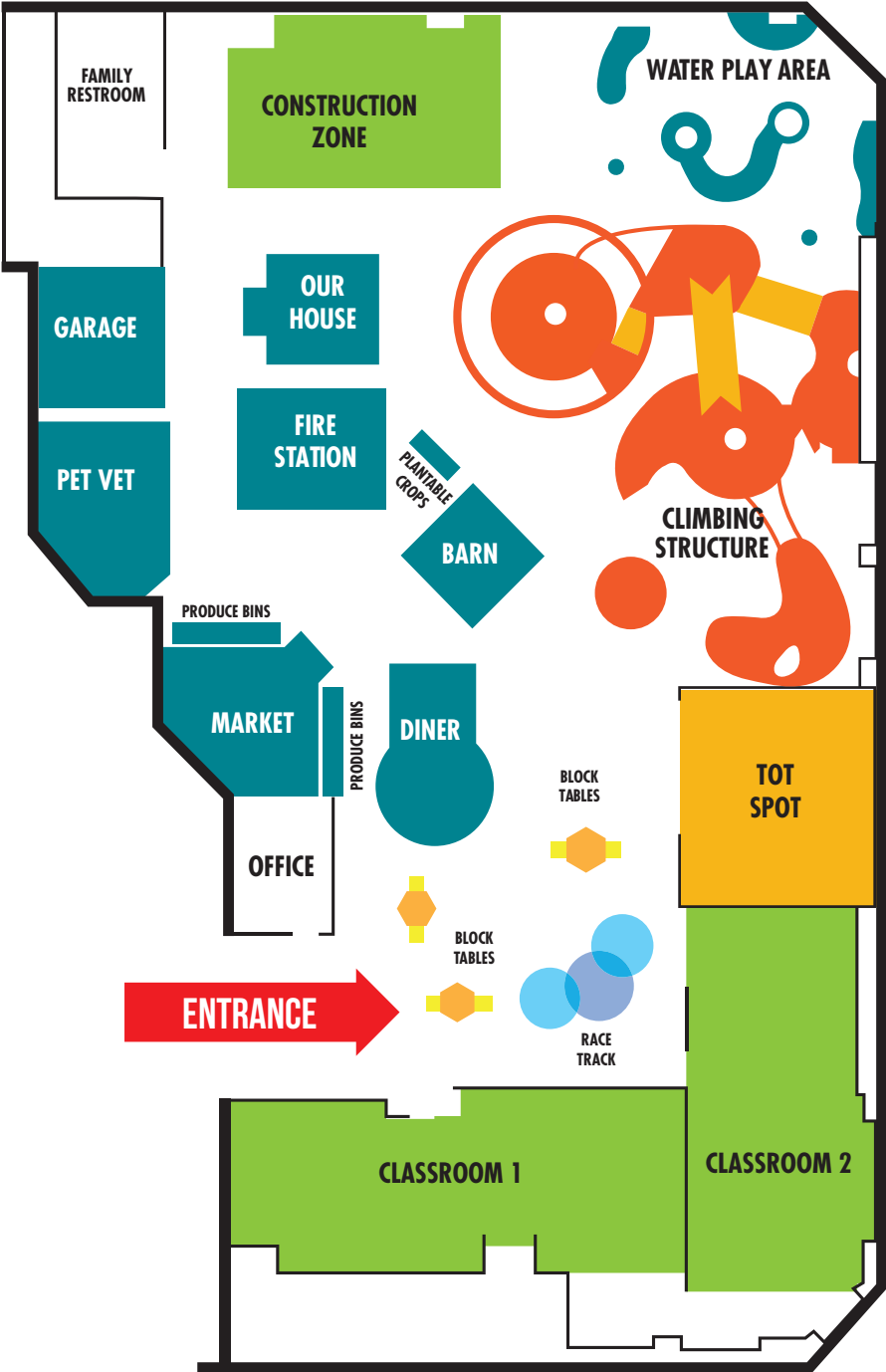


Table top area

- This area's toys and games are subject to change periodically.
- Children should NOT climb on top of the road ways. Encourage them to go under and through instead.
- Children should not climb in bins.

PRE-VISIT ACTIVITIES

- Discuss with the children that some of this area's activities may be different from their last time they visited.
- Discuss "sharing" concept and have them practice sharing – especially cars and trains.
- Discuss race tracks, train tracks, and roads.
- Have children discussion about blocks, construction of blocks and the many different types at Itty Bitty Magic City.

SUGGESTED EXHIBIT INTERACTION EXAMPLES

- What are you building? How did you build it?
- Try building the tallest or longest structure.
- Create a tower with a triangle base. One with a square base (like a cube). One with a single base, etc. Which structure is the strongest? Why? What can you do to make it even stronger?
- Some of these blocks are sticking together. What is inside that makes them attract to one another? Flip the block around. Do you feel it pushing against you?
- Metro Table –encourage children to negotiate which cars and trains they want to play with and the importance of sharing the table space.

