

# Brain Training

- Tuesdays at 2:00pm, Thursdays at 8:00pm
- September 27-28: Tools of the Brain
- October 4-5: Effective Studying
- October 11-12: Beat Procrastination
- October 18-19: Conquer Exams

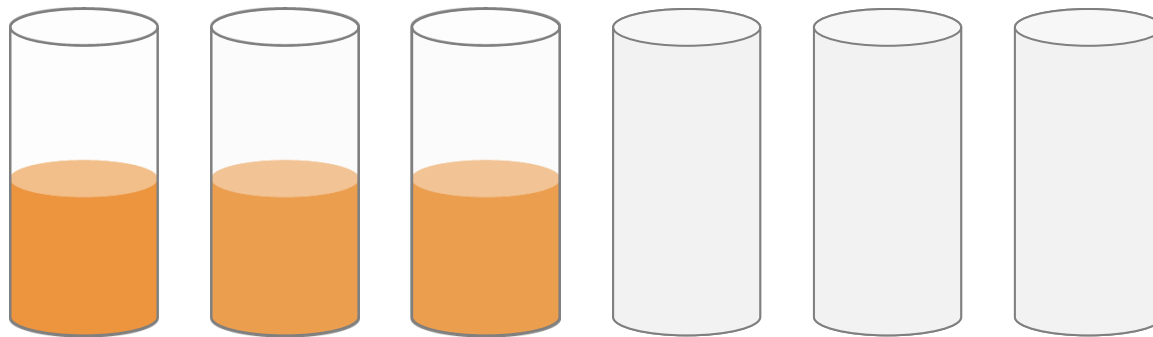
# Tools of the Brain

Learn about the tools you have and  
how to use them

# Focused vs. Diffuse modes of thinking



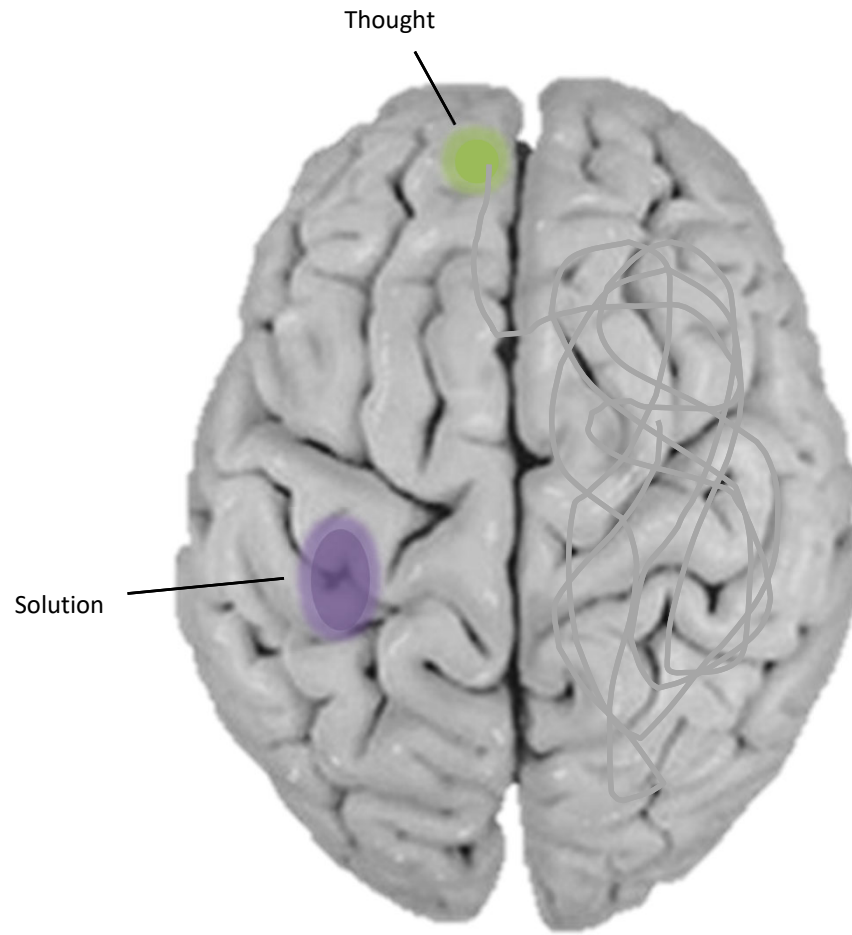
# Focused vs. Diffuse modes of thinking



Three of the glasses are filled with orange juice, and three are empty. While only touching one glass can you make the empty and full glasses alternate?

