Teacher’s guide: Sensing the Future: Moholy-Nagy, Media and the Arts

"The true artist is the grindstone of the senses; he sharpens eyes, mind, and feeling; he interprets ideas and concepts through his own media."

- László Moholy-Nagy

Sensing the Future: Moholy-Nagy, Media and the Arts, curated by Dr. Oliver Botar, highlights the influence of Hungarian artist and Bauhaus professor László Moholy-Nagy’s (1895-1946) body of work on contemporary art practice. In Moholy-Nagy's view, emphasizing the utility of sensory education would allow us to successfully adapt to and thrive in an increasingly technologized environment. While developments in art and culture are often assumed to be the by-product of developments in science and technology, the exhibition seeks to demonstrate how developments in art and culture often run parallel with, or even lead technological development and its application in society. This is an especially important subject to address in the 21st century given the increasing rate of technological change, more intense today than it was throughout Moholy-Nagy’s hey-day in the 1920s.

Prescribed learning outcomes:

Students will:

1. Read and interpret visual materials.

2. Communicate their ideas, experiences and feelings visually.

3. As part of the art workshop at Studio 393, students will work together to make a collaborative art video project aimed at activating all of the senses for both the viewer and the artist while exploring the themes of the future, technology and Utopia.

Assessment:

The teacher will decide on the appropriate assessment of this activity and communicate it to the class.
**Web resources:**
Museum of Modern Art (New York), exhibition website, Bauhaus: Workshops for Modernity:

Bauhaus Online:
http://bauhaus-online.de/en

Bauhaus Archive:
http://www.bauhaus.de/bauhaus1919/index+M52087573ab0.html

**Suggested classroom preparation (before coming to Plug In ICA):**

- As a class, go over a selection of the provided sources.
- Answer the worksheet questions individually or as a group.
- In smaller groups discuss some of the themes you think will be important in the exhibition based on what you have read about the artist and the exhibition. Discuss your expectations and thoughts on what the exhibition and gallery will look and feel like.

**Activity (at Plug In ICA):**

- Tour of Sensing the Future: Moholy-Nagy, Media and the Arts exhibition with Plug In ICA staff.
- Art workshop at Studio 393 (located in skywalk between Portage Place Mall and the Bay).
The exhibition Sensing the Future: Moholy-Nagy, Media and the Arts is roughly organized into sections, below are more detailed explanations of each section as well as additional biographical information about the artist.

INTRODUCTION:

Life in the digital economy of images and information can enrich us but can also induce a sense of being overwhelmed and of losing control. Sensing the Future: Moholy-Nagy, Media and the Arts considers the impact of technology today by exploring how it was addressed in the practice of the Hungarian polymath artist László Moholy-Nagy (1895 – 1946), a key figure in the history of Modernism. Moholy-Nagy is known for his work in traditional media such as painting and sculpture, but also in less conventional forms such as photography and film, as well as commercial fields like stage and exhibition design, typography, and advertising. His most original contributions are his speculations and experiments in new media such as light art, kinetic art, sound art, multi-media, expanded cinema, television, and immersive-participatory installations. Underlying all of these practices was a Utopian belief in the social utility of art and education. The exhibition is organized around some of Moholy-Nagy's key themes: sensory training, technology/modernity, production/reproduction, immersion/participation, art as information/information as art, and transparency/reflection/motion. Sensing the Future: Moholy-Nagy, Media and the Arts combines historical artworks with works by contemporary artists from Canada, Europe and the United States who have been invited to respond to these themes.

Moholy-Nagy understood by the early 1920s that the reproducibility of technically based media such as photography and film, the easy production of facsimiles of artworks, the proliferation of image, sound and information through mass media, and an increasingly urbanized world have placed us into a fundamentally new situation. The Futurists wrote of simultaneity, the parallel stimulation of our senses from multiple sources. Moholy-Nagy felt that people needed guidance to cope with this simultaneous environment. At the heart of his project, therefore, was teaching. His role as a teacher, first at the legendary Bauhaus school in Weimar and Dessau, Germany from 1923 to 1928, then in Chicago from 1937 to 1946 at the New Bauhaus, the School of Design and the Institute of Design, underlines his life-long commitment to pedagogical ideals.

