



The Neuropsychology of Reading

INSIGHTS FOR PARENTS

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About Me

- Founder and Chief Operator of Mindset Bermuda
 - Mindset Neuropsychological Assessment and Treatment
 - www.MindsetBermuda.com
- Clinical Neuropsychologist (subspeciality in pediatrics)
- Clinical Specialties:
 - Traumatic Brain Injury
 - Sports Concussions
 - Seizure Disorders and other medical/organic/acquired brain injury
 - ADHD and other neurodevelopmental disorders



Overview

Brain Regions involved in Reading

Overview of Dyslexia and Other Reading Disorders

Why Should Children be Assessed?

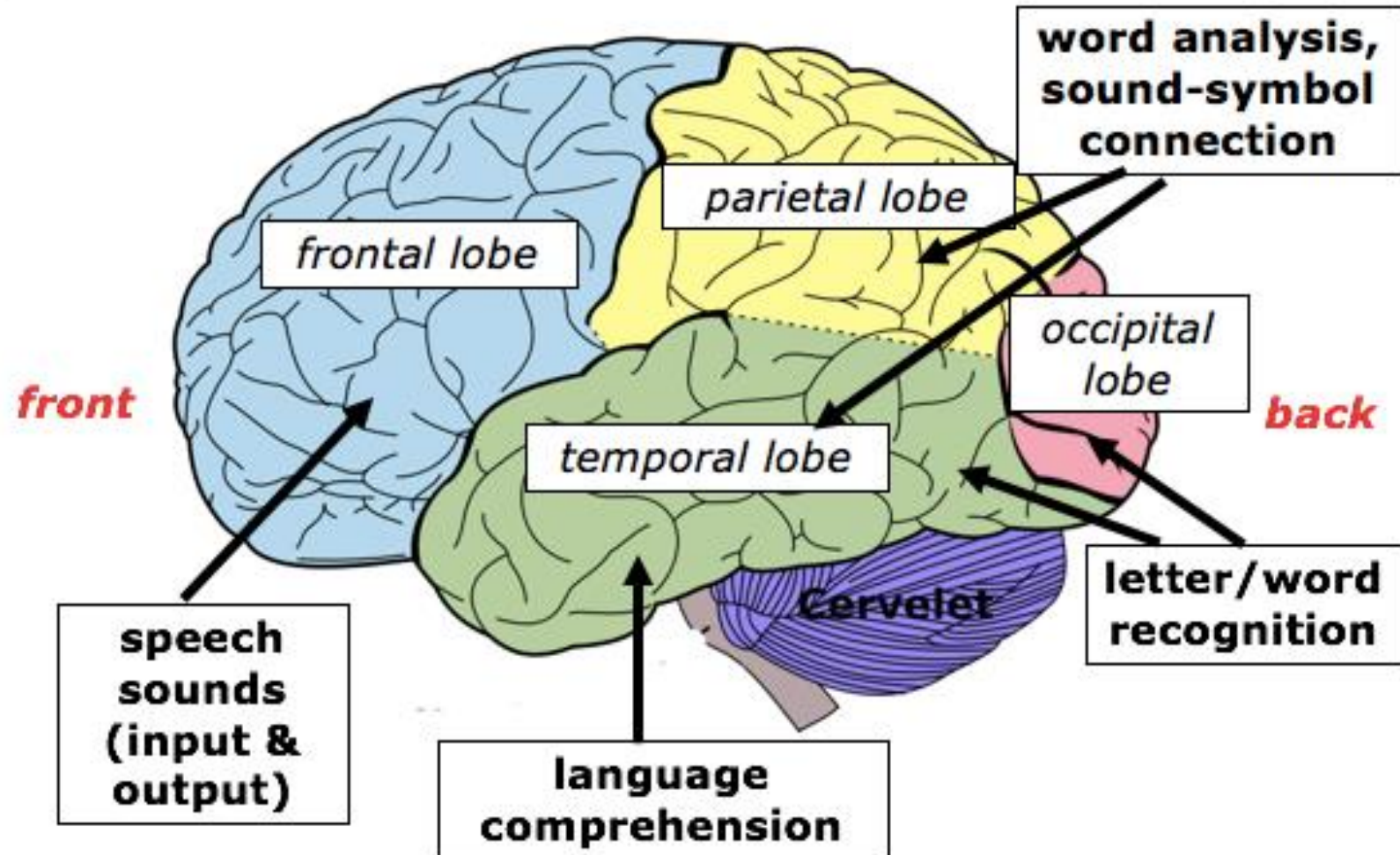
How to Support Reading at Home

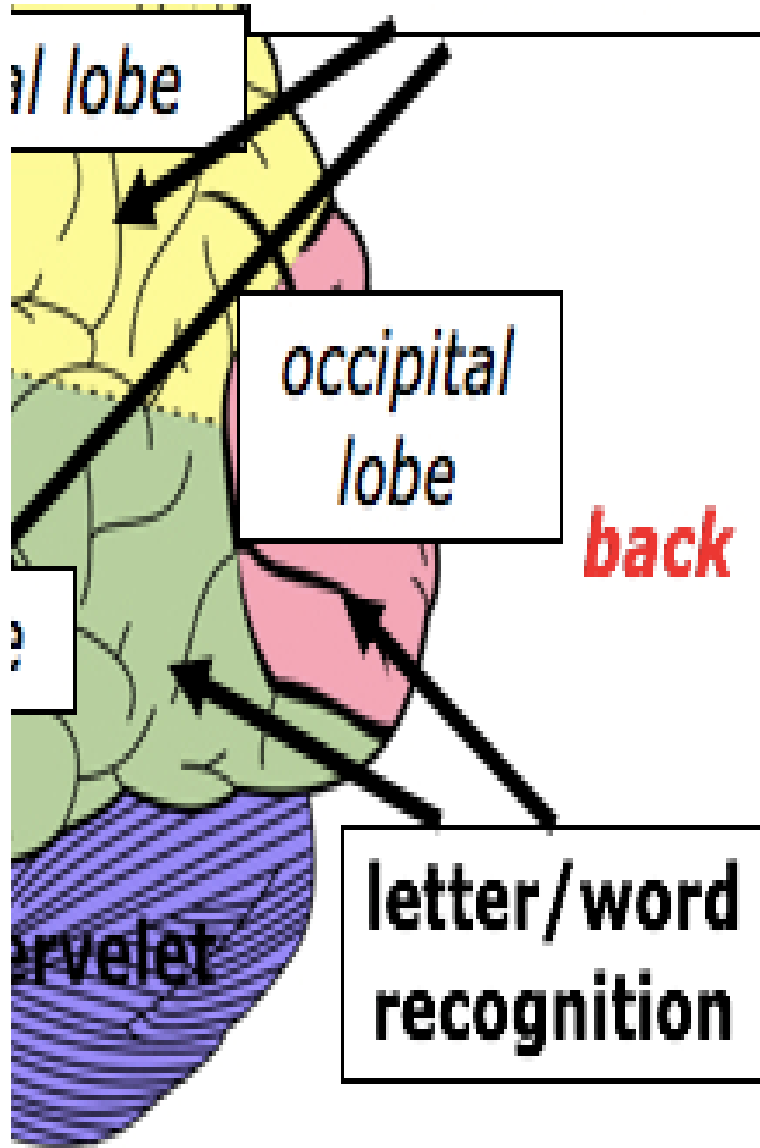
ICE BREAKER: Brain Fact or Fiction

- ▶ We only use 10% of our brains **FICTION**
- ▶ Reading activates multiple areas of the brain simultaneously. **FACT**
- ▶ The brain stops developing after childhood. **FICTION**
- ▶ The left hemisphere of the brain is primarily responsible for language processing. **FACT**
- ▶ Listening to classical music can make you smarter. **FICTION**
- ▶ Neuroplasticity allows the brain to change and adapt throughout life. **FACT**

The Reading Brain

(the left hemisphere)



