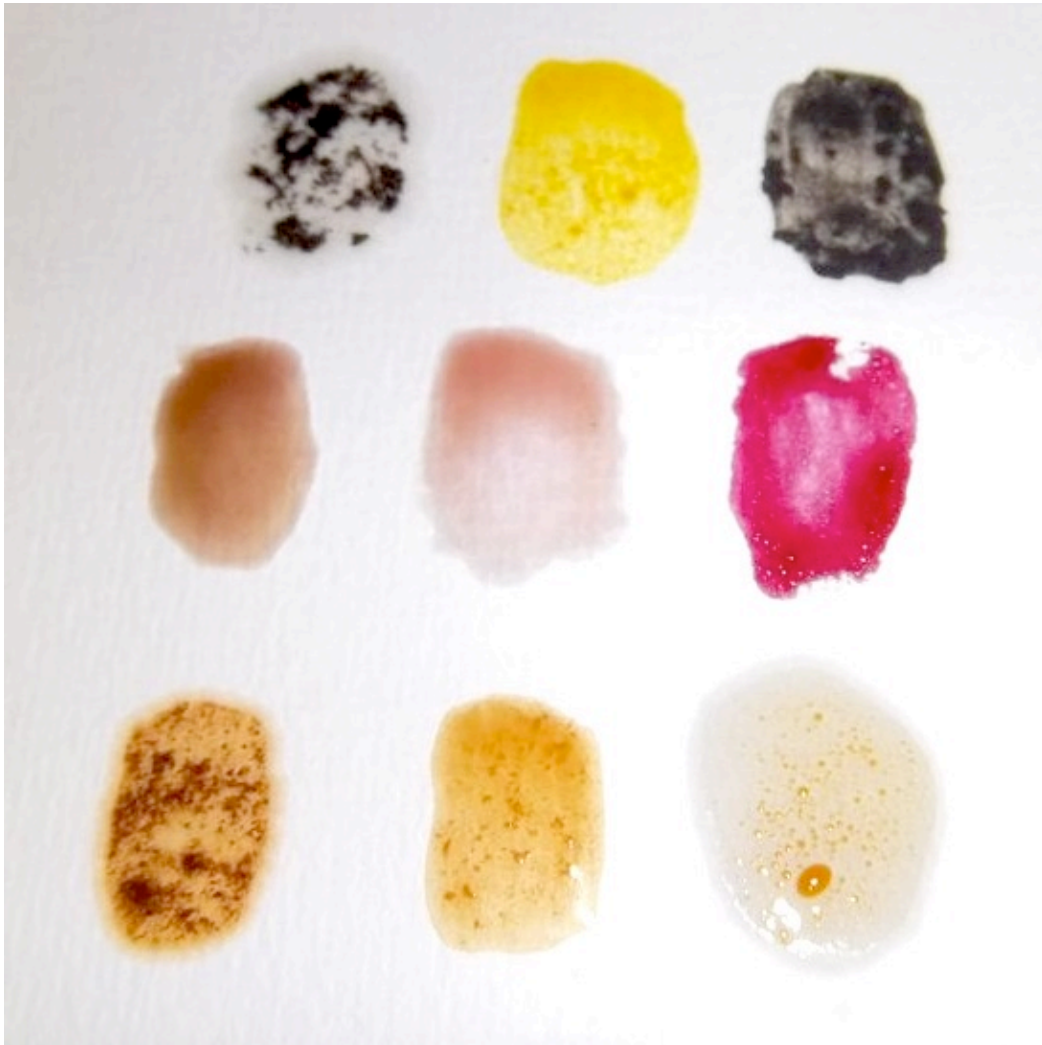


Personal Pigments

(Inspired by Ancient Egyptian paints)



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Grade Level: 9-12

Time Span: One 90-minute block period, or two 45-Minute periods

Essential Question: What is the importance of handmade materials in art making?

Guiding Questions: What is the history of pigment making? How do pigments differ across cultures? What natural materials can be used to make paint? What is the importance of making paint from scratch? How does the origin of materials change the meaning of the work created with it?

Objective: Students will learn about the history of pigment making, with a focus on ancient Egyptian paint inventions. Students will learn how to create paint or ink using natural materials such as carbon, madder root, turmeric, coffee and berries. Students will explore paint making with foraged natural materials. Students will create pigment recipe cards to share their personal discoveries with the class. Recipe cards will be incorporated into a small book in the final lesson of the unit.