Moholy-Nagy saw art as merely one form of information. Of the Emaillle [Enamel] Series he wrote: “In 1922 I ordered by telephone from a sign factory five paintings in porcelain enamel. I had the factory's color chart before me and I sketched my paintings on graph paper. At the other end of the telephone the factory supervisor had the same kind of paper. He took down the dictated shapes in the correct position.” This encoding of art as information and its transmission to the site of production has been seen to anticipate the digital age. However,
Moholy-Nagy was not an uncritical technophile. As if anticipating media theorist Friedrich Kittler’s dictum that “it is we who adapt to the machine. The machine does not adapt to us,” Moholy-Nagy attempted to place humanity back in control in light of this disheartening trajectory of modernity. But how could one be taught to cope? Like the Futurists, Moholy-Nagy held that the aesthetic lessons of modernity’s sensory onslaught could be deployed in art, thereby helping us engage creatively with the new environment. Unlike them he emphasized that “technical progress should never be the goal, but always the means.” Indeed he held that “we are faced with nothing less than the re-conquest of the biological bases of human life. Only when we return to these bases will technological progress reach its full potential.” Crucially, he humanized technologies by regarding them as extensions of our sensory organs. These ideas informed the work of media theorists such as Walter Benjamin, John Cage, Sigfried Giedion, Marshall McLuhan, and Gilles Deleuze, who anticipated or theorized digital culture as it emerged. Moholy-Nagy’s aesthetic engagement with the inherent tension between technology and the body broached the notions of immersion, participation and interactivity. Consideration of this in light of our current absorption into cyber worlds and video games via avatars elicits the question, was Moholy-Nagy both a pioneer and a proto-critic of the digital?

Underlining his belief in the power of sensory and general education, Moholy-Nagy held that “only the total ... integration of the senses and intellect will allow an organic development of the individual. A person so balanced will be better able to face the complexities of modern life.” He wished to make people aware of the possibilities inherent to all media, new and old, and culture, both high and low. He also promoted the notion that people should expand their understanding of the five senses—sight, smell, touch, taste and hearing—to more recently identified bodily senses, such as kinaesthesia and proprioception. This implicit rejection of a sensory and therefore medial hierarchy legitimized his employment of multiple media in his own creative production. His experimental approach to media and materials, as well as his resistance to medial hierarchies, his concern with perception, and his view of art as a form of information, all anticipated contemporary artistic practice. Sensing the Future: Moholy-Nagy, Media and the Arts, is intended to introduce this seminal figure of post-medial practices to younger generations and to consider, through present-day responses to his ideas, how his work is relevant to art now.

In addition to works by László Moholy-Nagy, the artists whose works are included in this exhibition include Eduardo Aquino (Winnipeg); the team of Nike Arnold, Andreas Haus, Aline Helmcke, Frédéric Krauke and Walter Lenertz (Berlin); Naomi Claire (Baltimore); Lancelot Coar (Winnipeg); Olafur Eliasson (Berlin); Oskar Fischinger; Ken Gregory (Winnipeg); Patrick Harrop (Winnipeg); the team of Gottfried Jäger and Karl Martin Holzhäuser (Bielefeld); Eduardo Kac (Chicago); György Kepes; the team of Jörg U. Lensing, Gudula Schröder, Jürgen Steger, Thomas Neuhaus, Malou Airaudo and Sascha Hardt (Düsseldorf); Erika Lincoln (Winnipeg);
Norman McLaren; Guy Maddin (Winnipeg); Bernie Miller (Winnipeg); Lucia Moholy; Francisco Javier Navarro de Zuvillaga (Madrid); Freya Olafson (Winnipeg); István Sebők; and Peter Yeadon (New York).

SENSORY TRAINING:

Arriving in Berlin in 1920, Moholy-Nagy became involved with the German Youth Movement. Through them, he would meet his future wife Lucia Schulz, a Youth Movement activist and literary editor. Schulz had been active in the alternative scene, and arranged for them to spend vacations near two Feminist women’s communes, Loheland and Schwarzerden. He also learned of the Reform Pedagogy Movement, a central concern of the communes emphasizing the training of bodily and particularly sensory awareness.

