Experience Guide

Grade: 5

To support meaningful engagement with museum content, we have developed grade-specific experience guides aligned with NGSS standards. These guides are designed to help students and chaperones explore exhibitions more deeply and purposefully.

Each guide is organized by gallery content and can be tailored to your needs. Before your visit, you may print the guides at your school, selecting specific sections based on your learning objectives. This flexibility allows you to focus on topics or exhibits that best align with your curriculum goals.

Use these guides to lead your students through exhibitions with engaging conversation starters and hands-on activities, creating a focused and enriching museum experience.

SAINT LOUIS
SCIENCE CENTER

Dinosaurs and Dig Site

Earth Sciences

Experience Energy

LOWER LEVEL

- Dinosaurs and Dig Site
- Earth Sciences
- Paleo Lab
- Experience Energy
- Energy Stage
- T.rex Room
- Dino Den (Esports)
- May Hall

Earth Sciences

Mass Extinction Six

Activity 1: Extinction Simulator

Objective:

Understand how human causes and natural events and processes work together to increase or decrease CO_2 levels.

Instructions:

Play the Extinction Simulator from left to right with at least one other person or in a small group.

Discussion:

What human actions caused the most change in extinction events? What animals or plants do you care about the most?

Standard:

ESS1.C – The History of Planet Earth.

Past Mass Extinctions

Activity 2: Past Mass Extinction and the Big Five

Objective:

Identify the causes of the five different mass extinction events.

Instructions:

Investigate the five major extinction events on the back wall.

Discussion:

What atmospheric changes occurred? Which one surprises you the most?

Standard:

ESS1.C – The History of Planet Earth.

More than Just Dinosaurs

Activity 3: Studying Past Life on Earth

Objective:

Discover the variety of sciences needed to study prehistoric life.

Instructions:

Read the panel describing types of scientists who study prehistoric life.

Discussion:

What is a question that a Palynologist might help us answer? Which of these was new to you?

Standard:

ESS1.C – The History of Planet Earth.

EXPERIENCE ENERGY

Rollercoaster Exploration

Activity 1: Exploring Gravity

Objective:
Review gravitational force exerted on objects.

Instructions:
Explore and interact with the rollercoaster exhibit. Partner up with another person and take turns with the rollercoaster on the wall.

Discussion:
Talk about ways that you could make the rollercoaster go faster. What can you do to affect the speed of the cars?

Standard:
PS2.B – Types of Interactions.

Car Engine Exhibit

Activity 2: Build a Car

Objective:
Observe the difference in electric and combustible engines.

Instructions:
Have students assemble the different cars on the wall.

Discussion:
Tal about the similarities and differences of the two engines. Discuss any of the experiences that the students have had with electric vehicles (busses, scooters, cars).

Standard:
ETS1.A – Defining and Delimiting an Engineering Problem.

GROW

Life Science Lab

GameXPloration

FIRST FLOOR

+ Lobby / Tickets
+ Life Science Lab
+ GameXPloration
+ GROW
+ Boeing Hall

GAMEXPLORATION

Foosball Energy

Activity 1: Foosball and Energy Transfer

Objective:

Describe how energy is transferred between objects when playing foosball.

Instructions:

Find the eight-player Foosball table. Play a game of foosball.

Discussion:

What forces did you observe when playing foosball? How is energy transferred between objects in a foosball game?

Standard:

PS2.B – Types of Interactions.

The Future of Gaming

Activity 2: Future Game Design

Objective:

Predict future developments in gaming technology.

Instructions:

Think about what games might look like in the future.

Discussion:

What features would you add to a game to make it more fun or educational? How do you think games will change in the next 10 years? What new technology do you think will be used in future games?

Standard:

ETS1.C – Developing Possible Solutions; ETS1.C – Optimizing the Design Solution; PS4.C – Information Technologies and Instrumentation.

LIFE SCIENCE LAB

Nature's Toolbox

Activity 1: How Animals Use Energy

Objective:

Discover how animals use energy from their environment.

Instructions:

Observe the reef aquarium in the Life Science Classroom.

Discussion:

How do the fish interact with their surroundings? How are they getting energy from their environment? Think about how this is similar to how people get energy from their environment.

Standard:

LS1.C – Organization for Matter and Energy Flow in Organisms; PS3.D – Energy in Chemical Processes and Everyday Life

Live Animals

Activity 2: Amazing Animal Adaptations

Objective:

Better understand animal adaptations through the observation of live animals.

Instructions:

Take a few minutes to observe the aquatic animals in the window. (Axolotls, Western Lesser Siren and African Clawed frogs).

Discussion:

What behaviors do you notice? What adaptation do these animals have to their natural environments? Hint: read signage in the windows.

Standard:

LS1.B – Growth and Development of Organisms; LS3.B – Variation of Traits.

Outside – Root Towers

Activity 1: Root Towers

Objective:

Discover how matter moves among plants, animals, and the environment.

Instructions:

Explore the Root Towers outside. Read the information about the hidden powers of roots.

Discussion:

Talk about how the different parts of the plants work together to help the plant grow. How does the plant use energy?

Standard:

LS1.C – Organization for Matter and Energy Flow in Organisms; PS3.D – Energy in Chemical Processes and Everyday Life; LS2.A – Interdependent Relationships in Ecosystems

Outside – Bioswales and Rain Gardens

Activity 2: Water Cycling

Objective:

Find water runoff and conservation solutions for their neighborhoods and schools.

