

KIDSPACE

PRESENTS

CURIOSITY

Curriculum Guide  
2012-2013

# TABLE OF CONTENTS

I. About Kidspace	pg 3
II. Introduction	pg 4
III. About this Curriculum	pg 5
IV. Curiosity Project Goals	pg 6
V. Teacher Pre-Activity	pg 7
VI. Curiosity at MASS MoCA, the Clark, and WCMA	pg 8
VII. Curiosity Classroom Activities	
A. Can You Be as Curious as a Four-Year-Old?	pg 10
B. Arts-Centric Curriculum Connections	pg 11
C. Visual Arts: Observation	pg 12
D. Visual Arts: Perspective	pg 13
E. Language Arts	pg 15
F. Social Studies	pg 16
G. Science	pg 17
H. Mathematics	pg 18
VIII. Planning a Visit	pg 20
IX. A Note from the Kidspace Education Team	pg 22



# KIDSPACE

## ABOUT KIDSPACE

KidSPACE is a partnership of the Sterling & Francine Clark Art Institute (the Clark), Williams College Museum of Art (WCMA), and the Massachusetts Museum of Contemporary Art (MASS MoCA). Under the umbrella of a shared theme, each of the three museums presents its own program of exhibitions, artists' residencies, performances, specialized tours, and/or art-making activities. This provides multiple perspectives on the shared theme. The three museums also sponsor an annual week-long summer teachers' institute to explore innovative ways of teaching with art across all disciplines, and develop curricula with teachers to be presented on a shared website.

Developed in 2012, this expanded version of KidSPACE extends the reach of the original program. KidSPACE was founded in 2000 to provide essential art education experiences for children and families in Northern Berkshire County through KidSPACE @ MASS MoCA, a child-centered contemporary art gallery and hands-on studio, which is free and open to the public. KidSPACE also partners with area schools

to develop thematic curriculum, artist residencies, and visits to KidSPACE @ MASS MoCA, WCMA, and the Clark.

We are proud to build on our track record of high-quality exhibitions and arts experiences featuring such renowned artists as Long-Bin Chen, Devorah Sperber, Portia Munson, Lisa Hoke, Aurora Robson, and Willie Birch, among many others. In addition to reaching every teacher and student in six partnering schools in the North Adams Public Schools and the North Berkshire School Union, annual KidSPACE @ MASS MoCA visitation has grown from some 8,000 in the early years to 20,000 today. In 2009, KidSPACE received the Distinguished Community Arts Collaborative Award and has been recognized by the school superintendents and the mayor of North Adams, Massachusetts as an integral part of the school and community life. The program has also been supported by the National Endowment for the Arts where it served as a national prototype for school-reform arts education programming.

## INTRODUCTION



*“The important thing is not to stop questioning. Curiosity has its own reason for existing.”*

–Albert Einstein

For the 2012-2013 school year, Kidspace has focused exhibition content around the theme of curiosity. In nurturing a child’s innate sense of curiosity (which Merriam-Webster defines simply as a “desire to know”<sup>1</sup>), an educator seeks to facilitate children’s desire to teach themselves, thereby creating a society of lifelong learners. The average four-year-old asks a total of four hundred questions every day. *Four hundred!* By the time the child is six years old, however, that number is reduced to two hundred and fifty questions.

But why is curiosity necessarily a good thing? Didn’t it kill the cat? Isn’t Curious George always getting himself into trouble? An alternative definition to “curiosity” in Merriam-Webster is: “inquisitive interest in others’ concerns: nosiness.” This version is offered first, before the “interest leading to inquiry *intellectual curiosity*,” thereby equating curiosity with inappropriate social behavior.<sup>2</sup> And then there’s the fact that we adults are often afraid of asking questions—how many of us preface our questions with “This may be a silly/stupid/irrelevant question, but...”?—as if to not already know something is embarrassing and exposes our incompetence. It takes a certain courageousness to be curious without reserve, even though curiosity has the potential to be a powerful tool in technology, science, artistry, and even compassion.

The key to raising new generations of Einsteins, Picassos, and Martin Luther King Jr.s is to embrace and nurture curiosity within our students. One cannot change the world without first being able to conceive of an alternative, and curiosity is a crucial partner to imagination and creativity. Williams College Professor Susan Engel states that “open-ended curiosity, the urge to simply find out more about the unknown, is an essential component of sustained inquiry in all domains. Yet few schools emphasize such inquiry when they are thinking through their curricula, and surprisingly few teachers make such open-ended inquiry a top priority.”<sup>3</sup> A “sustained inquiry” through curiosity is the foundation for innovation and development. In this era of instantaneous results, however, when Googling the answer to a given question on a Smartphone means that learning can happen anywhere and at anytime, we have come to expect that knowledge is immediate and often fleeting—*not* sustained. It is our curiosity that ensures we keep asking questions, prolonging our search for answers.

1. <http://www.merriam-webster.com/dictionary/curiosity>

2. Ibid.

3. Engel, Susan. “Open Pandora’s Box: Curiosity and Imagination in the Classroom.” The Thomas Wright Lecture, Child Development Institute, Sarah Lawrence College. 2006. 7.

## ABOUT THIS CURRICULUM

It is our hope that through the principles discussed below, teachers can direct students towards an active awareness of how they think, and how they can harness their curiosity for use in the classroom and beyond. As Jessica Hoffman Davis, cognitive developmental psychologist and founder of the Arts in Education program at the Harvard Graduate School of Education, says:

If we consider questions that have right or wrong answers as closed, bounded by the known, then we find questions that are open at the opposite pole, unbounded, available to responses that the teacher posing the question may never have considered. Open-ended questions, vividly addressed in the arts, go beyond answers. They use acquired facts as stimulation for new questions, not as benchmarks for learning. In the process of this mode of inquiry that is addressed through the arts, students need constantly to reflect—to assess the shape and determine the direction of their own thinking.<sup>4</sup>

Students' reflection, assessment, and determination of the direction of their own thinking are our goals for this curriculum guide.

