LOS ANGELES COUNTY MUSEUM OF ART
5905 WILSHIRE BOULEVARD
LOS ANGELES, CALIFORNIA 90036
EDUCATION DEPARTMENT

LACMA

Calder and Abstraction

THIS PROGRAM FOCUSES ON THE SPECIAL EXHIBITION *Calder and Abstraction: From Avant-Garde to Iconic* (on view through July 27, 2014). It provides the opportunity for educators and students to learn how American sculptor Alexander Calder (1898–1976) revolutionized sculpture—and modern art—by changing what had been a static and often monumental and figural art form into something radically new. He combined his deep understanding of materials and principles of balance and design with avant-garde notions of the use of abstract but organic forms to produce art that was wholly unprecedented: sculpture that incorporated space, movement, and time as essential components. Two types of his sculpture featured in the museum's exhibition (mobiles and large public sculptures) are so popular and familiar today that it is sometimes easy to forget the scope of Calder's achievement, along with his revolutionary contributions to modern art.

Classroom discussions of Calder's work can incorporate many different aspects of the sculptor's work. The materials he used are immediately noticeable. The son and grandson of successful sculptors, the artist was fascinated with materials, and how he could manipulate them, beginning in his childhood. As a young adult, Calder trained as a mechanical engineer but soon realized he would rather be an artist. After moving to Paris in 1926, he first made sculptures with wire and then with substances not often thought of as "fine art" materials, including industrial sheet metal and more common items such as plywood and string.

The basic elements of visual art—color, shape, and form—are particularly relevant in Calder's sculptures, and students can engage in lively discussions about them. Simply identifying those elements limits a full appreciation of his work, however. Calder's genius lay in his mastery of design and his understanding of balance, literally and figuratively. Looking closely at the sculptures reveals that he utilized color, shape, and form in multiple ways. "To me the most important thing in composition is disparity," Calder wrote in 1943. He used primary colors strategically: various component "parts" of each sculpture contrast with one another while also providing complementary counterbalance. The shapes of individual parts also both oppose and mirror each other, attracting the viewer's eye to individual "moments" but contributing to a coherent whole. The overall form of each work thus is balanced, as different sections harmonize visually, creating three-dimensional symmetry.

Calder's mobile sculptures subtly shift and change in wind currents, their movement introducing the dimensions of both time and space to the work. Viewers engage in multiple ways with the sculptures as they move and interact with the environment. Even the stabiles—sculptures that do not move—suggest motion, as their forms alternate material volume with empty space. One circles around, looking in, under, and through the sculpture, each movement revealing a different view of both the sculpture and its site.

Images of four Calder sculptures are provided here; each represents a key period in the artist's career. Two are part of the museum's permanent collection and are accessible to visitors virtually whenever the museum is open.

Alexander Calder
White Panel, 1936
Plywood, sheet metal, tubing, wire, string, and paint. 84 ½ x 47 x 51 inches
Calder Foundation, New York; Bequest of Mary Calder Rower, 2011

Photo: Calder Foundation, New York/Art Resource, NY

White Panel, 1936

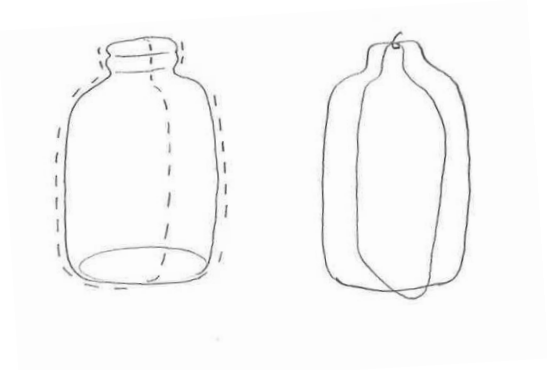
During the 1920s and early 1930s, Calder spent the majority of his time in France, then the epicenter of creative activity for an eclectic group of international artists, writers, poets, musicians, and choreographers. When Calder arrived in 1926, he was still in his twenties. Formed by his childhood fascination with materials, he also had a newly acquired engineering degree, training from New York's Art Students League, and experience as a magazine and newspaper illustrator. New friends and fellow artists, including Piet Mondrian, exposed him to modern notions of art, and he abandoned the representational style he had been working in (figural sculpture) and turned to abstraction.

