

Left Right Notes

Facts

8

OH

H OH

OH

Goal

5

3

Logic $E=mc^2$

6

1

2

$\pi = 3,141592$

3

A B C

a b c

$c^2 = a^2 + b^2$



Creative

Dream

Emotions

Imagination

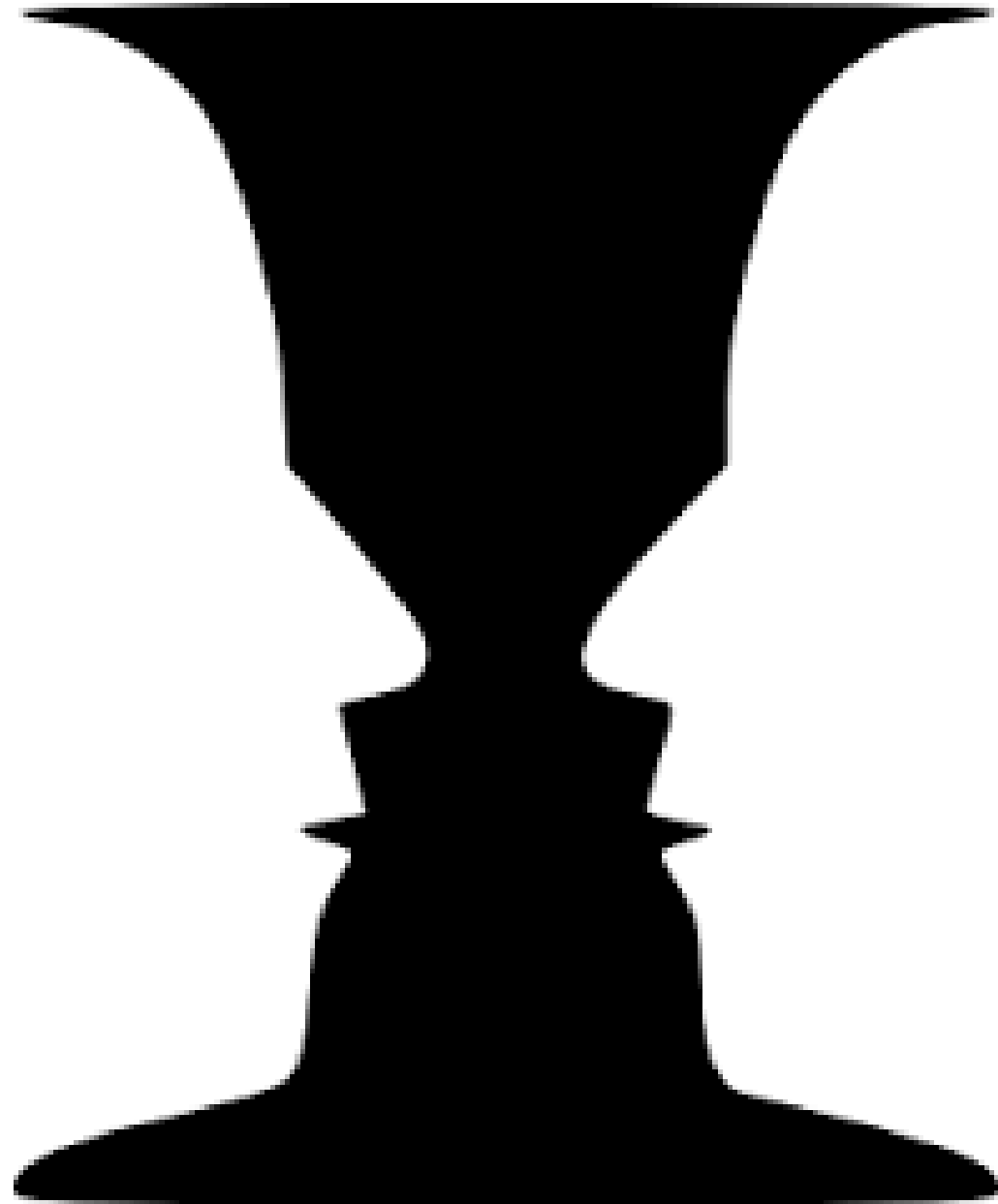
Our Brain

(“cliff notes” version)