POST-VISIT ACTIVITIES

- Attach different shapes of large buttons to a clothespin. Use your finger to race cars around. Describe the speed to the shape/size of the wheel.
- Purchase the same games/manipulatives as what was in the Itty Bitty Magic City so the play can continue.
- Have the children draw their own race cars and /or tracks and have others play with their tracks.
- What was your favorite thing to build with the blocks?

Diner

PRE-VISIT ACTIVITIES

- Discuss the farm to grocery store to table concept.
- What is good “customer service”?
- Identify and discuss the many jobs in a diner/restaurant.
- Define: diner, chef, waitress, waiter, server, cashier
- Discuss how to make a sandwich, pizza, hamburger, etc.
- Bring in some appropriate utensils from the kitchen for the kids to practice with and discuss what they are used for (spatula, mixing spoons/bowls, whisk, etc.).
- Discuss with the children what the purpose of a menu is. Bring in sample and example menus for the children to look at and play with.

SUGGESTED EXHIBIT INTERACTION EXAMPLES

- Which toppings are on your pizza?
- What is for lunch/dinner today?
- If the grill was a real one, where would the heat come from?
- How many different sandwiches can you make?
- Which types of food can be grilled?
- Are there any foods that should not be cooked on the grill? Why not?

POST-VISIT ACTIVITIES

- Using the idea of the layers in a sandwich, make a “vocabulary sandwich” stacking letters/and or words on top of each other to form words/sentences.
- Discuss with children that they should not play with a real grill, stove, or oven at home.
- Actively read A Piece of Red Paper (from the producers of Mister Rogers’ Neighborhood), tearing colored construction paper as the story unfolds.
- Draw your own diner. Make sure it shows all the things you need in it such as a food prep area, cash register, oven, sink, etc.

Market

PRE-VISIT ACTIVITIES:

- What is a market? What are other names of places that sell food?
- Where does the food and products come from? The ground? An animal? Farms?
- Identify different types of places to buy food.
- Discuss the “money for food” concept.
- What is a credit card used for?
- For literacy practice, show children pictures of grocery stores in their community.

SUGGESTED EXHIBIT INTERACTION EXAMPLES:

- Ask children why they are choosing the foods to buy.
- Identify fruits, vegetable, meats, and breads.
- Compare and contrast different kinds of foods. How are they the same? How are they different?
- Why do some foods need to be stored in the freezer verses in the refrigerator?
- Why are some foods not kept cold?
- Why are flowers sold in markets?
- Identify refrigerator and freezer. What are the differences?

POST-VISIT ACTIVITIES:

- When eating lunch/snack, discuss where the food originally came from.
- Discuss how some foods are made. A cake is made from flour, sugar, and eggs. These are things we get from a farm.
- Draw and create your own market, including what items you would have for sale.
- Using the MyPlate.org graphic format, create a couple of different healthy meal options. How did you choose the foods on your plate?
- Write or draw about the importance of markets in our own communities.

Barn on a Farm

PRE-VISIT ACTIVITIES:

- Identify and discuss roles a farmer does on a farm.
- Discuss “things” you might find on a farm and why they are there.
- Compare what food looks like on the farm versus in the grocery store.
- Discuss the different kinds of farms? (Hydroponic, urban, fruit specific, etc.)
- Identify animals that might live on a farm.

SUGGESTED EXHIBIT INTERACTION EXAMPLES:

- What do plants need in order to grow? Where do they grow?
- What is the difference between a fruit and a vegetable?

POST-VISIT ACTIVITIES:

- Cows produce milk. What other animals produce other kinds of food sources or products? Bring in samples, matching samples with the animal.
- After experiencing the weather effects in the farm, discuss how weather affects a real farm.
- Write or draw about the importance of farms.



Fire Station

PRE-VISIT ACTIVITIES:

- What is a fire station? Who works there?
- Why might a firefighter sleep at the fire station?
- What is a firefighter? What does a fire fighter do? How do they put out the fires? What kind of training do you think a firefighter would need before he/she is ready to fight fires?
- How does a firefighter know where there is a fire? What is a dispatch station?
- Show children a fire hydrant and a fire truck and discuss their uses.

SUGGESTED EXHIBIT INTERACTION EXAMPLES:

- Discuss the parts of the firefighter dress up clothes. How do each of these protect the firefighter? What would happen if a firefighter did not have one of these items, or if the item got damaged?
- A fire truck has special features like a ladder, radio, siren, etc. Find where they are.
- What kinds of things could catch on fire? Are there things that do not burn?
- Why does water put out fires? Is there anything else that could also put out fires?