These ideas, as well as those of Christoph Natter, an art educator who called for the training of our “crippled senses and organs,” were reflected in Moholy-Nagy’s 1922 article “Production-Reproduction,” written with the assistance of Lucia Moholy. Moholy-Nagy committed himself to the education of all our senses. At Schwarzerden the emphasis was on bodywork and alternative healing, and both Moholy-Nagy and Lucia Moholy took an active part in the commune’s activities during the 1920s. Moholy-Nagy was also inspired by the biocentric ideas of Heinrich Jacoby, a music educator who became a close friend. Jacoby coined the phrase “everyone is talented,” popularized by Moholy-Nagy and later taken up by the artist Josef Beuys. It was this pedagogical approach, rooted in early 20th century German Feminist and the Reform movement in general, that Moholy-Nagy brought to the Bauhaus and later the New Bauhaus, where students were instructed to make tactile charts, “sculptures for the blind,” sound films and other works that engaged more than just vision.

NEW VISION:

In his 1925 book Painting, Photography, Film Moholy-Nagy announced his intention to reform vision, indeed to engender a shift in sensory perception itself. He promoted a “New Vision,” a biocentric vision informed by the technical capabilities of the camera, often paired with other imaging devices such as the x-ray machine, microscope and telescope. He proposed that the “photographic apparatus has provided us with surprising possibilities... [that] become available to us very often through objective ‘non-artistic’ pictures taken by scientists, ethnographers, etc.” But he went even further, invoking the potential to learn from “so-called ‘faulty’ photographs: the view from above, from below, the oblique view, which today often disconcert people who take them to be accidental shots. The secret of their effect is that the photographic camera reproduces the purely optical image and therefore shows the optically true distortions, deformations, foreshortenings, etc., whereas the eye ... supplements perceived optical phenomena by means of association and [thereby] creates a conceptual
image. Thus in the photographic camera we have the most reliable aid to a beginning of objective vision... we see the world with entirely different eyes.” He promoted New Vision through periodicals, including the German photography annual Das deutsche Lichtbild and the Dutch journal iiO, for which he was photography editor.

PRODUCTION-REPRODUCTION: THE PHOTOGRAM

In his theoretical article “Production – Reproduction” of 1922, Moholy-Nagy proposed the use of light-sensitive photographic paper, normally used as a means of printing out images made in a camera, as a means of producing original works of art by exposing the paper directly to light, without the use of a camera. He had first encountered the production of photograms in the work of Bertha Günther at the Loheland women’s commune during the summer of 1922, and it seems that he did not know of contemporary experiments with this technique by artists such as Man Ray and Christian Schad. In any case, Moholy-Nagy expanded on these ideas in his first article published in English, in the American journal Broom (March 1923) then being produced in Berlin, the first theoretical article concerning photograms in the making of art at all. Moholy-Nagy became, along with Man Ray, an early master of the production of photograms as art. The importance accorded the photogram in his oeuvre is indicated by the fact that he incorporated them into many of his most important dust-jacket designs.

IMMERSION / PARTICIPATION:

One of the most radical proposals made by Moholy-Nagy was for a spiral structure about twelve stories high that would have provided a locus for physical play. This, the “Kinetic-Constructive System,” the first proposal for a fully immersive and participatory art environment (Moholy-Nagy also explored the notion of immersion in the “Polycinema” and the Light Prop for an Electric Stage, and of participation in the 1922 pair of works Integration of Two Systems of Construction, treated elsewhere in this exhibition), was conceived of by Moholy-Nagy in 1922, and worked out in more detail in 1928 with the help of the Hungarian architect István Sebők. Preceding its conception was the formulation of the manifesto “Dynamic-Constructive Energy System,” in which Moholy-Nagy and his co-author, Alfréd Kemény, called for a new art that would make manifest the “energies of the universe.” An aspect of this would be the provision of situations in which bodies could move in a completely immersive and participatory fashion. This idea is aptly expressed in a series of photomontages made by Moholy-Nagy during these years. The manifesto also calls for a kinetic art. Accordingly, the “Kinetic-Constructive System” revolve around its axis continuously. It is important to emphasize that, rather than being an artwork, the “System” was to be a site for physical movement and exploration, and thus an exemplar of the dictum that “everyone is talented.” Thus, by implication, it was the movement of the participants that constituted the “art” rather than the structure itself. What would result is a new kind of art invoking the
hitherto little remarked-upon "kinaesthetic" and "proprioceptive" senses of bodily movement. In conceiving of the "Kinetic-Constructive System," Moholy-Nagy was building on contemporary notions, expressed by Raoul Hausmann in his conception of "Dada Dances," but particularly in the Bauhaus theatre of Oskar Schlemmer and in proposals for theatres by Moholy-Nagy’s compatriots at the Bauhaus Andor Weininger and Farkas Molnár, that involved both more audience participation and the notion of moving bodies as part of an abstract, kinetic spectacle.