Vocabulary: pigment, madder, carmine, lake, alum

Materials:

- Paint palettes with deep wells or plastic egg cartons are useful for mixing colors
- Paintbrushes
- Thick paper 9" x 12" cut into quarters (watercolor works best, but thick Bristol-type paper also works, plain paper can also be used in a pinch, the colors look different depending on which paper is used.)
- Cups of water for rinsing brushes
- Pencils
- Electric kettle

Many different materials can be provided for students to experiment paint making with such as:

- Soil, earth, or clay
- Black tea
- Coffee grounds
- Berries of different varieties
- Beets
- Paprika
- Madder root
- Ash from burnt wood or paper
- Chalk
- Onion skins
- Turmeric
- Grass
- Lichen
- Walnut shells



Mediums to mix the pigment source with:

- Oil, (linseed, vegetable)
- Egg yolk
- Vinegar (can be added to a medium and pigment to alter the color in some instances)
- Alum (can be added to a medium and pigment to alter the color in some instances and provide more lasting color)

Resources:

Chance, M. (2010, April 7). *Making natural ink / paint*. Retrieved from <http://mjfchance.wordpress.com/2010/04/07/making-natural-ink-paint/>

Lipscher, J. (2011). *Pigments through the ages*. Retrieved from <http://www.webexhibits.org/pigments/>

Natural paints. (2010, September 8). Retrieved from <http://artful-kids.com/blog/2010/09/08/natural-paints/>

Performance Tasks: The instructor introduces the lesson by asking the class if they know where paint comes from. The instructor then asks students if they know where ancient paint came from. The instructor asks, “Who do you think invented the color blue?” The students are then told that ancient Egyptians were great inventors of color, and created some important pigments that are still used today such as madder lake, and carmine lake.

The web exhibit *Pigments Through the Ages* is used to show students how they can learn more about pigment making through history, while the instructor explains the two colors mentioned earlier. The instructor then explains how combining a pigment with a medium, such as oil or egg yolk, makes paint. The instructor

explains how mixing pigment with egg yolks helps to preserve the color and provide a unique sheen to the paint and was used in ancient Egypt and also gained popularity in Europe during the Renaissance, and is known as egg tempera.



The instructor provides a quick demo of a simple and effective paint making technique by mixing some paper ash with a few drops of oil. The instructor explains that the ash or other natural material used to make pigment should be finely ground in order to create a smooth consistent paint.

The instructor then demonstrates how to make a recipe card for created pigments, and explains that the 2 inches on the left side of each card should be left blank for the Japanese stab-bound bookmaking lesson.

Students are then asked to complete the following tasks:

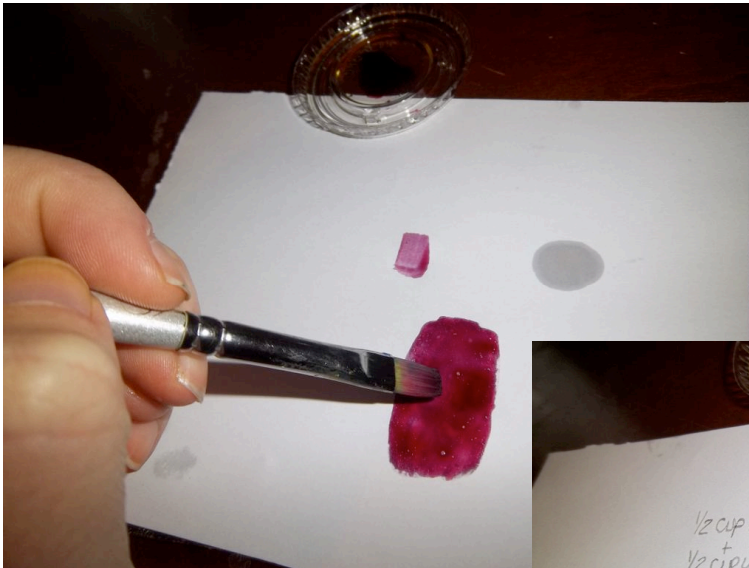
1. Choose a color from the *Pigments Through the Ages* website to research.
2. Write a brief summary about the chosen color on one of the cards (leaving a 2" margin on the left for the future book), explaining its history, how it is made, and its technical details.

3. Students are then asked to begin experimenting with pigment making using the provided materials. Boiling water from the electric kettle mixed with pigment material in a canning jar sometimes helps yield richer color. Using a

