WILLIAMS COLLEGE MUSEUM OF ART

Educator's Guide

Landscapes of the Mind

January 30 – May 2, 2010

Elementary, Middle, and High School Levels

WILLIAMS COLLEGE MUSEUM OF ART

encounterart

Cover image:
Katy Schimert
Untitled, 2006
paper, watercolor, Plastilina
Courtesy of the artist and David Zwirner, New York

Guide developed by
Joann Harnden, Coordinator of Education Programs
With thanks to Alex Schulte for researching children's books.

Overview

We look forward to your visit to the Williams College Museum of Art (WCMA). We hope this information will help you to integrate your museum experience with your classroom lessons.

The Tour:

Art & the Brain tours will explore the exhibition ***Landscapes of the Mind*: *Contemporary Artists Contemplate the Brain***. As students interact with prints, projections, embroidery, sculpture, and more, they will consider how different artists imaginatively envision the life of the mind. Opportunities for hands-on art-making in the galleries are incorporated into each tour, offering another avenue for student exploration of the materials, techniques, and concepts discussed during the tour. Younger students will use multiple senses to connect with the art. Older students will learn more about the scientific research that inspired the artwork. Storytime tours for classes in preschool through grade 2 will include readings of *Think, Think, Think* by Pamela Hill Nettleton and *Jack and the Dream Sack* by Laurence Anholt.

Should you have any questions or wish to share with us any of the creative work your students complete using this education material, we would love to hear from you. **Please let us know ahead of time of any areas of particular interest or special needs that your group may have.**

You can contact **Coordinator of Education Programs Joann Harnden** at **413-597-2038** or by email at **Joann.Harnden@williams.edu**.

Contents

INTRODUCTION TO THE EXHIBITION

Landscapes of the Mind:
Contemporary Artists Contemplate the Brain

This exhibition brings together two seemingly disparate worlds – the studio and the laboratory – to foster new connections between art and science. The four artists featured here, Susan Aldworth, Jessica Rankin, Katy Schimert, and Andrew Carnie, take as their starting point images produced by modern techniques that visualize the brain's dramatic interior. While neuroscientists create images for research that are at once technically revealing and aesthetically pleasing, these artists provoke further dialogue by asking larger questions about thought, memory, and consciousness, metaphorically opening a window on the mind.

The question of whether the self can be physically located intrigued Susan Aldworth after her experience as a neurology patient. Her drawings and etchings are based on cerebral angiograms, which depict blood flow through the brain. In her embroidered wall hangings, Jessica Rankin weaves together texts and symbols, using threads to map the neural processes of language, dreams, and memories. Katy Schimert's sculptures address the theme of brain as topographical landscape, exploring where body and mind intersect. Andrew Carnie's *Magic Forest* (located in the museum's Weston rotunda) recreates the life cycle of neurons, projecting images of brain cells on large diaphanous screens that viewers can walk between, as if they are inside a brain cavern.

These artists reveal distinctive approaches to interpreting the brain as both muse and source of creative output. Can neuroscience confront these metaphors and use them to guide future research on the mind? How can forging connections between these two worlds provide insight into the nature of creativity? The goal of this exhibition is to inspire dialogue about the connections between art and science. We invite you to explore the ideas raised by the exhibition and to continue your exploration back at school after your visit.

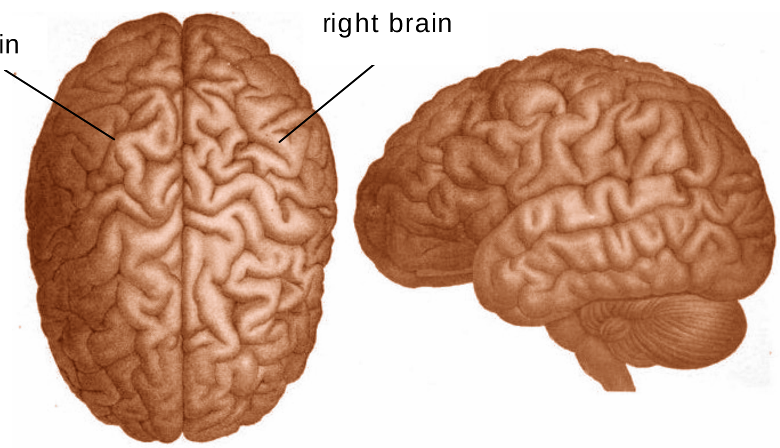
A collaboration between the museum and the Department of Psychology and the Program in Neuroscience, this exhibition was curated by Betty Zimmerberg, Professor of Psychology, and Kathryn Price, Interim Associate Curator. Curatorial assistance was provided by Williams College undergraduates Ethan Buchsbaum '10, Natalie Diaz '09, and Graduate Student in the History of Art Amy Bridgeman '11.

Source: Adapted from curatorial text.

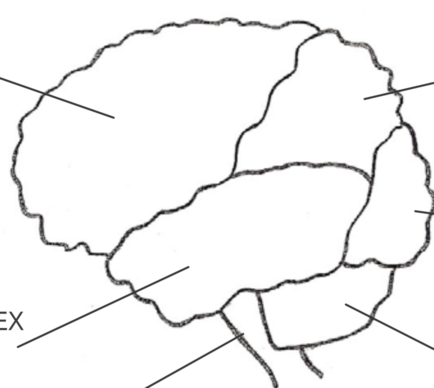
BACKGROUND INFORMATION

Brain Basics

The **nervous system** is made up of the brain, spinal cord, and the network of nerve cells (neurons) found throughout the body. Our brains are active not only when we think, read, and dream, but they also allow us to understand and react to information about our surroundings provided by our senses. The brain helps to coordinate our bodily movements, and even controls things that seem automatic such as breathing and heart beat. Most of the things we do everyday, like writing a letter or eating a meal, can only happen because many different parts of the brain are working together. Yet each area of the brain has its own special role to play. Scientists who study the brain are called **neuroscientists.** Neuroscientists think of the brain as being made up of two hemispheres (halves or sides). You may have heard of the "right side" of the brain and the "left side" of the brain.



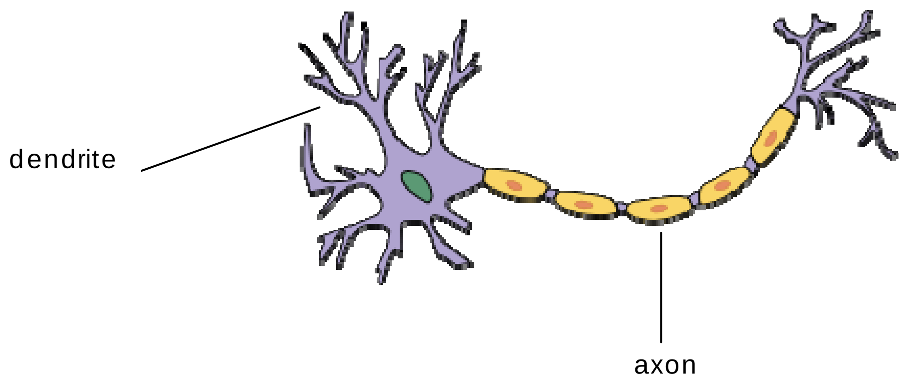
Each side of the brain seems to have certain areas of specialty. For example, the left side of the brain controls your right hand and the right side of the brain controls your left hand. The brain can also be thought of as having different structures or parts.



More Brainy Terms

Neurons (nerve cells) Specialized cells of the nervous system that transmit or send "messages" throughout the body. Neurons communicate with each other by sending impulses. The human brain has 100 billion neurons.

Parts of a Neuron



Dendrite The part of the neuron that brings information into the nerve cell.

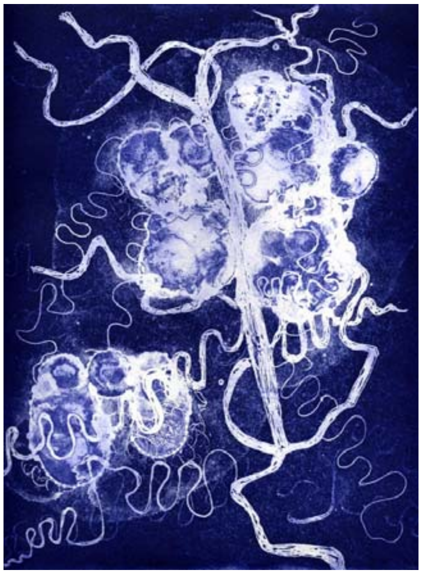
Axon The part of the neuron that sends information away from the nerve cell.

Synapse A tiny gap between neurons. Information is passed across this gap, from neuron to neuron, in the form of an impulse. The impulse is electrochemical (electricity created by a chemical reaction).

Additional resource: For more information on the functions of different parts of the brain or on the nervous system in general, the Neuroscience for Kids website provides a wealth of accessible resources: http://faculty.washington.edu/neurok.html.

The website was established and is maintained by Eric H. Chudler, Ph.D., Research Associate Professor of Neuroscience and Director of Education and Outreach at the University of Washington Engineered Biomaterials in Seattle, Washington.

Background on the Artists



Susan Aldworth (British, b. 1955)
Brainscape 18, 2006
etching and aquatint on paper
Collection of the artist

Susan Aldworth

In her artwork, Susan Aldworth focuses on the brain as a way to explore the nature of human consciousness. Working as an artist-in-residence has become central to Aldworth's practice – she has held residences at both the Royal London Hospital and King's College London, Gordon Museum of Pathology – as she "finds inspiration from looking directly into the brain."