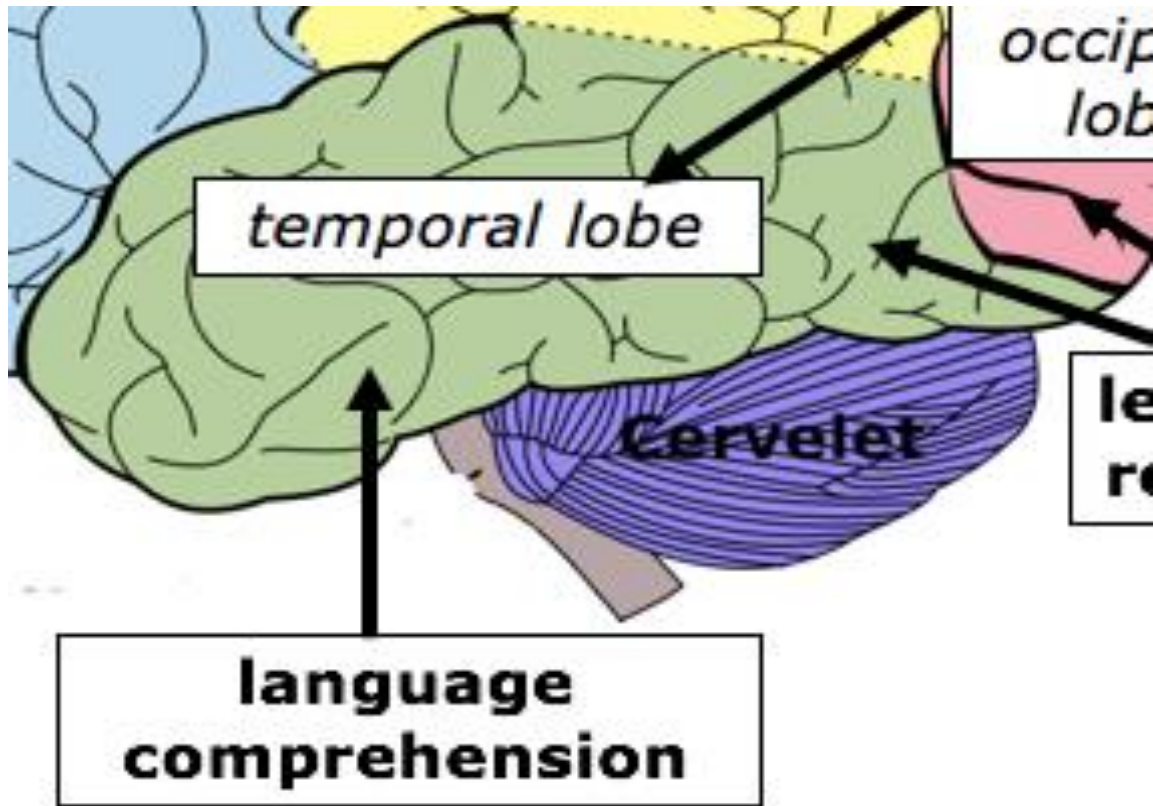


Occipital Lobe

VISUAL PROCESSING AND
RECOGNITION OF LETTERS AND
WORDS

Occipital Lobe Cont.

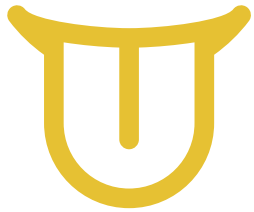
- ▶ Decoding: translating written text into spoken words by matching letters to sounds
 - ▶ The occipital lobe helps recognize letters and words, while the temporal lobe processes the sounds associated with them.
 - ▶ Fluent readers can quickly and accurately decode words, allowing them to focus on comprehension.



Temporal Lobe

PHONOLOGICAL PROCESSING AND
COMPREHENSION OF SPOKEN
LANGUAGE

Temporal Lobe Cont.



Phonological (Phonemic)
Awareness (& processing):

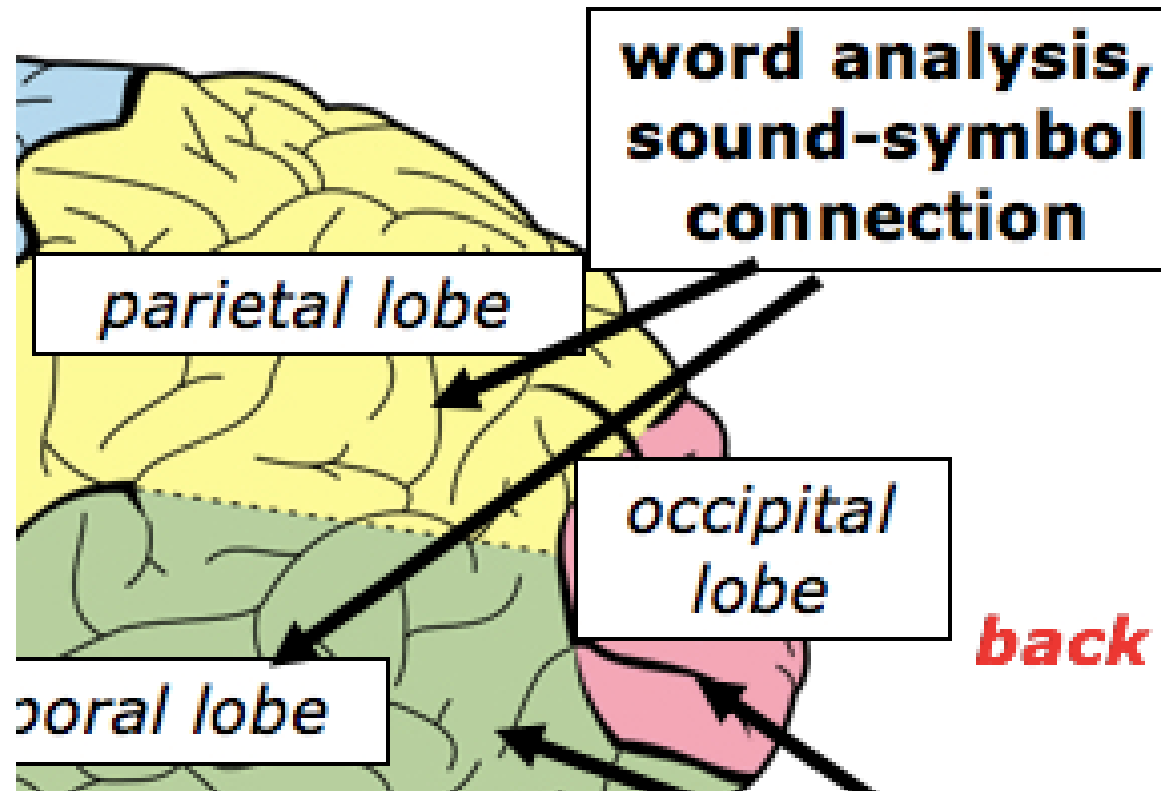
The ability to recognize and manipulate the
sounds of spoken language



