Visionary Activities
For the Classroom

Human, Soul and Machine
The Coming Singularity

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INVENTIONS
Inspired by Neil Harbisson and Temple Grandin

Introduction:
Some of the artists at AVAM are not showcased for visual art creations, but rather for their visionary thinking. Neil Harbisson, for example, was born completely colorblind, only seeing in black, white, and grey. An innovator and visionary thinker, he helped develop an “eyeborg” that allows him to hear color through bone conduction!

Temple Grandin, also a visionary thinker, was born with Autism, and has become world renowned for her inventions that improved animal handling systems. She also invented her very own “squeeze machine” to help calm her anxiety.

You, too, can be an inventor! To be an inventor, all you need is a little creative thinking and a little time for tinkering. Recent inventions include the 3D printer, mind-controlled bionic limbs, sprayable energy, and a pencil-making device from recycled paper. A kid invention that recently made the news was a video chat system that dispenses treats to your pet remotely.

Objectives:
- Students will understand and practice the process of brainstorming, both individually and as a group.
- Students will identify influential inventions.
- Students will apply problem-solving skills.
- Students will apply creative thinking to develop their own invention.

Critical Questions:
What is an invention?
How do inventors get their ideas?
How do inventors make their ideas a reality?
Why do we need inventions?
What are the different types of inventions?

Activities
1) Discuss the history of invention (Thomas Edison, Alexander Bell, etc). Discuss different types of inventions: inventions that solve problems, inventions that make life easier, and inventions that go beyond “what is” and look at “what might be.” Have the class inspect the room and other parts of the building, locating inventions that they can find.
2) For homework, have students check out their homes, communities, and local stores for inventions. Have them select one that they feel can be improved and describe how they would improve it.

3) Group Brainstorming: have students engage in spontaneous thinking to generate alternative ideas while deferring judgment. Remind them of the “rules of brainstorming;” no criticism allowed, quality not quantity, and “hitchhiking” off of other ideas is welcome.
   a. For warm-up, pick an object in the room and have students brainstorm many new uses for it. Try to pick a familiar object, such as a paper plate or hole puncher.

4) Open up the brainstorming session to ideas that solve problems. You can start by selecting a specific problem and having students brainstorm solutions to that problem. Then, have students think of problems and solutions on their own.

5) For homework, have students select one item from the brainstorming list to develop further. Students should write a description of the changes/expansions they would make, and provide an illustration of the new “prototype.”

6) Have students develop their illustrations into a 3D prototype of their invention.

7) Have students develop a campaign to promote their inventions: Come up with a name, write a jingle, design an ad!

**Materials:**
Chalkboard/Whiteboard/large paper for making lists
Paper and Drawing supplies
Cardboard
Variety of 2D and 3D art materials, including found and recycled objects

**Additional Activities:**
   1) Have students research and present on a specific inventor.
   2) Invite a local inventor to speak to the classroom.

*Lesson adapted from [www.just-think-inc.com](http://www.just-think-inc.com)*

**Standards:**
Maryland CCSS RST.6-12.1; CCSS W.2; W.3
Maryland State Standards Social Studies #5; Visual Arts #3
STEM Standards #1; #2, #3
EXPRESSive ART

Inspired by: Visionary Artist Fred Carter

Fred Carter is one of many visionary artists that use artwork to express personal feelings, beliefs, and concerns. Most of Carter’s artwork is about the destruction of the environment and about society’s failure to act upon injustice. He used both abstract and realistic techniques in his work, creating an entire collection of paintings and sculptures.

Visionary artists, such as Carter, typically do not create artwork to be rich and famous, but because they have a strong inner desire to create. This desire can stem from a variety of reasons; perhaps it is to cope with a traumatic experience, or because they have a vision or message that they have to share with the world. Some visionary artists may not fully understand why they have the urge to create, but the process of making art is something they simply must do.

Objectives:

• Students will experiment with art media, processes, and techniques to express thoughts and feelings that have personal meaning.
• Observe works of art and identify ways that artists express ideas about people, places, and events.
• Identify reasons why artists create artworks, including personal reasons
• Students will create a piece of art that communicates a personal belief, ideas, or emotions.