Aldworth's interest in her subject matter stems from very personal experience. In 1999, she collapsed in her studio and was taken to the Royal London Hospital. She was fully conscious while the doctors searched for a diagnosis and "was looking into [her own] brain, in real time, live, on a monitor, while lying on an operating table." For Aldworth, the episode was highly significant for her future development as an artist: "I knew from that moment that I didn't have a soul. The mind and the body are one thing, and that is my brain. I became obsessed with finding out what neuroscientists know about the brain and with understanding what it is to be human nowadays.

"I began to observe brain operations on other patients, creating drawings based on cerebral angiograms[1]. I developed a visual language as an artist, using the authentic marks and lines of the brain – its veins and arteries – to develop work about personal identities. Subtly colored and often involving multiple overlaying of images, the resulting works document bursts of activity or

[1] A brain scan showing blood flow through the brain.

even the systematic process of cell death in the brain. I find the imagery of contemporary neuroscience to be uniquely beautiful and continue to develop close interactions with several researchers in the field."

"Blending personal and scientific narratives, I aim to challenge conventional definitions of portraiture through an examination of the internal structure of our brains, from the intricate details of the micro-circuits formed by billions of brain cells, to the output signals that the brain generates, which are recorded through the scanning process and reflect our conscious experience. The 'internal person' is a proper subject of portraiture in the light of contemporary neuroscience and the consequent understanding of what it is to be human, including how we articulate these findings via our own creative and expressive means. By the very nature of its subject matter, neuroscience offers a unique bridge between the disciplines of art and science in their pursuit of understanding human consciousness."
Source: Adapted from curatorial text.

Andrew Carnie (British, b. 1957)
***Magic Forest*, **2002
slide dissolve installation, 31 minutes
Collection of the artist

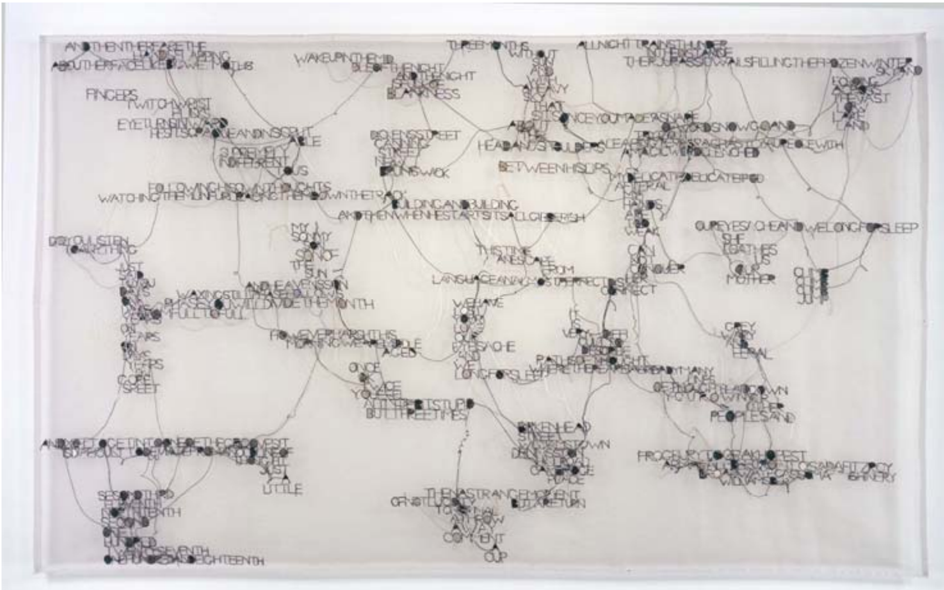
Andrew Carnie

Magic Forest is a dream-like journey through a sea of developing neurons, expanding in form and number. Starting with an empty skull and proceeding from immature to fully developed neurons capable of holding memories, the screens are increasingly filled with vibrant colors. The work ends with a neurotoxic event such as a stroke, the neurons disappear, blackness returns, and the cycle begins again. Each cycle lasts about thirty minutes.

"What inspired the work was an ever-growing awareness that the brain is not a static organ. I always remembered being told in my youth that the brain was 'fixed' after the age of 18 or 19 years of age and did not change, but the current research I looked at suggested a very different picture. I was particularly impressed by the work of Professor Eleanor Maguire at University College, London. Using fMRI brain scans of London taxi drivers, she discovered that as these men gained ‘Knowledge’ (a thorough acquaintance of London streets), their hippocampus (the brain’s center for mapping) proportionally grew larger. I was also impressed by the work of Dr. Richard Wingate on the developing brains of chicks. It was ongoing conversations with Richard that really made the development of *Magic Forest* possible. What I saw in his movies was the structuring of the brain and its neurons over time – an amazing flowing of neurons into their working places in the brain. It was incredible to think that despite there being only 22 days from conception to hatching, that within a few minutes of a chick pecking its way out of the egg it can stand, see, and move around. The mass of neurons that make this possible have been made and guided into place over this incredibly short time to allow the chick to do this.

“*Magic Forest* was made as a response to this amazing development, for what goes on in the chick goes on in us too – the proliferation of neuron cells, their movement, the refinement and organization of the cells within the brain and its continuation over our lifetime. The work references all these changes as the projected images slowly sweep from one side to the other on the voile screens. The screens in a way correspond to the layers of the brain as seen in the sophisticated microscopes that let us see this world not visible to the human eye. It is fitting that the screens move as viewers pass, giving more life to the work. The end of the work is envisaged as a collapse of the brain due to a stroke or some other trauma, in order to let the cycle of life restart.

“I experimented with using images from Richard Wingate’s confocal microscope images and video but the images were not suitable for adequate manipulation. So all the drawings were completed by hand in Photoshop. This involved drawing the neurons in sequence in layers in one Photoshop file. Then these layers were distributed to the correct place in the sequence of 162 slides. Some slides would have a background layer and then on top of this some one to twenty neuron layers. I used as a basic background the ‘greeny-yellow’ luminescent ground from one of Richard’s images. The sagittal cross section of the skull used in the early sequence of the slides was from a large format photograph I took in the human dissecting rooms at Kings College London. When all the layers are in place the image is flattened in the computer and the file written out to slide film. All the drawing and work took me about four months to complete.”
Source: Adapted from curatorial text.



Jessica Rankin
(Australian, b. 1971)
Cloud From Silt, 2009
embroidery on organdy
Courtesy of the artist, White Cube London, and Carlier/Gebauer Berlin

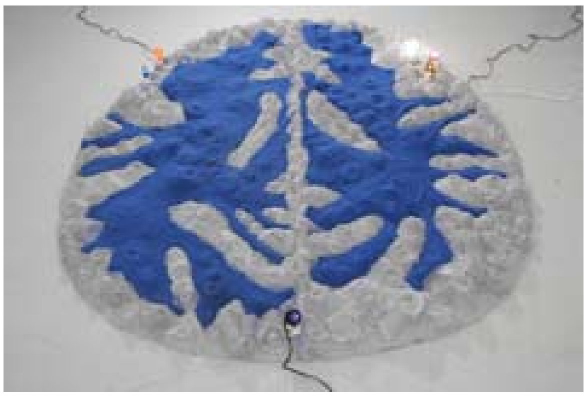
Jessica Rankin

Jessica Rankin embroiders large pieces of organdy with text and iconography that she calls "brainscapes." She created *Forest* based on a dialogue with Williams College neuroscientist Betty Zimmerberg. Zimmerberg sent Rankin images of actual brain slices as seen through the microscope. Rankin was particularly interested in the circuitry of the language area of the brain. As she wrote, "I am very interested in the visual processing of language. The negative space between letters evokes language without being as straight forward, and it also takes on the qualities of a land mass in a geographical map."

Rankin draws her sources from various texts and imagery, including her own writing, memories from her childhood, and other reading. "In *Empty Night* I have a reflected image, which is derived from a drawing by Leonardo da Vinci of a river and lake system. The sphere is based on a lunar eclipse that we saw in Michigan, a rich orange full moon." This piece and *Cloud from Silt* include texts based on a Babylonian creation myth.

"My work has always explored language, meaning, imagery, and the unconscious. My earliest works were purely text based – laboriously embroidered thoughts on translucent panels of cloth. I wanted the works to somehow embody the insistence and solidity of thought. As my work has evolved, the linearity and coherence of the thoughts has disintegrated. They no longer sit in regimented lines and solid blocks. More and more, I am trying to make the words and the thoughts reflect their nature – fragmented, blurry, layered, interconnected, meaningful, and meaningless. In their most recent manifestation, the sentences drip, drift, and form a complex interwoven web. The images in the pieces operate similarly. They emerge and dissolve and can be strident and ambiguous in the same moment. They react to and sometimes inform the words around them and then create meaning in their different combinations. I have also grown more interested in the space between the letters, the resonance of the negative space and the meaning it gives to the letters, words, and thoughts around it."

Source: *Adapted from curatorial text.*



Katy Schimert (American, b. 1963)
***Brain*, 1994-95**
wire mesh, straight pins, wool, sockets, and light bulbs
Williams College Museum of Art, Gift of Patricia and Frank Kolodny. M.2008.18.3

Katy Schimert

Katy Schimert has been thinking about the "invisible" body since her childhood, and her work captures her intent to convey how the internal brain mimics the external world. According to Schimert: "To me, the brain is a mysterious planet, with two hemispheres, up there in your head, where you cannot reach it or touch. Like the moon, it has strange powers over your body and soul."

The artist recalls: "My father was a doctor, a surgeon. He was a person from a generation unafraid to speculate on what might become of the future and he backed up his theories with bizarre and visually detailed information about the body and the mind's influence upon it. To him, the body was something to be opened, studied, cured, marveled at, and cherished. One day, when I was about 10 or 11, he told me that a woman's brain would evolve beyond that of a man's. I asked him why, and he said it was because of its structure and flexibility. My father's brother was the Hungarian neuroscientist János Szentágothai [a prominent neurobiologist who was president of the Hungarian Academy of Sciences and a member of Parliament]. I knew him a little and when he would come to visit he brought his watercolors and painted landscapes. As a college student I visited him in Hungary and he showed me volumes of large books of drawings that he made beginning in the late 1940s and continuing throughout his life. The drawings were abstract images of brains at a cellular level; the cells were connected by light and dark squiggly lines and he told me how the brain worked. I liked how he started with his imagination to establish a theory that would become well know in the future."