This curriculum provides you with standards-based classroom activities that you can do with your students all year long. While we have suggested grade levels for certain projects, it is possible to adjust all activities to meet the needs of your students, as well as to adapt lessons to your pre-existing curriculum. We also encourage you to make connections to activities that you are already planning to do in your classroom.



While we encourage those in our area to visit the Kidspace exhibitions at MASS MoCA, WCMA, and the Clark, visiting our exhibitions is by no means a pre-requisite for using this guide, which can stand alone as an educational resource.

Check out our website for additional Curiosity curriculum ideas that have been developed by participants at our summer teacher institute (available Fall 2012).

<http://kidspace.massmoca.org>

The *Curiosity* curriculum was developed by Senior Kidspace Intern Amanda Tobin with: Kidspace School Programs Coordinator Shannon Toye; MASS MoCA Education Coordinator Rachel Heisler; MASS MoCA Director of Education + Kidspace Laura Thompson; Summer Interns Kathryn Ha, Lauren Sottile, Elena Ostock, and Dessane Cassell; Clark Head of Education Ronna Tulgan Ostheimer; and WCMA Interim Director of Educational Programs Joann Harnden.

<sup>4</sup> David, Jessica Hoffman. *Why Our Schools Need the Arts*. New York, Teachers College Press: 2008. 72.

# CURIOSITY PROJECT GOALS

## Essential Questions

These will be addressed in the curriculum guide as well as made specific during tours and programs at MASS MoCA, the Clark, and WCMA:

1. What kinds of things do you wonder about?
2. When you are curious, what do you do?
3. How do you investigate what you are curious about?
4. Are there times when you *should* or *should not* act curious? Why or why not?
5. How can you explore your curiosity when looking at and making art?

## Learner Outcomes

Students will:

1. Describe their interests and things that they wonder about to become more mindful of their own curious nature.
2. Articulate ways in which artists harness curiosity in idea formation and their artistic production, and then apply this knowledge to their own art-making practice.
3. Apply close, careful observation and adopt multiple perspectives and alternative approaches to looking at objects and situations.



## TEACHER PRE-ACTIVITY

Before diving into the classroom activities, consider this: many questions occur to us throughout the course of a day. For a fleeting moment, curiosity is piqued by something puzzling, new, or provocative. Chances are, however, that by the end of the day we have forgotten all about these moments.

Reconnect with your own sense of curiosity with this challenge!

### Your Curiosity:

- What does curiosity mean to you? Is it a natural-born trait—or, rather, is it a learned skill, a behavior pattern, or an emotion? Can curiosity be both experienced as a feeling and performed as an action?\*
- For one day, take a personal curiosity inventory. Every time a question pops into your mind, make it a point to jot it down. If you feel a vague sense of curiosity, try to articulate it in the form of a question. At the end of the day, review the list. What made you most curious? What questions inspire you to explore further?
- Post your list where you will see it every day—your refrigerator, your desk, etc.—and check off questions if and when you find answers. Did the answers prompt more questions? Were there any definitive answers at all?

### Your Students' Curiosity:

- For one day, take note of each time a student expresses his or her curiosity. Review at the end of the day. What were students curious about? When did they ask questions? What happened after the moment of curiosity?

### Reflection:

- We hope that paying attention to moments of curiosity will inspire you. What will you take away from these exercises?

### Sharing:

- Make an account at our blog for teachers, <http://curiosityatmassmoca.wordpress.com/> Share inspiring moments of curiosity in the classroom with your peers, and read theirs as well. It is our hope that this blog will become a valuable tool for educators working to encourage inquisitive and creative thinking in the classroom—and you are the most important part of this tool.

\*In this curriculum guide, we are looking at *all* possible applications of and inspirations for curiosity: how an experience with creating a work of art may make a child (or an adult!) *feel* curious, and how close observation of a work of art (or any object) may inspire someone to act curious, such as by asking questions (*Who made it? Why did the artist choose that color, that material?*) and/or by exploring further (*What else did the artist make? How might I be able to do that kind of project?*).

## CURIOSITY @ MASS MoCA, THE CLARK, WCMA

We hope that you will find inspiration in the Kidspace model, which integrates classroom curricula with art viewing, art making, and thought-provoking interactions with exhibitions and practicing artists. We believe in the power of first-hand encounters with art, so we hope that those of you in our area will visit as many of our museums as you can. For those who live outside of our area, we encourage you to seek out first-hand art experiences near you.

### **MASS MoCA**

#### **Kidspace Gallery:**

***Curiosity* (June 23, 2012 – May 28, 2013)**

The Kidspace @ MASS MoCA exhibition, *Curiosity*, features nine internationally-acclaimed artists, whose work will arouse visitors' innate curiosity. Representing a wide-range of art materials, the installation explores themes about which many children (and adults!) are curious, including dinosaurs, heroes, ninjas, cowboys, monsters, and fantastical environments. The Bigfoot Art Cabaret, our art-making studio, serves up inspiring art materials for visitors to explore at café-style seating.