Critical Questions:

How can art evoke an emotional response?
How might the process of making art apply to personal expression?
Can you name an artist that uses his/her art to express personal beliefs or feelings?
What is something you believe in, or have strong feelings about, that could be expressed through art?

Activities:

1) Discuss how art can be a tool for people to express personal feelings, beliefs, and concerns. Discuss artists that have done this, including Fred Carter. Discuss how the process of making art can also be an effective technique, especially when coping with feelings and emotions. Discuss how different art techniques and mediums might elicit or depict different responses. For example, Fred Carter used materials found in nature, such as broken branches to depict his concerns over the destruction of the environment.
2) Have students brainstorm feelings, beliefs, and concerns that might be best expressed through art, and through the process of making art.

3) Have students create an art piece that expresses a personal belief, feeling, or concern. Have students put thought into selecting a specific technique or material for their particular piece. Give students free range of the classroom’s materials, as well as found materials, allowing them to take full advantage of their inner creativity.

4) When artwork is complete, have students write a short essay as to why they chose their particular theme, why they chose their particular technique or style, and a brief description of their artistic process.

5) Class Presentations: Have student share their works with the class, summarizing key points in their essays. Pose response questions like: How might a different material have changed the impact of the artwork? How might a different material have changed your artistic process? Did you feel that this project was an effective way to explore your personal beliefs?

**Materials:**
2D materials (canvas, paper, paint, oil pastel, colored pencil, etc)
Collage materials (magazines, colored paper, newspapers, etc)
3D materials (found objects, beads, wire, etc)
Sculpture materials (clay, carving blocks, paper mache, etc)

**To adapt this for a younger group,** have students select a personal belief, feeling, or concern to use as a theme for an art piece. Give students the option to use paint or clay. Students may be given a prompt. For example, “I believe that……” or “One thing I would want to change about the world is…..”

**Maryland State Standards**
*Visual Arts Standard #3: Creative Expression and Production*
*Visual Arts Standard #2: Historical, Cultural, and Social Context*
*Visual Arts Standard #1: Perceiving and Responding: Aesthetic Education*
Introduction:
The world is full of inspirational people. These people may be well-known, or they may have made a difference in a very small way. Have your class think about role models, personal heroes, and historical figures that have made a positive impact on the community, in today’s society, or even in their personal lives.

Objectives:
• Students will understand contributions from various individuals and how they impacted others and/or society
• Students will discuss individuals throughout history who have affected change
• Students will discuss what it takes to affect change in today’s society
• Students will describe personal beliefs and hopes for the future.

Critical Questions:
Part One
What does it take to make a difference?
What are things in the world that have become the norm but need to change?
What individuals have contributed to society in a positive way? Who has affected change?
Part Two
What do you want to be remembered for?
What do you believe in?
What change would you like to see in the world?
If you could be anything, what would you be?

Activities:
PART ONE
Discuss inspirational people and people who have contributed to society in a positive way, or who have affected positive change. Martin Luther King, Jr. is an excellent example of someone who saw the need for change, and took action to change it. Is it possible to affect change if you just keep things the way they are? What does it take to make a difference?

1) Have students select an inspirational figure to create an art piece about. The person they choose should be someone they feel strongly about, or someone that they want to learn more about. For homework, have students research this person, taking a deeper look into the individual’s life.
2) Students will use their research to create a Power Portrait of that individual. The final piece should portray significant qualities about that person and what they accomplished.

3) Use the image above as inspiration for your technique. The end result is a unique way to portray the individual, and is a way to help viewers learn more about the impact they have made!
   a. Border: this will include a quote or mantra that describes or identifies this individual. It should help the viewer understand who the individual is and why they are important.
   b. Person: laminate a photo of the individual (face only) and have students sew it in place onto the paper or canvas. Students will complete the body using paints and mixed media.
   c. 3D Objects/Mixed media: What would make this piece unique or special? Add symbolic items!