Brain

"*Brain* is based upon an article that was published in *The New York Times*. Using new brain imaging techniques, it showed how a woman's brain lights up in a greater number of areas, but a man's brain lights up more intensely in one or two places. The neuroscientists speculated that women had an easier time rerouting signals in cases of dyslexia."

Oedipal Blind Spot

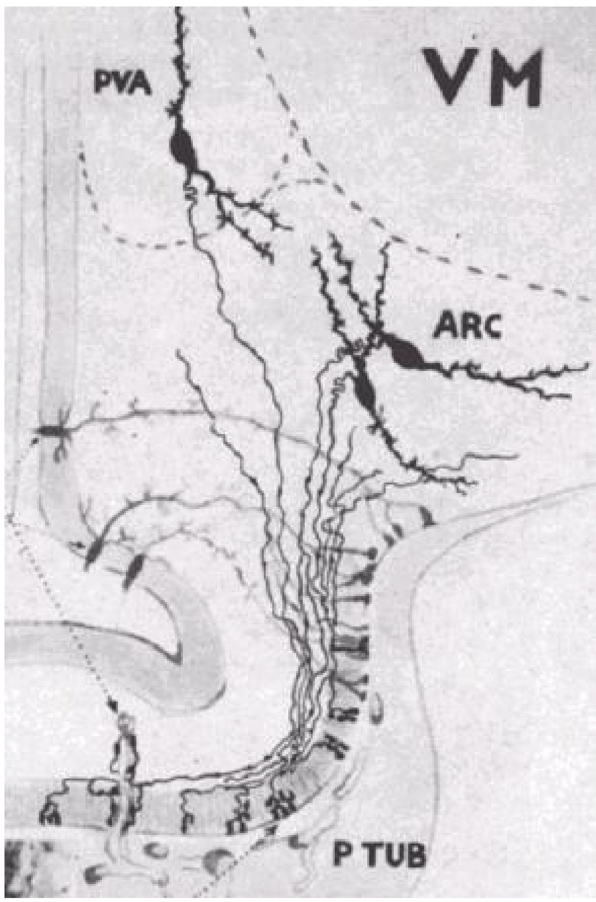
This piece, installed by the artist herself, is made of criss-crossing threads connecting two adjacent walls that meet at an angle; the threads traverse a brain-like mountain range of aluminum tape. The trope of criss-crossing informs this piece in several ways. As an artist, Katy Schimert was aware of the term *chiaroscuro*, meaning "the crossing of light and dark." From reading poetry, she became aware of the literary term *chiasmus* (from the Greek "to shape like the letter X"), which she describes as referring to the intersection of two characters whose fates become inverted. According to Greek oral tradition and the writing of Homer and Sophocles, Oedipus accidentally fulfilled a prophesy by unknowingly killing his father and marrying his mother. Separated from his parents at birth, he is unaware of the identity of his parents and cannot see what he's done, until a blind fortune teller reveals the truth to him. The tragic ending to Oedipus's story includes the tragic hero gouging out his own eyes, thus crossing fates with the blind prophet. Schimert sees her work as a map of Oedipus' journey, with the aluminum brain/mountains acting as a reflective blind spot, referencing the mountains where Oedipus was left as a boy and where he unknowingly murdered his father.

These motifs also resonate with the neuroscience behind human optics. A sort of inversion also takes place in our vision. Images that hit the retina at the back of the eye are actually upside-down. This upside-down image is transmitted to the brain, where it is translated so that we understand the image right-side-up. Each of our eyes has a blind spot, which is created by a lack of light-sensitive cells in a small area where the optic nerve passes through the retina at the back of the eye. Normally we don't notice these blind spots because our brains fill in the "holes" in our vision with information from the other eye.

Head with Opening

"The painted object fascinated me and in 2004, I began a series of heads to represent the sensations, dreams, and nightmares inside. I cut one open, to weave a brain as a funnel and plane that divide the face from the head. I suffer from migraines and feel my head as alien – surrounded by color and light. Recalling the image of Oedipus, the eye line, (blotched and bruised), is a horizon line, a fine opening between the face of expression and the buried secret of the brain."

Source: *Adapted from curatorial text.*



János Szentágothai (Hungarian, 1912–1994)
Drawing of the tuberoinfundibular region of the hypothalamus
Image courtesy of Katy Schimert

Making Connections

Art

This exhibition offers the opportunity to explore a single theme as expressed through a wide variety of media. Students will explore thought-provoking uses of space and unique materials, including projections on screens hanging in a darkened room; sculptural forms made of paper pulp, wire mesh, felt, and light bulbs; poetic embroidery that blends image and text; and etchings that employ an innovative marker-resist technique. The elements and principals of design play out in different ways as the artists make selective use of line, color, form, texture, and pattern to convey their impressions of the brain, creativity, thought, memory, and personality. Younger students will focus on connecting with artwork through the senses and through movement and vocalization activities. Older students can examine artistic choices regarding the use of positive and negative space and decisions about creating and negating the illusion of spatial depth. Students will learn how various artists have been inspired by scientific observations of the brain made possible by technological tools like brain scans. Tours will also delve into the ways that artists have utilized modes of abstraction, invention, and expression in the creative process as they imagine and give visual form to the workings of the mind. The tours include art-making activities in the galleries that offer students the opportunity to use unique materials to manifest their own creative visions of the mind at work.

Science, Health & Technology

The evocative and imaginative representations of the mind in this exhibition can add an exciting, experiential dimension to classes studying the nervous systems and its connection with other bodily systems, the senses, perception, or psychology. During tours, discussions can delve into the scientific research and the technological tools that informed and inspired these artists, in accordance with student interest and curricular goals. For example, Susan Aldworth's prints draw inspiration from cerebral angiograms, brain scans of blood flowing through the brain. Andrew Carnie's installation is informed by drawings of neurons by neuroscience pioneer Santiago Ramón y Cajal and through his collaboration with neuroscientist Richard Wingate, who takes pictures of neurons using a confocal microscope. Katy Schimert's three-dimensional floor-piece *Brain* (1994-5) is based on a groundbreaking study by neuroscientists Sally and Bennett Shaywitz demonstrating that men use a minute area on one side of the brain intensely in the process of decoding words, whereas women use areas on both sides of the brain. *Brain* recreates the female brain in the form of a topographic landscape and uses light bulbs to illuminate the areas of the female brain that are active when decoding words as shown on functional magnetic resonance imaging (fMRI) scans.

In addition, the exhibition connects with the technology “materials and tools” standards. The variety of materials utilized by artists in *Landscapes of the Mind* provides the opportunity for students to think about the properties and potential capabilities of different types of materials, from thread and fabric, to aluminum and paper pulp. Students will have opportunities to consider different materials, tools, and the processes involved with the physical construction of artwork. Students will be encouraged to consider why the artists may have selected certain materials, and how the effect of the work might vary with a change in materials.

English Language Arts

Tours for all grade levels include small-group conversations in the galleries. All students are encouraged to ask questions, share reactions, and to listen and respond to comments from their peers. This provides valuable practice in clearly articulating thoughts, tracking main ideas, making comparisons and contrasts, and citing detailed visual evidence to support ideas. WCMA’s approach also honors students’ prior knowledge, interests, and vocabulary.

For grades PreK- 2, the non-fiction picture book *Think, Think, Think* by Pamela Hill Nettleton (illustrations by Becky Shipe) and the illustrated storybook *Jack and the Dreamsack* by Laurence Anhold (illustrations by Ross Collins) will be read in the galleries during tours to build literacy skills. Tours for students in grades 8 – 12 will include a brief writing in the galleries during tours as a way for students to engage with individual pieces of art and to spark conversation.

Literary connections can also be drawn to several works in the exhibition. Katy Schimert’s three-dimensional wall drawing *Oedipal Blind Spot* (1997) explores the mind’s visual system, as well as the ancient myth of Oedipus. Andrew Carnie and Jessica Rankin both explore the idea of forests imbued with magic, mood, and memory. These unusual landscapes may suggest interesting connections to the enchanted or animated forests found in fairy tales like Hansel and Gretel, in Roman and Norse myth, in medieval romances and Shakespearean references, and even in modern works of fiction like *The Wizard of Oz* and *Lord of the Rings.*

STANDARDS

The following list presents examples of Massachusetts standards that relate to the material and activities covered in the tour.

Visual Arts Standards

1 Methods, Materials, and Techniques. Students will demonstrate knowledge of the methods, materials, and techniques unique to the visual arts.

2 Elements and Principles of Design. Students will demonstrate knowledge of the elements and principles of design.

3 Observation, Abstraction, Invention, and Expression. Students will demonstrate their powers of observation, abstraction, invention, and expression in a variety of media, materials, and techniques.

5 Critical Response. Students will describe and analyze their own work and the work of others using appropriate visual arts vocabulary. When appropriate, students will connect their analysis to interpretation and evaluation.

9 Inventions, Technologies, and the Arts. Students will describe and analyze how performing and visual artists use and have used materials, inventions, and technologies in their work.

10 Interdisciplinary Connections. Students will use knowledge of the arts and cultural resources in the study of the arts, English language arts, foreign languages, health, history and social science, mathematics, and science and technology/engineering.

English/Language Arts

1 Students will use agreed-upon rules for informal and formal discussions in small and large groups.

2 Students will pose questions, listen to the ideas of others, and contribute their own information or ideas in group discussions or interviews in order to acquire new knowledge.

