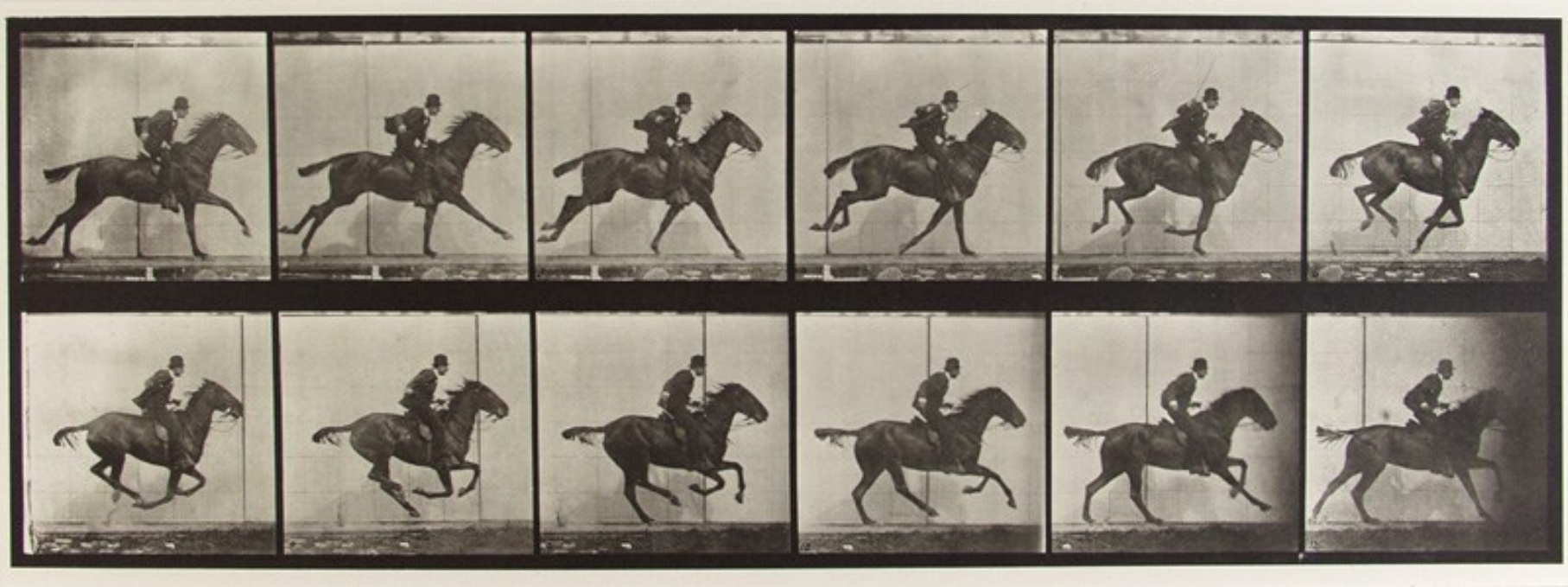
surrey art gallery

TEACHERS GUIDE

Out of Sight:
Eadweard Muybridge and Harold Edgerton

Zoopraxis:
Eadweard Muybridge's Animal Kingdom

Scott Billings: A Risky Jump



WITH BIG IDEAS CURRICULUM CONNECTIONS

Eadweard Muybridge, *Plate 624 Gallop; saddle; bay horse Daisy* from *Animal Locomotion*, 1887, collotype, 48.2 x 61.1 cm, Collection of the Vancouver Art Gallery, Gift of Claudia Beck and Andrew Gruft

Dear Teachers

This guide is a classroom resource, designed to support teachers and students attending the exhibitions *Out of Sight: Eadweard Muybridge and Harold Edgerton*, *Zoopraxis: Eadweard Muybridge's Animal Kingdom*, and *Scott Billings: A Risky Jump*, on display at the Surrey Art Gallery from January to March 2017. The Teachers Guide contains exhibit information, as well as activities that will prepare your students for their Gallery visit and engage them in classroom discussion afterwards. These activities reinforce the ideas and processes explored in the exhibitions—specifically the themes of sequence, motion, representation, and perception—and provide continuity between the Gallery visit and classroom. The pre-visit activity addresses the themes of sequence and motion and the post-visit activity addresses the themes of representation and perception.

The activities in this guide are adaptable to different grade levels and require a minimum of materials. The guide also provides vocabulary, a resource section, and links to the new BC Curriculum in the area of Arts Education, Science, and Applied Design, Skills and Technologies from grades K-12. We hope that you enjoy exploring and creating art with your students using this guide.

Sincerely,
Amelia Epp, Interpretive Programmer

The Teachers' Guide is created with contributions from Surrey Art Gallery staff including: Art Educator April Davis, Gallery Education Assistant Susanne Chow, Interpretive Programmer Amelia Epp, Visual Arts Programmer Lindsay McArthur, Volunteer Coordinator Chris Dawson-Murphy, Curator of Education and Engagement Alison Rajah, Communications Coordinator Charlene Back, and Curator of Exhibitions and Collections Jordan Strom.

ABOUT THE SURREY ART GALLERY

Surrey Art Gallery is the second largest public art gallery in the Metro Vancouver region. Internationally recognized, the Gallery showcases diverse contemporary art practices including digital and sound art and exhibits renowned local, national, and international artists. Located on the west wall of Chuck Bailey Recreation Centre, UrbanScreen is an offsite programming venue of the Surrey Art Gallery. The Surrey Art Gallery's mission is to engage the public in an ongoing dialogue about issues and ideas that affect our numerous communities as expressed through contemporary art, and to provide opportunities for the public to interact with artists and the artistic process.

