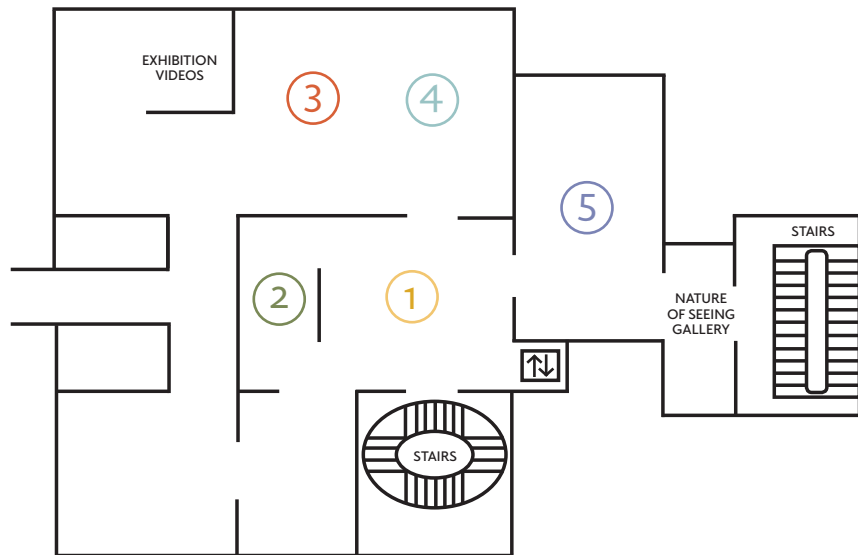


PHILLIPS

THE NATURE OF SEEING

EXPLORE CONNECTIONS BETWEEN ART AND YOUR BRAIN

A family-friendly educational guide created by the Portland Art Museum, presented in conjunction with *Seeing Nature: Landscape Masterworks from the Paul G. Allen Family Collection*.



HOW TO USE THIS GUIDE

Do you ever wonder what happens in your brain when you look at a painting? How does paint on a canvas trigger a sense of depth, excitement, or anxiety?

The Brain Challenges in this guide will lead you on an exploration of five paintings in this exhibition, offering tidbits of brain science along the way.

You can learn more in the “Nature of Seeing” interpretive gallery.

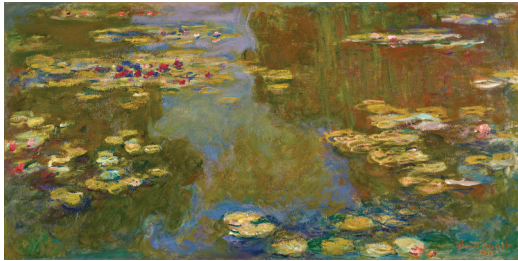
Enjoy!

BRAIN CHALLENGE ①

Can you perceive a sense of depth in this painting? Does the water appear to extend outward toward a horizon?

Your brain is wired to rely on visual cues to determine depth—that three-dimensional sense of space receding into the distance. These cues help you perceive objects that are near versus ones that are farther away.

Look at other paintings in this gallery. Is a sense of depth clearer in other artworks? What visual cues are missing in this painting?



Claude Monet, *The Water-Lily Pond*, 1919

BRAIN CHALLENGE ②



Henri Edmond Cross, *Rio San Trovanzo, Venice*, 1903-04

Try looking at this painting close up (approximately three feet away). Then slowly back away. Does the image change?

Your brain can respond to “high-frequency” details (fine, sharp lines or small points) only when you are close up. As you back away, your brain detects only “lower-frequency” features (larger shapes such as a building or area of trees).

In this painting of the Italian city of Venice, the high-frequency dabs of paint blend into lower-frequency buildings and bridges, and your brain experiences this image—which is made up of many tiny dots of paint—as a complete picture of a canal.



Thomas Moran, *Grand Canyon of Arizona at Sunset*, 1909

BRAIN CHALLENGE ③

How does this painting make you feel?

The Grand Canyon is an astonishing, mile-deep gash in Arizona, so vast and unexpected that you can't look away. Does this painting capture any aspects of what the physical experience of being at the Grand Canyon might be like?

The sense of depth in this landscape is strong, partly because of the high contrast and many details of the foreground cliffs in relation to the lower-contrast, less-detailed areas in the distance. This mimics your brain's experience with vast landscapes in real life, where closer places have more contrast and detail, while areas in the distance have less.



Yves Tanguy, *A Large Picture that Represents a Landscape*, 1927

BRAIN CHALLENGE ④

Can you identify the objects in this landscape? Try to figure out what they might be. Ask someone else if they know what these objects are. Does their interpretation agree with yours?

Sometimes an object is unfamiliar, or there isn't enough visual information to identify it. Visual details about color, shape, and form are routed to the parts of your brain that are most likely to recognize them. If the information is vague, several areas may respond, and you may be unclear about exactly what you're seeing.

Try looking at nearby paintings with more easily identifiable objects. Are you more curious about what Tanguy's unfamiliar objects might be? Do you like trying to figure them out?



David Hockney, *The Grand Canyon*, 1998

BRAIN CHALLENGE ⑤

Think back to other paintings of the Grand Canyon in this exhibition. How does this artist's depiction compare to the others? Do you perceive the same sense of vastness or depth? How does this painting communicate the size and depth of the Grand Canyon?

Probably the most important aspect of this painting is color: the bright reds, violets, and greens. Colors are a defining property of objects, including the cliffs, rocks, and trees of the Grand Canyon, and they help your brain identify what objects are.

How you perceive color depends on the parts of your brain that help you identify what something is. Bright colors like these also engage brain areas that make you pay attention.

Special thanks to Oregon Health and Science University's Brain Institute, the Allen Institute for Brain Science, and NW Noggin for their support in developing the "Nature of Seeing" interpretive gallery.

This guide was created by the Portland Art Museum. The Brain Challenges in this guide were written by Bill Griesar and Jeff Leake of NW Noggin.



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BRAIN SCIENCE



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