PART TWO
Now that you have focused on other individuals, have students create their own Power Portraits! Use the critical questions listed under Part Two to get started, and follow these modifications:
   a. Border: students’ own personal message, personal mantra, something they strongly believe in, something they want to be known for!
   b. Person: have students think about their facial expression and head position before you take their photo (remember, face only). Laminate the photo and have students sew it in place. Students will complete the body using paints and mixed media.
   c. 3D Objects/Mixed media: what would make this piece unique or special? Add symbolic items!

Materials:
Photo of inspirational individual (face only)
Canvas or Heavy-weight paper at least 18x24 in dimension
Paint and Paint Markers
Laminating Machine/Laminating Packets
Mixed Media materials (3D objects, found objects, magazines, random fun)
Awl and hammer
Thread/Yarn and heavy-duty needle
Hot Glue and glue sticks
Camera/iPhone and printer

Maryland State Standards
Social Students #2; #5; #6
Visual Arts #2; #3
HUMAN / MACHINE MASH-UPS

Inspired by: Visionary artist Christopher Moses, revolutionary Ray Kurzweil, and AVAM’s Human, Soul, and Machine: The Coming Singularity

Introduction:
AVAM’s thematic exhibition, Human, Soul, and Machine: The Coming Singularity, explores the relationship between humans and machines as we continue to advance technology. Modern technological advances have expanded the capabilities of humans, from bionic limbs to artificial intelligence. At what point do humans become machines, or do machines become humans? Is this something that we should be mindful of?

“How must the human and the machine modify or compromise as they merge with the other in order to forge a lasting relationship? Must the machine become a little more human-like, the human more machine?” - Christopher Moses

Objectives:
• Identify influential modern technological advances.
• Compare essential and non-essential modern technological devices.
• Understand the difference between Fact and Opinion.
• Examine how technology impacts human function and interaction.
• Define technology as “any invention, including tools, machines, materials, techniques, and sources of power, that makes people’s work easier.”

Critical Questions:
Has modern technology has had a positive impact on society, a negative impact, or both?
How does technology make your life better?
What are the risks of technological advances?
At what point do humans become machines, and do machines become humans?

Activities:
1) Have your students discuss advances in technology over the past several hundred years, and discuss ways in which these advances have benefited human beings. Examples you might start out with are the printing press, electricity, the telephone, automobiles and airplanes, and, of course, the computer.

2) Begin a discussion on the positive and negative effects of modern technology on human beings. As a group, make a list of examples. Examples of how modern technology has benefited human beings include increasing production of goods and services, reducing the amount of labor needed to produce these goods and services, and providing higher living standards. Examples of how technology has had a negative effect on society include environmental pollution, depletion of natural resources, unemployment, and the creation of ethical dilemmas, among others.
3) Once you have generated a class list from the discussion, look back through the list and note which examples are facts and which ones are opinions. Discuss the difference between fact and opinion, and note it’s relevancy with such ethical dilemmas.

4) Using the themes discussed as a group, have students respond individually by creating a mixed media art piece. This piece should reflect ideas on the relationship between humans and machines, singularity, enhancements as a result of technology, etc. Have students share their final artwork with the class, describing their creative process and overall concept of the work.

**Visionary Technique:**
When working with mixed media, layering images and materials can help to integrate the elements of the piece. In the example above, a technique called “Packing Tape Transfer” was used. This allows the student artist to create transparent layers. This technique is especially appropriate for this activity, as it allows the final image to appear as one integrated image.