20 Students will write for different audiences and purposes.

Science

All Grades: Scientific Inquiry Skills: WCMA's tours utilize an inquiry-based approach, meaning that discussions revolve around student observations, questions, and evidence-based interpretations.

PreK-2: Life Science

6 Recognize that people and other animals interact with the environment through their senses of sight, hearing, touch, smell, and taste.

PreK-2: Technology: Materials and Tools

1.1 Identify and describe characteristics of natural materials (e.g., wood, cotton, fur, wool) and human-made materials (e.g., plastic, Styrofoam).

1.2 Identify and explain some possible uses for natural materials (e.g., wood, cotton, fur, wool) and human-made materials (e.g., plastic, Styrofoam).

1.3 Identify and describe the safe and proper use of tools and materials (e.g., glue, scissors, tape, ruler, paper, toothpicks, straws, spools) to construct simple structures.

Grades 3 – 5: Technology: Materials and Tools

1.1 Identify materials used to accomplish a design task based on a specific property, e.g., strength, hardness, and flexibility.

1.2 Identify and explain the appropriate materials and tools (e.g., hammer, screwdriver, pliers, tape measure, screws, nails, and other mechanical fasteners) to construct a given prototype safely.

Grades 6-8: Life Science

6 Identify the general functions of the major systems of the human body (digestion,

respiration, reproduction, circulation, excretion, protection from disease, and movement, control, and coordination) and describe ways that these systems interact with each other.

<u>Grades 9 – 12: Life Science</u>

4.4 Explain how the nervous system (brain, spinal cord, sensory neurons, motor neurons) mediates communication among different parts of the body and mediates the body's interactions with the environment. Identify the basic unit of the nervous system, the neuron, and explain generally how it works.

4.7 Recognize that communication among cells is required for coordination of body functions. The nerves communicate with electrochemical signals, hormones circulate through the blood, and some cells produce signals to communicate only with nearby cells.

Health

<u>PreK-5</u>

1.1 Name the external and internal parts of the body and the body systems (nervous, muscular, skeletal, circulatory, respiratory, digestive, endocrine, and excretory systems).

1.2 Identify behaviors and environmental factors that influence functioning of body systems.

<u>Grades 6 – 8</u>

1.7 Explain the function of human body systems and how body systems work together.

<u>Grades 9 – 12</u>

1.11 Explain the impact of behavior and environment on failure of body systems (nervous, muscular, skeletal, circulatory, respiratory, endocrine, and excretory systems).

PREPARING FOR A VISIT

Preparation and Discussion

- Review the description of the exhibition and background material.
- Consider the possible curriculum connections and provide your students with relevant background before your visit.
- Inform students of what they will see and do at the museum, introducing key concepts through class discussion and/or activities.

PRE & POST-VISIT ACTIVITIES

Literacy Connections *Grades PreK-2*

For young students, reading picture books before a visit to the museum can help students to understand key concepts and vocabulary that may be used during a tour. Reading books after a visit can reinforce ideas and offer additional opportunities to analyze and discuss connections between words and art.

Think, Think Think by Pamela Hill Nettleton and *Jack and the Dreamsack* by Laurence Anholt will be read during tours. The following books also offer a variety of artistic expressions of the life of the mind, with a particular focus on dreams.

The Following Books Are Available Through the Central/Western Massachusetts Library System:

Non-Fiction

Aliki. My Five Senses. New York: Thomas Y. Crowell, 1989 (1962).
With simple images and illustrations by Aliki, the young boy in this book shares with readers the many ways he uses each of the senses in his everyday life.

Miller, Margaret. My Five Senses. New York: Aladdin Paperbacks, 1998.
This simple, oversized book of photo essays features children using each of the five senses and reacting to sensations both pleasant (smelling a big bowl of popcorn) and unpleasant (tasting medicine).

Fiction

Sendak, Maurice. Where the Wild Things Are. New York: Harper Collins Publishers, 1991.
This is the classic story of a young boy named Max who is sent to bed without supper for making mischief around the house while playing in a wolf costume. In his room Max imagines a wild forest and sea, and he sails to the land of the fearsome wild things, who proclaim him king.

Browne, Anthony. Willy the Dreamer. Cambridge, MA: Candlewick Press, 1998.
The fifth in a series of picture books by Anthony Browne about Willy the chimp. In this book readers follow Willy through a sequence of fantastic dreams in which he appears as Elvis Presley, a sumo wrestler, a ballet dancer, and so on. His dreams also lead him through strange landscapes reminiscent of the work of artists such as Winslow Homer and Salvadore Dali.

Banks, Kate and Georg Hallensleben (illus.). Close Your Eyes. New York: Frances Foster Books, 2002.
This book with painted illustrations in vivid colors tells the story of a tiger cub afraid to fall asleep. His mother reassures him with the thought that his imagination can help him see even more wonderful things when he is asleep than when he is awake.

PRE-VISIT ACTIVITIES

Mind Scrolls *Grades 3 - 12*

Students create quick drawings to begin thinking about how they conceive of the mind.

Goals

- To create imaginative visual expressions of what the mind is and what it does.
- To use color, line, and texture to express ideas about what it feels like when the mind is engaged in different types of activity.
- To consider the meaning of the terms *mind* and *brain*.

Standards

Visual Art 1, 2, 3, 10

Life Science 6 (K-8), 4 (9-12)

Health 1

Materials

- Colored pencils
- One mind scroll for each student

Procedure

1. Preparation: Make photocopies of the template and cut in half the long way. Each 8 1/2 x 11" sheet of paper yields two scrolls.

2. Hand out one template to each student. Explain that at the museum you will see the work of artists who try to show, through their art, what they imagine the mind is like when we are thinking, remembering, dreaming, and using our minds in other ways. Many of the artists featured in *Landscapes of the Mind* take inspiration from the work of scientists who study the brain using tools like brain scans. However these artists go beyond what they can see in the scans or under microscopes and use their imaginations to create art that suggests the feelings and experiences connected with the life of the mind. There is no right or wrong way to imagine and express what the mind is like.

3. Now your students will have an opportunity to create their own renderings of the mind. Hand out a scroll to each student. In the first head outline, ask students to draw whatever they imagine when you say the word "mind." They can color outside the lines as needed. Encourage them to go with their first thoughts. This is designed to be a relatively quick drawing exercise, with just a few minutes spent on each drawing. It is okay if the drawings look "sketchy" and unfinished.

4. After students have had time to complete the first drawing, ask them to draw what comes to mind when you say the word "brain."

5. When the brain drawings are complete, ask students to leave their scrolls on their desktops where they will be visible to other students. Ask everyone to stand and walk around the room to view other students' drawings.

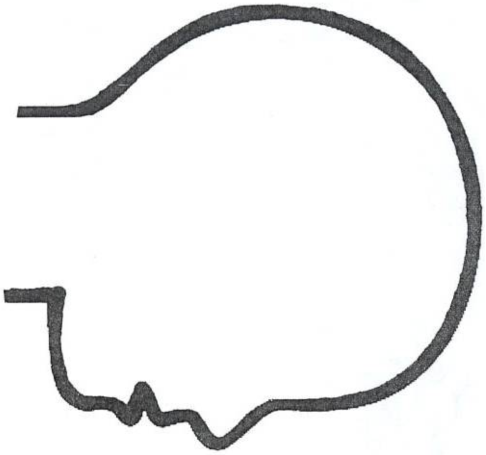
6. When everyone is seated again, ask students to discuss what they noticed. What were they thinking when they drew their own drawings? What did they notice about other people's drawings? How were the drawings of the mind and the brain different? How were they similar?

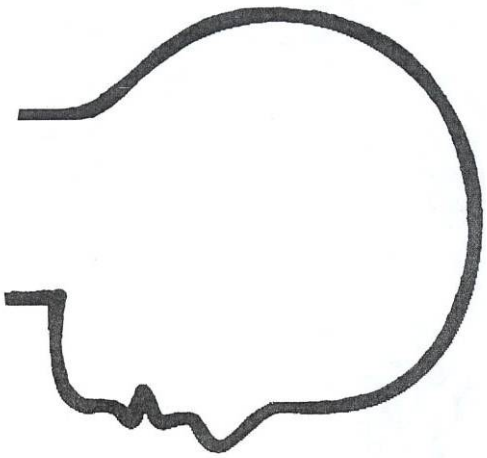
7. In the third head, ask students to draw the mind dreaming. Select your own prompt for the fourth head (ie., having an idea, figuring out a puzzle, doing math…)

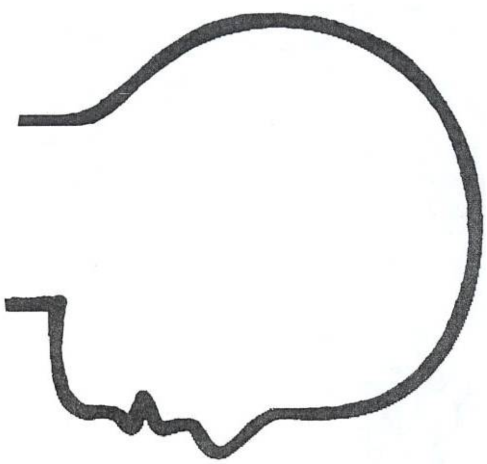
8. Ask students to share with a partner, in effect "reading" the "story" of their thoughts behind each of their drawings. This exercise will help students prepare for the imaginative way in which the *Landscapes of the Mind* artists have explored the visualization of the mind and its activities.