TRANSPARENCY / REFLECTION / MOTION:

As early as 1922, Moholy-Nagy began experimenting with the idea of transparency in his work. The painting Architektur I shows this conception in incipient form. It was developed in his paintings, graphic works, constructions and sculptures; often combined with other dynamic devices such as reflection and motion, and by applying unusual materials such as metals and plastics. In his lost pair of works Integration of Two Systems of Construction, reflection and transparency are combined potential motion given an invitation to viewer-participants to re-arrange the elements in relation to one another. Kinetics was proposed as a raw material of artistic production in his manifesto “Dynamic-Constructive Energy System,” co-authored with the Hungarian art historian Alfréd Kemény in 1922. In addition to the Light Prop for an Electric Stage, Moholy-Nagy thematized motion and reflection in works such as Gyros and in a series of static but visually dynamic multi-layered works involving Plexiglas that he referred to as Space Modulators. Popularized through his best-selling posthumous book Vision in Motion, the Space Modulator entered the popular imagination of 1950s America, through Hare-Way to the Stars, a Bugs Bunny cartoon of 1957. This idea presented during the age of Sputnik, space is reinterpreted as outer space, and within the context of the Cold War, the modulator becomes a weapon of mass destruction.

PROJECTION SPACES:

Moholy-Nagy proposed in his 1925 manifesto of media art Painting, Photography, Film, Moholy-Nagy that light, rather than pigment, is the primary raw material of painting. He “became interested in painting-with-light, not on the surface of canvas, but directly in space.” Applying paint onto transparencies was the start, moving beyond adding colour to the transparencies, Moholy started to experiment with placing translucent screens of different shapes in a variety of layers. Projecting coloured lights over each of these units activated the colour. From this experiment, photograms and paintings as well as films – and in Moholy-Nagy’s hands – theatrical sets, become projection spaces. Moholy-Nagy produced an Experimental Device for Light Painting, the Light Prop for an Electric Stage, Moholy-Nagy’s most prescient idea was for a “Poly-Cinema,” a film projections space that would break all the
rules of cinema. It would not be until after World War II, that the full potential of his ideas for alternative cinematic presentations were realized.

**PROJECTION SPACES: POLY-CINEMA / EXPANDED CINEMA**

Dissatisfied with mainstream cinema, Moholy-Nagy advocated for radical changes in the content, production and display of films, for a new type of film presentation environment he termed “Poly-Cinema.” Rather than reproducing stage plays, Moholy-Nagy argued that abstract and non-narrative films could best take advantage of the qualities specific to film and should be “constructed... upon tempo of movement and the contrast of light and shade and the various optical views.” His script *Dynamics of the Metropolis* (1921-22) used montage, a technique where multiple images were spliced together and appeared simultaneously in horizontal or vertical strips, a way of creating “vision in motion.” In their stead, he conceived of spaces where “different films could be projected simultaneously on the walls,” where the projectors could pivot, and flat rectangular screens were replaced by concave and convex surfaces and solids of various shapes and sizes that could create countless patterns by constantly changing position. New spatial experiences could be created by projecting light – coloured, ultra-violet or infra-red – onto scrims, nets, and trellis-work, or by mounting a rotating prism in front of the projector’s lens. Moholy-Nagy did not limit these “light displays” to screens, but envisioned focusing multiple moving projections onto smoke formations; or onto clouds that could then be walked, driven or flown through. For Moholy-Nagy Poly-Cinema, with its “wealth of undreamt-of optical experiences” would alleviate the alienation of modern life by broadening our consciousness and “profundly stirring” our emotions. Basing themselves on Moholy-Nagy’s suggestive descriptions, University of Manitoba architects Patrick Harropp and Lancelot Coar have devised a realization of the concept that challenges our sensory apparatus for the exhibition at Plug In ICA.