(Modified from Goldsmith, M., 2012)

# Focused vs. Diffuse modes of thinking



# Focused vs. Diffuse modes of thinking

Grated vegetable dish (2 words)

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C \_ R \_ OT \_ \_ \_ \_ \_

# Focused vs. Diffuse modes of thinking

Grated vegetable dish (2 words)

CARROT \_ \_ \_ \_ \_



# Focused vs. Diffuse modes of thinking

Grated vegetable dish (2 words)

CARROTS \_ \_ \_ \_

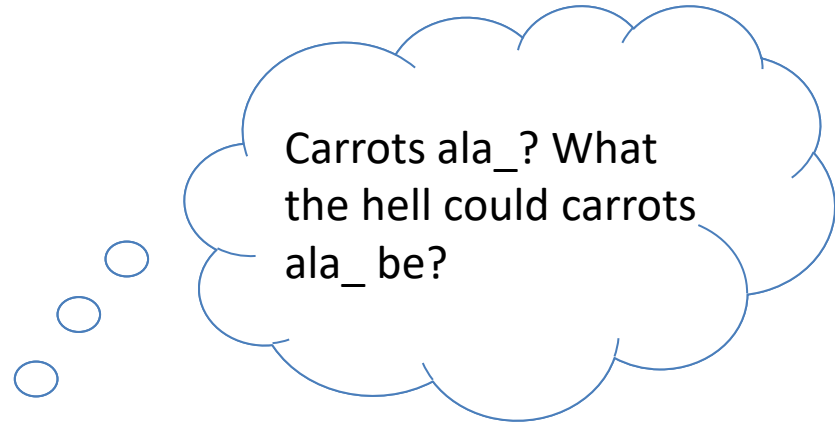
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Grated vegetable dish (2 words)

CARROTSALA \_

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Grated vegetable dish (2 words)



CARROTSALA \_

# Focused vs. Diffuse modes of thinking

$$12 - 3x = 4$$

$$-3x = 8$$

$$x = -8/3$$

# Focused vs. Diffuse modes of thinking

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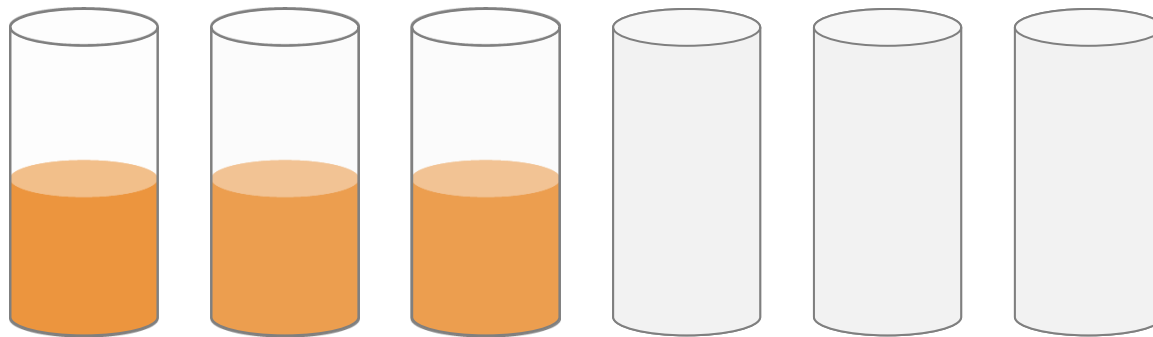
$$x = +8/3$$

# Focused vs. Diffuse modes of thinking

WALK AWAY!

- work on a different problem
- work on a different class
- take a break

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# Memory – How it works

Short Term Memory  
versus  
Long Term Memory



# Memory – How it works

## Short Term Memory versus Long Term Memory

RAM  
vs  
hard drive

# Memory – How it works

## Short Term Memory versus Long Term Memory

RAM  
vs  
hard drive

Open on your desk  
vs  
Books on the shelf

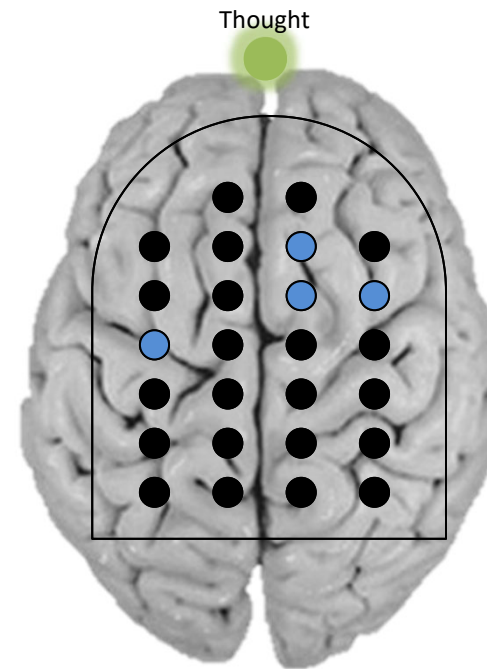
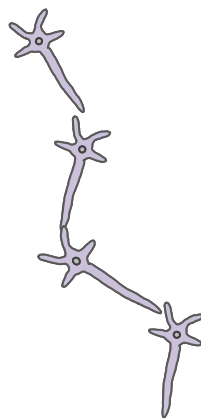
# Memory – How it works



