



Quarrybrook
EXPERIENTIAL EDUCATION CENTER

Program Title: The Bear Necessities

Audience: K2 students

Program Theme: Through creative role play, students will practice using push/pull forces with large objects as they mimic bear behavior and learn about the natural history of this fascinating omnivore.

Program Goals: At learning stations placed along a forest trail, students will discover facts about bear food, shelter, and behavior. They will then mimic that behavior through fun activities and playful challenges. Students will also practice using push/pull forces to move rocks like a real bear does.

Next Generation/Common Core Connections:

Topics: Motion and Stability: Forces and Interactions
From Molecules to Organisms: Structures and Processes

Dimensions: Cause and Effect, Patterns

Program Outline:

Activity 1: BEAR CUB BASICS (40 min.) – We will follow in the imaginary footsteps of an American Black Bear cub (*Ursus americanus*) on its daily journey through the forest. Students will encounter several learning stations along the trail where they will gather different facts and learn about how a cub can grow to be a healthy adult bear.

Objective: Students will know what black bears eat and how they find their food.

Intended Outcome: Students will be able to name and point out at least three to five types of natural foods that are consumed by black bears.

Activity 2: ROLLING ROCKS (50 min.) – In this activity, students will use push/pull forces to maneuver large rocks across a playing field to a finish line. Through this, they will be able to gain a physical understanding of the effects of different strengths and directions of pushes and pulls on the motion of an object. As a group, we will work together to troubleshoot and help design solutions to any challenges posed by gravity and friction (including the use of a hillside!).

Objectives: Students will work through the physical and mental challenges of pushing and pulling a heavy object along the ground, testing different strengths, angles, and strategies. Students will also work around changes in direction via a slalom course.

Intended Outcomes: Students will successfully move or roll their rocks to the finish line in all rounds of the game. Students will analyze and know that they can increase the speed of their rock and decrease the work needed on their part, by rolling it downhill.



Teachers and other adults will be helpful in guiding the students through the different “race courses.”

Conclusion/Wrap-up: (15 min.) For our final conversation, the whole group will be brought together to share their insights and experiences. They will then be asked to put all the day’s activities together by showing us how they would find food if they were truly a bear. In the immediate area, students will be guided to “look for grubs” and to show how they might try to “reach for a bee hive” up in the trees. They can act out behaviors such as rolling over rocks to look for insects underneath, or pushing at a small tree to bend the branches down to where they might be reachable, etc. This will be a fun and brief role play activity that encourages the students to reflect and make connections.

Successful completion of this program will help support your students’ proficiency in NGSS

Performance Expectations:

K-PS2.A Forces and Motion

Pushes and pulls can have different strengths and directions.

Pushing or pulling on an object can change the speed or direction of its motion and can start or stop it.

K-PS3.C Relationship Between Energy and Forces

A bigger push or pull makes things speed up or slow down more quickly.

K-LS1.C Organization for Matter and Energy Flow in Organisms

All animals need food in order to live and grow. They obtain their food from plants or from other animals.