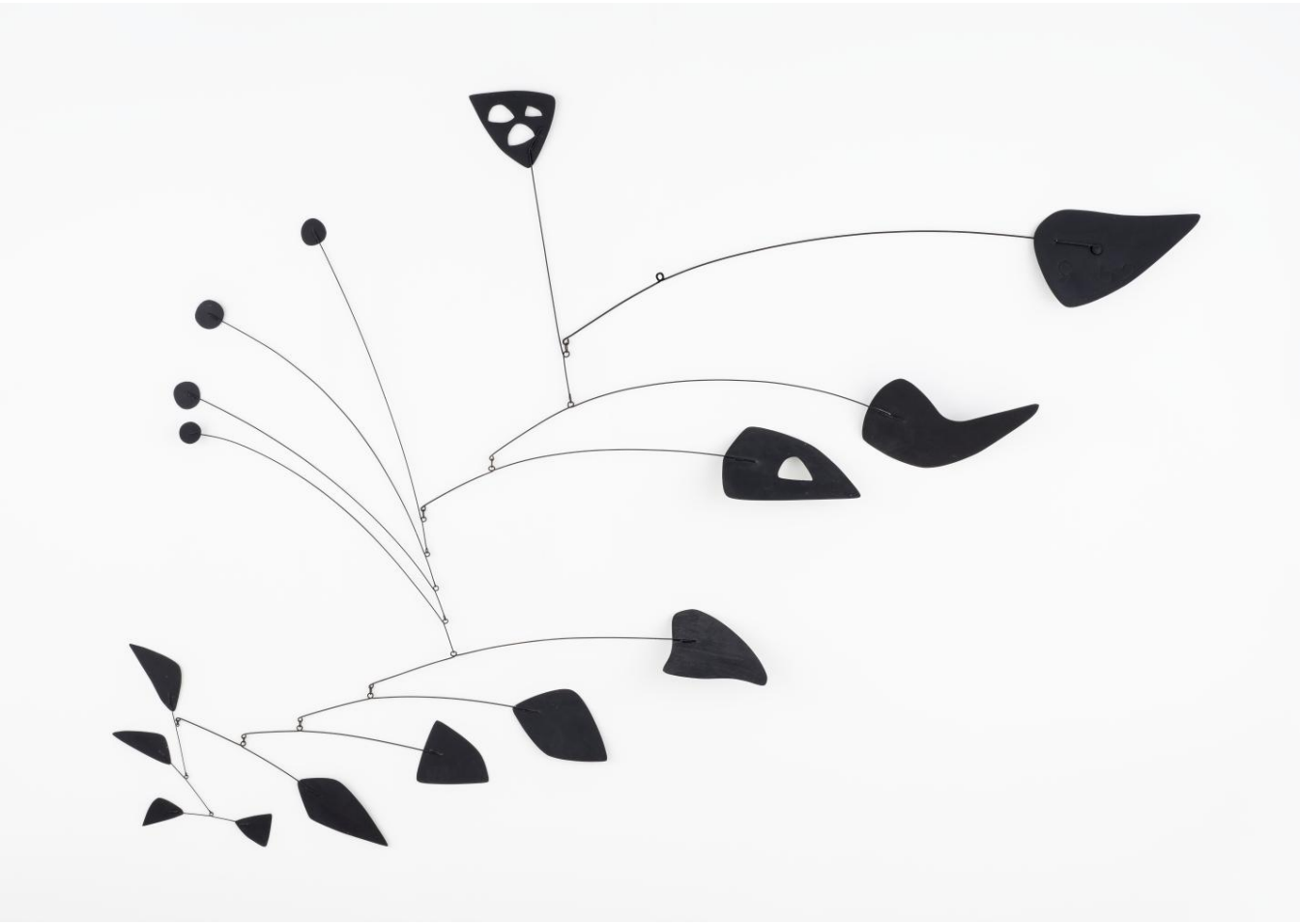
White Panel offers a key to the artist's vision. A visit to Mondrian's studio was a particular revelation. It was not the geometrically abstract paintings, but rather the studio environment that deeply impressed him. Calder said later, "I was particularly impressed by some rectangles of color he had tacked on his wall . . . I told him I would like to make them oscillate—he objected. I went home and tried to paint abstractly." Calder realized that he did not want to paint. He continued working with sculpture instead, and an idea took hold: "Why not plastic forms in motion? Not a simple translatory or rotary motion, but several motions of different types, speeds, and amplitudes composing to make a resultant whole. Just as one can compose colors and forms, so one can compose motions." Calder often used curvilinear and *biomorphic* forms (irregular abstract forms based on shapes found in nature); both Calder and his friend Joan Miró shared an affinity for that artistic vocabulary.