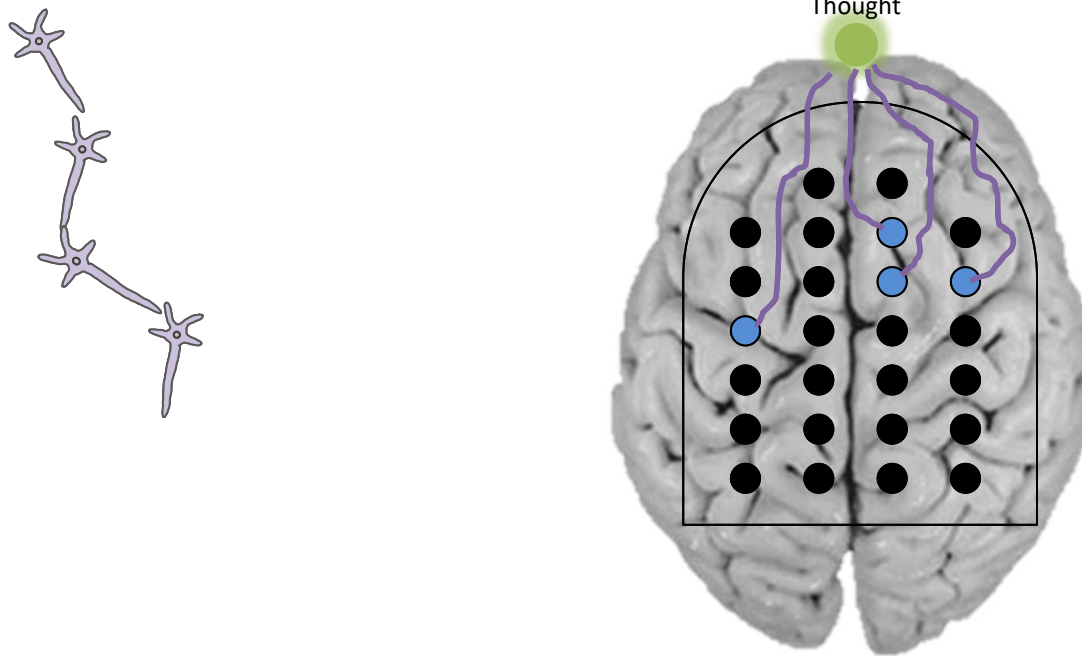
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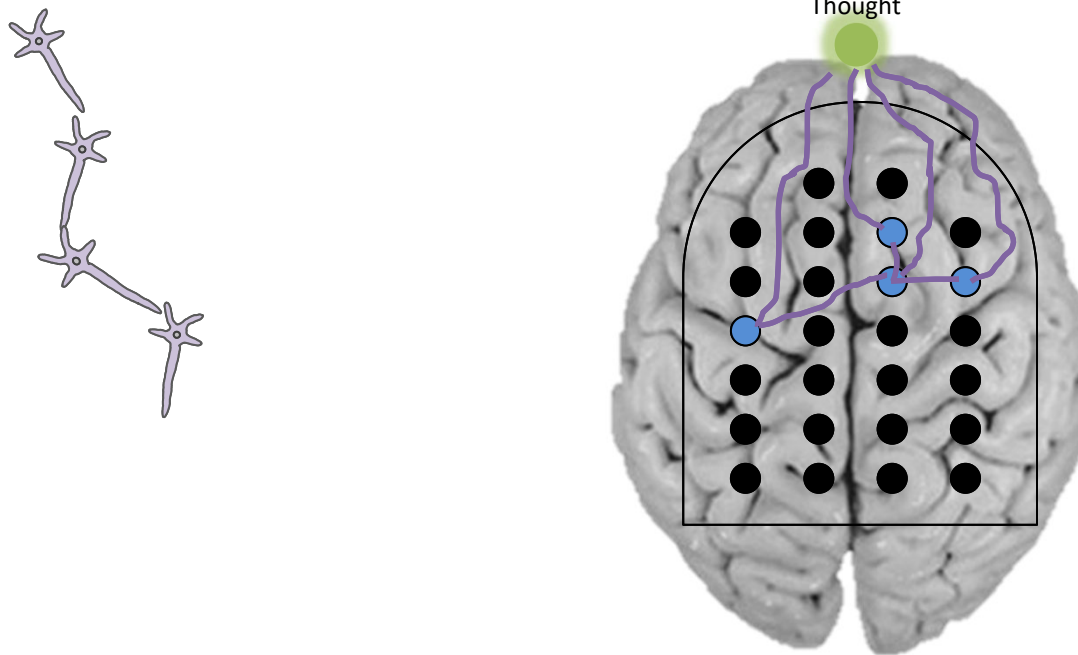
# Invest in your neural pathways