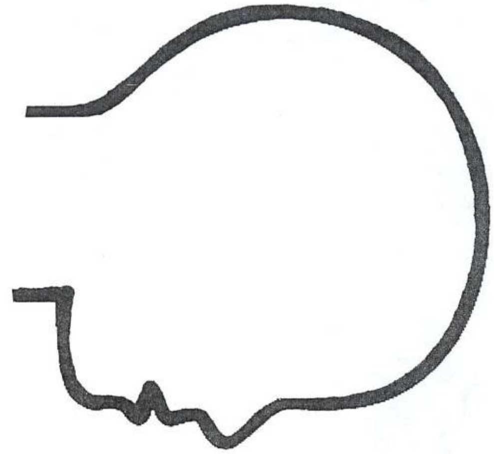
Extension:

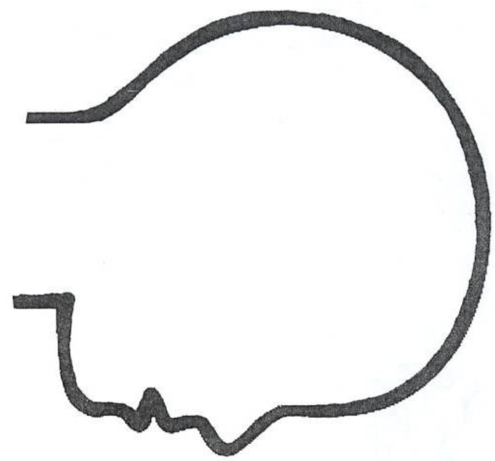
Creating a 3D model of a neuron or of the entire brain is a fun way for students to delve into the scientific body of knowledge about the mind, while engaging in visual, spatial, and kinesthetic modes of learning. The Neuroscience for Kids website (see recommended resources) offers many suggestions for different ways that students can create models of brain structures using materials that vary from clay or markers to beads and pipe cleaners. The directions are easy to follow and visuals are included, so a brief viewing will allow you to find the project that is most appropriate for your students.

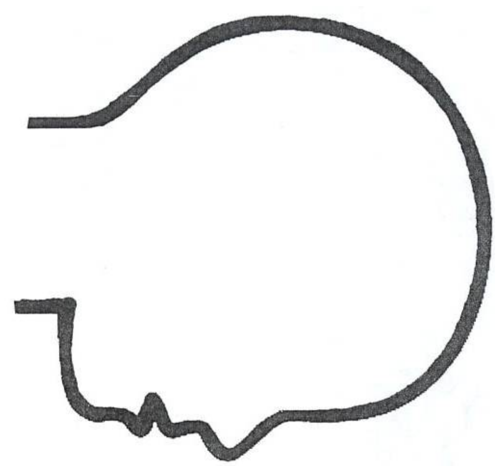


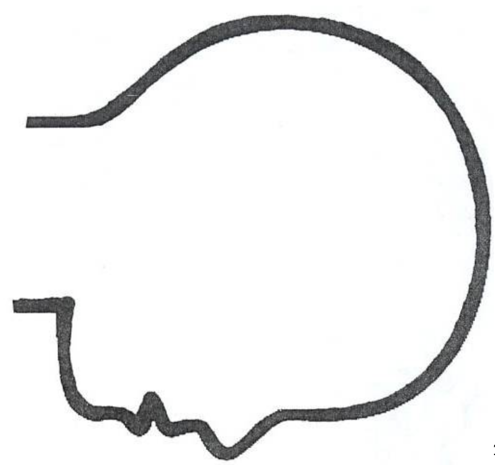












POST-VISIT ACTIVITIES

Sensory Science & Art Labs Elementary

Students explore the senses of smell, taste, and touch and their connection to the brain in these hands-on science labs and related studio art activities.

Smell and Taste: Students work with partners to test the senses of smell and taste. A follow-up painting activity features homemade scratch & sniff "watercolors."

Touch: Students test one another's skin sensitivity and then try their hand at drawing unseen mystery objects using only the sense of touch.

Goals

- To develop a deeper and more detailed understanding of the way our nervous system helps us to interact with our surroundings.
- To use the scientific process.
- To make connections between science and art.
- To create artwork that engages different senses.
- To experiment with mixed media.

Standards

Visual Art 1, 2, 3, 10

Scientific Inquiry, Life Science 6 (K-8), 4 (9-12)

Health 1

Smell and Taste: Science Lab Materials

Foods for taste testing *(slices of fruits or different flavors of jelly beans work well)*

Blind folds *(optional)*

Data collection sheet and pencil for each student

Smell and Taste: Science Lab Procedure

1. Explain that you will be experimenting with the senses of smell and taste today. Ask students what parts of their bodies they use for smell? What about for taste?

2. Explain that you will be doing an experiment to test the question: what happens to my sense of taste if I lose my sense of smell? Explain that they will be plugging their noses, closing their eyes, and tasting different flavors of jelly beans. Ask students to make predictions about what will happen.

3. Each student should work with a partner. One student will be the taster first, while the other student collects data. Then they will switch. The tasters should close their eyes (blindfold optional) and plug their noses while the data collector feeds them different flavors of foods, one by one. Jelly beans work well because they do not spoil and each of them has the same texture. After each tasting, the tasters should tell the data collectors what flavor they tasted (if any).

4. Hand out data sheets, pencils, and jelly beans or other food samples to the data collectors. To set up the data collection sheets, younger students can glue different colors of jelly beans in each row of the left column and place a check mark in the right column next to any beans that their partners could accurately taste. Older students can enter the names of bean flavors on the left and keep track of taster's responses on the right. After students have conducted the first round of tastings, they should switch roles with the new data collector beginning a new data collection sheet.

5. Discuss the results as a whole class. What did students notice? Was there any surprising data? What flavors could be tasted without the sense of smell? Which ones could not? Do students have theories about why this might be the case? What do they think would happen if they repeated the same test with their eyes closed and their noses unplugged? Or if they kept their eyes open but kept their noses plugged?

6. Review students' initial thoughts about which parts of the body are used for smelling and tasting. Ask if they would like to revise or add to their initial comments? What about the brain? How does that come into play?

Extension: Ask students to design their own experiment exploring a different question about the sense of smell or the sense of taste. Older students may carry out their ideas individually, with partners, or in teams. For younger students, solicit experiment ideas from the whole class, and then vote on one idea to try together.

Background Information

Tasting and smelling begin when molecules (small particles) float into the nose or are placed in the mouth. When the molecules dissolve in moist areas of the nose or mouth, they are detected by sensory "receptor" cells (so-called because they are the first to receive the stimulus from the environment). These cells send the information to the brain, via a pathway of neurons. The brain then tries to make sense of the information, making us aware of a particular smell or taste. In addition to information collected by the taste buds in the mouth, our brains also use information sensed by cells in the nose to identify tastes. About 70 – 75% of what we perceive as taste actually comes from our sense of smell.[2]

Additional resources:

The Neuroscience for Kids website, www.neuroscienceforkids.com, is a great resource for other sensory activity ideas. You'll also find printable mazes, word searches, optical illusions, and other lessons related to the brain, memory, nervous system, reflexes, and more.

[2] Newton's Apple: http://www.reachoutmichigan.org/funexperiments/agesubject/lessons/newton/tstesmll.html.

Food Tasting Experiment

Data Collection Sheet

Taster: ____

Data Collector: ____

Flavor	Response

Smell and Taste: Art Studio Materials

Blank paper & pencils

Packets of unsweetened Kool Aid

Water, cups, and paint brushes

Smell and Taste: Art Studio Procedure

1. Preparation before class: Mix each packet of Kool Aid with a small amount water. To vary the pungency of the scent, vary the quantity of water.

2. Explain to students that they will be able to use these special watercolors to create scented watercolor paintings. They should use one color at a time, washing the brush between colors. For each color, they should smell the wet paint first and then apply the paint to the paper in way that feels appropriate for the smell.

   The idea is for students to experience the scent and make visual associations freely. For example, powerful scents might appear as bright colors that take up large areas of the paper. Faint scents might be applied as small dots. Pungent or sour odors might have jagged edges or points.

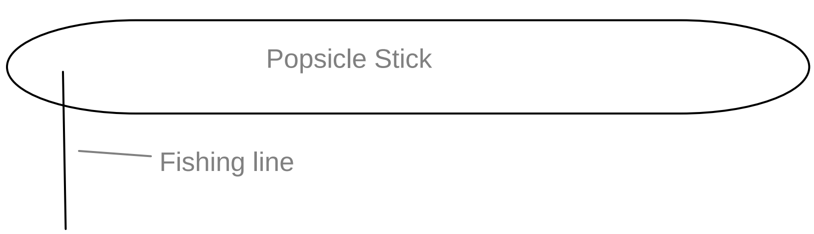
Touch: Science Lab Materials

A Von Frey hair for each pair of students (Popsicle sticks, monofilament, ruler, glue, scissors)

Data collection sheets and pencils for each student

Touch: Science Lab Procedure

1. Preparation: You may wish to make the Von Frey hairs ahead of time yourself. Older students can make their own (just allow time for the glue to dry before conducting the experiment). Measure and cut a 1.5 inch length of monofilament (fishing line) and glue it perpendicularly on to one end of a Popsicle stick. *Quick version: tape the fishing line to a pencil.*



2. Tell students that you'll be testing their tactile powers (sense of touch) today. Ask them if they think all parts of our body have equal tactile powers, or if some areas might be more sensitive than others.

3. Show students the tool they will be using—the Von Frey hairs. Ask for a student volunteer to help you demonstrate. Ask the volunteer to close his or her eyes. Hold the Popsicle stick and gently touch the back of your volunteer's hand with the fishing line until it just begins to bend. Ask the volunteer if he/she can feel it.

4. Hand out the data collection sheets. Each student will collect data about his or her partner. Looking over the list, they should predict whether their partners will be able to feel the hair as it touches each area listed on the data sheet. Students can record "yes" or "no" predictions in the prediction column.