**MOHOLY-NAGY AND THE ORIGINS OF EXPANDED CINEMA:**

Written in 1925, Moholy-Nagy’s Poly-Cinema was one of the first theoretical texts on the subject of what would come to be known as expanded cinema. While numerous mentions to the concept had been made by groups and individuals such as the Italian Futurists and Theo van Doesberg, the first artist to realize the idea was the German animator Oskar Fischinger, whose abstract animated films explored the interplay of motion, shape, colour, light, and sound. In 1926 Fischinger, under the concept name *Raumlichtkunst* [space-light-art], performed several versions of a three-screen show that employed up to five projectors to display slides and reels of black and white, tinted and hand-painted abstract forms, along with coloured light effects and a musical soundtrack. Berlin theatre director Erwin Piscator staged a production of *Rasputin* in 1927 that integrated live actors and film. In 1929 Piscator commissioned Walter Gropius to design a “Total Theater” combining stage plays with cinema.
TECHNOLOGY / MODERNITY:

Moholy-Nagy loved nature, but above all he was engaged with modernity. He loved technology, as well as big metropolitan cities, the most intensive sites of modernity. In his film script “Dynamics of the Metropolis,” including a version done in his signature design style combining typography, layout and photography, Moholy-Nagy both celebrated and critiqued modernity. While Moholy-Nagy never made this film, a team of art historians and art students later realized it in Berlin. In a series of silent documentary films made during the early 1930s in Marseilles and Berlin, just shortly after the Scottish film maker John Grierson invented the concept of the documentary film, Moholy-Nagy again expressed his ambivalence towards modernity distorted, as he saw it, by Capitalism. Moholy-Nagy met Grierson in London in the mid 1930s, just shortly before Grierson was called to head the National Film Board in 1938. In set designs for a filmed version of H. G. Wells' pioneering sci-fi story Things to Come made in London (1936, ultimately unused), we catch glimpses of Moholy-Nagy's Utopian Modernist dream of a city of the future; a city of kinetic glass towers and spirals, an architecture of movement and light.

PRODUCTION-REPRODUCTION: SOUND

In 1922, Moholy-Nagy, with the assistance of Lucia Moholy, formulated a theoretical text addressing the use of media normally reserved for the purposes of reproduction and their potential employment for the production of original works of art. He proposed that composers, rather than using discs for recording music, instead incise directly into the grooves of the record, in order to produce sounds (when played back) “never heard before.” This is an early theoretical text promoting the production of “artificial” sounds for the making of music, an ancestor of what developed into digital sound after World War II.

Moholy-Nagy tried to interest contemporary composers in his idea. In fact, these experiments proved to be technically challenging, due to the small scale of the grooves. This led Moholy-Nagy to conceptualize incising directly into the sound track of films, once sound film emerged around 1929. Moholy-Nagy completed “Sounding Alphabet,” an experimental film using this technique in 1932, and showed it on several occasions, but all copies of the film were subsequently destroyed. Two of his German contemporaries, Oskar Fischinger and Rudolf Pfenninger also completed films that year using this technique, and the idea soon spread to Great Britain, where the Scottish film maker Norman McLaren adopted it, and brought it with him to Canada when he was appointed to head the animation department at the National Film Board in 1941. McLaren is now widely recognized as having been the greatest master of the technique.
ART AS INFORMATION / INFORMATION AS ART:

Underpinned by his fascination with communication technologies, Moholy-Nagy saw art as another form of information. Of the “Enamel” [Enamel] Series, he later wrote: “In 1922 I ordered by telephone from a sign factory five paintings in porcelain enamel. I had the factory’s color chart before me and I sketched my paintings on graph paper. At the other end of the telephone the factory supervisor had the same kind of paper, divided into squares. He took down the dictated shapes in the correct position. (It was like playing chess by correspondence.) One of the pictures was delivered in three different sizes, so that I could study the subtle differences in the color relations caused by the enlargement and reduction.”

That at least some people understood the radical nature of Moholy-Nagy’s gesture is indicated by a 1924 review of them written by Ernő Kállai, a Hungarian critic living in Berlin at the time: “A sign of future strength and liveliness is the entirely pathos-free nature of this group of serially produced, standardized pictorial achievements that anyone can take home, keep or exchange, just like they would a gramophone record. While he actually ordered these works in person rather than over a telephone, the point was made: the making of art could be detached from the artist, and this art could be both modular and scale-less, broken down into bits of standardized information that could be electronically transferred and remotely manufactured.

