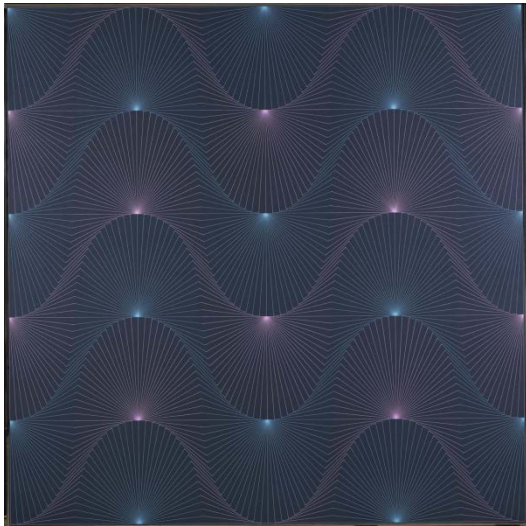


## THINKING TOOLS FOR INNOVATORS: PART 4— RECOGNIZING PATTERNS

Recent research has shown that we can build innovative thinkers by reinforcing a set of thinking tools, including such skills as observing, abstracting, pattern recognition, modeling, and transforming (among others). As these skills can all be taught, it makes sense that we can help students become the creative thinkers that we will need in the twenty-first century. This lesson plan is the fourth in a series that is focused on using art to enrich instruction in these critical skills. The research on which this information is based can be found in many sources, perhaps best summarized in the book *Sparks of Genius: The Thirteen Thinking Tools of the World's Most Creative People* by Robert and Michele Root-Bernstein.



*Night Sea*, 1977  
Edna Andrade, American  
Acrylic on canvas  
72 x 71 15/16 inches (182.9 x 182.7 cm)  
Gift of the Philadelphia Arts Exchange, 1978  
1978-13-1  
© Estate of Edna Andrade

### Grade Level

For grades 7–9, adaptable for elementary or high school

### Common Core Academic Standards

- [CCSS.ELA-Literacy.RH.6-8.1](#)
- [Mathematics: Modeling](#)

### PA Academic Standards for Art

- 9.3.A: Critical Processes
- 9.4.B: Aesthetic Interpretation

### Art Images Required

Click on the titles below to view high-resolution photographs on the Philadelphia Museum of Art website. Images that are available in the ARTstor Digital Library are indicated by an ID number or search phrase. Entering that number or phrase into the ARTstor search bar will direct you to the corresponding image in that database.

- [Night Sea](#), 1977, by Edna Andrade  
ARTstor search: Not available
- ["Admiral" Heraldic Carpet](#), c. 1429–73, Spain  
ARTstor search: PMA 1955-65-21
- [At the Moulin Rouge: The Dance](#), 1890, by Henri de Toulouse-Lautrec  
ARTstor search: PMA 1986-26-32
- [Hydrangeas Spring Song](#), 1976, by Alma Thomas  
ARTstor search: 2002-20-1

For more information, please contact Division of Education and Public Programs: School and Teacher Programs by phone at 215-684-7580, by fax at 215-236-4063, or by e-mail at [educate@philamuseum.org](mailto:educate@philamuseum.org).

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- [Untitled \(We Are Your Circumstantial Evidence\)](#), 1983, by Barbara Kruger  
ARTstor search: Not available
- [Three Musicians](#), 1921, by Pablo Picasso  
ARTstor search: 1952-61-96

## Background

We constantly see patterns all around us, and our brains organize our experience of the world through the recognition of these patterns. Consider something as basic as a joke: tell a “knock-knock” joke to a partner. Tell a second one. The pattern becomes obvious. Now tell your partner that you have one more, but your partner should start. This time the joke is in the confusion that results when the pattern is disrupted. In fact, most jokes involve the expectation of some sort of pattern which is invariably broken to form the joke. Patterns not only help us make sense of the world, they allow us to form expectations and predict outcomes. According to Arthur Koestler in *The Act of Creation*, pattern recognition is also the basis of scientific thought—as scientists fit new observations into recognized patterns, they are always ready for a new experience that will force them to find a new pattern. In this lesson, students will recognize patterns in art that can then be helpful in gaining a deeper insight into the work’s significance.