- **Neurons- Brain cells**
 - Store and process information (like a flash-drive)
- **Synapses**
 - Connections between brain cells (similar to the thing that connects your thumb drive to your computer)
- **Neural Net**
 - When a bunch of neurons are making multiple connections with other neurons
 - When you learn new information, you are literally forming new connections in your brain. This is why when you learn something new it feels like your brain is moving in slow motion until you have that “oh-I-get-it” moment.
 - The only way to get to that “I get it” moment is to keep forcing your brain to keep working at the new task. If you stop, you stop making your neurons re-wire themselves.
 - This is why it’s ok if you don’t understand something the first time you learn it, you may just need more time or different ways of learning something to develop your Neural Net!
- **Creative Center Learners (aka: Right Brain people)**
 - Creative, intuition, center for your brain, prefer more nonlinear way of learning
- **Logic Center Learners (aka: Left Brain people)**
 - Logic, rationalizing, center for your brain, prefer more linear way of thinking
- **Neurology**
 - The study of how and why your brain works the way that it does.

Quick Left/Right brain test

Identify what do you see *FIRST* in the following image.



- **Logic/Left Brain** has difficult time seeing mirror images, so it recognizes the closed shape first: the **Vase**. It focuses in the area inside the edge of the shape first.
- **Creative/Right Brain** sees the **faces** first because it likes to focus on symmetry first.

Some skills may seem unrelated but are actually linked together and have a dramatic impact on each other.

Example: your ability to crawl and your ability to read are connected. If you can't crawl, you can't read

The Reading Study:

- **Problem:** a group of adults was identified as being very intelligent but were never able to read – even if they got extra help and tutoring. Scientists set out to understand why and see if they could help them learn to read.
- **Hypothesis:** is there something all of the people in the study have in common; if so, what is it and could it be used to help them learn to read?
 - Collected data on all the people in the study included: personal background information, developmental milestones (did they meet them, or were there delays), what was their education background, etc.
- **Result:** one major commonality emerged: none of them learned how to crawl. They skipped it by doing a side scoot or walked on all fours instead, or just went right into walking. There were other similarities but that one was so wired and unusual it stood out and they decided to focus on it.
- **Theory:** If they taught them to crawl would they be able to learn how to read?
- **Experiment:**
 - **Part 1:** try teaching them to read. Basically: Give them remediation with out learning to crawl and see if they just needed extra help learning how to read. If that didn't help, then they would move on to part 2.
 - **Part 2:** Teach them how to crawl. Yes these were all adult men (some were in their 60's) on the ground learning how to crawl for the first time.
 - **Part 3:** Teach them how to read again now they know how to crawl.
- **Results:** all of them were starting to read by the end of part 3. **Confirmed their theory**

Digging a little deeper... if you want to know

For those interested: The result of that first reading study obviously left them with more questions and scientists wanting to understand more about the connections between crawling and reading. Overtime and many studies later they did discover their answer:

Crawling is a base skill that is the foundation Neuro-Net that also affects your eyes ability to track and follow text in a line across a page when you're reading.

Those 2 skills are literally connected and use the same parts of your brain to do them. It is the foundation for the neural net for reading. If you don't develop that foundation there's nothing to build from, hence why you can't read until you've created that neural net. Crawling is actually a very specific series of tasks your brain needs to do all at the same time without you thinking about: hand eye coordination, balance, being able to lift yourself off the ground, being able to see a place and moving towards it alternating movements between your hands and legs, being able to focus on an object while you're moving towards it, etc.

Your eyes process that information basically instantaneously all at the same time. Your brain needs to be able to do those level of complex calculations to follow text along a line, down a page, while deciphering letters that form words, interpreting what those words meaning in the context of other words, turn the page or scroll down, imagine in your head the seen you're reading, etc. and then thinking about what you're going to have for lunch pops into your head and derails everything!

Ok that's interesting but How does this relate to art SKILLS?

