Animal Locomotion: An Integrated Science, Art, & Writing Lesson Sequence for Grades 2-5, Part Two (Movement Photography & Narrative Writing)

Inspiration: Photographs from the SBMA Exhibition *Art to Zoo: Exploring Animal Natures*

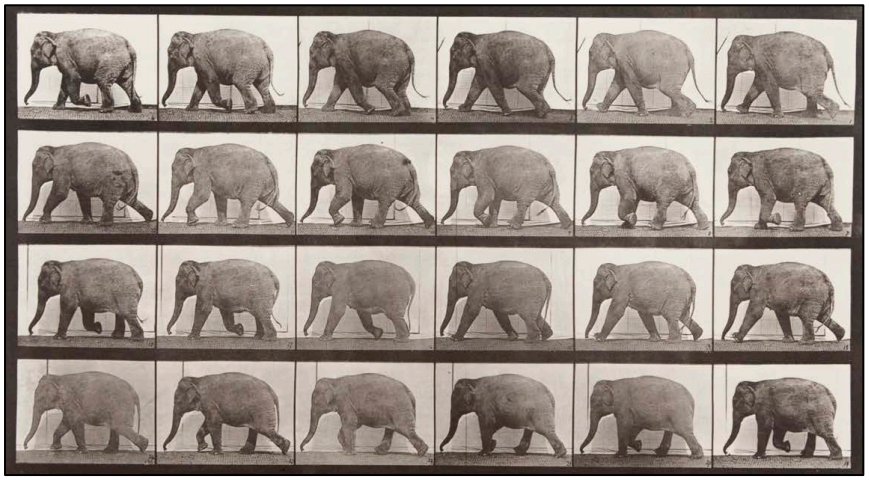
Goals for the Lesson Sequence:

Students will demonstrate higher-order thinking skills while participating in facilitated discussions and Thinking Routines that explore works of art.

Inspired by the exhibition, students will take photographs and create art that demonstrates aspects of animal locomotion.

Students will engage in informative and narrative writing that reflects their close observations of animal characteristics and movements.

Through integrated activities including observation, reading, writing, and art making, students will explore recent scientific discoveries about the dimensions of animal characteristics and knowledge.



Eadweard Muybridge, English, 1830-1904 (Active USA), *Untitled (Elephant)*, 1887, Collotype, SBMA

VTS* Discussion: 30 Minutes

Project the image (use the full-sized image in the Animals to Zoo Image Collection at the end of this PDF) and invite students to look carefully at the subject.

After a full minute of careful viewing, ask the group: *What is going on in this picture?* Remind students that there is no one "right" answer – you are interested in their ideas, hypotheses, and responses to the work.

As each student contributes an idea, ask him/her to support the statement with evidence from the work. Ask*: What do you see that makes you say that?*

After the student provides evidence, paraphrase the comment(s), pointing to the specific referenced detail(s). Continue asking for more ideas from other students by asking: *"What more can we find?"*

After the VTS discussion, use the Same/Same/ Different Thinking Routine (see next slide).

*Visual Thinking Strategies, see http://www.vtshome.org

Camille Solyagua, American, *Jellyfish #9*, 2000, Toned gelatin silver print, SBMA

Same/Same/Different Thinking Routine

Project the two images (use the following slide) and invite students to look carefully at the subjects. Tell students that the image of the bird was taken by a teaching artist who tried to capture "stilled movement" using her smart phone's camera.