**Packing Tape Transfer:**
1. Select an image you wish to transfer (you may use magazines, photocopied images, and images printed with a laser printer...inkjet printers do not work)
2. Take a strip of packing tape and place it over the image you wish to transfer (if your image is large, simply overlap layers of tape)
3. Rub the tape over the image with the back of your scissors to ensure tape is properly adhered (be sure that tape is covering all areas of the image that you wish to use)
4. Cut out the taped image to the desired size
5. Dip the taped paper into a bowl of water, and let soak for at least 30 seconds
6. Using your fingers, rub the paper from the back of the tape. The friction will remove the paper, but leave the image behind on the tape! When dry, the tape will regain it’s stickiness

**Materials:**
Chipboard or artboard
Packing tape
Bowl of water
Collage materials (magazines, newspapers, photographs, , paper, tiny gears, wire, found objects)
Scissors
Glue / Mod Podge

**Additional Activities:**
1) Have each student choose one technological advance to study thoroughly. Write a paper on the benefit of the technology, the harmful side effects, and recommendations for the ethical future use of the technology. Students may share findings with the class.

2) Have students brainstorm in groups to come up with what they think may be the next technological advance. Encourage students to use their imagination. Open it up to a class discussion to discuss the positive and negative effects of this technology.

*Lesson adapted from [www.discoveryschool.com](http://www.discoveryschool.com)*

**Standards**
Maryland CCSS RST.9-12.8; RST.9-12.10; CCSS W.1; W.2; W.3
Maryland State Standard Visual Arts#2; #3
STEM Standard #1; #2
**Introduction:**
Self-taught visionary artist Vollis Simpson is known for his huge kinetic sculptures. Most of these sculptures are built to catch the wind, making them spin and sparkle. Simpson’s first windmill was built to power a washing machine during WWII. Fascinated by wind power, Simpson built several other large windmills, and began making gigantic whirligigs and wind machines on his brother’s farm. His large pieces are nearly 40 feet tall and weigh thousands of pounds! Covered with highway reflectors, recycled mirrors, and salvaged materials, these sculptures are spectacular during the day and night.

**Objectives:**
- Follow multistep instructions to create a propeller that spins.
- Design a wind-powered kinetic sculpture that spins.
- Experiment with qualities of wind and structural design.

**Critical Questions:**
What is wind?
What does wind help us do?
What does “kinetic” mean?
What do you think “kinetic art” means?

**Activities:**
1) Wind is moving air. Discuss how we can use the energy in wind to work. Early Egyptians used the wind to sail ships on the Nile River. In Holland, people used windmills to grind wheat. Pilgrims used windmills to grind corn, to pump water, and to run sawmills. Today, we use wind to make electricity.

2) Present the idea of making a wind-powered piece of art. Using Vollis Simpson’s whirligigs as inspiration, discuss the idea behind kinetic art. Kinetic art is art (as sculpture or assemblage) that has parts that can be set in motion.

3) Have students begin by trying out some of the blade designs below to incorporate into their kinetic sculpture. Find out which blades spin best. Have students design their own blades.

4) Allow students to freely experiment with different blade shapes to construct their own “whirligig,” then test it under a number of wind speeds (e.g. the wind outside, their own breath, a fan).

5) Have the students determine how the efficiency of the models could be tested. One way would be to have an electric fan provide a standard wind speed, and counting the
revolutions per 10 seconds. (You will need to color or mark one blade in order to do this.)

**Step-by-Step Instructions**

1. Design a blade that could possibly work
2. Glue blade onto wooden dowel.
3. Insert a straw into a milk or plastic carton, or attach to a solid base (make sure the straw is level).
4. Insert the wooden dowel into the straw.
5. Have the students test different blades.
6. Discuss which blades work best.
7. Discuss what the blades are doing in the sense of rotating, spinning, etc.

**Materials:**

- Material from which to cut blades: Such as cardboard, plates or plastic container
- Wooden dowel
- Drinking straw
- Milk container, plastic bottle, or other form for the stand
- Glue
- Scissors
- Decorative items: paint, sequins, reflectors, electrical tape, bottle caps, feathers, etc.

**Additional Activity:**

Continue the study of wind and how it can be used in art and science by creating a visionary anemometer! Use anemometer lesson plan to measure wind speed.


*Lesson plan adapted from “Wind Power,” one of a series of five publications collated by the Queensland Sustainable Energy Industry Development Group.*

**Standards**

Next Generation Science Standards K-5 – PS3; ETS1; ETS3
Maryland State Standards Visual Arts #1; #3