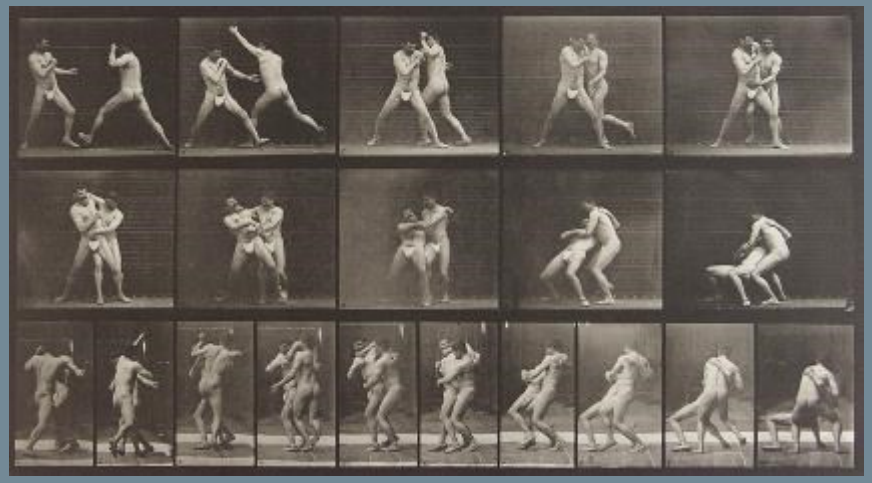
To receive announcements about exhibitions and related events at the Gallery, sign up for our e-newsletters at www.surrey.ca/arts-signup. The City of Surrey also has an e-newsletter specifically for teachers: www.surrey.ca/enews.

SCHOOL PROGRAMS

The Gallery's school programs develop an appreciation for, understanding of, and excitement about contemporary art. Visit the Gallery's website to learn about our school programs and the resources that we offer for teachers: www.surrey.ca/artgallery.

IN THIS GUIDE

Harold E. Edgerton, *Milk Drop Coronet*, 1957, dye transfer print, 50.5 x 40.5 cm, Collection of the Vancouver Art Gallery, Gift of Angela and David Feldman, the Menkes Family, Marc and Alex Muzzo, Tory Ross, the Rose Baum-Sommerman Family, Shabin and Nadir Mohamed © 2015 MIT, Courtesy of MIT Museum



Eadweard Muybridge, *Plate 331 Boxing; stop for cross-buttocks (shoes)*, from *Animal Locomotion*, 1887, collotype, 48.3 x 60.9 cm, Collection of the Vancouver Art Gallery, Gift of Claudia Beck and Andrew Gruft

Harold E. Edgerton, *Cranberry Juice (Dyedrop) Into Milk*, 1960, dye transfer print, 50.5 x 41.8 cm, Collection of the Vancouver Art Gallery, Gift of Angela and David Feldman, the Menkes Family, Marc and Alex Muzzo, Tory Ross, the Rose Baum-Sommerman Family, Shabin and Nadir Mohamed © 2015 MIT, Courtesy of MIT Museum

ABOUT THE EXHIBITIONS

Observe the unseen in three exhibits which explore our understanding of time and the mechanical truth of movement through historical and contemporary developments in motion-capturing media.

Out of Sight: Eadweard Muybridge and Harold Edgerton

January 21 – March 5, 2017

Is there more than meets the eye? Muybridge and Edgerton present slices of time—frozen moments—to approach the problem of representing that which cannot be seen. *Out of Sight* presents the work of two photographic pioneers who challenge us to reconsider what we see in our everyday lives through their revolutionary studies on motion and perception in their photography.

Zoopraxis: Eadweard Muybridge's Animal Kingdom

January 21 – March 5, 2017

In addition to making many serial photographs of human movement, 19th-century photographer Eadweard Muybridge also used his pioneering multi-camera apparatus to make sequential images of mammals and birds. This mini exhibition invites you to consider the legacies of these images on modern and contemporary wildlife photography and film.

Scott Billings: A Risky Jump

January 21 – March 19, 2017

Known for his experimentations with film and video, Billings makes cinematic experience new again. A specially made mechanical rig projects a slow-motion video of the artist falling through a trapdoor in his studio floor. Billings' artwork literally moves the moving image down the gallery wall where the artist lands safely at the viewer's feet. The resulting experience ponders the question, how can technology and its mechanisms alter our perception of time and space?

Read more about the exhibitions online:

http://www.surrey.ca/culture-recreation/1564.aspx

VOCABULARY

Abstract: The opposite of representational—depicting imagery in a way that is detached from reality. Existing in thought as an idea but not having physical, concrete existence.

Animate: To give the appearance of movement using the technique of showing a sequence of images very quickly.

Camera: A device for recording visual images in the form of photographs or film.

Cinematic: Having qualities characteristic of moving pictures (i.e. movies and film).

Film and Moving Pictures (Movie): A series of still images which creates the illusion of images moving when shown in rapid succession.

Frame: One of the many still images which make up the complete moving picture (i.e. film).

Installation: A 3D artwork—sometimes consisting of various elements—which alters the way a space is experienced.

Mechanical: Being a machine; operated by machinery. A machine is an apparatus consisting of interrelated parts with separate functions, used in the performance of some kind of work.

Medium: The physical objects used to convey messages to audiences through the senses.

Motion: A change in the position of an object over time.

Multiple exposure: The superimposition of two or more exposures to create a single image.

Optical illusion: An image or images that appear to be different from how they are in reality.

Perception: The organization, identification, and interpretation of sensory information that allows the representation and understanding of the environment. These are influenced by non-sensory factors such as our prejudices, desires, and ideas about truth.

Photography: The art or process of capturing images by recording light or other electromagnetic radiation using electronic (i.e. image sensor in a digital camera) or chemical means (i.e. light-sensitive film).