- Drawing is a neural net foundation skill
 - It affects your spatial reasoning skills and ability to accurately perceive space
 - It helps increase your divergent thinking and problem-solving skills
 - Make seeing the whole problem easier instead of just the parts (and vice-versa)
 - The mechanical skills in this area translate to all media (all art materials incorporate mark making skills)
 - Sub Neuro Net skills
 - Observational drawing-
 - Helps our brains stop “editing out/in” visual information so we can draw what’s really there instead of what we think/assume is there.
 - Linear perspective drawing
 - Understanding how rules and logic make for accurate representations of objects in real space
 - Sculpting
 - Seeing how objects really take up space vs. what we think they look like in our head

How does this relate to an art CLASS?

- Most of our time in an art class is spent on deprogramming our brains out of natural instincts.
 - Some people have an easier time with this than others, but just like with any skill the more time you put into practicing it the better you'll get at it.
 - Example: What do you see in the image?
 - Our instinct is to identify the object.
 - Thinking with an Artist's Brain what else do you see?
- Drawing helps us learn to really see the world around us, instead of what we think we see...
 - Our brain likes to edit information that's around us- especially when we're unaware of it.
 - Symbol Bank: something our brain uses to simplify information



How does this relate to an art CLASS?

- Learning *how to draw* helps us learn to really see the world around us, instead of what we think we see...
 - Our brain likes to edit information that's around us- especially when we're unaware of it.
 - Symbol Banks are our brain's way of creating shortcuts.
 - These shortcuts are great when our brain needs to identify things fast
 - However, they get in the way when we're trying to learn how to draw what we *really* see

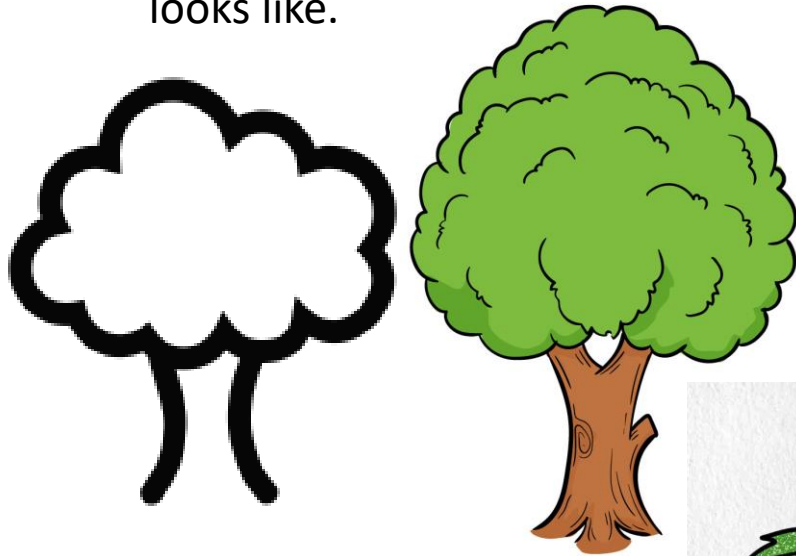
Symbol Bank Experiment

Draw a Tree
in 1 minute

Which did you draw?

These are **symbols** of a Tree

This is drawing what your brain THINKS a tree looks like.



This is a **REAL** tree



How do we see these things?

1. Work from observation or photographic images!
2. Slow down, take time to really look!

What does a trunk and branches look like, how do I recreate the textures of the leaves and the open spaces between prances. What about the sky behind it, how is it existing in space, how does scale of the background/foreground related to the tree?

How do we start drawing what we really see instead of what we think we see?

- We practice doing these exercises
 - Upside-down drawing
 - Turning an image upside down confused our symbol bank so we start seeing the shapes, forms, lines, angles, value, etc.
 - Blind contour drawing
 - Trains our hand eye coordination so we can focus more on what we're looking at while we're drawing instead of our drawing.
 - Contour and Cross-Contour drawing
 - Helps our brain develop more sensitivity to objects details and the space they occupy.
 - Linear Perspective drawing
 - Helps train our brains for what to look for when we start observational drawing.
 - Observational drawings
 - Help train our brains to translate real 3-D space to 2-D space and gain a better internal space recognition.
 - Drawings that focus on exaggerating scale
 - Help to develop higher level of sensitivity to extreme details.

What makes someone “good” at art?

PRACTICE!

“After 10,000 hours of practicing any skill, talent doesn’t matter anymore” - Malcom Gladwell

(~10 hours/week for 18 years = 10,000 hours)