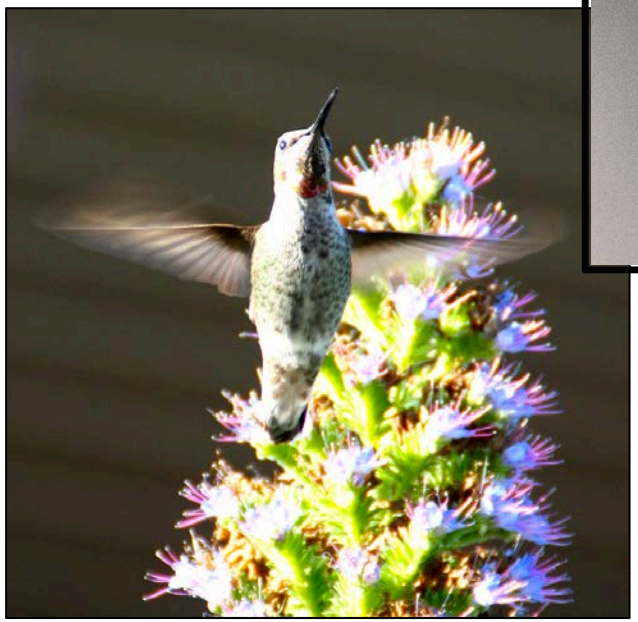
Ask students to look carefully and compare and contrast the two photographs (the jellyfish and the hummingbird in the top image). How are they alike? How are they different? Consider the two photographers' possible intents or purposes, the photographic effects, and elements of art (composition, contrast, values, perspective, etc.) What words come to mind as you look at each photo? (see next slide for larger images)

Assignment description for Stilled Movement photography:

Ask students to take their own photographs that depict the "stilled movements" of an animal/creature.

Discuss and demonstrate options for capturing images: digital cameras, smart phones, or tablets. Encourage experimentation with different apps and effects. Students can transpose color images to black and white (see the top hummingbird image), sepia tones, or other color effects.

Photographs by Joni Chancer, SBMA Teaching Artist



Camille Solyagua, American, *Jellyfish #9,* 2000, Toned gelatin silver print, SBMA

Photographs by Joni Chancer, SBMA Teaching Artist

App used to remove background

Camille Solyagua, American, *Jellyfish #9,*
2000, Toned gelatin silver print, SBMA

Photograph by Joni Chancer, SBMA Curriculum Consultant (a Polyphemus Moth, discovered clinging to a wall outside her art studio.)

Art making (photography) activity and discussion:

Facilitate a VTS discussion about the image (see slide 6 for full-sized image).

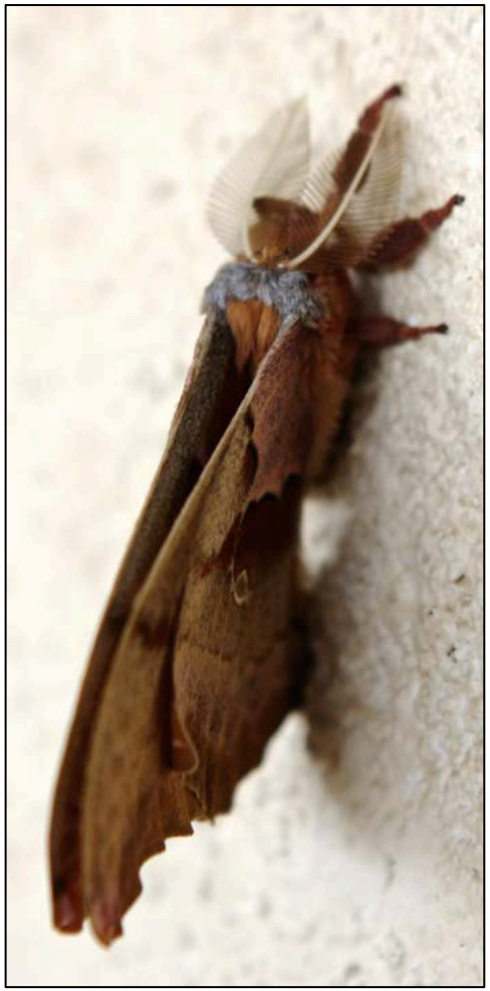
After the VTS discussion, invite students to look again at the enlarged image. If students have not commented on the blurred action of the left wing and the stilled detail of the right wing, ask: *Why do you think the photographer chose to include both a blurred and stilled wing in the image?*