Decoding (is also mediated by the
temporal lobe)

The temporal lobe processes the sounds
associated with the letters and words

hemisphere)

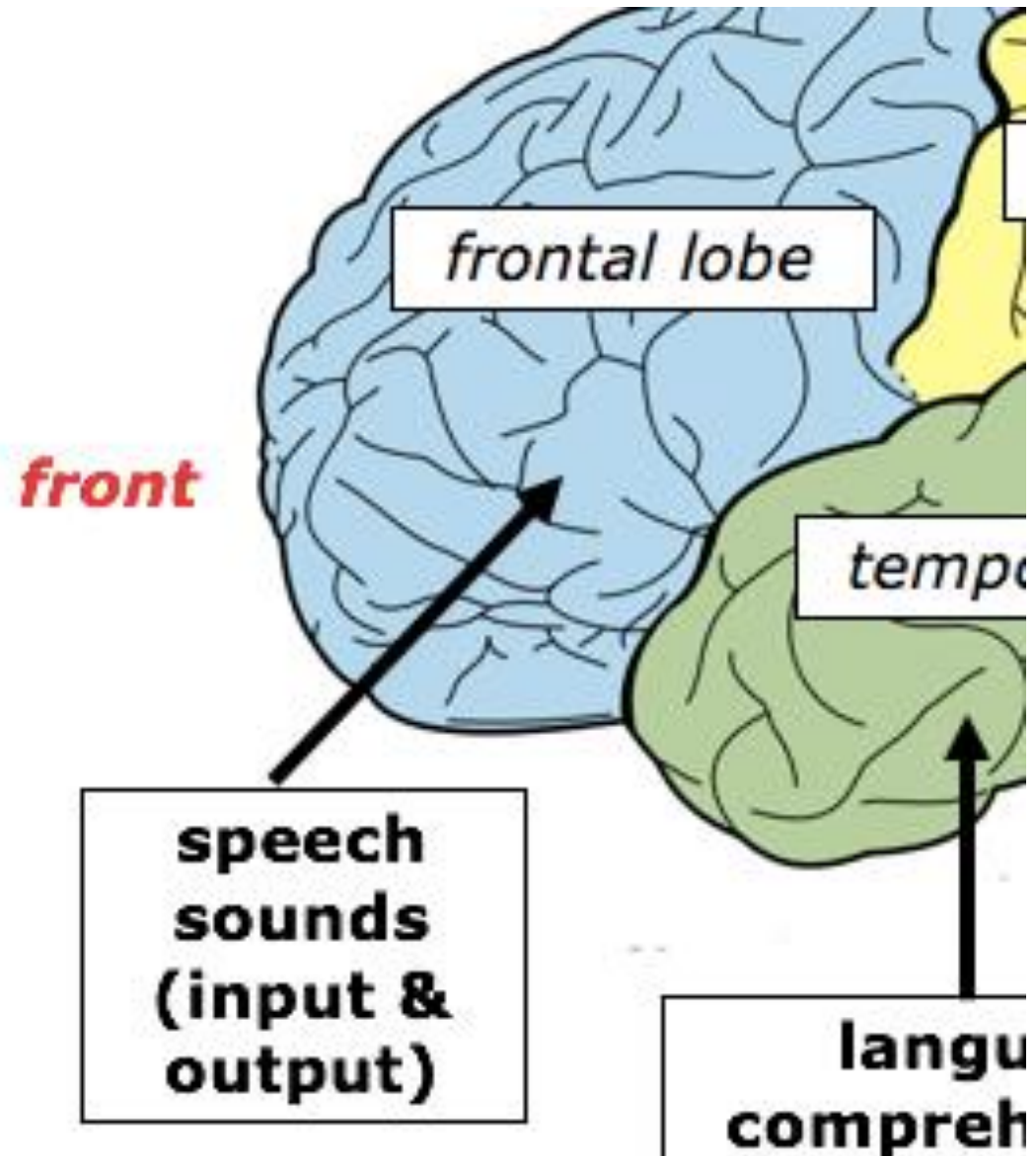


Parietal Lobe

INTEGRATION OF SENSORY
INFORMATION AND SPATIAL
ORIENTATION

Parietal Lobe Cont.