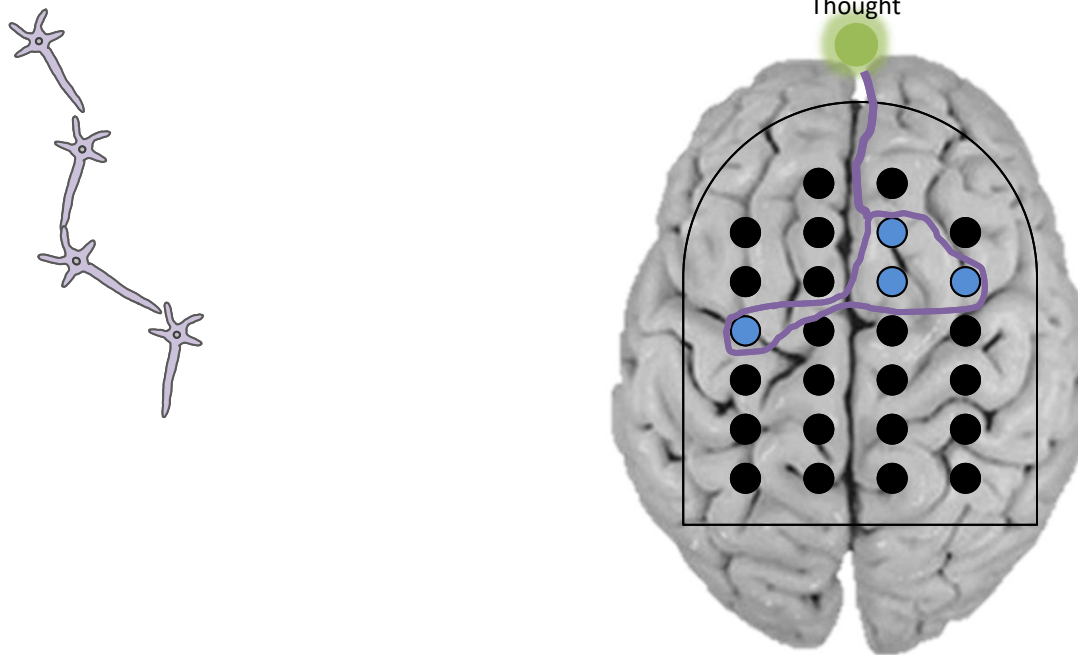
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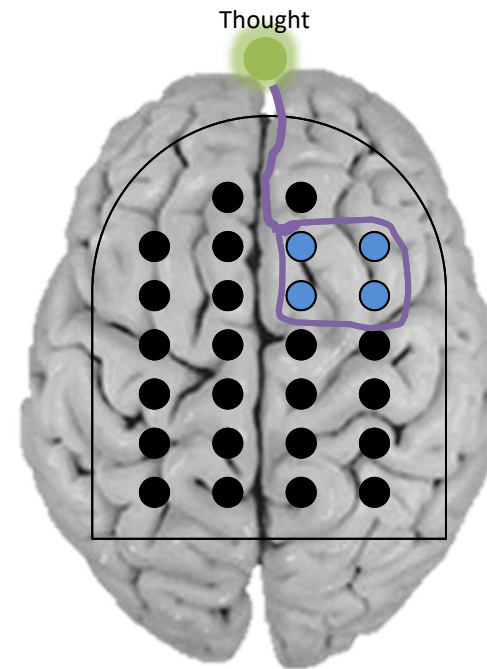
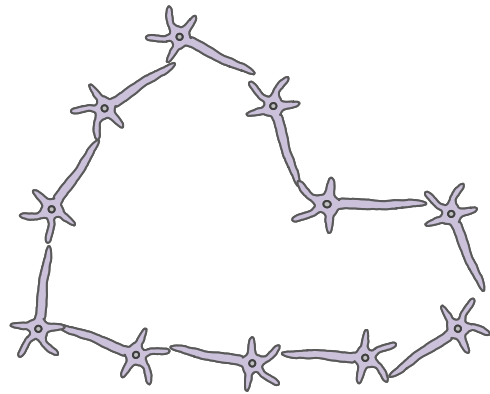
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## Chunking