## Lesson Process

1. Patterns are everywhere, and recognizing them helps us make sense of the world. When someone smiles at us, we have an expectation of something pleasant because that is the pattern we are used to. We recognize patterns in sounds, as well. It’s easy to recognize a bird, for example, when we are familiar with the pattern of its call, and some birds, like the chickadee, are named according to their sound pattern. Language also has patterns. Ask the students what they know about poetic rhythms, such as iambic pentameter. It’s important to recognize patterns in order to make sense of things. Have the class look around the room. What patterns do they see? Do they hear any? List these.
2. Examine the painting *Night Sea* by Edna Andrade and read through the available Teacher Resources. Have the class write a few sentences describing the patterns they see, then discuss their observations. How are they appropriate to the subject of *Night Sea*? Working with a partner, have students attempt to make sounds that reflect the patterns in the painting.
3. Examine the “Admiral” *Heraldic Carpet* as a class or print out copies of this image and have students review in small groups. What patterns do they see? Have students make lists that describe these patterns and discuss what they write down. Have students make note of the patterns they missed but classmates recognized. Do students find these intricate patterns more or less pleasing than the simpler patterns of *Night Sea*? Discuss their reactions.
4. When we become more aware of the patterns around us and begin to recognize them where we didn’t see them before, we also begin to complete them. (NOTE: There are many interesting examples on the web of how we can read passages easily, even if half of the letters in the words are either missing or incorrect. Printing or displaying one of these would provide an instance of our innate desire to complete patterns.) Examine *Untitled (We Are Your Circumstantial Evidence)* by Barbara Kruger and take a moment to read the Teacher Resources for the artwork. In this print, the face has been “broken” apart, but we have no problem putting it back together. In fact, we make sense of an entire work that seems as if it has fallen and shattered. What is the effect of this cracked appearance? What can you see

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other than the woman's face, and what patterns exist despite the fragmented nature of the work? Does the appearance of the print have any connection to the words? What affect does this print have on you? Discuss.

5. Now examine *Three Musicians* by Pablo Picasso. Identify the people in the painting—where are their faces? Why is it that we can see their faces despite the fact that they don't actually look like faces? Spend some time discussing what you see in this painting, despite the image seeming only to be a collection of geometric shapes. Read the Teacher Resources for *Three Musicians* and discuss why the artist chose this sort of representation.
6. Discovering patterns not only affects us emotionally, it also provides an opportunity to investigate and interpret an object or an event. For example, cardiologists routinely interpret the audible patterns of heart rhythms as well as the visual patterns printed out from an electrocardiogram. And although it seems clear that finding and completing patterns is a natural result of observing the world, what happens when patterns are broken? When a cardiologist notices differences, he or she immediately becomes concerned. Broken patterns offer the chance for greater interpretation, further investigation, and understanding. Examine the painting *At the Moulin Rouge: The Dance* by Henri de Toulouse-Lautrec. Look carefully for a minute, find patterns and discuss them.
7. Where do the patterns break? What patterns do you see in the people's eyes? What color patterns do you see? How are people's heads positioned? What exceptions do you see, and what affect does this have? Take a few minutes to read the Teacher Resources for *At the Moulin Rouge*. Use what you have learned and what you see to offer ideas about the painting and the painter's intentions. (NOTE: As a supplement, gather a collection of magazine advertisements. See what patterns you can find and how the designer of the ad directs your attention by breaking them.)

## Assessment

1. Build a portfolio of patterns from nature. Separate them into groups, such as "obvious patterns" (flower petals, tree shapes, etc.) and "imagined patterns" (cloud formations, "faces" found in wood grains, plants, etc.). Present your portfolio to the class.
2. Examine the painting *Hydrangeas Spring Song*. Write an essay describing the patterns you see and discuss how the artist breaks those patterns. Include a speculation about the artist's choices regarding these patterns.