Representation: The description or portrayal of someone or something in a particular way.

Sequence: A particular order in which related movements or events follow each other.

Still (image): A photograph that shows an unmoving or “frozen” scene/object.

Stop-motion: The process of capturing the movement of objects one frame at a time by moving them incrementally after each capture, giving the illusion of lifelike motion when the captured frames are shown in rapid sequence.

Technology: The collection of techniques, skills, methods, and processes used in the production of goods or services or in the accomplishment of objectives such as scientific investigation or artistic exploration.

Thaumatrope: An optical toy popularized in the 19th century. A disk with a picture on each side is attached to two pieces of string or elastic bands. The optical result when the strings are twirled quickly between the fingers are:

- The appearance of both pictures blending into one
- A brief, two-frame animation

Time: A measure of ongoing sequence of events that can be put in order from the past through the present into the future.

Video: The recording, reproducing, or display of moving visual images.

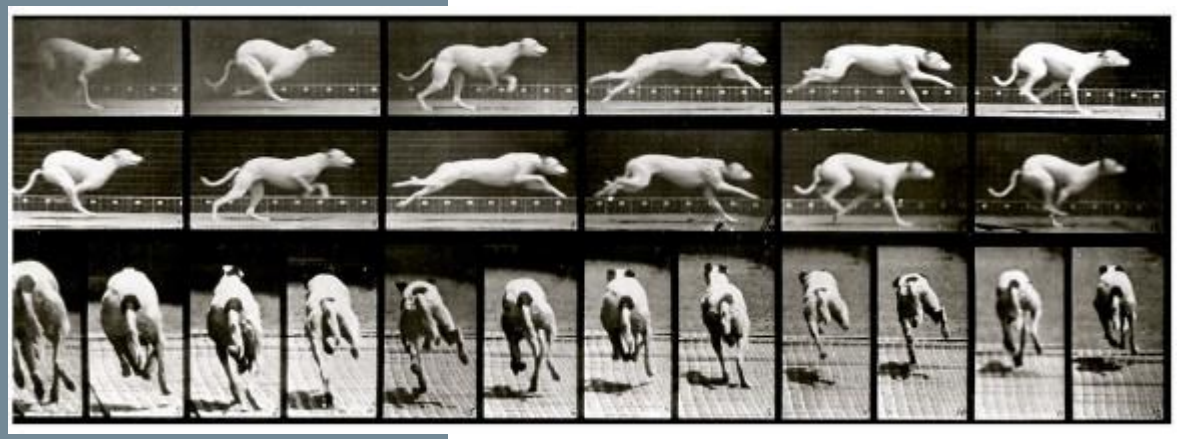
SUGGESTED PRE-VISIT ACTIVITY: Thaumatrope [**thaw**-muh-trope]

THEMES: Sequence, Motion

OBJECTIVES

To explore key ideas – sequence and motion – as addressed in the Winter 2017 exhibitions *Out of Sight: Eadweard Muybridge and Harold Edgerton* and *Zoopraxis: Eadweard Muybridge's Animal Kingdom*. Students will learn a method of showing motion using a mechanical technique — animating a two-image sequence.

Eadweard Muybridge, *Plate 710 "Maggie" galloping*, 1887, from *Animal Locomotion*, collotype, Courtesy of Equinox Gallery



BIG IDEAS FROM THE BC CURRICULUM

- Technologies are tools that extend human capabilities (Kindergarten to Grade 3, Applied Design, Skills and Technologies)
- Forces influence the motion of an object (Grade 2, Science)
- Artists experiment in a variety of ways to discover new possibilities and perspectives (Grade 5, Arts Education)
- The arts provide opportunities to gain insight into the perspectives and experiences of people from a variety of times, places and cultures (Grade 9, Arts Education)

ACTIVITY

Students will create an animation device called a *thaumatrope* by creating a two-image sequence. For quick reference, view this link: http://www.stormthecastle.com/how-to-make-a/how-to-make-a-thaumatrope.htm

DISCUSSION & INTRODUCTION

Introduce the class to the work of Muybridge and Edgerton by first showing the latter's *Cranberry Juice (Dyedrop) into Milk* (1960). Refer to the image of this artwork found on page 17.

- Have students describe what they see without revealing the title of the work.
- After the brief sharing session, show *Plate 710 "Maggie" galloping* (1887) found on page 18. Repeat the exercise of describing what they see.

After revealing that the first image is of the moment after a drop of cranberry juice bounces up from contact with a pool of milk, note the difference between the two images. One is a **still (image)** and the other is a **sequence** (see the vocabulary list on page 4 for definitions) of several images that shows the movement of a Greyhound over a short period of **time**.

SUGGESTED PRE-VISIT ACTIVITY: Thaumatrope [**thaw**-muh-trope]

THEMES: Sequence, Motion

DISCUSSION & INTRODUCTION (continued)

Despite this difference, there are a few similarities between these images. *Out of Sight* and *Zoopraxis* feature artworks that captured what the human eye cannot see on its own—as can be seen in the images by Edgerton and Muybridge. Muybridge worked with **photography** around 140 years ago and Edgerton around 60—at a time when photographic **technology** was not widely understood. They wanted to find new ways to use photography for science/research or art.

Through experimenting with tools such as lights and cameras, they were able to capture the motion of humans, animals, and a variety of scenes in split-second detail. Show Edgerton's *Pete Desjardin Diving* (1940) on page 19 to highlight the camera's ability to capture movement in a way that our eyes would not be able to do.

Discuss the following questions with your students:

- What have you used your camera for?
- Based on the information about the featured artists, what is the difference between how people used photography in the past and how they use it now?
- Direct attention to Muybridge's *Plate 710 "Maggie" galloping* (1887) on page 18. Imagine what the process of taking each of these **frames** looked like.