Kidspace @ MASS MoCA, a child-centered art gallery and hands-on studio, presents exhibitions and educational experiences in collaboration with leading artists. Major season support is provided by the National Endowment for the Arts and the Anne R. Avis and Gregory M. Avis Fund. Additional support by the Milton and Dorothy Sarnoff Raymond Foundation, and Alice Shaver Foundation in memory of Lynn Laitman; the William Randolph Hearst Foundation; the George D. and Valerie P. Kennedy Fund at The Chicago Community Trust; and the Berkshire Bank Foundation - Legacy Region.



Colin Boyd, *Resurrecting the Elephant Bird*, 2007, foam, plywood, steel, and plaster



Michael de Broin, *Tortoise*, 2012, 12 picnic tables

#### **Main Galleries:**

***Oh, Canada* (May 26, 2012-April 1, 2013)**

***Invisible Cities* (April 14, 2012-February 4, 2013)**

Have you ever been curious about a place you have never been to or that may not even exist? In *Oh, Canada*, explore the vastness of Canadian creativity in work that illustrates real and imagined landscapes and communities, as well as the overwhelming expanse of the Arctic wilderness. *Invisible Cities* affords the opportunity to investigate many fantastical places that become seemingly real places in the artists' renditions.





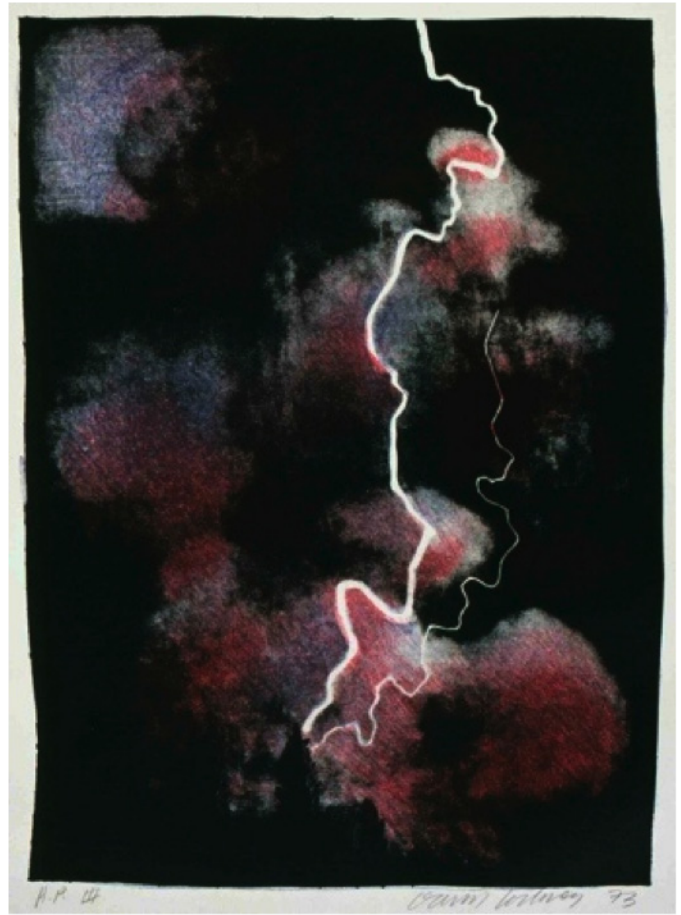
Peter Paul Rubens, *Tiger, Lion, and Leopard Hunting*, 1616-1618, oil on canvas.

## **The Clark**

### ***Kidspace @ the Clark:***

#### ***Lions and Tigers and Museums, Oh My!* (November 10, 2012 – March 31, 2013)**

A single image can spark curiosity that leads in many directions. Inspired by Peter Paul Rubens's enormous painting *Tiger, Lion, and Leopard Hunting* (in the collection of the Musée des Beaux-Arts in Rennes, France), visitors will explore this image and the many questions it raises: Who will be victorious? Could this animal hunt really have happened—and did it? What events or personalities caused Rubens to paint this picture? What problems did Rubens encounter when painting such a big picture so very long ago? This exhibition will include a number of hands-on activities. A visit to our *Clark Remix* exhibition in our permanent collection galleries is a natural complement to this Kidspace @ the Clark experience.



David Hockney (British, b. 1937), *Small Study of Lightning*, 1973, lithograph, 19¼" x 16 ¼", Edition of 75 © David Hockney/Gemini G.E.L., Gift of Frederick M. Myers, Class of 1943.

## **WCMA**

### ***Kidspace @ WCMA: Artistic Curiosity* (November 10, 2012 – April 21, 2013)**

Explore the work of a wide variety of artists who have followed their own sense of curiosity. Artist's sketches reveal a curious mind at work, while other works showcase experimentation with the art-making process itself, like Ed Ruscha's prints made with pie filling and chocolate syrup. Some of the artworks investigate intriguing aspects of the natural world, from the structure of plants to forces of lightning and electricity. Still others inquire how to represent the hidden inner life of the emotions and the mind. A visit to our permanent collection and other special exhibitions would enhance your visit to the Kidspace @ WCMA.

# CURIOSITY

## CLASSROOM ACTIVITIES

### **Can You Be as Curious as a Four-Year-Old?**

Asking questions is an essential part of following your own curiosity, yet we often ask students to think of answers rather than questions.

This game helps students flex their question-forming muscles.

Ask students to focus on a simple, everyday object—an animal cracker, for example—and come up with as many questions as possible about that object. For **younger students**, pick one object for the whole class to focus on together. **Older students** can work together or individually. If all students are silently thinking of questions about a single object, compare them at the end to see what kinds of questions can be asked.

Tips:

- Review the difference between a question and a statement, as needed.
- Encourage a variety of question words: Who/What/Where/When/Why/How.
- Challenge **older students** to come up with a certain number of questions per question word. Review your list of questions and reflect on which ones are most interesting and why.