During the ’20s Moholy-Nagy – inspired by his experiences during the Hungarian Soviet Republic of 1919 during which an astonishing amount of material was published and distributed – was involved in many publications ventures for which he had broad ambitions as regards modern art and related realms of knowledge; in short, as regards their multi-mediality and interdisciplinarity. Given his involvement with their conception, design and execution, these synthetic publication projects might be regarded as works of art in themselves, giving rise to the notion of “information as art.”

ARTIST BIOGRAPHY:

1895 Born “László Weisz” in Bácsborsod, Hungary
1913 Moves to Budapest to begin legal studies
1918 Joins Lajos Kassák’s Budapest “Activist” group. Kassák is publisher of the journal MA [Today].
1918-1919 Briefly attends a private art school
1919 Experience of the short-lived Hungarian Soviet Republic instils in him a Universalist utopianism and a belief in the power of mass communication media. Moves to Vienna where he reconnects with Kassák and the MA group in exile
1920 Settles in Berlin and encounters Raoul Hausmann’s and Kurt Schwitters’ inter-medial Dadaist approaches to art. Learns of Biocentrism and Reform Pedagogy through his first wife, Lucia (Schulz) Moholy 
1921 Encounters Russian Constructivism and begins making material constructions and abstract paintings influenced by Kasimir Malevich and Lazar El Lissitzky. Becomes Berlin correspondent for MA. 
1922 Authors a remarkable series of manifestos and articles that establish his working program and approach for the rest of his career. Has his first exhibition at Galerie Der Sturm in Berlin. 
1922-23 Produces the Emaille series (“Telephone Pictures”), ordered from an enamel sign-maker using graph-paper sketches and standard colours 
1923 Hired to teach at the Bauhaus, a highly influential design school 
1924 Launches the bauhausbücher (Bauhaus books) series. 
1925 Painting, Photography, Film, a key manifesto of 20th century media art, launches the “New Vision” in photography and film as well as the “Poly-Cinema,” forerunner of Expanded Cinema. 
1926 Moves with the Bauhaus from Weimar to Dessau 
1926-28 With Walter Gropius, edits the journal bauhaus. 
1928 Leaves the Bauhaus for private design practice in Berlin. Separates from Lucia Moholy  
1929-32 Makes a series of documentary films about urban life 
1930 His mechanized Light Prop for an Electric Stage produces moving coloured light projections, initiating immersive light art 
1933 National Socialists elected to power in Germany. Moholy-Nagy starts to relocate his design practice abroad. Birth of his daughter Hattula 
1934 Relocates his studio to Amsterdam 
1935 Moves with his family to London. Largest European exhibition of his work during his lifetime in Brno, Czechoslovakia 
1936 Appearance of telehor, devoted to his work. Birth of his daughter Claudia 
1937 Becomes Director of the New Bauhaus in Chicago 
1939 Opens the School of Design (later “Institute of Design”) 
1943 Participates in the founding of the Hungarian-American Council for Democracy 
1946 Dies of Leukaemia in Chicago 
1947 Posthumous publication of Vision in Motion. Comprehensive touring memorial exhibition organized at the Museum of Non-Objective Art in New York
Worksheet:

Respond to each of the following questions with at least three sentences.

1. The impact of technology on our every-day lives was very important to Moholy-Nagy and his work. What are some of the ways that technology has affected your life?

2. Moholy-Nagy believed that the creation of art and the education of artists was key factor in the betterment of society. What are some ways in which you think art can make a difference in society?

3. New technology has enabled new and exciting experiences for moviegoers, similar to what Moholy- Nagy envisioned as completely immersive and multi-sensory experience of film. How do you think these special effects influence your understanding of the narrative and content of films?

4. Moholy-Nagy argued that we should not privilege vision over our other senses in our experience of art. One of the activities in his class at the Bauhaus was to blindfold students and have them touch different texture panels, enabling the students to increase their sensitivity to texture and touch. What are some ways in which you can use senses other than vision to experience art?

5. Imagine you were creating artwork for a person who no longer has the use of one of their senses (perhaps hearing or sight). What kind of artwork would you make?