

**Berkshiremuseum**

**Alexander Calder: An Artist at Play**  
*Activities to Do at School or at Home*

**Activities: Grades 3 - 5**

**Calder Toy Picture Book**

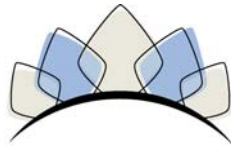
Students create a picture book about the Alexander Calder toy exhibit to share with people in their families who may not have been able to come on the field trip. Book contents might include a drawing of the student's favorite toy, information about how it moves (i.e., You pull it and it wobbles around), what machines helped to make their toy move (levers, tilted wheels, regular wheels, etc.) and what students liked best about the exhibit.

**Simple Machine Scavenger Hunt**

Complete the Simple Machine Scavenger Hunt (included at the end of this document) at school, at home, or both.

**Problem Solving Challenges**

Students will have fun working on these problem solving challenges in small groups. The materials are everyday items and the directions are simple, but the outcomes are completely open-ended. Students may use simple machines to solve these challenges without even knowing what the simple machines are. Have each group do a different challenge, or give each group the same challenge and see how many different solutions your class comes up with. (Full directions are included at the end of this document).









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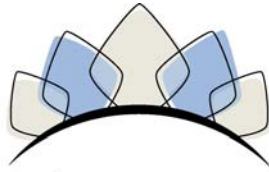
**Alexander Calder: An Artist at Play**

*Pre & Post Visit Activity*

**Simple Machine Scavenger Hunt**

How many simple machines can you find in your everyday life? Find and record the names of objects or mechanisms that contain simple machines.

Simple Machine	Inside	Outside
Lever 		
Ramp 		
Screw 		
Wedge 		
Wheel and Axle 		
Pulley 		



# Berkshiremuseum

## Alexander Calder: An Artist at Play

### Pre & Post Visit Activity

#### Problem Solving Challenges

##### **# 1**

Challenge: Use object A to lift object B, using only one hand.  
(you can use more than one hand to set up)

Materials: one ruler  
one square crayon  
object A: should be smaller than object B, and very difficult to balance anything on. For example, a small plastic dinosaur with a long neck works well.  
object B: should be larger than object A.

##### **# 2**

Challenge: Make your bead travel at least three feet in a straight line, without leaving your spot.

Materials: one bead: the hole should allow the bead to slide snugly onto the pencil and the bead should have a smaller diameter than the spools  
one pipe cleaner  
one pencil  
two spools that will slide onto the pencil  
a yard stick to measure the distance of three feet

### **# 3**

Challenge: Start with your egg at least 1 foot above the ground. Lower the egg to the ground without touching it and without breaking it.

Materials: masking tape  
toilet paper tubes  
scissors  
one egg (hardboiled)

### **# 4**

Challenge: Make the cotton ball fly through the air without using your arms (or legs) to throw it.

Materials: masking tape  
one ruler  
one cotton ball  
one or more rubber bands  
one plastic spoon

### **# 5**

Challenge: Pick up your fish and lower it back to the ground, while standing 3 feet away from the fish. You may attach things to your desks or chairs.

Materials: a few washers  
one small magnet  
tape  
one paper fish  
one piece of string 6 - 7 feet long  
2 pipe cleaners

### **Some Possible Solutions:**

Here are some solutions that students may devise, though this is certainly not an exhaustive list, as this is an open-ended activity. Students should be encouraged to test out creative solutions.

**#1** With the crayon placed perpendicularly under the ruler, the ruler becomes a lever. By placing object B on one end, and then placing object A on the other end, object A can lift object B. It will work regardless of which object is heavier, though they should not be greatly different in weight. The key is to play with the placement of the fulcrum (which is determined by the placement of the crayon).

- #2** The bead can be placed on the pencil, in the center, with one spool on either side, with the pipe cleaner used to hold things in place. The wheel and axle will then carry the bead.
- #3** The toilet paper tubes can be cut in half lengthwise and then taped together to create a chute for the egg that acts as an inclined plane, allowing a slow, gentle ride to the ground for the egg.
- #4** Various types of catapults can be created with these materials. For example, the plastic spoon can be laid on top of the ruler, with the handle overlapping the ruler and the curved part hanging off the end. Rubber bands can then be wrapped around the middle of the spoon, so that the cotton ball can be placed in the curved part of the spoon and launched through the air.
- #5** The magnet can be taped to the paper fish. The washers can then be attached to the string. By creating loops out of the pipe cleaners and attaching them to the side of a table or the back of a chair, a pulley system can be created, with the washers at one end of the string, and with the string then running up and through the loops, and back to the student who can pull on the string to lift the fish, and then let it back down again.