Extension:

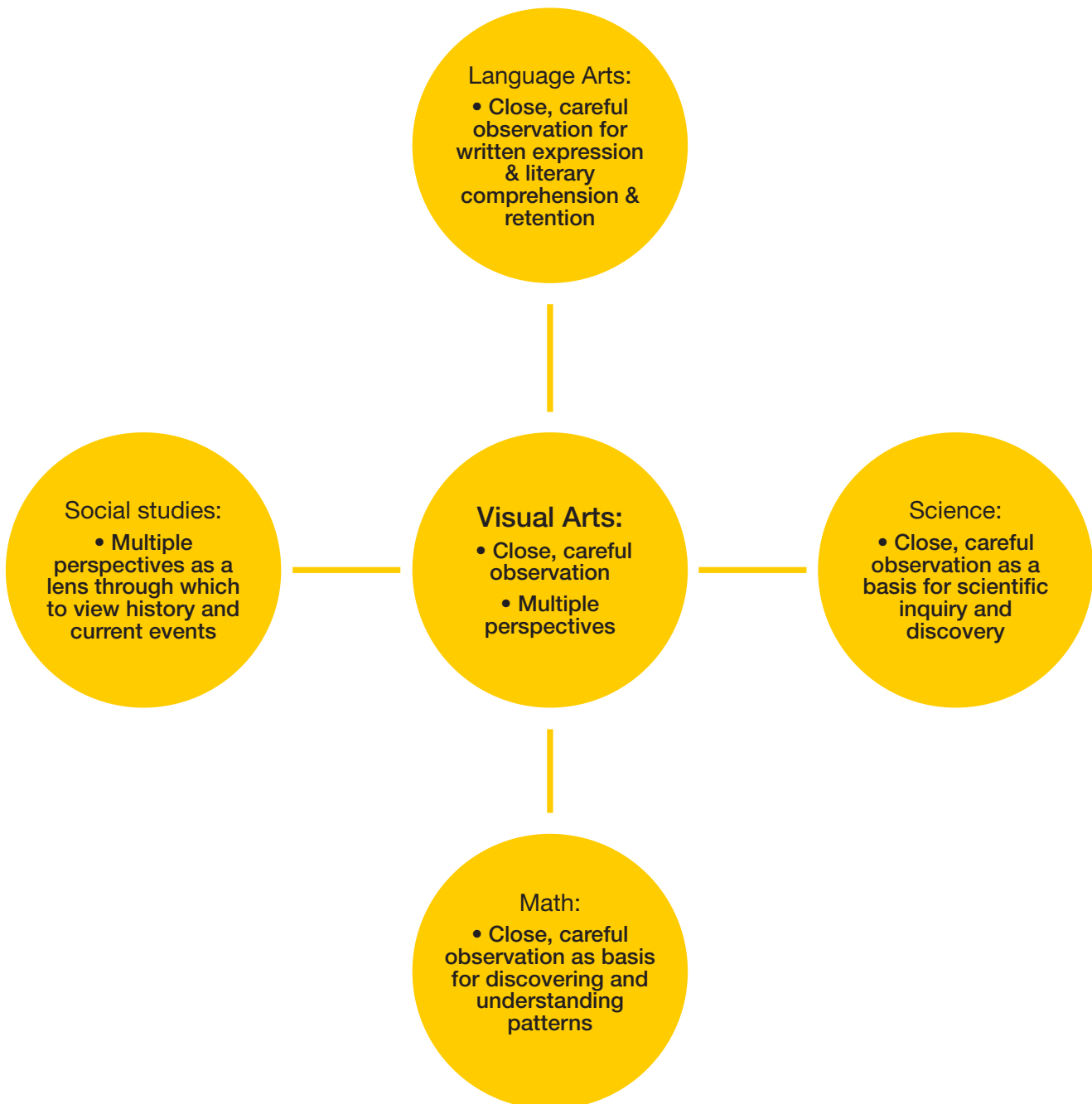
You can turn the project into a Jeopardy-like game show. Divide students into teams, but rather than prompting them with answers like in the show, give them an object, word, or concept. How many questions can each group come up with in 2 minutes? 5 minutes?

# ARTS-CENTRIC

## CURRICULUM CONNECTIONS

The two techniques natural to the visual arts—**observation** and **perspective**—are just two of the many ways to look at art, but they are well suited to the cultivation of curiosity in general, both among child and adult artists.

We will apply these approaches first to the visual arts, and then to the other academic disciplines as well; how can they extend to non-academic scenarios?



## VISUAL ARTS: OBSERVATION

A raisin is just a raisin, or is it?:

**Close, careful observation** plays a vital role in the arts as well as serving as a jumping off point for curiosity; conversely, both a work of art and curiosity itself may invite close observation and inspection. Consider Georgia O’Keeffe’s large-scale close-up paintings of flowers. Her nearly microscopic view of flower petals exposes geometries and colors that are easily overlooked at a more conventional viewpoint.

*Try these activities to hone observation skills:*

### **All Grades: Mindful Observation**

Start off with a mindful observation exercise. Give each child a raisin, and ask them to spend a whole minute looking at it. What do they notice? What kinds of patterns and shapes can be found in the texture? What colors are in the raisin? After they have exhausted all of the possible observations that can be made, have them eat the raisin slowly. First they should place it in their mouths and move it around before chewing and swallowing. Ask them to pay attention to the texture, taste, and reaction that is happening in their mouths. Does it taste different having spent that much time observing how it looks?