- ▶ Comprehension:
 - ▶ Requires understanding the meaning of words, sentences, and text
 - ▶ The parietal lobe integrates sensory information, helping us create mental images and understand spatial relationships in the text



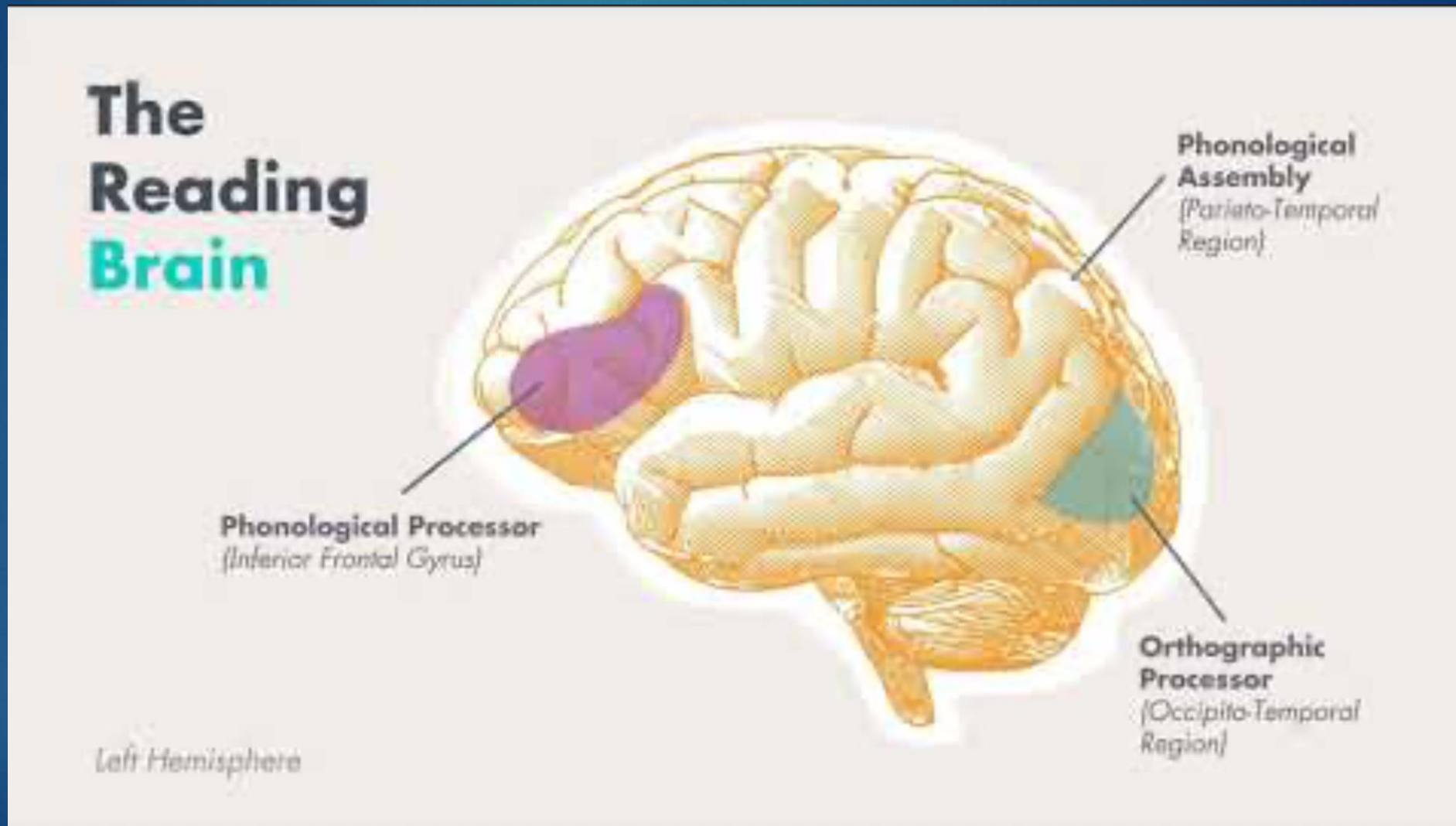
Frontal Lobe