White Panel thus can be seen as a three-dimensional, kinetic abstract painting. The white plywood resembles a canvas, underscoring the sculpture's relationship to the medium of painting, yet the curving biomorphic forms are suspended in front, constantly turning, with kinetic energy supplied both by winding cords and cranks as well as by changing air currents. From these beginnings, Calder's mobiles—so named by artist Marcel Duchamp (see discussion for *Little Face*)—evolved. Calder stopped placing wood panels behind his sculptures; the cranks, pulleys, and other apparatus that provided motion were abandoned; and the mobiles instead were constructed with carefully balanced elements, either suspended in the air, perched on tabletops, or joined with stabiles.

Wire Drawings

Try drawing in two and three dimensions using paper, pencil, wire, and simple household objects. First, bring an assortment of small household items to the classroom, such as a screwdriver, a bucket, or a teapot. Ask each student to select an object and study its properties with their hands. What words might describe its form? Organic (curvy and amorphous but recalling plant or animal life) or geometric (straight and angular)? Next, draw the shape of the object in two dimensions on a piece of paper, using one continuous line to capture its outline or contour. Pay careful attention to the direction of the line and points of intersection. Then translate the pencil sketch into a wire drawing by drawing in space with a piece of Twisteez © wire (for the elementary grades) or 22-gauge aluminum wire (for the secondary grades). Shape the wire to mimic the object's contour; then expand it into three dimensions by adding and attaching additional wire. Experiment with ways to capture different contour lines, creating twists and turns to depict the object's three-dimensional form. Lastly, ask students to compare their pencil sketches and wire drawings. Which form best captures the essence of the object?





ALEXANDER CALDER
Little Face, 1962
Sheet metal, wire, and paint, 42 x 56 inches
Los Angeles County Museum of Art
Gift of the Joseph B. and Ann S. Koepfli Trust in honor of the museum's 40th anniversary, M.2011.139

Little Face, 1962

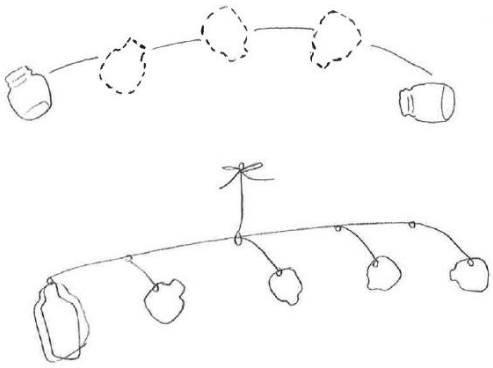
Little Face, a 1962 sculpture in LACMA's permanent collection, represents how Calder's mobiles evolved from their inception in the 1930s. From the perspective of the twenty-first century, when almost every infant in the United States is tucked into a crib with a mobile dangling above (Calder's work was the inspiration for this custom), it may be difficult to grasp just how groundbreaking Calder's art was, but no artist before him had created kinetic, suspended sculpture.