After a short discussion, note that a real life scene of Greyhounds running can be recorded easily in the form of **video**. Explain how looking at a sequence of still images quickly, **animates** the scene. This is basically how **moving pictures** or movies work.

Harold E. Edgerton, *Pete Desjardin Diving*, 1940, silver gelatin print, 50.5 x 40.5 cm, Collection of the Vancouver Art Gallery, Gift of Angela and David Feldman, the Menkes Family, Marc and Alex Muzzo, Tory Ross, the Rose Baum-Sommerman Family, Shabin and Nadir Mohamed, © 2015 MIT, Courtesy of MIT Museum

SUGGESTED PRE-VISIT ACTIVITY: Thaumatrope [**thaw**-muh-trope]

THEMES: Sequence, Motion

MATERIALS

- White cardstock
- Cardboard or other firm material that can be cut
- 2 rubber bands per student
- Scissors
- White paper
- Tracing paper
- Glue sticks
- Pencils, rulers, erasers, and crayons, coloured pencils, markers and/or other drawing materials
- Hole punch
- Cups (3 inches in diameter) or similar sized circular objects to trace with

PROCESS

Inform students that like the artists in *Out of Sight* and *Zoopraxis*, they will create a device that will question what we are able to see. They will do this by creating their own animation using a **thaumatrope**: An optical toy popularized in the 1800s. To create a thaumatrope, a disk with a picture on each side is attached to two elastic bands. When the elastic bands are twirled quickly between the fingers, the students will observe:

- The appearance of both pictures blending into one
- A brief, two-frame animation

Prompt students to recall the process of animation—showing movement using a sequence of two images. Ask the students to brainstorm an action that could be shown through a sequence of two images. Examples might include:

- a person waving, a blinking eye, a basketball going into a hoop, etc.

Modification: The thaumatrope can spin fast enough to create an illusion—the appearance of two images blending into one. Examples include:

- a bird in a cage, a butterfly in a jar, stripes on a zebra, etc. refer to the following link for more examples- http://lam-animation.weebly.com/thaumatrope-examples.html

SUGGESTED PRE-VISIT ACTIVITY: Thaumatrope [**thaw**-muh-trope]

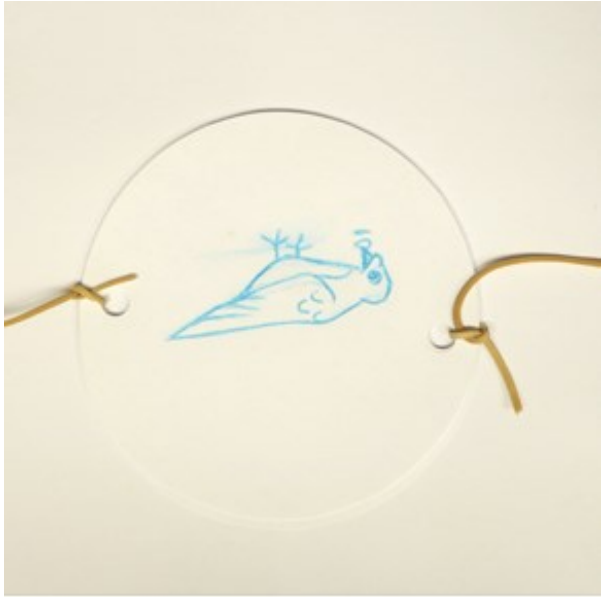
THEMES: Sequence, Motion

PROCESS (continued)

- Using a cup and pencil each student will trace the following: one circle on a sheet of cardboard, two circles on white paper, and one circle on tracing paper

Sample *thaumatrope*. View of the front

- Cut out all four of the circles
- Prior to drawing: In order to achieve an optimal animation, have students create simpler drawings without excess decoration
- Draw the first "**frame**" in one of the white paper circles (i.e., an upright bird)
- Place the blank tracing paper circle on top of the drawn circle, using it as a positioning guide to draw the second frame (i.e., a bird pecking a seed)
- Glue the first frame onto one side of the cardboard circle. Glue the blank white circle on the other side.
- Glue the second frame (tracing paper) onto the cardboard to the opposite side of the first frame **It's necessary to position it so that it is directly upside down in comparison to the first drawing. The illusion/ animation will not work otherwise.* Refer to the image on the right. It shows the back of the thaumatrope (flipped horizontally), where the second frame/drawing must be upside-down
- Measure the horizontal half-way point of the circle and mark the far left and right ends with a pencil. Use a hole punch to create two holes as shown in the images on this page.
- Cut the loop of each elastic band to create two longer pieces of stretchy material. Take one elastic band and thread about 2cm through the hole and tie it in a knot. Repeat this step on the other side with the second elastic band.
- Test the *thaumatropes* by twirling both sides of the rubber bands in the same direction, alternating when the circle spins too slowly for the optical trick to work



Sample *thaumatrope*. Rear view (flipped horizontally in relation to the front)

SUGGESTED PRE-VISIT ACTIVITY: Thaumatrope [**thaw**-muh-trope]

THEMES: Sequence, Motion

CONCLUSION

In small groups, have students share the animation or illusion that they created.

Discuss as a larger group the following questions:

- What are some of the differences and similarities between the thaumatropes you made and the photography of Muybridge and Edgerton?
- Can you describe examples of technology that allow humans to **perceive/**see in ways that they cannot do using the naked eye?

When your students visit the winter 2017 exhibitions at the Surrey Art Gallery, take note of the specific actions and scenes that were captured by the artists. Considering the time period during which the photographs were taken, how could these images have helped people understand the world in new ways?