### **All Grades: Art Observation**

Next, have students repeat the observation activity with this image of the lion from the Kidspace @ the Clark exhibition, *Lions and Tigers and Museums, Oh MY!* Have them look at the image in silence for one minute; then, encourage them to share as many things as possible that they have noticed, both about the lion and the image. You might write a list of all of their observations. After students have run out of things to say, ask them what they wonder about this lion based on their observations. Keep a list of their questions to bring with you when you visit the Kidspace @ the Clark.

### **All Grades: Art Project**

Turn your students’ attention to their own hands. Have them spend a minute looking at their own hands, noticing every line, every freckle, all the colors and textures, and so on. After they have finished observing, have them trace their hands on a piece of paper and draw all of the details they noticed while they were looking at their hands.



Taxidermy African Lion, Frank J. Zitz Co.



## VISUAL ARTS: PERSPECTIVE

### Every picture tells a story (Grades 3-8)

**Perspective** is another fundamental element of the visual arts: in the most literal sense, it is the point of view at which an artist studies an object, but it can also be multiplied or deconstructed—think Picasso! His curiosity led him to become one of the founders of Cubism, but this kind of visual curiosity is applicable to student artists as well:

- Do things look different when you change point-of-view (from the front to the side, to from a birds-eye view)?
- Is a partial view of an image able to give you enough information to form a complete story? Why or why not?
- How does exploring multiple perspectives increase your curiosity about an object?

This activity explores how a point of view can inform our opinions and how altering your point of view can revolutionize those opinions.

Break your class into four groups. Give each of the four groups one of the following images that they will see when visiting Kidspac @ MASS MoCA. Don't let them see the other ones! Tell them that their images are details from a larger image, and have them spend five minutes constructing a narrative for their image, considering questions such as: What's happening? Who is involved? What is the context? Where is it taking place? etc.







Muir Vidler,  
*Isobel Varley*, 2001



### All Grades: Art Project

After discussing the effect of perspective on narrative with your class, have students create “exquisite corpses” (see image).

- Give each student a single piece of paper.
- Fold the paper in half, and then in half again. Older students can fold the papers themselves, but you may want to pre-fold paper for younger groups.
- Unfold to spread out the full sheet of paper.
- Each student draws a head on the top quarter of the paper.
- Fold the top quarter of the paper back to hide the head.
- Pass your paper to another person, who draws a torso in the next section of the paper. Fold this section back to hide the torso and pass to another person.
- Continue this process, drawing legs in the third section and feet in the bottom section.
- Unfold the paper to see the drawings as a whole. What did they create?

What else, besides a human figure, can be created this way? Try making exquisite buildings, animals, plants, and so on.



Muir Vidler,  
*Danny Lynch, the Great Stromboli*, 2001

After they have completed their stories, show them the images as a whole: Have a class discussion based on how seeing the whole picture changes the stories that they have created.

- Ask one person from each group to relate the original story for each fragment.
- Is there anything in the picture as a whole that makes the story impossible? Is there anything that could fit into the original story?
- Compare the stories of the two groups that had a fragment from the same photograph. Are the stories different? How are they different?
- How can these fragments inspire such different stories when they come from the same image?
- How does this experience relate to other situations, in the classroom or outside of school?

## LANGUAGE ARTS

In this activity, investigate how observation and perspective function in both expressive and receptive literary endeavors. Mystery stories, in particular, stimulate curiosity—there is a reason they are often called “page-turners!”

### Grades 5-8: What Makes a Good Mystery Story?

As a class, create a list of literary devices that mystery writers use to craft their stories. How do these literary devices make a mystery a *good* mystery? What observations helped to solve the mystery? How does a cliffhanger or a particular point-of-view inspire curiosity? How can these devices be used outside of the mystery genre to encourage the reader’s desire to keep reading?

### All Grades: Classroom Mystery

Create a mysterious situation in the classroom; feel free to get as involved as you want! You can simply introduce a bizarre object into the space, rearrange the classroom in a strange way, or if you are feeling more ambitious, set up a treasure-hunt scenario with clues. This will serve as a writing prompt for your students (or a story-telling/illustrating prompt for PreK-2). Ask them to make observations about the object or the situation based on visual properties, and write a mystery story for how the situation came to be. Encourage older students to include the literary devices discussed during the reading exercise.

Suggested reading list of mysteries and mysterious stories to inspire curiosity in your students:

#### Pre-K-2

- Aesop’s Fables
- Fairy tales
- Randolph Caldecott
- D’Aulaire
- Harold and the Purple Crayon
- Curious George
- Maurice Sendak
- Mother Goose nursery rhymes

#### 3-4

- Myths and folktales (Greek, Roman, Norse, Asian, African; of indigenous peoples)
- Stories about King Arthur & Robin Hood
- L. Frank Baum
- Elizabeth Coatsworth
- Lewis Carroll
- Mary Norton
- *Encyclopedia Brown* series by Donald Sobol
- *From the Mixed Up Files of Basil E. Frankweiler* by E.L. Konigsburg

#### 5-8

- Fairy tales, fables, legends
- Edgar Allen Poe
- J. K. Rowling, *Harry Potter* series
- Arthur Conan Doyle
- C. S. Lewis
- J. R. R. Tolkein
- Philippa Pearce
- Lemony Snicket

## **SOCIAL STUDIES**

Curiosity about other perspectives is crucial in interpreting the world around us. Viewing and interpreting an event, whether historical or contemporary, through the lens of another's experience helps foster understanding and cooperation. We are able to analyze situations with a greater insight and tolerance if we can put ourselves in the shoes of those experiencing the situation, be it a politician and his/her opponent running for office, a pilgrim settling in Massachusetts in search of religious freedom or the American Indians who were already there, or a classmate with whom a student has a conflict.

