

pH Scale: Color Field Painting

THROUGHthe
Get Smarts

Science & Visual Art

Grade 8

Science Standard(s)

4.8.D.2. Cite evidence and give examples of chemical properties of substances.
b. Use information gathered from investigations using indicators and the pH scale to classify materials as acidic, basic, or neutral.

Visual Arts Standard

3.8.2.b. Apply elements of art and principles of design to communicate specific ideas in visual compositions.



CONNECTED OBJECTIVES

Students will demonstrate their understanding of the pH scale to classify materials as acidic, basic, or neutral by creating color values similar to those on the pH scale while gaining an understanding of non-objective art.

MATERIALS & RESOURCES

KEY CONTENT VOCABULARY

KEY ARTS VOCABULARY

- Images of Mark Rothko color field pictures
- Web Resource
<http://www.christies.com/features/in-the-saleroom-rothko-untitled-17-1471-3.aspx>
- Watercolors white paper
- brushes, water containers

- pH scale
- acid
- base
- neutral

- abstract art
- non-objective
- color values

A S S E S S M E N T

Students pencil in the pH number on their color block to show their understanding of the color values they created and where it falls on the pH scale

End of lesson Reflection: Explain the relationship between these Mark Rothko (or your painting) Paintings and the pH scale?



L E S S O N S T E P S

Engagement

- Introduced students to the artwork John Rothko and his style of non-objective art using color fields with the Artful Thinking Routine: *Claim, Support, Question*. While viewing Rothko's painting discuss the how the artist represents moods and emotions by the intensity of the colors in the blocks.
- Ask students what they think the value of one of his paintings might be. Click on the link to Christie's Auction House which is embedded in the picture on the Notebook
- The students love watching the auction.

Explanation for today's activity:

- Review with students the color wheel made up of 3 primary colors and how they will use those primary colors to mix up Analogous colors which are hues that are next to each other on the color wheel and have a single color in common for example, yellow-green, yellow, and yellow-orange. Today we are going to build upon our knowledge of the color wheel and apply it to acids and bases!
- Have students look at the color wheel and the pH scale of colors and find the relationships.
- Notice how the color wheel begins with the reds and oranges and progresses toward the blues...look at the pH color scale and observe how the colors "move" along the scale....
- Ask the students which colors are acids, bases, neutral and which number is associated with each color.

Exploration: Today you will create a Mark Rothko style painting and tie in your knowledge of acids and bases.

- Which color will you begin with?
- Explain what will the progression of colors look like?
- Think about how one color will blend into the next....
- On your paper put your name on the opposite side you will be painting on.
- When you are finished with a pencil lightly label each color you used as an acid, base, or neutral.

Elaboration:

- Have students tack up their pictures for a gallery walk time permitted. Display a few in front of the class and have students identify the color and its pH value and property.

EXTENSIONS AND OPTIONS

- Students could compare/contrast the emotions or mood that their colors reflect with properties of the pH value (acid:sour or base:bitter)

RESOURCES AND SOURCES

Artful Thinking Routine @
http://www.pzartfulthinking.org/colors_shapes_lines.php

G E T S M A R T T H R O U G H T H E A R T S

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Friday October 12, 2012 Week 7A

Learning Goal: I will demonstrate my understanding of the pH scale to classify materials as acidic, basic, or neutral by creating color values similar to those on the pH scale.

Warm Up: Claim, Support, Question...(next slide).



HW: Fix It Friday!



CLAIM	SUPPORT	QUESTION
<p>Make a <u>claim</u> about the artwork or the topic. Claim = an explanation or an interpretation of some aspect of the artwork</p>	<p>Identify <u>support</u> for your claim Support = Things you see, feel and know that support your claim</p>	<p>Ask a <u>question</u> related to your claim. Question = What's left hanging? What isn't explained, What new reasons does your claim raise?</p>

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How much would you pay for something like this?

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- **Analogous** colors are hues that are next to each other on the color wheel and have a single color in common for example, yellow-green, yellow, and yellow-orange.



Explain a relationship between the color wheel and the pH scale.



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Lets review the color wheel....

We created color wheels and used Primary colors to represent elements and secondary colors to represent compounds.

Today we are going to build upon our knowledge of the color wheel and apply it to acids and bases!

Take a look...



Notice how the color wheel begins with the reds and oranges and progresses toward the blues...look at the pH color scale and observe how the colors "move" along the

Color Wheel and Chemistry



Representative pH values

Substance	pH
Hydrochloric acid (1M)	0.0
Battery acid	0.5
Sulphuric acid	1.0 - 2.0
Lemon juice	2.0
Vinegar	2.5
Orange or apple juice	3.0
Beer	4.5
Acid rain	4.5 - 5.5
Coffee	5.0 - 5.5
Tear or healthy saliva	6.5
Urine	6.0
Pure water	7.0
Healthy human saliva	6.5 - 7.4
Blood	7.38 - 7.42
Seawater	7.7 - 8.3
Hard soap	9.0 - 10.0
Household ammonia	11.0
bleach	12.0
Household lye	13.0
Gaustic soda	13.6

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Today you will create a Mark Rothko style painting and tie in your knowledge of acids and bases.



***Which color will you begin with?**

***Explain what will the progression of colors look like?**

*** Think about how one color will blend into the next.....**

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- 1
You will have a rectangle of art paper. Put your name on one side, then flip it over. You do not want to paint over your name.
- 2
Plan out your colors: which color will you begin with? How will you make that color blend into the next. Consider lightly labeling the colors you will use with a pencil on your paper.
- 3
Once you have your plan...you may begin painting with the watercolors. Remember to dip and dab your brush between colors.
- 4
When you have finished your painting and it begins to dry, you can label the parts of your painting as Acid Base Neutral

And list the properties of each
422-427