POST-VISIT ACTIVITIES:

- Discuss conversations that the children had on the dispatch station phones.
- Show the children the fire extinguishers at school (or at home).
- Practice your fire evacuation plan.
- Take a field trip to a fire station or invite the firefighters to visit the school.
- Encourage children to look for fire hydrants around their neighborhood.
- Discuss using 911 for appropriate emergencies.
- Teach the 911 concept.
- Write about or draw fire stations and firemen/women.

Pet Vet

PRE-VISIT ACTIVITIES:

- Identify different kinds of pets. What makes a pet a pet? Who has a pet?
- How do you care for a pet?
- Discuss the differences between a wild animal and a pet.
- What is a veterinarian? List jobs they do.
- Why do animals need to be cared for?
- What do animals need to be healthy?
- How should animals be treated?

SUGGESTED EXHIBIT INTERACTION EXAMPLES:

- What is the animal's diagnosis? What are the treatment options?
- Why do only bones show up on an x-ray? Why not other parts of the body? How do x-rays help the veterinarian?
- Look at the "Breeds Of The World" poster, compare and contrast all of the different types. Identify the breeds for the children.
- How are animals like humans? How do they differ?



POST-VISIT ACTIVITIES:

- How are veterinarians the same as doctors for people? Different?
- If child has own pet at home, ask child about his or her responsibility in taking care of the pet.
- Have a representative from the Humane Society come visit the school.
- Share something new you learned about taking care of animals.
- Draw or write about your pet or a pet you would like to have.

SUGGESTED READING:

Garage

PRE-VISIT ACTIVITIES:

- What is a garage? Who works there? What does a mechanic do?
- What kinds of jobs do people have in a garage?
- Facilitate a discussion about why you might take a car to a garage. Have children come up with different things that could be wrong with a car.
- Introduce electric cars.
- What are some tools used in a garage? Have children use/identify tools a mechanic might use and discuss their purpose.
- What does a car run on, or what makes it go? What makes us go? Discuss and give examples of how our bodies are like machines.

SUGGESTED EXHIBIT INTERACTION EXAMPLES:

- Which car is the gas powered car and which is the electrical car? How do you know?
- What are the differences and similarities of an electric powered car verses a gas powered car?
- Discuss the functions of the engine parts.
- What is wrong with the car?
- Try fixing the car. Try fixing the car a different way.
- What is the name of the tool you are using? How does it work?

POST-VISIT ACTIVITIES:

- Explain a car muffler. When riding down the road, have children look for mufflers. What comes out of some of them?
- Point out car dealerships and/or car mechanics in the neighborhood.
- Discuss why car wheels are round. Children can try creating wheels in different shapes and see how they roll in comparison.
- Draw or write about a car that you would like to drive one day.



House

PRE-VISIT ACTIVITIES:

- Define the term “house”.
- List the rooms of a house.
- What specifically do you do in a house?
- What do you do in your own house?
- What do you like to do in your house?
- Name types of places people live (igloo, teepee, adobe, apartment, house, mansion, tent, etc.).

SUGGESTED EXHIBIT INTERACTION EXAMPLES:

- How would you feel if your furniture was moved around in your house?
- Identify the shapes of the pictures on the wall.
- Tell stories about what is happening in the pictures on the wall.
- Dance to the music playing.
- Pretend you are roasting marshmallows in the fire.

POST-VISIT ACTIVITIES:

- Talk about what the children did in the Itty Bitty Magic City House.
- Compare the activities in the Itty Bitty Magic City House with the activities in your own home. What do you have at home that was also in the Itty Bitty Magic City House? What do you not have at home? OR what do you have at home that was not in the Itty Bitty Magic City home.
- Have children make a model/diorama of the rooms in their house.
- Discuss fireplace safety with the children.
- Gather small sized samples of carpet and/or wall paper and have children look at, feel, and describe.
- Have children draw their house and include things they would like in their house.



Construction

PRE-VISIT ACTIVITIES:

- Discuss what construction means.
- Watch a video clip or read a book about construction sites, noting that all workers are working together as a team to complete the task. This will help with sharing roles in the pretend construction area.
- Talk about and show examples of tools used at a construction site and discuss their purpose. Have the children do the motions of using such tools as a hammer, shovel, etc.

SUGGESTED EXHIBIT INTERACTION EXAMPLES:

- Try moving the conveyor wheel slowly. What happens? Try moving it faster now. What do you notice?
- What are you building?
- How many foam blocks can you stack until they fall or until you cannot reach to build anymore. Try flipping the blocks to a different side. How does this change the amount of blocks that can be used?
- Describe the properties of each material. Are some easier to build with than others? Which ones are sturdy materials? Which ones are flexible?
- Build a simple "structure". Think of all the different things this could be. (A chair. A boat. A bus., etc.)