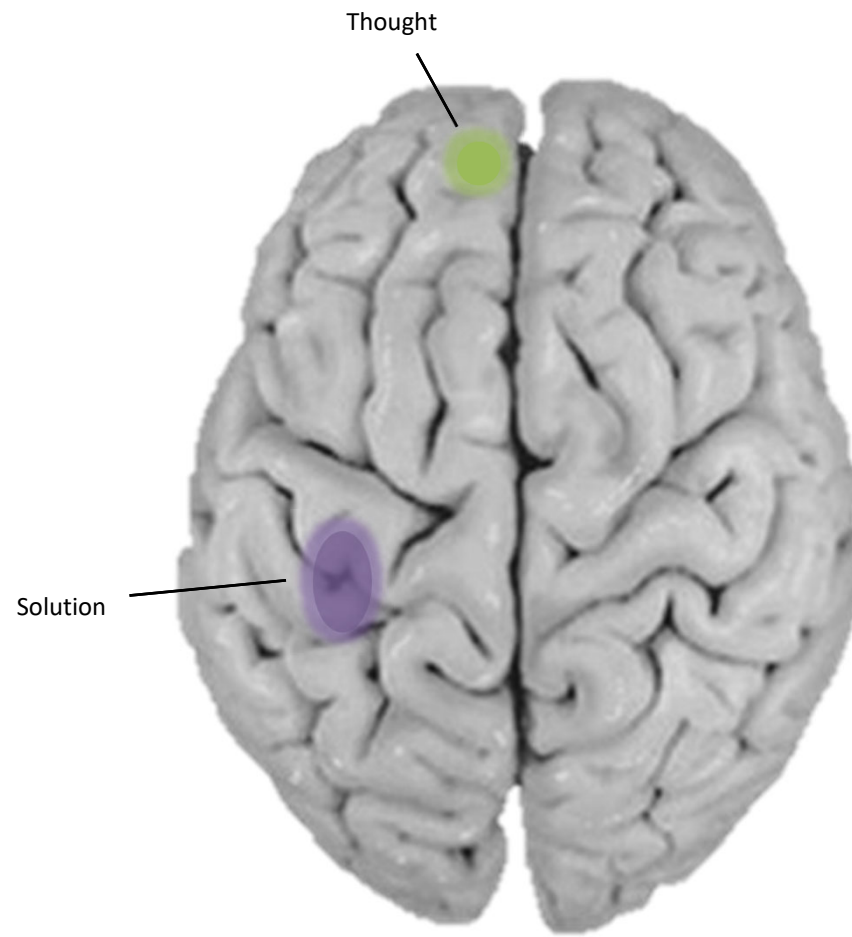


# Practice Retrieval

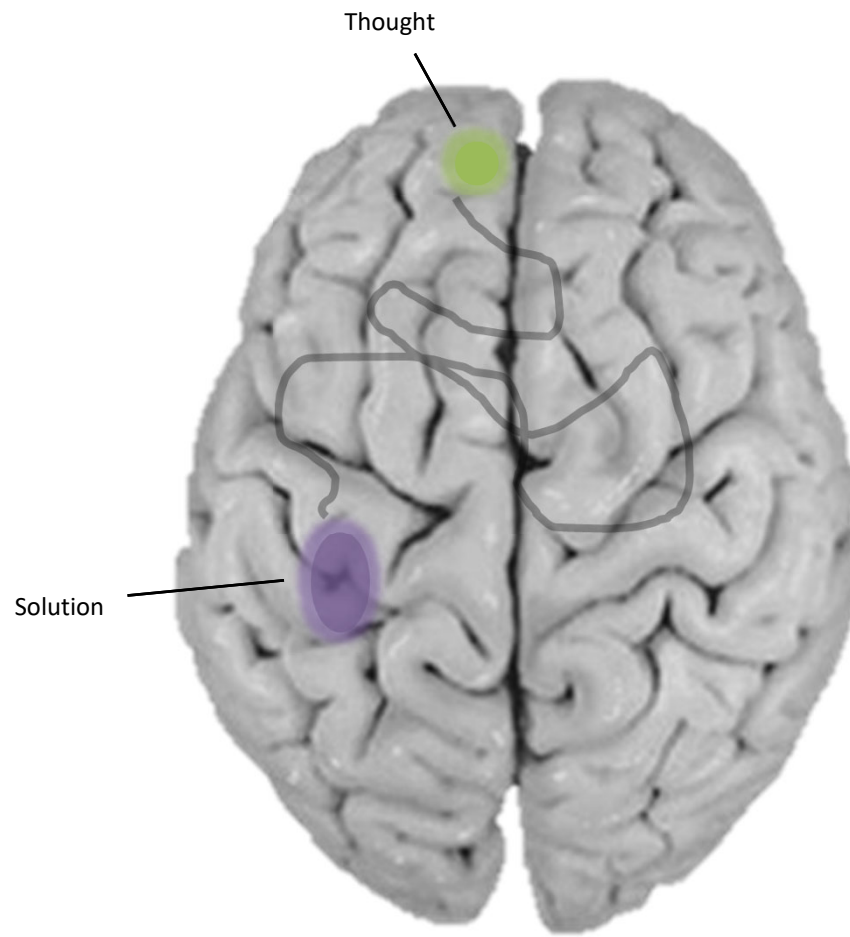
*Remembering* information does not help if you cannot *retrieve* it!