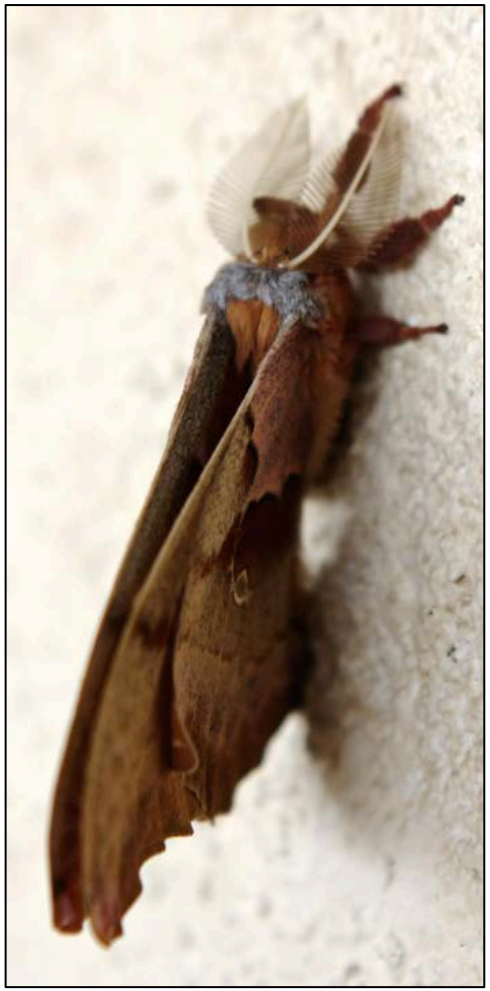
Ask:

How does this photo tell a story about the usefulness (to the moth) of the often-hidden oval design pattern on the wing?

Background information (can be shared after discussions):

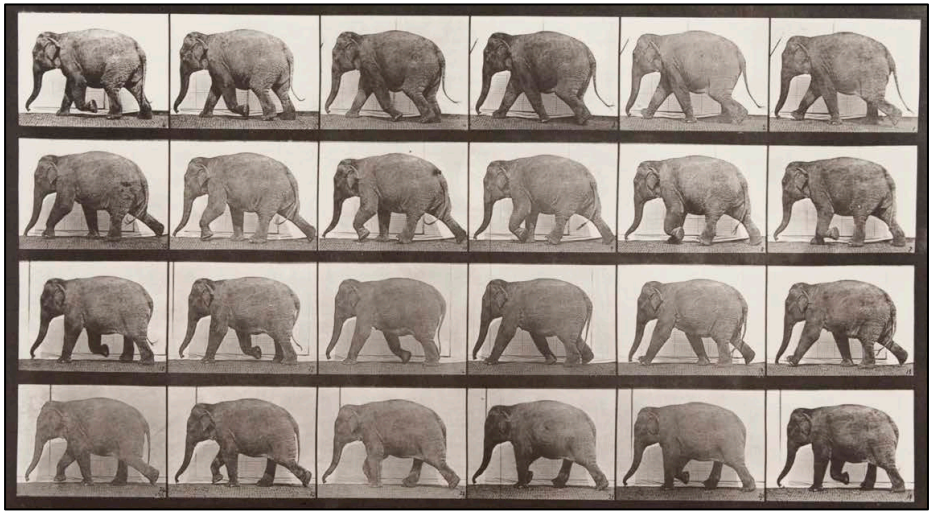
This Polyphemus Moth (*anthera polyphemus*), has a wingspan of up to 5 1/2 inches. Its opened wings reveal small, mostly yellow eyespot on each forewing (front wing), and larger blue, black, and yellow eyespots on the hindwings. When closed, the wings look like dead leaves or tree bark. Polyphemus Moths are often found in forests (and oak trees), and they use mimicry to defend themselves. In addition to looking like dead leaves or bark when their wings are folded, these moths can, in a brilliant, quick flash of open wings, reveal large eyespots that mimic an owl's eyes. These beautiful, frequently hidden spots can surprise a predator.





Invite students to take their own photographs of stilled movement.

Art Making: Photographing a Creature's Locomotion Sequence



Eadweard Muybridge, English, 1830-1904 (Active USA), *Untitled (Elephant),* 1887, Collotype, SBMA

Margaret Bourke-White, American, 1904-1971, *Praying Mantis,* ca. 1935, Gelatin silver prints, SBMA