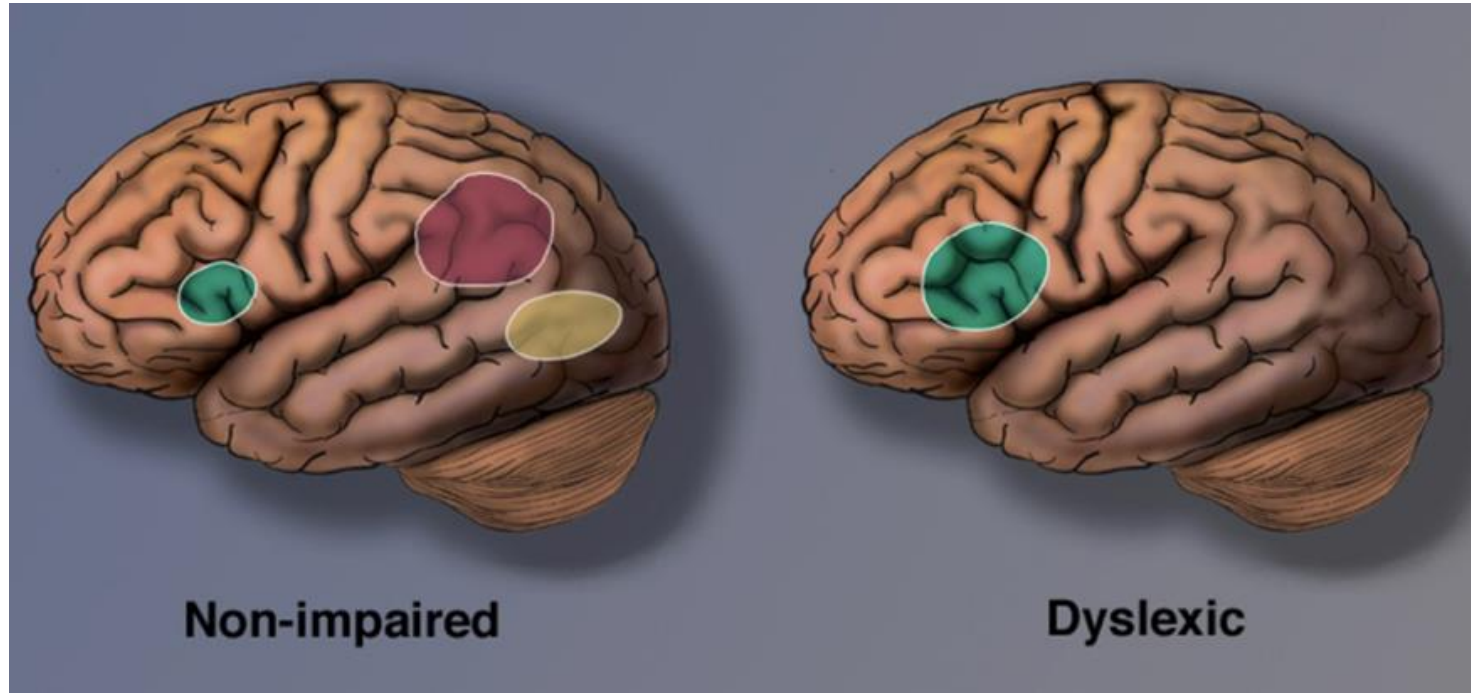
EXECUTIVE FUNCTIONS,
SUCH AS ATTENTION,
PLANNING, AND PROBLEM-
SOLVING.

Frontal Lobe Cont.

- ▶ Comprehension is also impacted by the frontal lobes
 - ▶ The frontal lobe helps with executive functions like maintaining attention and organizing information.

Let's Review!