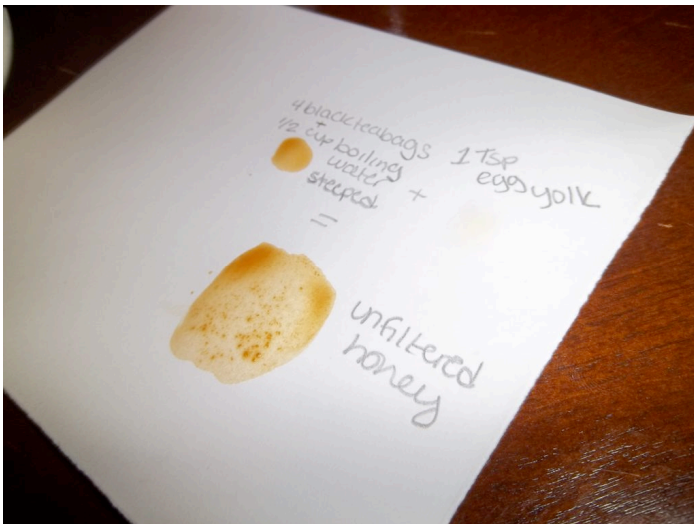
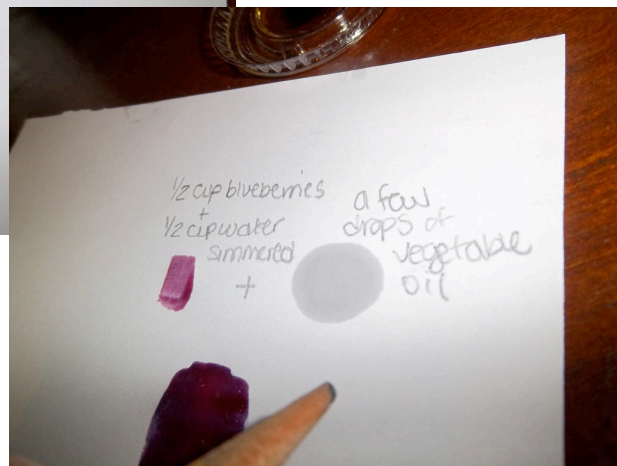


concentration of pigment materials and only a small amount of medium also yields stronger color. Different materials can be mixed in an attempt to make

more colors (for example blueberry paint mixed with turmeric paint in an attempt to make the color green).



Recipe cards are to be made right after a pigment's discovery so the process is still fresh in the student's mind.



4. Students are encouraged to look at their peer's recipe cards while they are drying to inspire more ideas. Colors can be duplicated so that each student can learn the hands-on create that color. Each is expected to make at least 3 different original paints. Each color created should have

a corresponding recipe card (with color name), and color swatch on a "collection card". Recipe cards and "collection cards" will be incorporated into a unit portfolio in the Japanese stab bound book final lesson.



5. Students are then asked to answer these questions on provided paper (which will be incorporated into a journal in the future book-binding lesson).

Which color do you think was most successful, and how did you make it?

Why do you think that color worked well?

Which color was least successful, and how did you make it?

Why don't you think the pigment material and medium worked well?

Clean up: The last 10 minutes of class is reserved for clean up. Students leave completed recipe cards on a drying rack with their names on them. All containers and paintbrushes with egg yolk and egg tempera mixtures are washed thoroughly in the sink with soap and water. Any excess oil is collected in a separate container to be disposed of, rather than dumping it down the sink.

Modifications: The length of assignment can be adapted depending on the interest of the student. An entire color unit can be made from this lesson by increasing the time and exploration. Using one class per color is a unique way to focus on the history of the color and pigment, and incorporate lessons on how to make each color. Students who finish their recipe cards earlier can free paint with their new handmade paint.

Assessments: Assessment is based on the questions prompted at the end of the lesson. A final rubric is used after the final lesson is completed. Students should attempt to make at least three recipe cards, but are encouraged to make as many as possible. Sometimes experiments don't result in a usable paint. Students are expected to provide speculation on why their attempts were particularly successful or unsuccessful. Process and experimentation are more highly valued than product outcomes in this lesson.

Maine Learning Results:

A. Disciplinary Literacy - Visual Arts: Students show literacy in the art discipline by understanding and demonstrating concepts, skills, terminology, and processes.

A3. Media, Tools, Techniques, and Processes:

Students compare the effects of *media* and their associated *tools, techniques, and processes*, using *elements, principles, and expressive qualities in art forms and genres*.

B. Creation, Performance, and Expression - Visual Arts: Students create, express, and communicate through the art discipline.

B1 Media Skills:

Students choose multiple suitable *media, tools, techniques, and processes* to create a variety of original art works.

C. Creative Problem-Solving: Students approach artistic problem solving using multiple solutions and the creative process.

C1 Application of Creative Process:

Students apply and analyze *creative problem-solving* and creative-thinking skills to improve or vary their own work and/or the work of others.

E. Visual and Performing Arts Connections: Students understand the relationship among the arts, history and world culture; and they make connections among the arts and to other disciplines, to goal-setting, and to interpersonal interaction.

E1 The Arts and History and World Cultures:

Students analyze the characteristics and purposes of products of the visual/performing arts to understand history and/or world

E2 The Arts and Other Disciplines:

Students analyze skills and concepts that are similar across disciplines.