The term "mobile" was first used by the avant-garde French artist Marcel Duchamp, who visited Calder's studio in 1931, and, upon watching a sculpture move, promptly called it a "mobile." In French, this word refers to an object that moves but also means "motive." Perhaps this was Duchamp's sly way of both describing the artwork and suggesting the deliberate nature of the artist's invention.

Whereas Calder's earliest mobiles could be considered "moving paintings" (see *White Panel*), as he worked into the 1930s, his sculptures became less dependent on mass. Movement, rather than solid forms, began to delineate the sense of space. *Little Face* embodies many other characteristics of Calder's work: biomorphism; unexpected "holes" or "voids" in some of the component parts; shapes that alternate between smaller discs and larger paddles; and an all-important sense of balance, as one side visually and physically balances the other, with some wires outstretched horizontally while others soar vertically. Unlike some of Calder's other mobiles, however, this one is monochromatic (only one color). As it moves slowly in the air currents, it creates silhouettes, suggesting a second, ephemeral artwork made of light and shadow. The slowly turning sculpture moves unexpectedly, constantly changing shape, occupying and animating its space differently each time.

Wire Sculptures

For the upper elementary grades and above, ask students to transform their wire drawings into hanging wire sculptures. First, ask students to study how objects travel through space. Pair students and ask each team to select one of their inspiration objects. Each team should generate a hypothesis about how this household item, if thrown, might travel through the air. Students should record their hypotheses in writing and drawing, using one continuous line to describe the object's trajectory. Next, test the hypotheses in an open and safe space around campus. One student can throw the object, alternating different movements and heights, while the other student charts the object's path in a drawing or through a video. How does the object fill or deflect the air? How does the actual trajectory compare with the hypothesis? Revise the trajectory sketch as needed, then transform the sketch into a wire sculpture by adding onto and extending the original wire drawing. How will you capture the object's path through space? Try repeating or changing the wire drawing and attaching multiple drawings using single wire pieces as branches. Expand the branches into three dimensions to create volume but ensure that the drawings do not cross or collide. Once students have reached their desired compositions through trial and error, use string to hang the wire sculptures in the classroom.



Alexander Calder
Three Quintains (Hello Girls), 1964
Sheet metal and paint with motor, 275 x 288 inches
Los Angeles County Museum of Art, Art Museum Council Fund, M.65.10

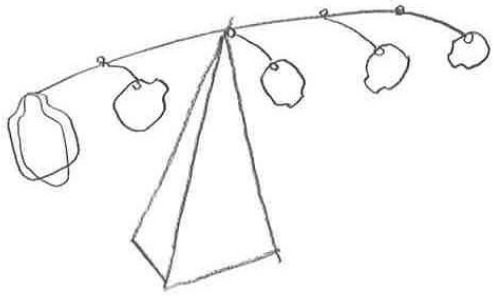
Three Quintains (Hello Girls), 1964

In the mid-1950s, Calder began working with quarter-inch steel (thicker than the aluminum he used during the 1940s during wartime shortages), which enabled him to construct larger, more durable, and more ambitious sculptures. This made him an ideal collaborator for architects hoping to enliven large public spaces, a popular goal for many communities in the 1960s and 1970s. *Three Quintains (Hello Girls)*, executed in 1964, was commissioned by LACMA's Art Museum Council for the 1965 opening of the museum in its present location on Wilshire Boulevard. Calder was by then an internationally famed artist, and it was considered an important moment in the museum's development when he agreed to the commission. As a LACMA official stated at the time, "To have a man of Alexander Calder's prominence be the first to design a sculpture specifically for the new museum would set the standards for future efforts, on the part of the artists and donors."