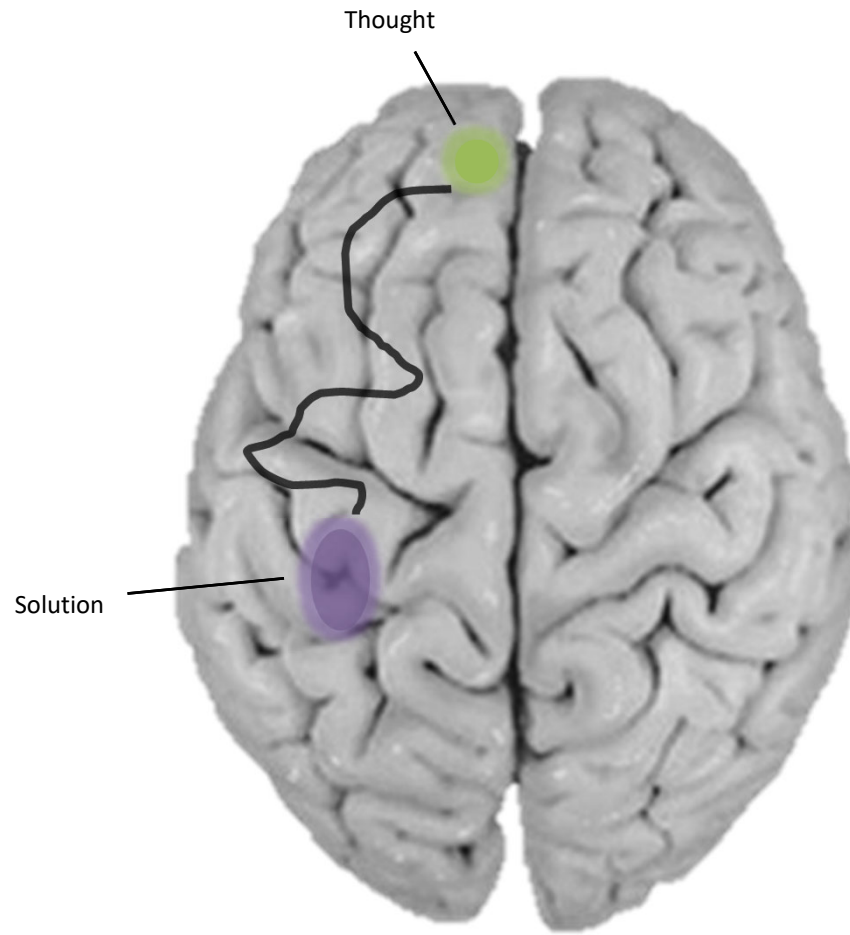
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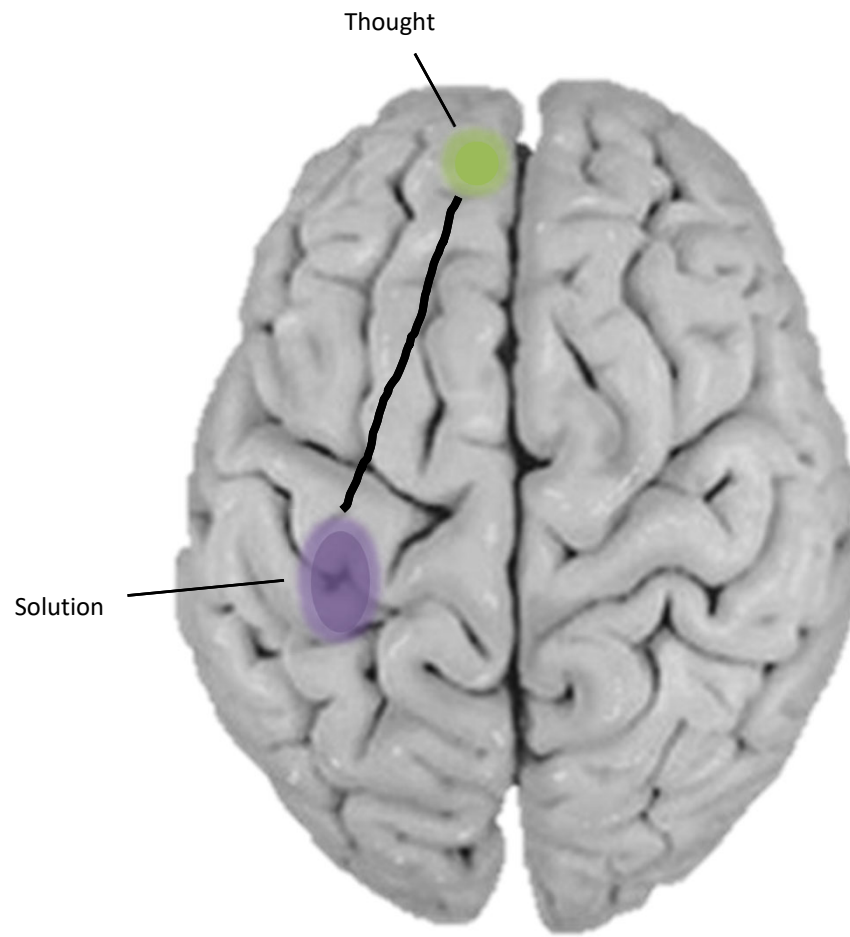
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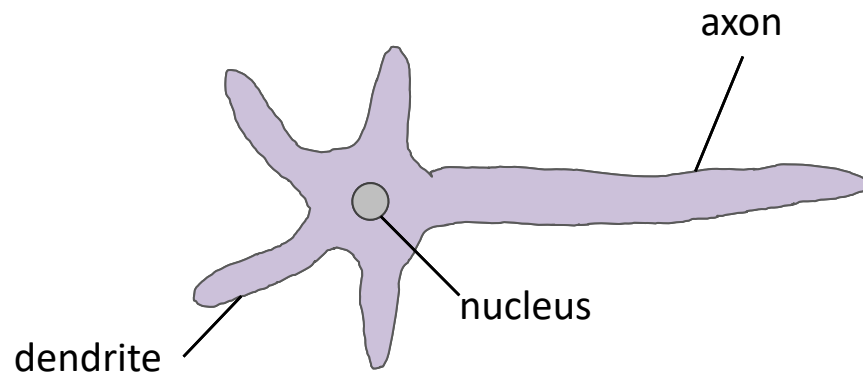