End the lesson by having your class compile a list of actions they would be interested in seeing in sequence (Muybridge's work) and in still or "freeze-frame" (Edgerton's work). Bring the lists to the Gallery upon your visit and see if the students can find any matches in the Galleries!

Harold E. Edgerton, *Milk Drop Coronet*, 1957, dye transfer print, 50.5 x 40.5 cm, Collection of the Vancouver Art Gallery, Gift of Angela and David Feldman, the Menkes Family, Marc and Alex Muzzo, Tory Ross, the Rose Baum-Sommerman Family, Shabin and Nadir Mohamed, © 2015 MIT, Courtesy of MIT Museum

SUGGESTED POST-VISIT ACTIVITY: Abstract Moving Pictures
THEMES: Representation, Perception

OBJECTIVES

To explore the themes of **representation** and **perception** through creating an artwork that activates abstract modes of perception (see activity below). In this activity students will examine their perceptions of movement through the particular representation of movement in the exhibitions, *Scott Billings: A Risky Jump* and *Out of Sight: Eadweard Muybridge and Harold Edgerton.*

BIG IDEAS FROM THE BC CURRICULUM

- Technologies are tools that extend human capabilities (K-Grade 3, Applied Design, Skills, and Technologies)
- Creative experiences involve an interplay between exploration, inquiry, and purposeful choice (Grade 3, Arts Education)
- Works of art influence and are influenced by the world around us (Grade 5, Arts Education)
- Creative growth requires patience, readiness to take risks, and willingness to try new approaches (Grade 8, Arts Education)

Still from Scott Billings' video
A Risky Jump (2015)

ACTIVITY

Students will create a sequence showing the movement of a shape. They will use their imagination to represent the movement of inanimate object by purposefully aranging the same repeated shape to suggest character and personality.

Referencing the idea of perception in the work of Billings, Muybridge, and Edgerton, this activity challenges students to think in more abstract ways rather than relying on their sense of sight for interpretation and representation.

SUGGESTED POST-VISIT ACTIVITY: Abstract Moving Pictures
THEMES: Representation, Perception

DISCUSSION & INTRODUCTION

Invite students to reflect on and share their experiences visiting the exhibitions *Scott Billings: A Risky Jump* and *Out of Sight: Eadweard Muybridge and Harold Edgerton* at the Surrey Art Gallery. What stood out to them about the exhibitions?

Tools such as film equipment, cameras, projectors and even cellphones can **represent** and record reality in ways that we could never have imagined in the past.

The work in *Out of Sight*, *Zoopraxis*, and *A Risky Jump* are all depictions of movement—although they were captured in different ways and for different purposes. Another feature that they have in common is that they all rely on our sensory **perceptions** to understand the intentions of the artists.

- Can you describe examples of sensory perceptions and what knowledge they can give us?

Show Edgerton's *Jackie jumps a bench* (1938). Refer to the image of this artwork found on page 20. Have students examine the image and to consider the following questions:

- What do you see?
- If you didn't have any information about the work, would you have given the same answer?
- What senses or knowledge are you using to help you answer the question?

Sometimes, when we look at images or artwork, we will not be able to recognize what we're looking at. We may not have the knowledge that we need to understand a picture. Rather than interpreting the image by trying to figure out—using nouns—what you see (e.g. it's a dog!), challenge yourselves to use adjectives to describe the image (e.g. it looks fast).

- Using adjectives, describe what you see.

By doing this, students can be better prepared to analyse more complex and unfamiliar imagery. They can also develop their **abstract** thinking—leading to risk-taking and creative habits of mind.

Harold E. Edgerton, *Jackie jumps a bench*, 1938, silver gelatin print, 28.0 x 35.5 cm, Collection of the Vancouver Art Gallery, Gift of Angela and David Feldman, the Menkes Family, Marc and Alex Muzzo, Tory Ross, the Rose Baum-Sommerman Family, Shabin and Nadir Mohamed, © 2015 MIT, Courtesy of MIT Museum

SUGGESTED POST-VISIT ACTIVITY: Abstract Moving Pictures
THEMES: Representation, Perception

DISCUSSION (continued)

Remind students of Scott Billings' *A Risky Jump* (2015). Show them part of the video:

http://www.youtube.com/watch?v=WKKB-C_VCoU

Have students share how they felt or what they were thinking while observing his **installation** artwork.

- What did you expect was going to happen?
- The artist chose to show himself falling in slow motion. What effect did this have on you? How would your reaction be different if you saw this in real life?
- How did the mechanical equipment that was used to move the projector down while Billings was falling change your **perception** or feelings/thoughts about it?

Eadweard Muybridge, *Plate 624 Gallop; saddle; bay horse Daisy* from *Animal Locomotion*, 1887, collotype, 48.2 x 61.1 cm, Collection of the Vancouver Art Gallery, Gift of Claudia Beck and Andrew Gruft

MATERIALS

- Paper or sketchbook for layout and brainstorming
- An 11" x 14" sheet of white paper for each student
- Pre-cut cardstock into one 4" x 4" square per student
- Construction paper of various colours
- Scissors
- Glue Sticks
- Pencils and erasers
- *Optional extension: paint, brushes, crayons

PROCESS

Reflect on how the work you saw in the Gallery relates to movement. Billings, Muybridge, and Edgerton all show movement that is predictable even though the details of movement are either invisible to our eyes or extremely difficult to see. In other words, we know what to expect when we look at how humans, animals, and some objects move.

We will be creating an artwork that shows the movement of something that doesn't move in real life like a shape (i.e., triangle).