POST-VISIT ACTIVITIES

- Introduce the term "blueprint," and have children draw what they built at Itty Bitty Magic City.
- Build a structure with a square base, a triangular base, and one with a different shaped base. Which foundation is stronger? Why? Which one is weaker? Why?
- Bring in unusual "building blocks" for more interesting ways to play (examples: milk/juice cardboard containers (with tops flattened), cereal boxes, cracker boxes, etc.)
- Build a structure with paper, cardboard, etc. noting the strengths and weaknesses.
- Read and act out the story of the 3 Little Pigs by Golden Books.
- Introduce the topic of simple machines. Give examples of simple machines and explain to them how they have used them in the museum.

SUGGESTED READING:

Goodnight, Goodnight Construction Site by Sherri Duskey

Water Play

- Children should be well supervised in this area.
- Children should wear smocks while playing with the water.
- They should play in the water only with their hands.
- Children should not drink the water.

PRE-VISIT ACTIVITIES:

- Describe water.
- Discuss the properties of liquids.
- How are liquids different than solids and gases?

SUGGESTED EXHIBIT INTERACTION EXAMPLES:

- Encourage the children to look up for the launching ball activities and look straight ahead for the musical water activities.
- Stand underneath the water dome. How does it feel to have water all around you but not get wet?
- Describe the cause and the effect that you observe while experimenting with the water.
- Identify your emotions while playing with the water.
- Pour water into one shaped container. Pour that shape into another shape. What happens? Do certain shapes hold more or less water than other shapes? What would happen if I poured a solid object from one shape to another? Would that solid object change shape like the liquid water does?
- What makes the water come out in a fast stream? Why does the water not fall straight to the ground? How does it remain in its water arch?



POST-VISIT ACTIVITIES:

- To re-create your own water instruments, attach pots/pans to the play-ground fence (or lay on ground) and squirt with turkey basters/pipettes.
- Show pictures of fog and explain how it forms.
- Place unusual containers in the water table and let children freely explore.
- Gather a variety of different sized/weighted objects and test if they sink or float in water.

Climbing Structure

PRE-VISIT ACTIVITIES:

- Bring in a random (unidentifiable object). Have children brainstorm all the possibilities of what that object could be. Repeat at a later date with a different item. This will help foster the child's creativity to better be able to imagine what the climbing structure could be.
- While children are playing on playground equipment give them ideas of what the structures could be. Have the children act out that scenario while playing. Discuss how using your imagination can create play scenarios.
- Lead the children in stretching or basic exercises so they will be use to using their muscles.
- Mention the term "jungle gym". Say that the climbing structure at Itty Bitty Magic City is like a jungle gym, using the language that the children already know.
- Define periscope, telescope, kaleidoscope, and binoculars. Discuss how all of these terms are alike and how are they different.

SUGGESTED EXHIBIT INTERACTION EXAMPLES:

- Place a ball on the ramp. Watch that particular ball and see where it goes.
- What were you pretending to be in the climbing structure?
- How do the different colored musical scales sound? What is the difference of the smallest one and the largest one?
- Have a climbing race with a friend. Who can climb the fastest up the cargo net?
- What do you see through the periscope?
- What climbing structure do you like the best? (Net bridge, wiggly bridge, cargo net, ramp, stairs, etc.) Why?

POST-VISIT ACTIVITIES:

- Using cardboard boxes and fabric, create a fort outside on the playground.
- Do the "Hokey Pokey" as a movement activity and tie it in to the same muscles used as in the climbing structure.
- After climbing at McWane Science Center, were any body parts a little sore? Why do you think that is?
- Discuss if there were body parts that you could have used differently to get around in the Climbing Structure.
- Have children mentally go through each of the climbing structure sections and move like they did in the actual exhibit.

Pictures



THE GARAGE

Kids can take a look under the hood inside Itty Bitty's "Garage." They also will have a chance to learn the difference between a gas powered vehicle and an electric powered vehicle.

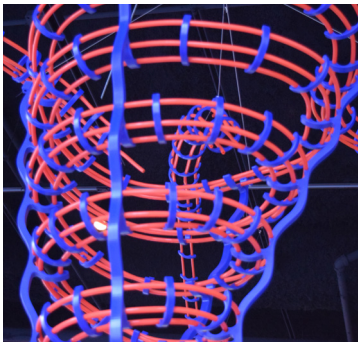


THE DINER

Pictures



THE GROCERY STORE



THE WATER PLAY AREA



Pictures



THE FIRE STATION

In the "Fire Station" children will get a chance to live the life of a fireman, dressing up in fireman gear and operating a fire truck. They can even use a fire hydrant.

The fire station will give children a first hand look at what goes on inside a fire station, how fireman work and live and most importantly fire safety.






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