This activity focuses on the process of forming an opinion and how to articulate that opinion. This process is a cyclical one, spurred by our experiences, which are in turn fueled by our curiosity. Greater exposure to information and situations leads to a reevaluation of previously held opinions, which urges a person to research more information about the subject and to listen to others with first-hand or greater knowledge of the subject, prompting further conclusions—and so on and so forth.

### **Getting to Know You: A Shift in Perspective Grades 3-8:**

Ask students to choose a person in the community or historical figure to write about. First, students will make observations from afar about that person (a teacher, classmate, family member, community member, etc.). Then students will either interview their person or read a biography to gain greater insight into his or her work, experience, personality, and point of view. For the final write-up, students will assess how the interview/biography affected their pre-interview observations:

- Did learning more about this person change the way the student looked at appearance?
- Did understanding more about the person's history alter the student's opinion of him or her?

### **Grades PreK-2:**

This activity can be adapted for younger students as well. If students are learning about community members or different occupations, have a class discussion in which students share what they already know about a policeman, fireman, principal, etc. (or ask them to illustrate their idea of that person). Then ask a community member who works in that occupation to come talk to your class, sharing why they decided to pursue that career and/or what other things they like to do. After the class visit, hold another discussion in which students share what they learned about this person (or again, have them illustrate a new portrait of that person and compare it with the original).



## SCIENCE

Observation of the physical world is at the core of what drives scientists to discover. The scientific method itself is a direct and more formal iteration of curiosity: observe (look closely), hypothesize (ask a question and make a guess), experiment (find ways to discover the answer to your question), evaluate (find the answer and/or discover new questions), record (share).

Observation and curiosity are central to the goals of the Massachusetts Science Curriculum Framework. In grades PreK-2, students' natural curiosity "leads them to observe, collect, and record information..." whether it is information about the weather, insects, plants, or the stars. Students in grades 3-5 are encouraged to "generate questions, investigate possible solutions, make predictions, and evaluate their conclusions."



Detail of Unknown  
(Indian, Rajasthan),  
A Study of Three Flowers,  
late 18th century,  
opaque watercolor on  
paper, Bequest of  
Mrs. Horace W. Frost.  
Williams College  
Museum of Art, 91.15.52.

### All Grades: Object Inquiry

Bring in an object related to a unit of science study in your class. It could be as simple as a leaf, a shell, or an orange. Then ask students to generate as many questions as they possibly can about the object. Keep a class list of questions on the board. As a group, figure out how to further explore each question. Discuss how different questions call for different ways to investigate (e.g., looking with a magnifying lens, using the 5 senses, watching how things change over time, measuring, conducting a test, reading, etc.).

### Grades 3-5: Observation Game

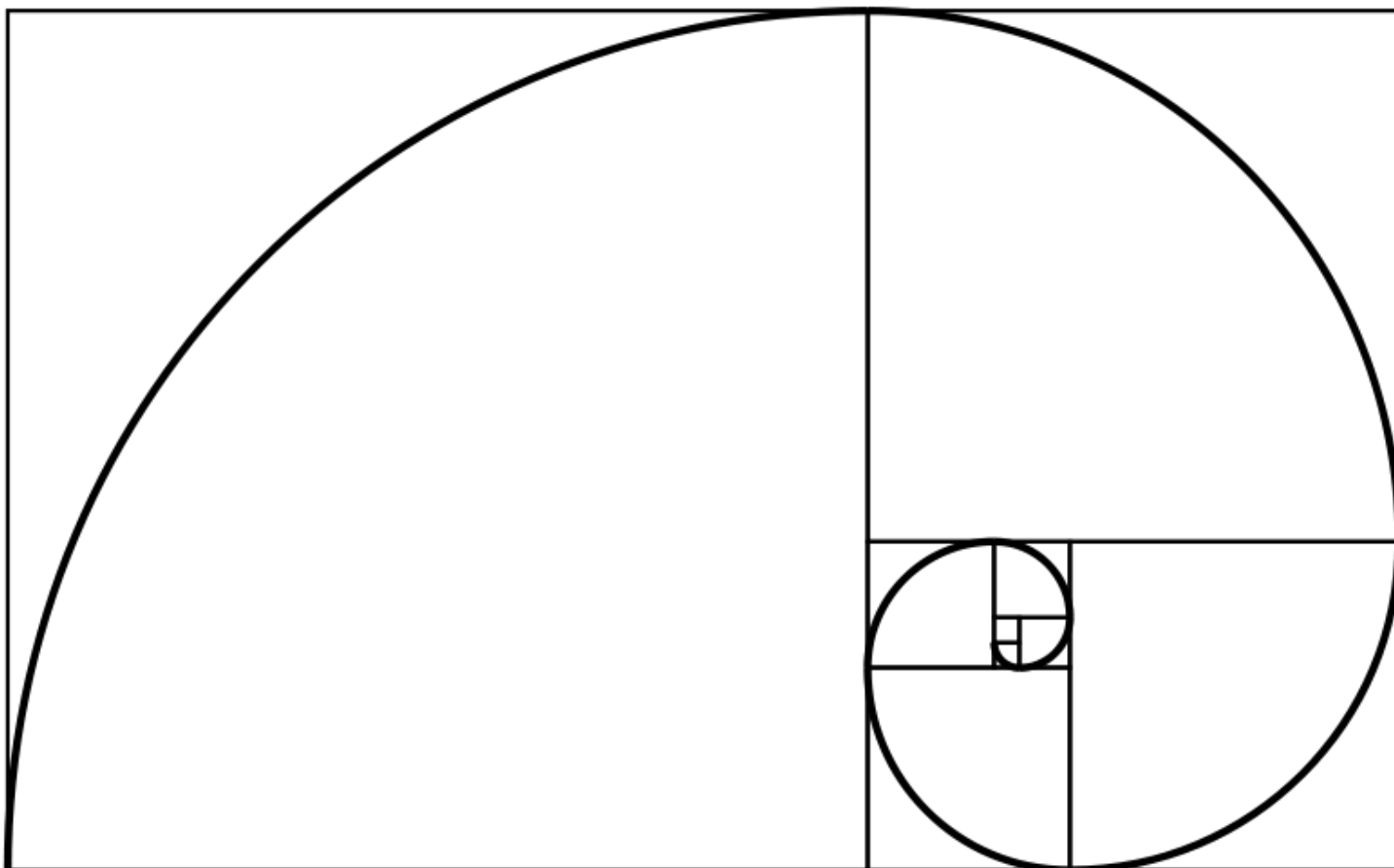
Bring in a group of leaves or rocks, enough for every other student in your class. Ask students to work with a partner. One partner closes his or her eyes and listens, while the other describes their object with as much detail as possible, thinking about what makes their object unique and different from the others. Collect all objects. Then invite the listeners to view the group of objects and guess which one was theirs (checking their guesses with their partners).

