

# Raceways Exhibit

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## **DESCRIPTION:**

The Raceways exhibit invites children and adults to play with gravity, energy and motion as they send golf balls on various journeys. Send golf balls through ski jumps, loops and spirals; or you can build your own raceways.

## **KEY WORDS:**

- Gravity
- Distance
- Weight
- Predict
- Observe
- Experiment

## **LEARNING ACTIVITIES:**

- Challenge your preschooler to **GRASP** golf balls using only their thumb pointer, and middle fingers. Attempt it one hand at a time, then try with both hands! (Physical Health + Development)
- **PRETEND** you are construction workers at a job site and have to build a new race track. Decide together who is in charge of the design, building, and testing. (Language + Social Emotional)
- Ask your preschooler to use the workspace to **DRAW** up plans for an awesome racetrack, and then work together to try to **BUILD** it in real life! (Math + Cognition)

## **DRDP**

### **APPROACHES TO LEARNING:**

- Self-Control
- Investigation
- Curiosity / initiative
- Engagement / Persistence
- Shared use of Space / Mats

### **SOCIAL EMOTIONAL DEVELOPMENT:**

- Social Emotional

- Collaboration /Cooperation
- Symbolic Play

### **LANGUAGE AND LITERACY:**

- Receptive Understanding
- Expressive Understanding
- Communication and Use of Language
- Letter Word Knowledge

### **ENGLISH-LANGUAGE DEVELOPMENT:**

- Receptive English
- Expressive English
- Symbol Letter Knowledge

### **COGNITION, INCLUDING MATH AND SCIENCE:**

- Spatial Relationships
- Engineering
- Classification
- Number Sense of Quantity
- Measurement
- Patterning
- Inquiry Obs. Investigation

### **PHYSICAL DEVELOPMENT AND HEALTH, WELLNESS:**

- Small motor
- Large motor

## **KANSAS EARLY LEARNING STANDARDS**

### **SCIENCE STANDARDS:**

- S.p.4.1: Describes and compares the effects of common forces (e.g., pushes and pulls) on objects and the impact of gravity, magnetism and mechanical forces (e.g., ramps, gears, pendulums, and other simple machines).

### **COMMUNICATIONS AND LITERACY STANDARDS:**

- CL.SL.p3.3: Uses some basic qualitative (e.g. wet/dry, hot/cold) and quantitative (e.g. more/less, empty/full) concepts to describe familiar people, places, things and events.

- CL.SL.p.4.3: Uses some basic spatial (e.g., front/back, top/bottom) and temporal (e.g., first/last, before/after) concepts to describe familiar people, places, things and events.
- CL.LS.p4.1: Demonstrates an emerging command of the conventions of standard English grammar and usage when writing or speaking.

**MATH STANDARDS:**

- M.MD.K.3: Classify objects and count the number of objects in each category
- M.G.K.1: Identify and describe shapes
- M.G.K.4: Analyze, create, compare and compose shapes

**MISSOURI EARLY LEARNING STANDARDS**

**LITERACY STANDARDS:**

Symbolic Development:

- Represents feelings and ideas in a variety of ways

Speaking/Expressive Language

- Uses language to communicate

Listening/Receptive Language

- Listens for different purposes

**MATH STANDARDS:**

Number and Operations:

- Uses number to show quantity
- Uses language to represent number objects
- Solves problems using numbers
- Uses numerical representation

Geometry and Spatial Sense:

- Investigates positions and locations
- Explores shapes in the environment

Patterns and Relationships:

- Makes comparisons
- Uses measurements

**SCIENCE STANDARDS:**

Physical Science:

- Explores physical properties of objects and materials
- Investigates properties of objects and materials
- Solves problems involving physical properties of objects and materials
- Represents observations of the physical world in a variety of ways

## **K-2 KANSAS STATE STANDARDS**

### **SPEAKING AND LISTENING STANDARDS:**

SL.K.1b: Continue a conversation through multiple exchanges.

SL.K.3: Ask and answer questions in order to seek help, get information, or clarify something that is not understood.

SL.1.1b: Build on others' talk in conversations by responding to the comments of others through multiple exchanges.

SL.2.1c: Ask for clarification and further explanation as needed about the topics and texts under discussion.

### **PRESENTATION OF KNOWLEDGE AND IDEAS:**

SL.K.6: Speak audibly and express thoughts, feelings, and ideas clearly.

SL.1.4: Describe people, places, things, and events with relevant details, expressing ideas and feelings clearly.

### **GEOMETRY STANDARDS:**

K.G.2: Correctly name shapes regardless of their orientations or overall size.

K.G.3: Identify shapes as two dimensional (lying in a plane, “flat”) or three-dimensional (“solid”).

## **NEXT GENERATION SCIENCE STANDARDS**

### **E.S1.A: STRUCTURE AND PROPERTIES OF MATTER**

Pushes and pulls can have different strengths and directions (K-PS2-1), (K-PS2-2)

Pushing or pulling on an object can change the speed or direction of its motion and can start or stop it. (K-PS2-1), (K-PS2-2)

### **PS2.B: TYPES OF INTERACTIONS**

When objects touch or collide, they push on one another and can change motion. (K-PS2-1)

**PS3.C: RELATIONSHIP BETWEEN ENERGY AND FORCES**

A bigger push or pull makes things speed up or slow down more quickly.  
(secondary to K-PS2-1)

**ETS1.A: DEFINING AND DELIMITING ENGINEERING PROBLEMS**

A situation that people want to change or create can be approached as a problem to be solved through engineering. (K-2-ETS1-1)

Asking questions, making observations, and gathering information are helpful in thinking about problems. (K-2-ETS1-1)