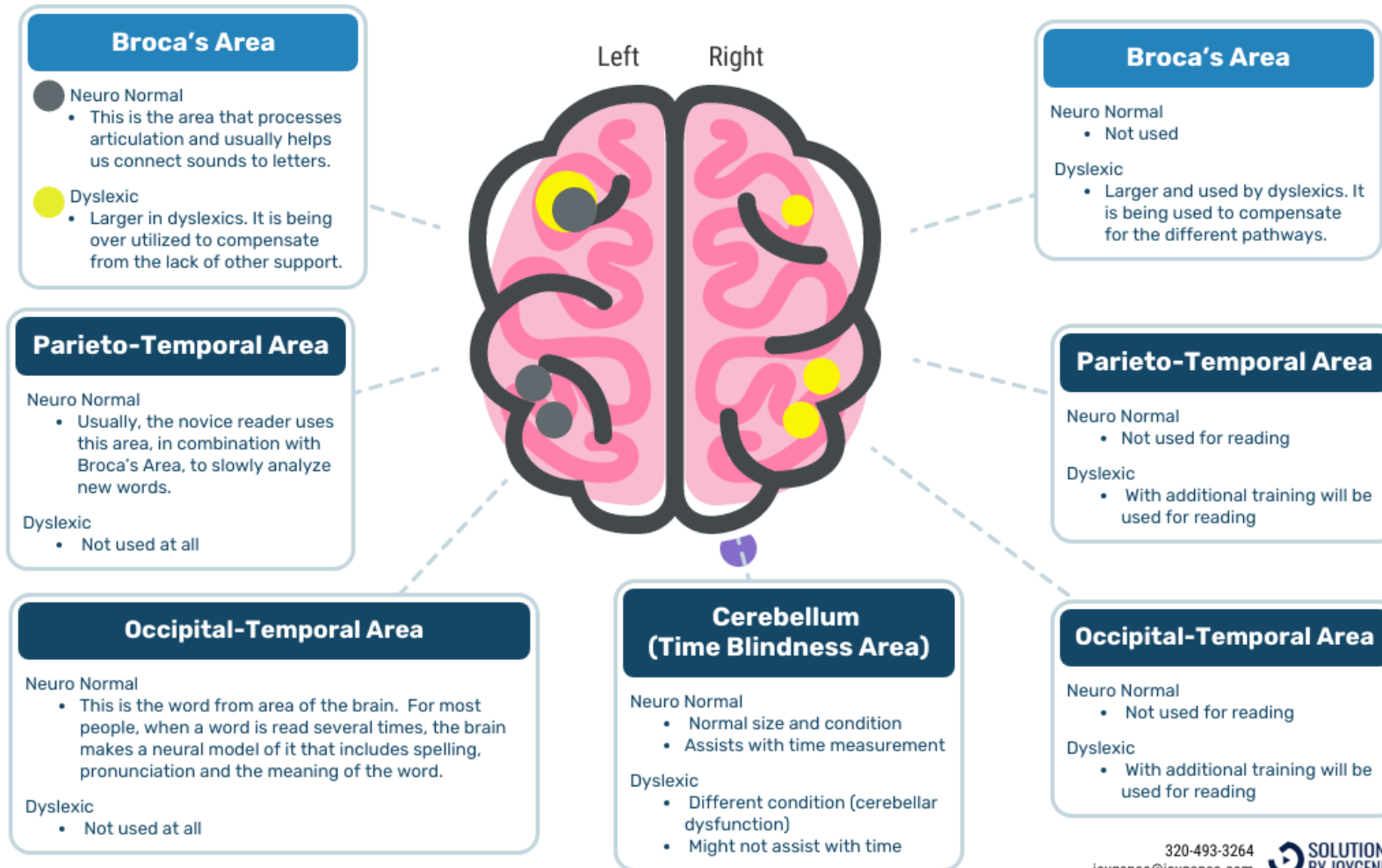


Neural Pathways

NEURODIVERSITY - Dyslexia, Reading, and the Brain

Dyslexia is a specific learning disability that is neurobiological in origin. It is characterized by difficulties with accurate and/or fluent word recognition and by poor spelling and decoding abilities. These difficulties typically result from a deficit in the phonological component of language that is often unexpected in relation to other cognitive abilities and the provision of effective classroom instruction. (Lyon, Shaywitz, & Shaywitz, 2003, p. 2)