### All Grades: Design an Experiment

For a truly curiosity-themed lesson, ask your students to come up with the experiment themselves, start-to-finish. What is it that they are curious about? Stars, anatomy, insects, fossils? Then, with your guidance, help them design and implement their own experiments. They do not have to be successful! Part of the discovery process includes learning what *doesn't* work, as well.

## MATH

Mathematics also benefit from the adoption of an alternative viewpoint and close, careful looking. By observing closely and with attention to detail, we are able to identify patterns that may occur both in nature and in the human-made world—it is through this close observation that mathematicians recognized the Fibonacci sequence in pine cones and artichokes, for example. How does a mathematician’s curiosity enable him or her to conceive of new concepts and theorems? How does recognizing a pattern aid in calculations?



### **Observing Patterns**

#### **Grades PreK-2:**

Give students a series of patterns to identify. Stress the importance of looking closely at the objects: how many sides does that shape have, how big is that coin compared to another, and so on. Then, have your students design their own patterns, using combinations of numbers, coins, or shapes. Emphasize the process of recognizing patterns:

observe → identify individual elements → find repeating elements → describe the sequence

#### **Grades 3-8:**

How can a more advanced study of patterns and geometry benefit from this same kind of close, careful observation?



# **MASSACHUSETTS LEARNING STANDARDS**

The activities described in this curriculum can meet many of the Massachusetts Learning Standards. Below are listed specific standards from the Massachusetts Curriculum Frameworks that can be applied to the activities (though not all will apply every time—it depends on how you implement the projects!).

## **Visual Arts:**

- 1.1 Use a variety of materials and media.
- 1.2 Create artwork in a variety of two-dimensional [and three-dimensional] media.
- 2.5 For pattern and symmetry explore the use of patterns and symmetrical shapes in 2D and 3D works. Identify patterns and symmetrical forms and shapes in the environment and artwork. Explain and demonstrate ways in which patterns and symmetrical shapes may be made.
- 3.1 Create 2D and 3D artwork from direct observation.
- 4.1 Select a work or works created during the year and discuss them with a parent, classmate, or teacher, explaining how the work was made, and why it was chosen for discussion.

## **Language Arts:**

### *Reading Standards for Literature:*

- PreK.10 Listen actively as an individual and as a member of a group to a variety of age-appropriate literature read aloud.
- K.9 With prompting and support, compare and contrast the adventures and experiences of characters in familiar stories.
- K.10 Actively engage in group reading activities with purpose and understanding.
  - 1.1 Ask and answer questions about key details in a text.
  - 2.1 Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text.
  - 2.6 Acknowledge differences in the points of view of characters.

4.6 Compare and contrast the point of view from which different stories are narrated, including the difference between first- and third-person narrations.

5.6 Describe how a narrator’s or speaker’s point of view influences how an event is described.

### *Writing Standards:*

Write narratives to develop real or imagined experiences or events using effective technique, well-chosen details, and well-structured event sequences.

## **Social Studies:**

- PreK-K Living, Learning, and Working Together –PreK-K.6 Identify and describe family or community members who promote the welfare and safety of children and adults. PreK-K.8 Give examples of different kinds of jobs that people do, including the work they do at home.
- 4.21 Describe the diverse nature of the American people by identifying the distinctive contributions to American culture

## **Earth & Space Science:**

- PreK-2: 1 (observation), 1.1 (identification), 5 (lists of what you see)
- 3-5: 2 (observation of physical properties of minerals, can be applied), 4 (observing sand), 13 (solar system)
- 6-8: (fossils)

## **Mathematics:**

- K.N.3 Identify positions of objects in sequences;
- K.P.3 Identify, reproduce, describe, extend, and create color, rhythmic, shape, number, and letter repeating patterns with simple attributes.;
- 2.P.1 Identify, reproduce, describe, extend, and create simple rhythmic, shape, size, number, color, and letter repeating patterns.
- 2.G.1 Describe attributes and parts of two- and three-dimensional shapes.
- 8.G.7 Identify three-dimensional figures by their physical appearance, distinguishing attributes, and spatial relationships.

## PLANNING A VISIT

Visit one, visit them all! When making your reservations, please let staff know that you are interested in exploring the Kidspace Curiosity theme, and let us know which of the three museums you plan to visit. Connections to the Curiosity theme can be made in all three museums' programs, whether in special exhibitions or through permanent collections.