5. Hand out the Von Frey hairs so that students can conduct the tests and collect data.

6. Discuss the results. How do the actual results compare with the predictions? How did the results vary from person to person? Why might different areas of skin have different levels of sensitivity?

7. Extension: Compare the response to Von Frey hairs made using different gauges of fishing line. You can also try a variation of this experiment using the two prongs of a paperclip to test two-point differentiation. Select a location like the forehead. Position the two prongs 2 mm apart and lightly touch them to the skin. Continue moving the prongs farther and farther apart until the subject can tell that there are two points touching their skin (not just one). For each area tested, student can note the final distance between the two prongs on their data collection sheets.

Background Information

The skin is the largest organ of the body. Like the mouth and nose, the skin has receptor cells that detect information about our surroundings. Skin receptor cells are sensitive to different types of stimuli such as texture, pressure, and temperature. Some areas of skin have many more receptor cells than others. For example, our fingers and lips have many more touch receptors than our backs. When a signal is sent to our brains along a pathway of neurons, then we become aware of the feelings that our skin cells detect.

Skin Sensitivity Experiment

Data Collection Sheet

Data Collector ____

Subject ____

Test Area	Prediction	Response
Cheek		
Back of the hand		
Nose		
Calf		
Shoulder		
Forearm		
Finger		
Upper Lip		
Forehead		

Touch: Art Studio Materials

Paper bags (one for each student) & mystery objects

Paper and pencils

Touch: Art Studio Procedure

1. Preparation: Select mystery objects and place one inside each paper bag. Objects with a distinctive silhouette and some surface details make the exercise interesting. Avoid overly-complex three-dimensional forms. Natural objects like rocks, sticks, seed pods, and leaves work well.

2. Ask students if they have ever drawn an object from observation—by looking at it. Introduce the idea that we can also observe objects and understand their shape and texture with our sense of touch.

3. Explain that each student will receive a paper bag with a mystery object inside. Demonstrate how to reach inside the bag and feel the object without looking at it. Model the process of exploring the object with your hands as you draw a picture of the object on a blank piece of paper. Reassure students that the goal is not to make a beautiful finished drawing. Instead, you are trying to get as much information as possible about size, shape, texture, and other details using just your hands.

4. Give each student a bag, paper, and a pencil. Give them time to draw their objects.

5. When they have finished their drawings with as much detail as possible, they can pull their objects out of the bags and compare them with their drawings.

6. Discuss student observations. What could they tell about their objects using only the sense of touch? How did the process feel? Did drawing from touch feel different than drawing from sight? How? Did anything surprise them when they were finally able to look at the mystery objects?

Similar activities can be found on:

Chudler, Eric C. Neuroscience for Kids, http://faculty.washington.edu/chudler/chtouch.html and http://faculty.washington.edu/chudler/receptor.html.

Scientific Inspiration Middle & High School

Students learn more about the scientific research that inspired the *Landscapes of the Mind* artists. Then students take on the challenge of creating their own work of art inspired by science.

Goals

- To further explore the creative process and its intersection with science.
- To learn more about a contemporary artist of interest from *Landscapes of the Mind.*
- To review science curriculum and to approach it from a fresh perspective.
- To create original artwork inspired by scientific research.

Standards

Visual Art 1, 2, 3, 10

Scientific Inquiry, Life Science 6 (K-8), 4 (9-12)

Health 1

Materials

Information sheets on scientific influence on *Landscape of the Mind* artists

[see "Background section" of this guide for artist statements; additional scientific information and images follow this lesson plan][3]

Assorted art supplies

Procedure

1. Break students into groups based upon their interest in one of the artists. Those most interested in Andrew Carnie should form a group, those interested in Susan Aldworth another group, and so on.

2. Ask students to read the background information that relates to their group's artist of choice, and then discuss within their groups. How and why do you think the artists were inspired by science? What elements of the scientific research do students remember

[3] *For a color version of this guide, visit www.wcma.org and click the link for education, then school programs.*

surfacing in the artist's work? What aspects of the work go beyond what can be seen in the scientific research?

3. Rotate students to different groups. Each new group should be made up of at least one student representing each artist, if possible. Each student should take a turn presenting to the other students what his or her group learned about their artist. After everyone has presented, students can discuss any connections or differences between artists.

4. Challenge students to create their own works of art inspired by a topic that they have explored in science class this year, using their choice of media. The Artist's Statement Worksheet below is designed to help students develop their projects and to write an artist's statement explaining the link between science and their artistic creation.

5. Critique Session: Once students have begun working on their art pieces substantially, hold a class critique. This is an opportunity for students to articulate the source of their inspiration and explain what they would like to convey visually in their work. Arrange the classroom space so that the whole class can view the work. Students can give one another feedback in writing or in the form of a group discussion. Students often need some guidance in offering useful feedback. Many teachers set a ground rule that eliminates judgment statements such as "I like/dislike…." Or "This is good/bad because…" Some helpful prompts include:
    - What stands out to you most at first?
    - Why do you think it stands out?
    - What else do you see?
    - What seems important?
    - How has the artist used 2-D or 3-D space?
    - What do you notice about the use of colors, value (light & dark), line, shape, size, texture or placement?
    - What kind of feelings and ideas does the artwork suggest to you?
    - What connections to science do you see?
    - What titles could you give this artwork?
    - What questions do you have?

6. Exhibition: Based on the critique experience, students may gain a new perspective on their work, which can inform the final stages of the creative process. When they

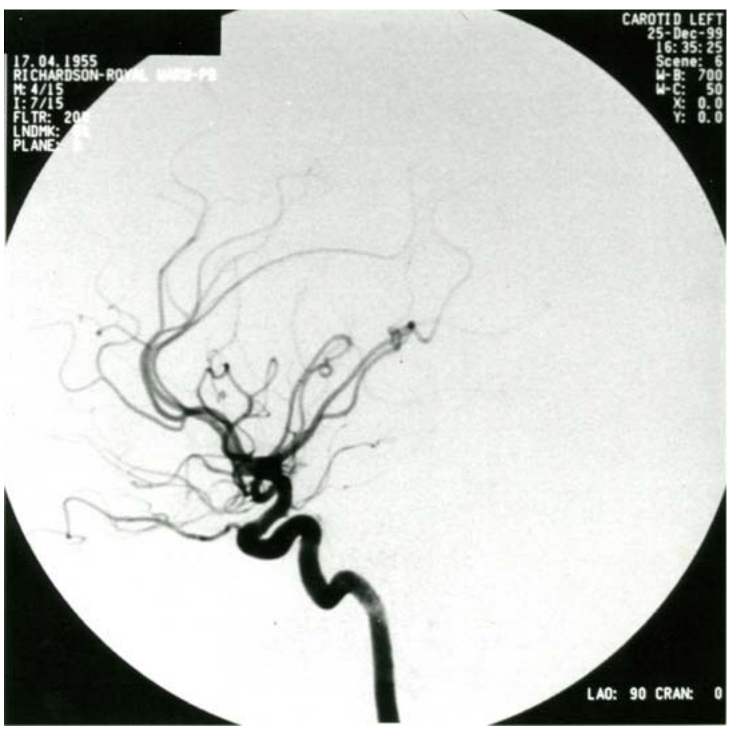
have completed their pieces, they can develop their notes from the artist's statement worksheet into a final version of an artist's statement, suitable for display next to their finished pieces. Mounting 2-D work will also add a level of finish to the presentation. The installation of an exhibition in a public space can be a valuable learning experience for students as well. Students will need to consider the content, format, and design of labels identifying their work. Fruitful discussions may also arise regarding placement and sequencing of the artwork, as well as lighting and other situational factors that can affect the way the artwork is viewed.

The Neuroscience Behind the Artwork

Susan Aldworth (British, b. 1955)

Susan Aldworth's prints are based on a series of that she made while watching monitors revealing cerebral angiograms of patients at the Royal London Hospital. She extracted what she considers the "self" revealed by the blood flowing through the patients' brains. Back in her studio, she then converted the drawings into etchings.

A cerebral angiogram is a diagnostic neurological procedure used routinely to determine the path of blood flow through the brain in cases where an aneurysm (weakening), blockage, or leakage in blood vessels or a brain tumor is suspected. The angiogram starts with the neurosurgeon threading a catheter into the carotid artery leading to the brain, followed by the injection of a radio-opaque contrast dye that absorbs X-rays so the blood vessels can be visualized by radiography. As the dye moves through the arteries that supply blood to the brain, it shows up on an x-ray.



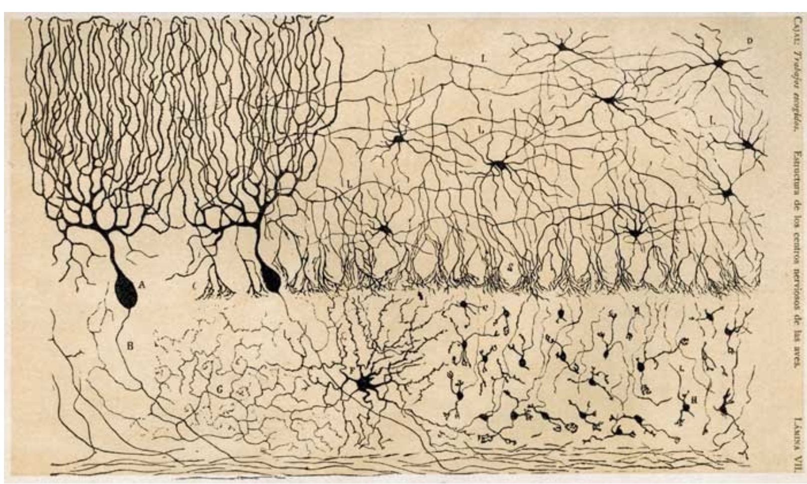
Susan Aldworth's own cerebral angiogram, 1999
Image courtesy the artist

Source: Adapted from curatorial text. For more information on Susan Aldworth, see the "Background" section of this guide.