SUGGESTED POST-VISIT ACTIVITY: Abstract Moving Pictures
THEMES: Representation, Perception

PROCESS (continued)

Show Muybridge's *Plate 624 Gallop; saddle; bay horse Daisy* from *Animal Locomotion*. Refer to the image of this artwork found on page 21. Have students observe the positioning of the horse's legs. How does the position of the horse's legs change in each image? What adjectives might you use to describe the horse's movement throughout the images (i.e. fast, explosive, jerky). While Muybridge has shown motion in separate images, Edgerton depicts motion in just one image as seen in *Gus Solomons* (1960). See page 22. The students will do this in their own artwork.

Have students brainstorm by writing or sketching how the personality or character of their triangle affects the following:

- what it looks like (i.e. What colour is it? Does the colour change when it moves? Is it an equilateral, isosceles, scalene, or right-angled triangle?)
- where it moves (i.e. from one side to the other)
- what direction it moves in (i.e. diagonally across the page, in circles around the page, along the bottom of the page)
- how fast it moves (a slow speed is commonly shown by placing objects close to each other and fast speeds are shown by placing them further apart)
- how it moves (i.e. explosive, smooth, swirling, bouncy)

Show Edgerton's *Gus Solomons* (1960) (see page 22) while students are brainstorming to provide a visual ideas. Consider how the hands create the direction of an arc and how close each hand is to one another. This is one way of showing low speed.

Harold E. Edgerton, *Gus Solomons*, 1960, silver gelatin print, 60.7 x 50.8 cm, Collection of the Vancouver Art Gallery, Gift of Angela and David Feldman, the Menkes Family, Marc and Alex Muzzo, Tory Ross, the Rose Baum-Sommerman Family, Shabin and Nadir Mohamed, © MIT, Courtesy of MIT Museum

SUGGESTED POST-VISIT ACTIVITY: Abstract Moving Pictures
THEMES: Representation, Perception

PROCESS (continued)

*Optional extension:

Decorate the 11” x 14” sheet of paper using paint, pencil crayons or other media available prior to arranging shapes.

Students use a ruler and pencil to draw the shape of their triangle on their 4” x 4” piece of cardstock. They will use it to trace a dozen triangles onto construction paper in a colour of their choice, and then cut them out. They can cut more as needed.

Students will then arrange the triangles according to their brainstorm plans and glue each of them in order onto the 11” x 14” sheet.

CONCLUSION

Display the finished *Abstract Moving Pictures*. Give the students time to observe each other’s work.

Have students choose another person’s artwork and describe their triangle using adjectives and the same characteristics they considered when creating their own.

Connect this exercise and learning at the Gallery to future experiences and interactions with photography, film and other visual media.

Possible questions for students to answer (Exit slip for grades 4+)

- Describe how you felt when you had to brainstorm and represent the movement of a triangle. Was it easy or hard? Why?
- How is the work of the artists similar and different from your *Abstract Moving Pictures*?

CURRICULUM CONNECTIONS FOR SCHOOL PROGRAMS

Participating in a guided tour, studio workshop, or self-guided tour in conjunction with the exhibitions supports Big Ideas and Learning Standards in the British Columbia Arts Education Curriculum for grades K-12. The exhibitions can be used as a touchstone for discussion relating to themes and concepts addressed in a variety of curricular areas.

K-7 ARTS EDUCATION CURRICULAR COMPETENCIES

KINDERGARTEN - GRADE 2

- Create artistic works collaboratively and as an individual, using ideas inspired by imagination, inquiry, experimentation, and purposeful play
- Observe and share how artists use processes, materials, movements, technologies, tools, and techniques
- Reflect on creative processes and make connections to personal experiences
- Describe and respond to works of art
- Experience, document, perform and share creative works in a variety of ways

GRADES 3 - 4

- Create artistic works collaboratively and as an individual, using ideas inspired by imagination, inquiry, experimentation, and purposeful play
- Observe, listen, describe, inquire and predict how artists use processes, materials, movements, technologies, tools, techniques, and environments to create and communicate
- Reflect on creative processes and make connections to other experiences
- Connect knowledge and skills from other areas of learning in planning, creating, and interpreting works for art
- Apply learned skills, understandings, and processes in new contexts
- Express feelings, ideas and experiences in creative ways

GRADES 5 - 7

- Create artistic works collaboratively and as an individual, using ideas inspired by imagination, inquiry, experimentation, and purposeful play
- Observe, listen, describe, inquire, and predict how artists use processes, materials, movements, technologies, tools, techniques, and environments to create and communicate
- Interpret creative works using knowledge and skills from various areas of learning
- Examine relationships between the arts and the wider world
- Adapt learned skills, understandings, and processes for use in new contexts and for different purposes and audiences
- Describe, interpret and respond to works of art and explore artists' intent

CROSS-CURRICULAR COMPETENCIES

Applied design, skills and technologies, K-3

- Making: Choose tools and materials, make a product using known procedures or through modelling of others, use trial and error to make changes, solve problems or incorporate new ideas from self or others
- Develop their skills and add new ones through play
- Explore the use of simple, available tools and technologies to extend their capabilities

Science, K-2

- Compare observations with predictions through discussion
- Transfer and apply learning to new situations

CURRICULUM CONNECTIONS FOR SCHOOL PROGRAMS

Participating in a guided tour, studio workshop, or self-guided tour in conjunction with the exhibitions supports Big Ideas and Learning Standards in the British Columbia Arts Education Curriculum for grades K-12. The exhibitions can be used as a touchstone for discussion relating to themes and concepts addressed in a variety of curricular areas.