The sculpture, situated outdoors within a shallow pool at the museum's southeast corner, was specially designed to be a fountain. It was one of only a few of the artist's works to combine monumental size, kinetic movement, air currents, and water jets. The forms and design recall his earlier work, such as his 1930s "mobile paintings" (see *White Panel*), which included biomorphic and zigzag shapes. The colored paddles are painted in primary hues, while the supporting pylons are left unpainted, revealing the industrial nature of the material. The overall effect is of a very large sculpture that nonetheless moves with the grace of his much smaller mobiles.

Kinetic Sculptures

If your wire sculpture could walk, how would it move? Would it run and bounce through the air or slither slowly through space? For middle and high school grades, ask students to transform their wire sculptures into standing sculptures that utilizes a base and employ principles of balance. How will your sculpture's interaction with gravity change when the point of balance shifts from the hanging string to the floor? How will you keep the sculpture's sense of movement? Ask students to experiment with scraps of cardboard to serve as the standing sculpture's foundation. What shape will the foundation take and how will its shape ensure stability? Try pyramidal or rectangular bases and test different ways to attach the sculpture to its base.



Alexander Calder
Le Grande vitesse (intermediate maquette), 1969
Sheet metal, bolts, and paint
102 x 135 x 93 inches

Photo: Calder Foundation, New York/Art Resource, NY

La Grande vitesse (intermediate maquette), 1969

Calder's *maquette* (or model) was part of his planning process for a large sculpture commissioned by the city of Grand Rapids, Michigan. (The title translates as the "great swiftness," or, less literally, the "grand rapids.") Calder in the 1950s had begun a virtually nonstop output of public sculptures, a period that continued until his death in 1976. The elements he incorporated in the fully realized Grand Rapids work—monumental size (forty-three feet tall), bold color, and a robust shape designed to animate the outdoor space—are conveyed by the maquette, which itself is over eight feet tall.

Like many of Calder's public sculptures, this one—while suggesting motion—is stationary. Such works by the artist are known as "stabiles," a term, coined by artist Jean Arp in 1932, also applied to his smaller, nonmoving sculptures. Many of the artist's commis-sions share the brilliant orange-red color of *La Grande vitesse* and utilize similarly muscular, biomorphic forms. Often situated in prominent locations in major cities, such as courthouses and office complexes, the monumental sculptures have become quite familiar.

A closer look at the maquette reveals the artist's genius and his particular mastery of balance and proportion on a grand scale. The slender but massive sheet metal components echo or visually counterbalance each other. The open spaces, or voids, provide a changing glimpse of the sculpture's site as the viewer moves around it, and the sculpture seems to reveal itself anew from each vantage point. Some say that the biomorphic forms themselves suggest movement, resembling claws or even animals that are about to step across the landscape. The fully realized sculpture has become a source of enormous civic pride for Grand Rapids, which includes its image on the city's logo and flag.

Stabiles

If you could freeze the motion suggested by your wire sculpture, how would you translate this motion and its path into simple shapes and planes? For the high school grades, ask students to study the lines created by their standing sculptures, noting changes in direction and movement. What shapes emerge? Are there joints or points where the shapes touch? Ask students to translate these shapes into simple cardboard planes such as triangles or circles. Experiment with different ways to adhere the planes now that there are multiple points of balance throughout the sculpture. How will you ensure structural stability while still capturing the suggestion of movement and utilizing depth? When finished, display students' stabiles in the classroom alongside the inspiration objects and preparatory sketches that document the artistic process and the evolution of the project. In reflection, ask students to think about how and when they engaged in the stages of engineering: imagine, conceive, produce, revise, and refine. In culmination, students can summarize their understanding of engineering principles in writing, responding to such concepts as gravity, balance, and motion as they affected their sculptures. For a math connection, ask students to imagine taking their stabiles to monumental scale and to estimate the associated costs in different materials and sizes. Share the project-based learning experience with the rest of the school by curating and mounting a STEAM (science, technology, engineering, art, mathematics) exhibition.