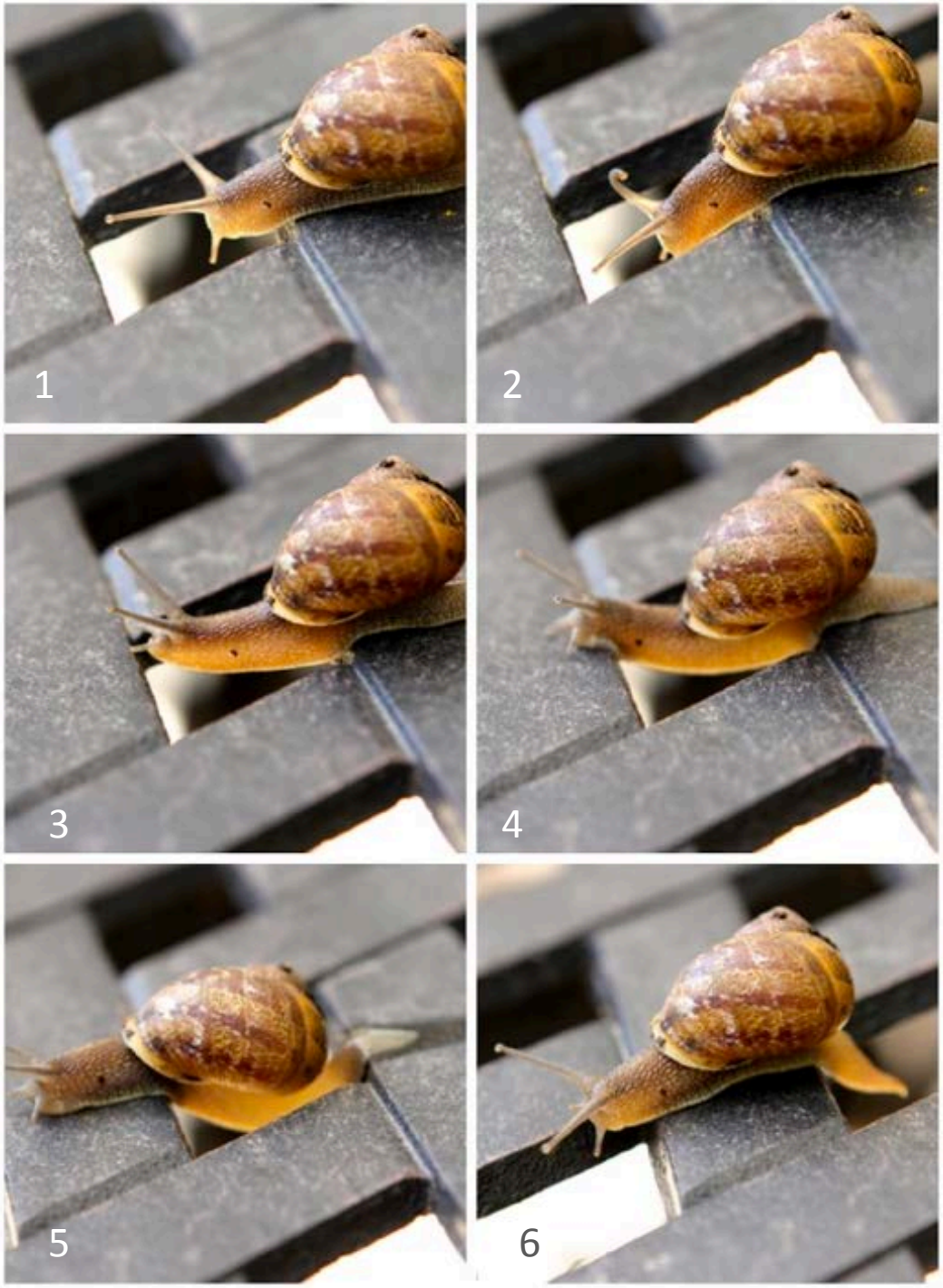
Facilitate a VTS discussion about the elephant collotype by Eadweard Muybridge. (Project the full-sized image located in the Animals to Zoo Image Collection at the end of this PDF)

Invite students to look closely at the image, and to note the locomotion sequence. What is similar/ different in each frame?

Ask students to speculate on the type of photographic process used to capture this example of a locomotion system. What current technology might assist an artist in creating this kind of sequence? Research Muybridge's groundbreaking work to discover how he created this and other locomotion studies.

Related art making activity: Ask students to use today's technology (digital cameras, smart phones, or tablets) to capture a locomotion sequence of the creature of their choice.
Option: Use an app or computer program to create a photographic sequence with a chosen effect, inspired by Muybridge's collotype. Discuss the provided examples (see slides 9 & 10).