8-12 ARTS EDUCATION CURRICULAR COMPETENCIES

GRADES 8 - 9

- Create artistic works collaboratively and as an individual using ideas inspired by imagination, inquiry, experimentation and purposeful play
- Demonstrate an understanding and appreciation of personal, social, cultural, historical, and environmental contexts in relation to the arts
- Describe, interpret, and evaluate how artists use processes, materials, movements, technologies, tools, techniques and environments to create and communicate ideas
- Reflect on works of art and creative processes to make connections to personal learning and experiences
- Interpret works of art using knowledge and skills from various areas of learning
- Describe, interpret, and respond to works of art
- Adapt learned skills, understandings, and processes for use in new contexts and for different purposes and audiences

GRADE 10

- Create artistic works collaboratively and as an individual using imagination, observation, inquiry, and ideas
- Express meaning, intent, emotions, and feelings through visual art
- Recognize knowledge and skills from other contexts in the planning, creating, interpreting, and analyzing of artistic creations

GRADES 11 - 12

- Create artistic works collaboratively and as an individual using imagination, observation, and inquiry
- Engage in appropriate risk taking to express thoughts and emotions
- Describe and analyze, using the language of visual arts, how artists use materials, technologies, processes, and environments in art making
- Apply knowledge and skills from other contexts in the planning, creating, interpreting, and analyzing of artistic creations
- Adapt learned arts skills or processes for use in new contexts

ONLINE RESOURCES

EADWEARD MUYBRIDGE

Video describing one of Muybridge's inventions, the *zoopraxiscope*

- https://www.youtube.com/watch?v=aG5erS2GNG0

A database of the artist's photographs, a timeline to contextualize his work, and information regarding his work with citations

- http://www.eadweardmuybridge.co.uk/

Collection of Muybridge's photographs for reference or additional lesson planning

- http://www.getty.edu/art/collection/artists/2046/eadweard-j-muybridge-american-born-england-1830-1904/

THAUMATROPES

Instructions for making a thaumatrope

- http://www.stormthecastle.com/how-to-make-a/how-to-make-a-thaumatrope.htm

Alternative versions of thaumatropes (lower level of difficulty)

- https://paper-crafts.knoji.com/what-is-a-thaumatrope-and-how-do-i-make-one/

HAROLD EDGERTON

Comprehensive resource with biographical information, access to his notebooks (all primary sources), images of Edgerton's artwork, his scientific accomplishments and details regarding the technology he developed