Instructions:

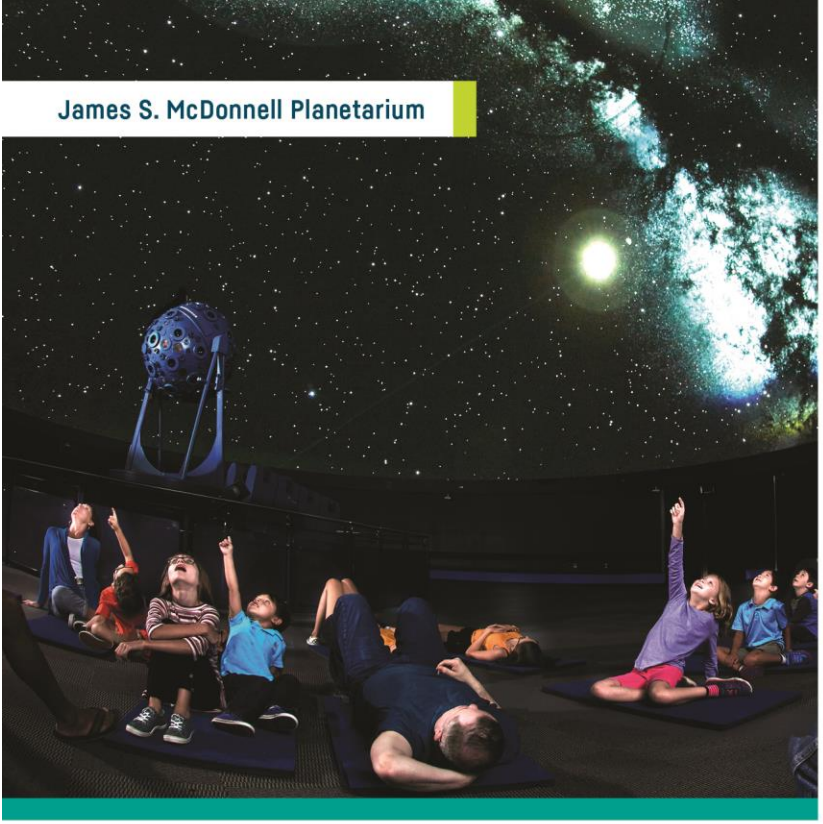
Locate the bioswales and rain gardens that are around the north side of the Pavilion.

Discussion:

How do you think a rain garden helps both plants and our sewer systems? What is one thing you could do at your home or school to increase biodiversity?

Standard:

LS2.C – Ecosystem Dynamics, Functioning, and Resilience; ETS1.B – Developing Possible Solutions.



James S. McDonnell Planetarium

Structures

Makerspace

SECOND FLOOR

- OMNIMAX® Theater
- McDonnell Planetarium
- Structures
- Experience Flight
- Current Curiosities
- Makerspace
- Discovery Room

MAKERSPACE

Riga-Ma-Jig Exhibit™

Activity 1: Bolted Together

Objective:

Develop problem-solving and engineering skills by constructing a stable structure.

Instructions:

Divide up into groups of four. Give each group a challenge to build the most stable structure with the Rig-A-Ma-Jig pieces provided in the exhibit.

Discussion:

Ask the students to talk about what they made, and what strategies they used to make decisions about their creations. Did they accomplish what they wanted? What could they do to improve the design?

Standard:

ETS1.A – Defining and Delimiting Engineering Problems; ETS1.B – Developing Possible Solutions; ETS1.C – Optimizing the Design Solution.

CURRENT CURIOSITIES

Keva Gallery

Activity 1: Dream It, Build It

Objective:

Develop problem-solving and engineering skills by constructing a stable structure.

Instructions:

Divide into small groups around the tables in the gallery. See which group can build the biggest pyramid in two minutes.

Discussion:

What was challenging about this activity? How did you make your structure stable? Do you think you could make a taller tower if you had more time?

Standard:

ETS1.A – Defining and Delimiting Engineering Problems; ETS1.B – Developing Possible Solutions; ETS1.C – Optimizing the Design Solution.

STRUCTURES

"Shake It" and "Top Heavy"

Activity 1: Tall Towers

Objective:

Learn how engineers and architects create buildings that can withstand natural disasters.

Instructions:

Follow the instructions on the activities.

Discussion:

What did you learn about architectural design from these interactions? What have engineers and architects put into place to make buildings able to survive natural disasters?

Standard:

ETS1.A – Defining and Delimiting Engineering Problems; ETS1.B – Developing Possible Solutions; ETS1.C – Optimizing the Design Solution.

"Go with the Flow" and "Drops of Knowledge"

Activity 2: Water systems

Objective:

Discover the complex system used to capture, clean and move water for human use.

Instructions:

Follow the water through a whole cycle.

Discussion:

Water is a very important resource that is scarce in some areas of our country. How can we play a role in keeping our water clean and sewers functional? Should you flush these: cotton swabs, tissues, paper towels, dental floss? (No) Only flush: toilet paper, your waste and water. What is one way you can commit to reducing your water use at home or at school?

Standard:

ESS2.A – Earth's Materials and Systems; ESS2.C – The Role of Water in Earth's Surface Processes; ESS3.A – Natural Resources.

JAMES S. MCDONNELL PLANETARIUM

Rotating Globe

Activity 1: As the World Turns

Objective:

Postulate how scientists use data collected from satellites.

Instructions:

Have students explore the “Earth’s Vital Signs” and “Latest Events” on the Eyes on the Earth interactive monitor.

Discussion:

Did the students see any events they recognized? How do they think we can use the information gathered to make decisions about the health of our planet? How about predicting weather?

Standard:

ESS3.B – Natural Hazards, ESS3.D-Global Climate Change.