Praying Mantis (left) is another example of an image sequence. Each frame reveals a different aspect and/or movement of the insect. For projection and discussion, use the larger image of this piece located in the Animals to Zoo Image Collection at the end of this PDF.



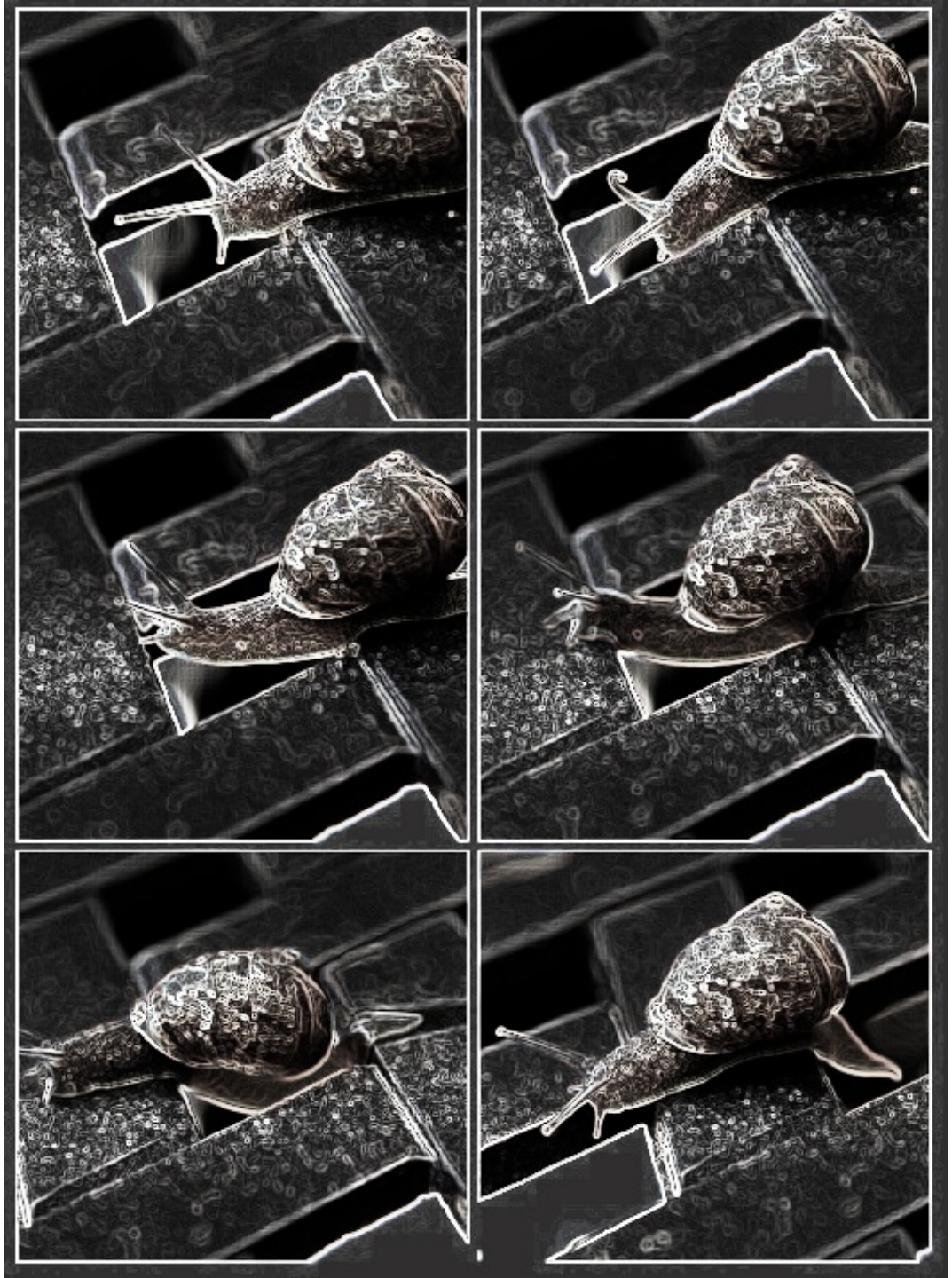
Example: Snail Locomotion Sequence

In this sequence, the photographer observed a snail inching its way across a lattice-topped iron table. The openings in the latticework posed a major challenge for the snail. Note how it stretched its foot (the long bottom muscle that propels the motion), and employed its slime-producing mechanism to excrete an adhesive liquid trail.