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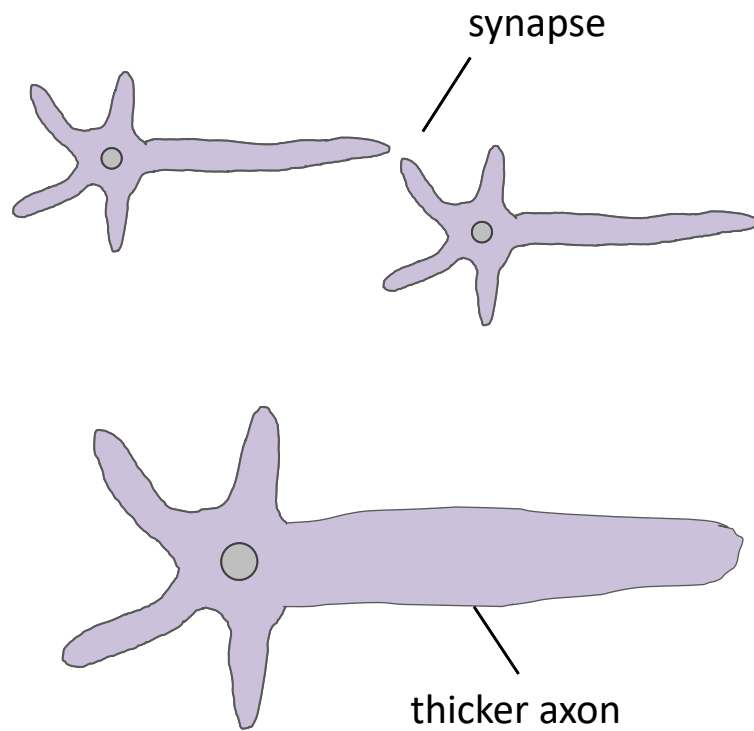
# Practice Retrieval