### **MASS MoCA**

#### **Kidspace:**

During class visits to the Kidspace gallery (2 hours), students work with education staff and interns to interpret the art on view by answering a series of questions, and to respond to the exhibition themes through their own artistic production. Kidspace also demonstrates multiple approaches to learning including yoga, movement, meditation, and guided visualization to better prepare students for gallery experiences.

#### **Main Galleries:**

School group visits (1 hour) to the Main Gallery exhibitions are also inquiry-based tours, focusing on changing exhibitions and long-term installations such as Sol Lewitt's wall drawings.

#### **School Visit Combo:**

Combine your visit to Kidspace and the Main Galleries (3 hours). Includes an hour-long tour of each, a snack, as well as an art project.

#### **Fees:**

*Kidspace Gallery only:* \$100 for a group of up to 25 students. Additional students are \$4/each.

*MASS MoCA main galleries only:* \$100 for a group of up to 25 students. Additional students are \$4/each.

*Combo:* \$200 for a group of up to 25 students and \$6 per additional student.

#### **Contacts:**

Rachel Heisler, MASS MoCA Education Coordinator at 413-664-4481 x8150 or at [rheisler@massmoca.org](mailto:rheisler@massmoca.org)

There is no fee for Kidspace partnership schools (North Adams Public Schools and North Berkshire School Union); contact Shannon Toye, Kidspace School Programs Coordinator at 413-664-4481 x8154 or at [stoye@massmoca.org](mailto:stoye@massmoca.org).

#### **Art Assembly:**

MASS MoCA offers a series of student programming, featuring live music, dance, storytelling, film, and theater performances that give regional schoolchildren the opportunity to see world-class performers in our state-of-the-art theater facilities. The Education Department develops standards-based curricula for all assembly performances. Contact the Performing Arts Department for a performance schedule, fee, and reservations: 413-664-4481 x 8109.

#### **Kidspace Public Hours:**

During the summer, Kidspace will be open to the public every day from 11pm to 4pm with art-making. After the start of the school year in September, Kidspace will be open to the public every day except Tuesday from 11pm to 5pm. Art-making will take place on weekends and school holidays.

#### **MASS MoCA Public Hours:**

Summer Hours (June 21 - September 4, 2012), 10 AM–6 PM every day

Fall/Winter/Spring Hours: 11–5pm, closed Tuesdays.

## **The Clark**

### **School Group Gallery Talks**

The Clark's outstanding collections of European and American paintings, sculpture and decorative arts connect with many areas of study for all ages and class levels. Teachers can discuss their interests with a Clark educator and book "tailor-made" interactive Gallery Talks to fit with a particular curriculum focus. Check out our website ([www.clarkart.edu](http://www.clarkart.edu)) for a list of suggested themes that may connect with your work in the classroom. The Clark's goal is to encourage students to look carefully at works of art, to think and talk about them, and to enjoy the process.

In addition to the individualized gallery talk option, the Clark offers featured talks each year (also listed on our website), highlighting a special exhibition or a particular focus on our permanent collection. *Lions and Tigers and Museums, Oh My!* (our Kidspace program) will be one of our featured talks this year, on view from November 10, 2012 – March 31, 2013.

**Fees:** School group talks and transportation to and from the Clark are free of charge.

**Contact:** Monica Henry at 413-458-0563 ([mhenry@clarkart.edu](mailto:mhenry@clarkart.edu)) or you can begin by filling out the form found here: <http://www.clarkart.edu/PDF/teacher-guidelines.pdf>

**Clark Public Hours:** The Clark is open daily in July and August, 10am–5pm  
Open Tuesday through Sunday, 10am–5pm,  
September through June

## **WCMA**

Our guided tours facilitate close looking and inquiry-based discussion of art and include hands-on activities. As a teaching museum, we are committed to finding innovative approaches to teaching and learning through art, making connections across disciplines, and using literacy strategies. Our goals are to build participants' knowledge of art, visual literacy and creative thinking skills, and confidence in expressing their points of view. Confirmation packets include standards-based educational material to assist with integrating the museum experience into the school curriculum.

**Fees:** All programs are free but reservations are required for guided tours, self-guided visits, and workshops due to limited space. Please contact us at least three weeks in advance. We can reimburse your school for transportation costs up to \$125 per visit.

**Contact:** WCMA's Education Office at (413) 597-2038 or email Joann Harnden at [Joann.Harnden@williams.edu](mailto:Joann.Harnden@williams.edu).

**WCMA Public Hours:** Public hours are Tuesday–Saturday, 10 am to 5 pm and Sunday, 1–5pm. Tours are available Tuesday–Friday between 10am and 5pm.

## A NOTE FROM THE KIDSPACE EDUCATION TEAM

The entire Kidspace education team would like to express deep gratitude to the directors of the Clark, WCMA, and MASS MoCA for having the vision and the resolve to create, nurture, and support Kidspace. In particular, we are indebted to the Clark and Clark Director Michael Conforti for providing essential resources time and time again, without which Kidspace simply could not exist. We are indebted to MASS MoCA Director Joe Thompson for his sense of conviction and dedication to the Kidspace mission, and to all of the support we continually receive from Williams College, all of our colleagues, and the North Adams and Northern Berkshire public school teachers and administrators.



Joann Harnden, Interim Director of Educational Programs, WCMA  
Rachel Heisler, Coordinator of Education Programs, MASS MoCA  
Laura Thompson, Director of Education + Kidspace, MASS MoCA  
Amanda Tobin, Kidspace @ MASS MoCA Senior Intern  
Shannon Toye, School Programs Coordinator, Kidspace @ MASS MoCA  
Ronna Tulgan Ostheimer, Head of Education, the Clark