- http://edgerton-digital-collections.org/

1985 Interview with David Letterman—Featuring demonstrations of experiments

- https://www.youtube.com/watch?v=IEUGvwkmR_o

A documentary demonstrating how Edgerton's strobe photography works

- http://www.youtube.com/watch?v=gspK_Bi0aoQ

SCOTT BILLINGS

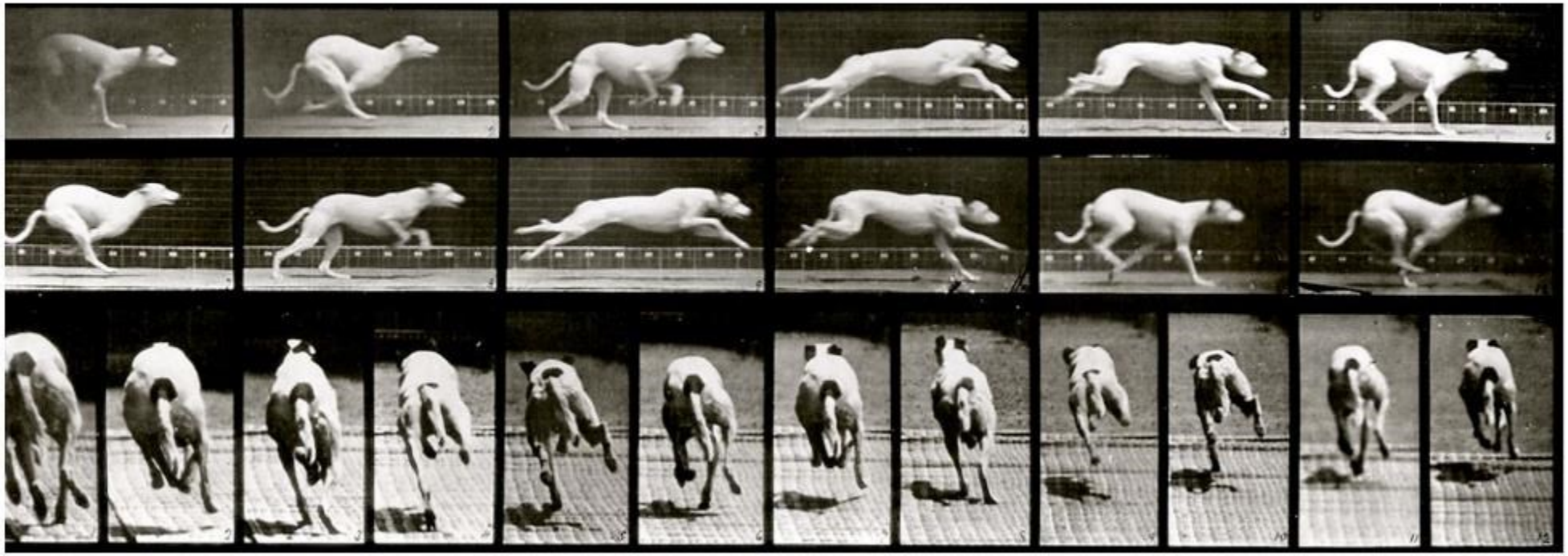
Full video—*A Risky Jump*

- http://www.youtube.com/watch?v=WKKB-C_VCoU

Artist's Website—Contains essays on his work

- http://www.scottbillings.com/info/

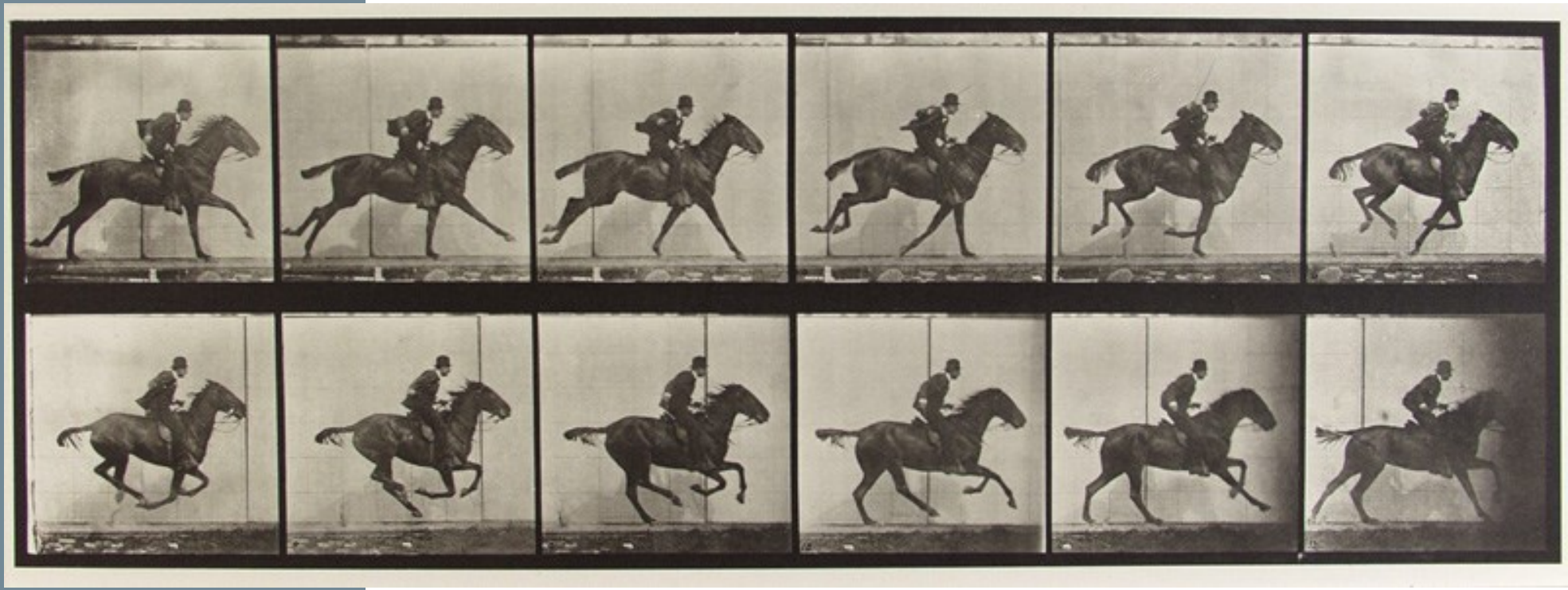
Harold E. Edgerton, *Cranberry Juice (Dyedrop) Into Milk*, 1960, dye transfer print, 50.5 x 41.8 cm, Collection of the Vancouver Art Gallery, Gift of Angela and David Feldman, the Menkes Family, Marc and Alex Muzzo, Tory Ross, the Rose Baum-Sommerman Family, Shabin and Nadir Mohamed © 2015 MIT, Courtesy of MIT Museum



Eadweard Muybridge, *Plate 710 "Maggie" galloping*, 1887, from *Animal Locomotion*, collotype, courtesy of Equinox Gallery

Harold E. Edgerton, *Pete Desjardin Diving*, 1940, silver gelatin print, 50.5 x 40.5 cm, Collection of the Vancouver Art Gallery, Gift of Angela and David Feldman, the Menkes Family, Marc and Alex Muzzo, Tory Ross, the Rose Baum-Sommerman Family, Shabin and Nadir Mohamed, © 2015 MIT, Courtesy of MIT Museum

Harold E. Edgerton, *Jackie jumps a bench*, 1938, silver gelatin print, 28.0 x 35.5 cm, Collection of the Vancouver Art Gallery, Gift of Angela and David Feldman, the Menkes Family, Marc and Alex Muzzo, Tory Ross, the Rose Baum-Sommerman Family, Shabin and Nadir Mohamed, © 2015 MIT, Courtesy of MIT Museum



Eadweard Muybridge, *Plate 624 Gallop; saddle; bay horse Daisy* from *Animal Locomotion*, 1887, collotype, 48.2 x 61.1 cm, Collection of the Vancouver Art Gallery, Gift of Claudia Beck and Andrew Gruft.

Harold E. Edgerton, *Gus Solomons*, 1960, silver gelatin print, 60.7 x 50.8 cm, Collection of the Vancouver Art Gallery, Gift of Angela and David Feldman, the Menkes Family, Marc and Alex Muzzo, Tory Ross, the Rose Baum -Sommerman Family, Shabin and Nadir Mohamed, © MIT, Courtesy of MIT Museum

INFORMATION / MAP

- *2km walk from King George Station*
- *Take the Skytrain to Surrey Central Station and catch Bus #321 or #96 B-line and get off on King George Hwy at 88 Ave*
- *Free parking*

SURREY ART GALLERY

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Surrey, BC V3W 3L1

604-501-5566
artgallery@surrey.ca
www.surrey.ca/artgallery

GALLERY HOURS

Tues, Wed, Thurs:	9am – 9pm
Fri:	9am – 5pm
Sat:	10am – 5pm
Sun:	Noon – 5pm

Closed on Mondays & holidays

Admission by donation

SIGN UP FOR OUR E-NEWSLETTERS

To receive gallery exhibition and program updates, visit www.surrey.ca/arts-signup

With thanks to the members of the Surrey Art Gallery/Surrey Art Teachers Association Planning Committee