## Anatomy of a neuron



# Practice Retrieval

## Anatomy of a neuron





# Chunking – invest in your neural pathways

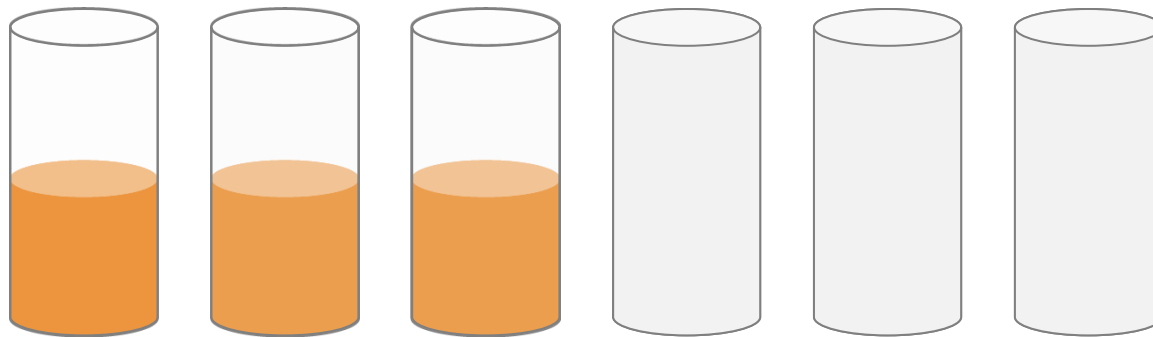
## How to form a chunk

1. Focus on the info you want to chunk  
(sample problem)
2. Understand the information/concept  
you are trying to chunk.
3. Practice without notes or book  
(practice retrieval)
4. Build Context (interleaving)

# Memory Techniques

- Visualization
  - Method of loci (memory palace)
- Metaphors/Analogies
- Spaced repetition
- Interleaving

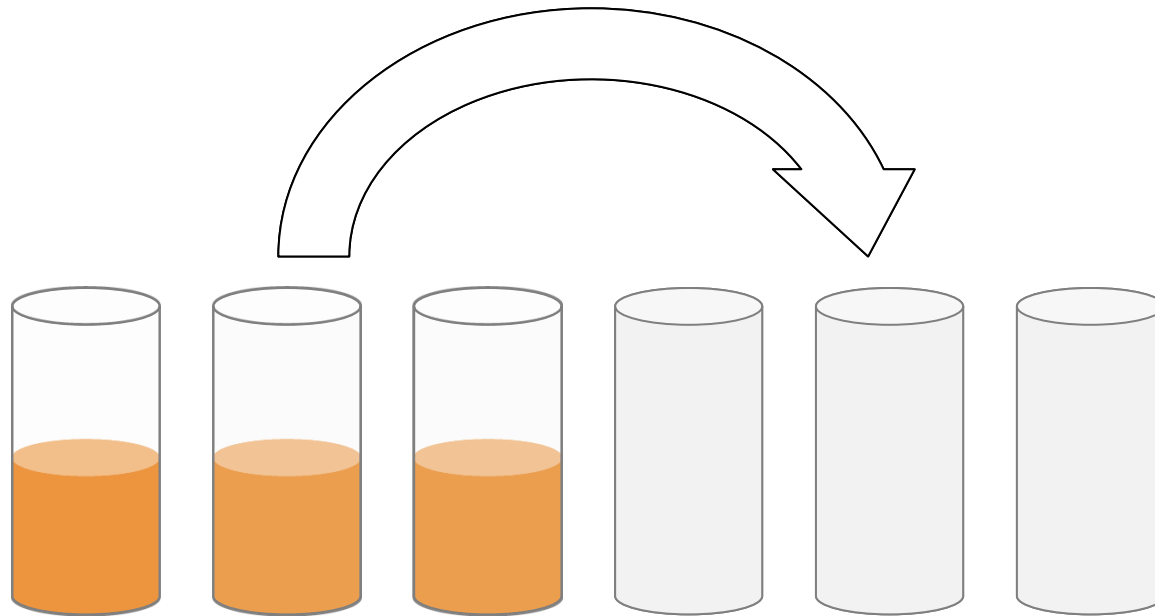
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  - Associate memories with other memories. Turn them into a block so you only have to remember *one* thing instead of many little things.

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- Sleep!
  - Your neurons grow and adapt when you are sleeping – adequate sleep is important to make sure the training sticks!