Andrew Carnie (British, b. 1957)

Andrew Carnie's work was based on his research on the Spanish anatomist Santiago Ramón y Cajal and on the contemporary work of Dr. Richard Wingate of the Medical Research Centre for Developmental Neurobiology, Kings College, London. The structure of cells in the brain was unknown until the dramatic invention in 1873 by Camillo Golgi of the potassium dichromate-silver process that, for reasons still not fully understood, causes only a few cells complete with all their processes to turn black. Cajal used this stain to draw elaborate pictures as he looked into a microscope at slices of chick brain. He concluded that the one major type of cells called neurons is the individual unit of brain function (the Neuron Doctrine). Cajal and Golgi shared the Nobel Prize in Physiology in 1906, but it was Cajal who intuited that each nerve cell is a simple input-output unit that receives information through its many dendrites and transmits that information out a single axon. These dendrites and axons can be seen elaborating from the central soma as the neurons develop in Carnie's slides.

About 25 years ago, a new type of microscope was invented that enabled three-dimensional imaging of living neurons genetically engineered to express proteins that are fluorescent. In these confocal microscopes, lasers are used to produce extremely bright light at specific wavelengths for fluorochrome excitation. These microscopes use highly sensitive photomultiplier-detectors and motorized scanner mirrors to sequentially scan layers as if they were literally slicing through the brain. Data is collected for computer analysis and reconstruction of digital images. Dr. Wingate uses a confocal microscope to see the neuron cells stained with GFPs (Green Fluorescent Protein) within the sections of brain.



Santiago Ramón y Cajal (Spanish, 1852-1934)
Drawing of chick cerebellum

This drawing, taken from Ramón y Cajal's first publication on the central nervous system, illustrates the five classes of neuronal populations that exist in the cerebellum: Purkinje, stellate, basket, Golgi and granule cells. *Nature Reviews Neuroscience* 4, 71-77 (January 2003)

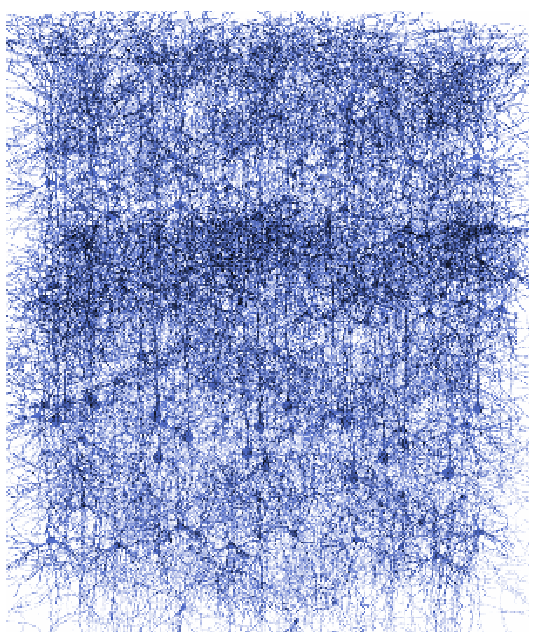
Image courtesy Dr. Richard Wingate

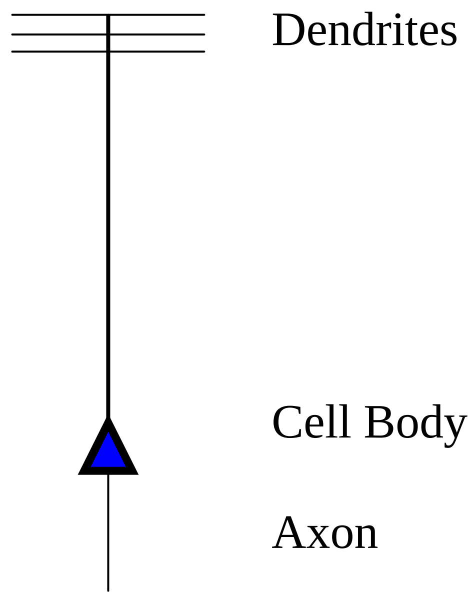
A ganglion neuron from the retina of a ferret, filled with the fluorescent dye, Lucifer Yellow. The dendrites look like the branches of a tree. This tree collates inputs from photosensitive cells and sends information to the brain via a single axon joining others in the optic nerve. Thousands of individual alpha retinal ganglion cells sit side by side on the retina. Each is responsible for communicating a fragment of the visual world.

Source: Adapted from curatorial text. For more information on Andrew Carnie, see the "Background" section of this guide.

Jessica Rankin (Australian, b. 1971)

The outer layer of the brain is responsible for our ability to remember, think, communicate, adapt to new situations, and plan for the future. In mammals, this outer layer is called the neocortex, or newer cortex. The neocortex has a simple six layered structure of cells lined up in functional units. There are two cell types, neurons and glia. The neurons provide the major source of communication between cells. They receive information in the form of chemical messengers (neurotransmitters) that match protein receptors on the extensive branched processes called dendrites. The messages received by the dendrites are converted to electrical signals, which, if they reach a set threshold, will send an action potential (wave of electricity) down the axon towards its next connecting neuron. The end of the axon, called the axon terminal, releases neurotransmitters upon the arrival of the action potential and sends them across the small gap (the synapse) between the axon terminal and dendrite of the next neuron.





Blue forest
Image courtesy Blue Brain Project / EPFL (Ècole Polytechnique Federale de Lausanne)

This image was taken by a camera on a microscope looking at a slice of rat cortex mounted on a slide. The cortex section had been stained with a blue dye to visualize the neurons. Note the layers of cells, with their dendrites extending upwards to receive information from other neurons, and the axon extending down and leaving that area to communicate the processing of information to another area of the brain. This image shows a minute fraction of the cells and connections within the microcircuitry of the neocortex.

Adapted from curatorial text. For more information on Jessica Rankin, see the "Background" section of this guide.

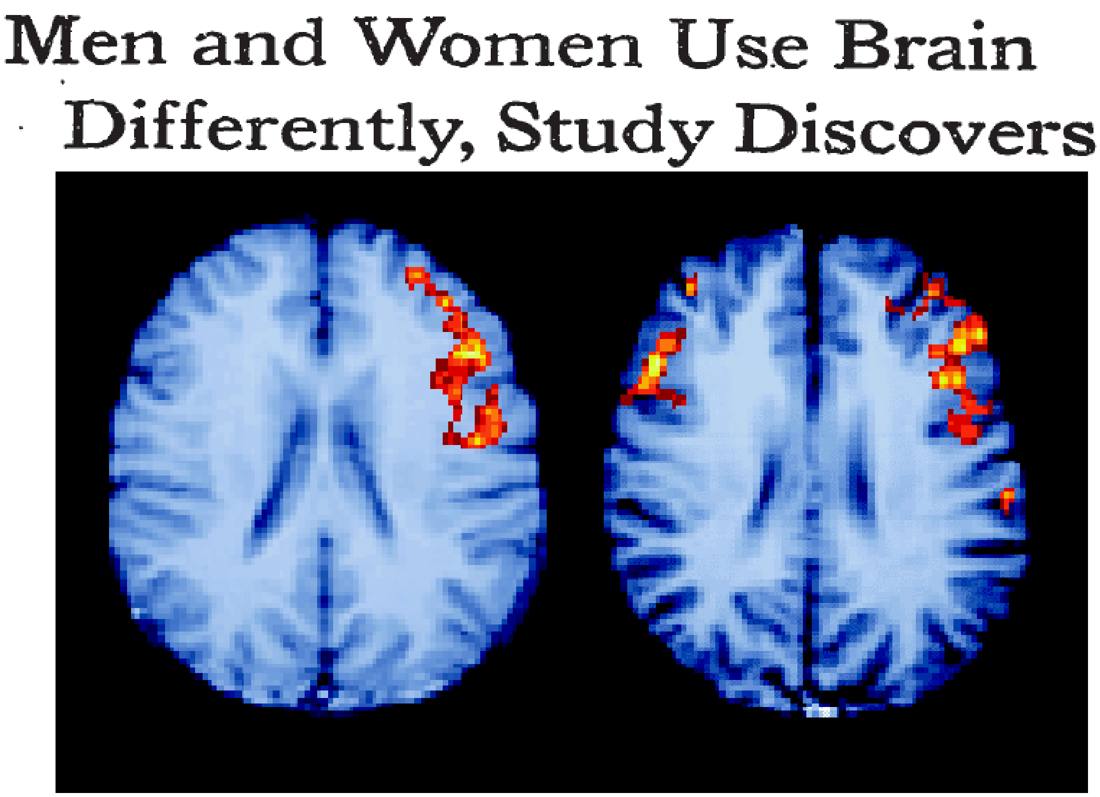
Katy Schimert (American, b. 1963)

In her work, Katy Schimert takes the metaphors of neuroscience and makes them real. Schimert was inspired to create *Brain* after reading an article in *The New York Times* (February, 1995) on gender differences in brain function. The article reported on a study by Doctors Sally and Bennett Shaywitz of Yale University that had just been published in the prestigious scientific journal *Nature*. This study was the first one to report a gender difference in activity in the language areas of the brain using the then new technique called functional magnetic resonance (fMRI) scans.

fMRI is a neuroimaging technique that relies on the interesting fact that neurons, the main type of cell in the brain, are reliant on oxygen when engaged in receiving or processing information. Thus, when a particular brain region is involved in a mental operation, the blood flow increases to that area to bring new oxygen to those depleted neurons. The hemoglobin carrying the oxygen has different magnetic properties than when it is deoxygenated. The fMRI scanner uses a powerful magnetic field to detect the increased blood flow and a computer to analyze the data and produce detailed pictures of brain activity occurring seconds after a person inside the scanner answers questions or presses buttons to participate in neuropsychology experiments. These computer-generated reconstructions of the brain are colored from black to white, with greater brain areas receiving more oxygen depicted as whiter, leading to the expression that a particular brain area "lights up."