Clearly, it used its tentacles and eyes (located on the end of the two longer tentacles) to sense surfaces and potential dangers.

The drama occurred in frame 5, when the snail almost fell through the open lattice space. Its muscle was strong enough to secure its grip, and the slime trail provided the adhesion that helped it stick onto the tabletop. However, once it crossed to safety, what did it encounter? (frame 6) Another opening! A snail's work is never done – time to begin the crossing all over again!

Photographs by Joni Chancer, SBMA Curriculum Consultant



Example: Snail Locomotion Sequence

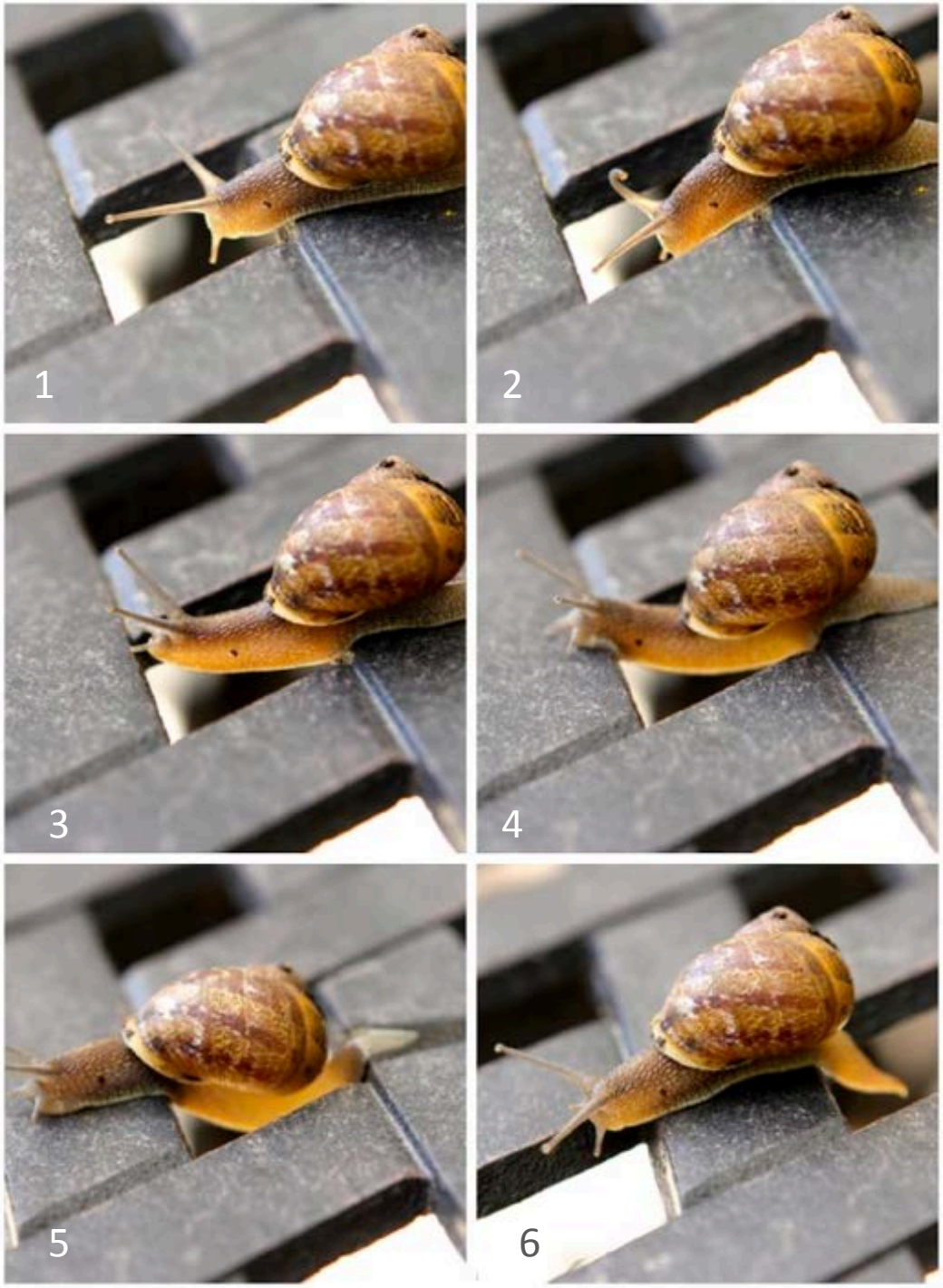
Using Technology to Alter Images

In this slide, the photographer used an app to re-color the images and highlight outline of each shape, the snail's specific body parts, and its different movements.

Which do you prefer – the original image, or this one? Why?

After you take photographs, consider the range of possible effects you can create by using current technology. Experiment with programs and apps - be purposeful in your selection.

Photographs by Joni Chancer, SBMA Curriculum Consultant



Narrative Writing Extension

Invite students to consider the narrative aspects of this sequence of snail movements. Ask:

What is the setting? What does the snail want to do? What problem does it encounter? How does the snail respond to the challenge – what might it be thinking? What other creatures might it meet in the garden?
(students will fictionalize the sequence)

Ask students to write a short narrative story about the snail's adventures in a garden, including the dangerous crossing of the tabletop. Use specific action verbs to describe its movements.

Or, students could write about the adventures of a creature they choose to photograph.

See the CCSS (Narrative Writing) for the grade level you teach.

Photographs by Joni Chancer, SBMA Curriculum Consultant

Related Art Making Activity:

Using Printmaking to Illustrate A Locomotive Sequence or A Realistic or Fictional Narrative

Step One: Take Photographs of a Moving Creature
Try using the "fast action" or "sports" feature on a camera, tablet, or smart phone. This setting allows a photographer to take quick, repeated shots without a moving subject.

Step Two: Select a frame that shows a close-up of the moving creature.
Step Three: Using the selected image or frame, experiment with different filters, effects, and apps.
Step Four: Print out an enlarged version of the image of the creature on copy paper.
Step Five: Place the copy over a foam printing plate.
Step six: Using a brayer, apply some washable printing ink over the plate. \

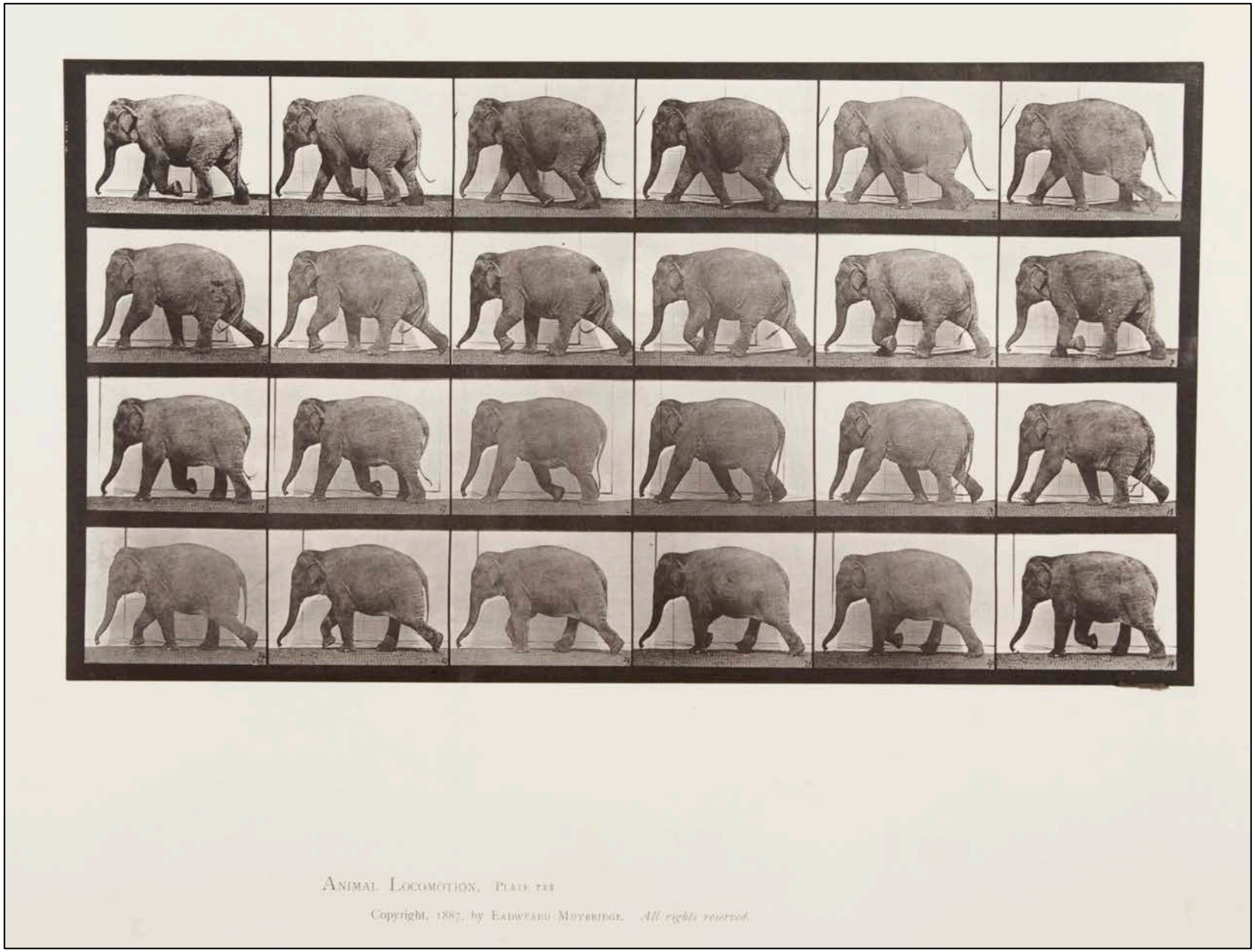
Image Collection from the SBMA Exhibition

