

the warhol: resources & lessons

Unit Lesson Plans / Creative Thinking & Making / Collaboration / Handout: Billy Kluver

Andy Warhol, Billy Kluver & *The Silver Clouds* (art and science)



“Artists and engineers are separate individuals, and if they work together, something will come out of it that neither can expect.” Billy Kluver

The Andy Warhol Museum, Installation, Andy Warhol's *Silver Clouds*, 1966, ©AWF

The *Silver Clouds* continually surprises viewers' expectations and is the result of a collaboration between artist Andy Warhol and engineer Billy Kluver. Exhibited in 1966 at the Leo Castelli Gallery, *Silver Clouds* created an ethereal, joyful atmosphere, and challenged traditional expectations of art by mingling with and touching the viewer. Kluver's knowledge of technology helped bring Warhol's vision to life. The engineer recalls that their original plan was to somehow make floating light bulbs but that when his research group at Bell Labs showed Warhol a sample of the material scotchpak—a metalized plastic film made by 3M that could be heat-sealed—he is reported to have said, “Let's make clouds.”¹ The clouds, filled with helium and oxygen, floated through the gallery on air currents, bumping into each other and into viewers in the space.

As an engineer at Bell Laboratories in New Jersey, Kluver saw the importance of interaction between the arts and the sciences. He saw collaboration as an opportunity for engineers to apply their knowledge to a new environment where unusual and unplanned challenges could develop. In 1960, Klüver helped Jean Tinguely create his self-destructing junkyard opus *Homage To New York*. This collaboration led to others with many of New York City's premiere artists of the decade, including Robert Rauschenberg, Jasper Johns, Yvonne Rainer, Merce Cunningham, and Andy Warhol. In 1966 a series of collaborative performances between Bell Labs engineers and avant-garde artists titled, *9 Evenings: Theatre and Engineering* formalized Klüver's involvement with the art world.²

¹ Frei, N., Printz, N., & King-Nero, S. (1994) *The Andy Warhol Catalogue Raisonné Vol. 1: Paintings and Sculpture 1961-1963*. London: Phaidon

² David Pescovitz, “1957: Billy Kluver, the father of electronic art, earns his PhD,” *University of California Berkeley School of Engineering*, 19 February 2004.

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In 1966 Klüver, Robert Whitman, Fred Waldhauer, and Robert Rauschenberg co-founded, Experiments in Art and Technology (E.A.T.), which sought to bring together artists and people working with new technologies and materials to generate ambitious projects.

After seeing *Silver Clouds* at the Castelli exhibition, choreographer Merce Cunningham invited Warhol to adapt the work for a new dance performance. The resulting piece, *Rain Forest*, premiered in 1968, with choreography by Cunningham, music by David Tudor, set by Warhol, and costumes by Jasper Johns.

Comprehension Questions:

1. What materials, experience, and ideas did Kluver and Warhol bring together in *Silver Clouds*?
2. What kind of environment was Kluver looking to create by establishing E.A.T.?
3. If you could work with an engineer or scientist to create something new what would it be? Why?

Research

Research the accomplishments of the engineers at Bell Labs. What are some of their inventions? Describe how these inventions have improved people's lives.