In this seminal study conducted by the Shaywitzes, men and women volunteers decided whether two nonsense word strings rhymed. One language center of the brain, the inferior frontal gyrus (IFG), was found to be uniquely associated with this task compared to other tasks the volunteers performed. In males, the left IFG was more than twice as active than the right IFG, while females engaged both the left and right IFGs more symmetrically. The article reporting on this finding included a reproduction of the fMRI image demonstrating this sex difference, as seen below. Schimert used the female brain (shown at right) as the model for her piece. The blue areas in *Brain* represent the fibers carrying information to different brain regions, while the gray terrain corresponds to areas of neurons processing the information.

Although other scientists replicated the Shaywitzes' finding that females are more likely than males to use both sides of the brain when engaging in language, this observation does not mean that males and females are genetically programmed to have a sex difference in brain function. Neuroscientists know that any brain activity difference seen in adults is a function of the environment those individuals experienced during infancy, childhood, and adolescence. In our culture, males and females are treated differently from birth, and the gendered environment will have an impact on brain development, as will the degree and timing of exposure of the brain to hormones. There are very few detectable sex differences in brain function or anatomy, and these differences are very small and the functional advantage is not clear.



The New York Times, February 16, 1995
Image courtesy Bennett Shaywitz

Source: Adapted from curatorial text. For more information on Katy Schimert, see the "Background" section of this guide.

Developing an Artist's Statement

Select a topic that you have learned about in science class this year that interests you. Take some time to imagine how it could inspire a work of art. The medium (drawing, sculpture, collage, photograph, etc.) is your choice. Here are some questions to think about to help you get started on the artistic process:

1. What topic did you select?

2. What do you know about the topic?

3. What aspects of the topic interested you? Why?

4. What kind of art could you imagine making that takes inspiration from this topic? Sketch some ideas below.

5. What ideas and feelings would you like your artwork to convey to viewers?

6. What artistic choices could help convey those ideas and feelings?

6. What medium seems to fit your idea best? Why?

Mindscapes

Grades 3 - 12

Students develop their own science fiction tales that describe the "landscape" of the mind.

Goals

- To help students creatively visualize the mind.
- To use detailed descriptive language to establish setting and mood.
- To plan and develop character and plot in an original work of fiction.

Standards

ELA 15, 20, 21, 23

Materials

Pencil and paper or computer

Procedure

1. Ask students to imagine the mind as a landscape that can be explored. What would it be like to travel through the mind?

2. Students can begin brainstorming by inventing a character who will magically travel inside the mind of another person. Ask them to jot down ideas in response to the following questions:

    - What is the main character's name?
    - How old is he/she?
    - What is his/her personality like? What are some of his/her favorite things?
    - What kinds of things is he/she curious about?
    - Whose mind could the main character explore?
    - What is this character's name? Age? Favorite things? Personality?
    - How might the main character end up in another person's mind?

3. Next, students can make a list of sensory details describing what the main character would experience while exploring the other person's mind. What would the main character see? Hear? Smell? Feel?

4. Next, consider the plot line. Outline some main events on the journey. How did the main character enter the mind of the other character? What activities might be going on in the mind? What will he or she do there? How will the story end? Remember this is science fiction so you make the rules and anything you imagine is possible!

5. After brainstorming, students can develop a first draft of their stories, using the details developed during brainstorming. This topic could be explored in writing only, or as a series of illustrations with text in comic book or graphic novel format, or a combination of writing and text.

6. Students can share their work with one another for feedback and editing, before creating a final draft.

Coming Soon!

Landscapes of the Mind Blog

WCMA BLOG!

The Williams College Museum of Art is excited to announce its first blog! Coming soon! Watch for an email update announcing the launch of the blog. For the first few months, the blog will be dedicated to ***Landscapes of the Mind.*** Each week will feature a different guest blogger. This is a great opportunity for you to hear directly from artists and scientists, to ask them questions, and to see behind-the-scenes photos of exhibition installation. We invite you to get in the spirit! Here are some suggestions of ways that you can get connect with WCMA's *Landscapes of the Mind* blog:

EXPLORING BLOG BASICS

While older students may be familiar with blogs and may already be active participants in online discussions, younger students will probably require more of an introduction. The following lesson plans lay out step-by-step suggestions for guiding students in the elementary grades through the process.

Scholastic: How to Use Blogs, Grades 3 - 5
http://www2.scholastic.com/browse/article.jsp?id=3749958

Langwitches Blog: Introduction to Blogging Lesson Plan
http://langwitches.org/blog/2008/12/25/introduction-to-blogging-lesson-plan/

Blogging is Elementary
http://mscofino.edublogs.org/2008/12/05/blogging-is-elementary/

Young students will need time to explore some sites online, and the lessons above provide links to blogs created by and for kids. Class discussions following online exploration allows students to thoughtfully evaluate what they find and to consider:

- What do blogs look like?
- What's the difference between a post and comment?

- How long are posts? How long are comments?
- What makes a good comment?
- What kinds of things can you find on blogs (words, pictures, video, audio clips, author's name, archives, links, etc.)?
- What do many blogs have in common? What differs from blog to blog?

Working as a whole class to establish criteria for good posts and comments and practicing as a class can be helpful. This gives students a chance to think about what makes a comment constructive, respectful, interesting, and meaningful. Explicit discussion of online safety is also very important before students go online. The "Blogging is Elementary" page provides Public Service Announcement video clips exploring online safety issues. On "Langwitches Blog," scroll down and you'll find a whole elementary blog unit, including a section dedicated to online safety.

BRAINIAC BLOG-BOARD

If your students would really benefit from some low-tech practice with the process of writing posts and comments before going live online, try devoting a section of your classroom bulletin board dedicated to a "Blog Board." For the weeks leading up to and following your visit to *Landscapes of the Mind*, the Blog Board could take on the theme of the brain or the mind. Each week could feature a guest student blogger (or pair of guests), who post a brief essay exploring some aspect of the mind or brain. You may wish to provide a list of suggested topics for students to choose from, such as dreams, parts of the brain, memory, neurons, the senses, and so on. Give the rest of the class opportunities during the week to read the "post" and to write comments on index cards and tack them to the board beneath the essay. On Friday, give the guest blogger a few minutes to respond to the comments, answering any questions and summarizing what the experience was like. The guest blogger for the following week might select a topic suggested by comments from the previous week, or something completely different.

CONNECT to WCMA'S BLOG

Watch WCMA's blog for a guest blogger that interests you. Artists whose work appears in the exhibition will be invited to guest blog, along with scientists, college students, and museum staff. Once you've identified a blogger of interest, follow their posts for the week and join in the conversation by submitting a comment or a question. Older students can interact with the blog individually. Classes in the younger grades can read posts and brainstorm comments together.

Discuss student reactions as a class. What comments did the guest blogger make about the exhibition? About the mind? What interests that person in the mind? What comments stood out to students? Why? Where was the blogger's thinking similar to your own? Where did it differ?

START YOUR OWN CLASS BLOG

Getting Set Up

Believe it or not, creating and launching your own blog takes only a few minutes and costs nothing. If you use a free blog site like blogger (https://www.blogger.com), the site provides basic templates and walks you through each step. If you can use Microsoft word, you have all of the skills you need to make a blog.

21 Classes (http://www.21classes.com/) offers a free blog service that includes classroom friendly features that allow teachers to act as site administrators who can establish and oversee student accounts, which is helpful if students do not have their own email accounts. It also provides more options for controlling privacy levels.

Recommended Resources

Books for PreK-2

Think, Think Think *by Pamela Hill Nettleton and* Jack and the Dreamsack*by Laurence Anholt will be read during tours.*

Aliki. My Five Senses. New York: Thomas Y. Crowell, 1989 (1962).

Banks, Kate and Georg Hallensleben (illus.). Close Your Eyes. NY: Frances Foster Books, 2002.

Browne, Anthony. Willy the Dreamer. Cambridge, MA: Candlewick Press, 1998.

Miller, Margaret. My Five Senses. New York: Aladdin Paperbacks, 1998.

Sendak, Maurice. Where the Wild Things Are. New York: Harper Collins Publishers, 1991.

Web Sites

"Your Brain & Nervous System." KidsHealth from Nemours.
http://kidshealth.org/kid/htbw/brain.html#.

Neuroscience for Kids
http://faculty.washington.edu/chudler/neurok.html

Newton's Apple
http://www.reachoutmichigan.org/funexperiments/agesubject/lessons/newton/tstesmll.html.

Andrew Carnie: Science & Art Blog
http://scienceandart--andrew-carnie.blogspot.com/
[Note: There is nudity in some of the works featured on this site].

Susan Aldworth
http://www.susanaldworth.com/html_index.htm

White Cube: Jessica Rankin
http://www.whitecube.com/artists/jessica_rankin/

Education Programs

At the Williams College Museum of Art, our Education Programs strive to instill in visitors a love of art and an appreciation for all that a museum can offer.

As a teaching museum, we are committed to finding innovative approaches to teaching and learning through art—making connections across disciplines, building literacy skills, and encouraging the exchange of ideas.

Our programs engage participants in active experiences with art and investigate art history, artistic practices, and the issues that artwork raises. We are always available to discuss ways to tailor our programs and provide support to help you make the most of your experience with us.

Education programs at the Williams College Museum of Art are made possible by the Eugénie Prendergast Trust.

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