Art to Zoo: Exploring Animal Natures

(see the following slides)

Camille Solyagua, American, *Jellyfish #9*, 2000, Toned gelatin silver print, SBMA

Harold Edgerton, American, 1903-1990, *Jackie Jumps a Bench*, 1938, Gelatin silver print, SBMA



Eadweard Muybridge, English, 1830-1904 (Active USA), *Untitled (Elephant),* 1887, Collotype, SBMA

Margaret Bourke-White, American, *Praying Mantis,* ca. 1935, Gelatin silver prints, SBMA

Connections to Standards

National Visual Arts Standards (K-5)

Content Standard: Understanding and applying media, techniques, and processes
Achievement Standard: Students know the differences between materials, techniques, and processes, describe how different materials, techniques, and processes cause different responses, use different media, techniques, and processes to communicate ideas, experiences, and stories, and use art materials and tools in a safe and responsible manner

Content Standard: Making connections between visual arts and other disciplines
Achievement Standard: Students understand and use similarities and differences between characteristics of the visual arts and other arts disciplines. identify connections between the visual arts and other disciplines in the curriculum

Common Core State Standards: **English Language Arts**

CCSS.ELA-Literacy.CCRA.R.1 Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text (using art as text).
CCSS.ELA-Literacy.CCRA.R.7 Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words.
CCSS.ELA-Literacy. CCRA.SL.1 Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others' ideas and expressing their own clearly and persuasively.
CCSS.ELA-Literacy. CCRA.SL.4.1.C Pose and respond to specific questions to clarify or follow up on information, and make comments that contribute to the discussion and link to the remarks of others.
CCSS.ELA-LITERACY.W.4.2.B Develop the topic (in writing) with facts, definitions, concrete details, quotations, or other information and examples related to the topic.
CCSS.ELA-LITERACY.W.4.2.D Use precise language and domain-specific vocabulary to inform about or explain the topic.
CCSS.ELA-LITERACY.W.4.3.B Use dialogue and description to develop experiences and events or show the responses of characters to situations.

Lesson plan sequence and art activity created by Joni Chancer, SBMA Curriculum Consultant

Credits and permissions:

Artwork was created by SBMA Teaching Artists and students in the SBMA Education and Outreach Programs.

For further information about these or other Education and Outreach Programs, contact Rachel Krieps at rkrieps@sbma.net

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