2021 Science keeps evolving, stay tuned



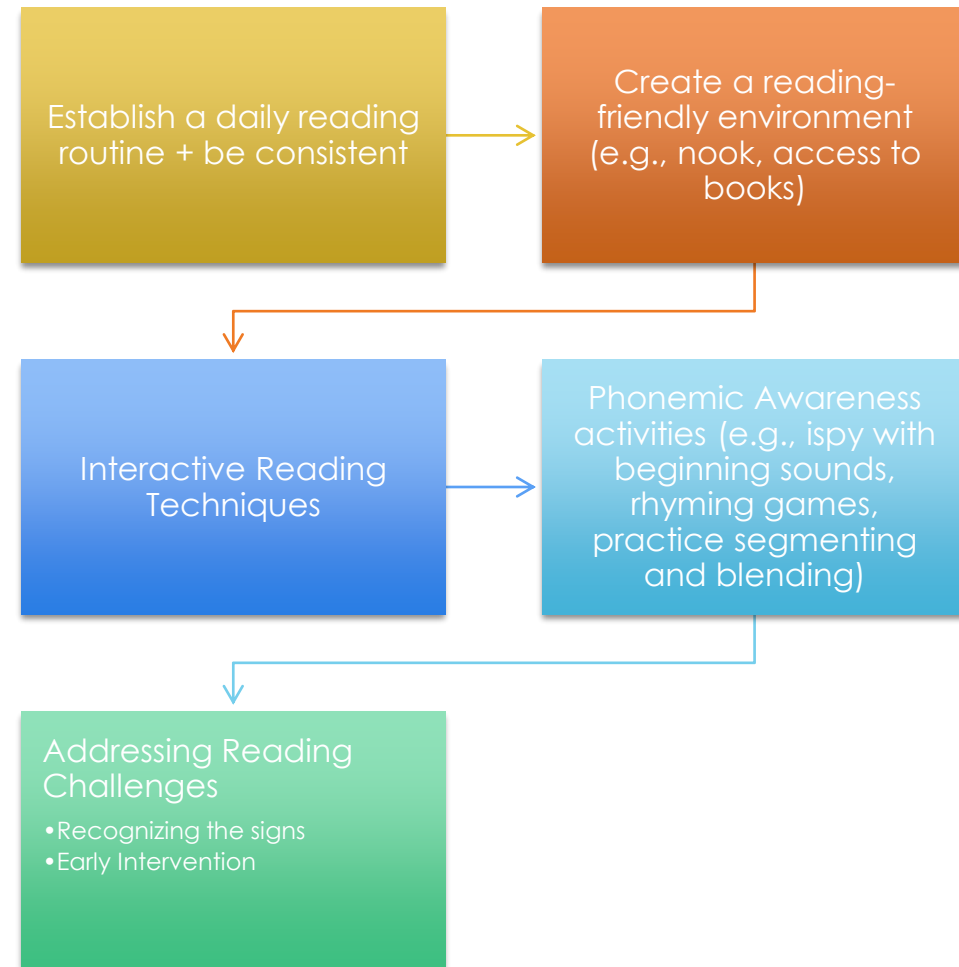
Dyslexia Fact or Fiction

- ▶ Every child who struggles with reading is dyslexic **FICTION**
- ▶ If a dyslexic child reads out loud for 20 mins a day, their reading will improve. **FICTION**
- ▶ Dyslexic children will never read well, so it's best to teach them to compensate. **FICTION**

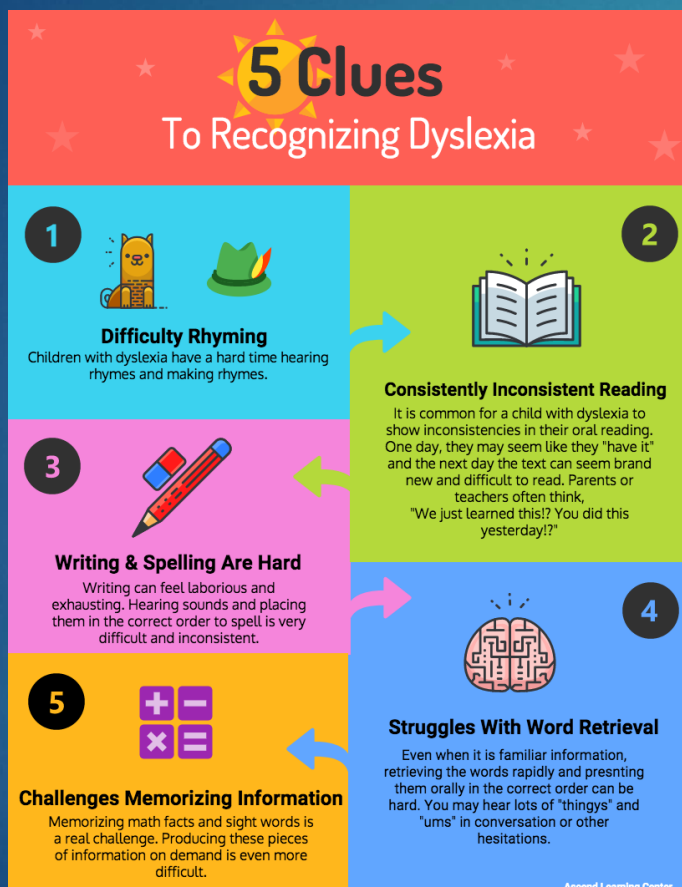
Let's Review!



Strategies to Support Reading at Home



Signs of Reading Challenges



Strategies for Specific Challenges



Dyslexia:

Multi-sensory
techniques
Assistive Technology
Structured Literacy
Programs



Attention Difficulties:

Short, Focused Sessions
Movement Breaks
Interactive Reading



Comprehension Issues:

Graphic Organizers
Summarizing
Predicting and
questioning Games

Collaborate with Educators



Communication with Teachers

Support at School

- E.g. reading intervention, one-on-one tutoring

IEP and 504 Plans



Mental Health and Emotional Challenges Impacting Reading Achievement

Anxiety and Stress

Depression

ADHD

Trauma and PTSD



Provide Emotional Support



Positive Reinforcement: Use to build your child's confidence and motivation. Celebrate small achievements and progress



Patience and Encouragement: Be patient and provide encouragement, especially when your child is struggling. Remind them that everyone learns at their own pace.



Stress Management: Teach stress management techniques, such as deep breathing or mindfulness, to help your child cope with frustration or anxiety related to reading.



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For more information:

- **Target age group/population:** Boys and girls, ages 8 and up.
- **Schedule/availability:** Mondays & Tuesdays from 4:15 PM – 7:15 PM, and Wednesdays & Thursdays from 5:15 PM – 7:15 PM.
- **Cost:** \$200 per 50-minute session (out-of-pocket or copayments).
- **Client scheduling:** Focus on afternoons and evenings.

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