

Understanding How The Brain Learns

Alert! Alert!

Because NICHCY's website will only remain online until September 30, 2014, most of its rich content has moved to a new home, the **Center for Parent Information and Resources** (CPIR), where it can be kept up to date.

The new address of *Understanding How The Brain Learns* at the CPIR is:

<http://www.parentcenterhub.org/repository/brain101/>

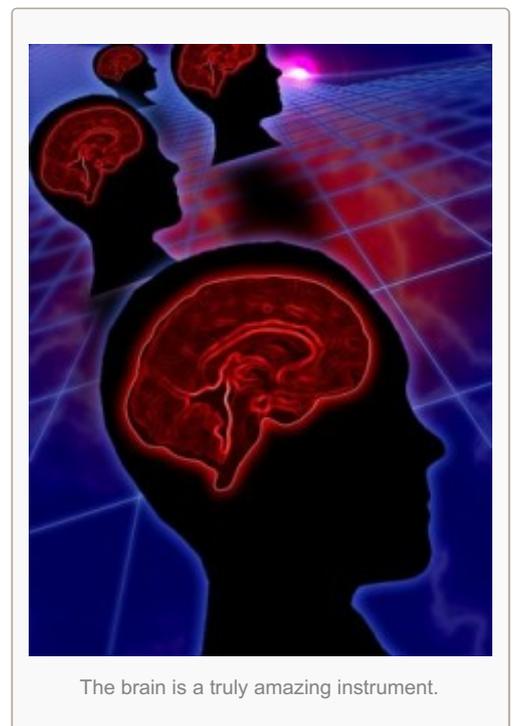
Links updated, April 2013

This page connects you with resources of more information on the ever-developing story of brain research, which has brought an explosion of excitement and promise to our understanding of ourselves. As we discover more and more about the brain and its function, responsibilities, and organization, we hopefully can translate findings into educational programs, practices, and policies that take advantage of what we've learned in the laboratory and beyond.

Non-invasive technologies such as the CT Scan and the MRI play a large part in our ability to peek inside the head and see what the brain is doing. When you look at a color, or hear a sound, or smell a favorite aroma, what part of the brain goes into action? When you're asked to do something complicated with language—or drive a car, or recognize a face—which part or parts of your brain come alive with electrical impulses? In fact, what are the different parts of the brain? With specific kinds of disability, how are these parts the same or different?

The resources we've listed below aren't intended to be exhaustive of the resources available, but they will get you started...and then some! Enjoy.

- [ABCs of the brain](#)
- [What learning does to your brain](#)
- [Applying brain research to education](#)
- [Brain research and disability](#)



The ABCs of the Brain

Brain basics: Know your brain.

NINDS offers this ten-page intro to the human brain, including information on how a healthy brain works, how to keep it healthy, and what happens when it is diseased or dysfunctional.

http://www.ninds.nih.gov/disorders/brain_basics/brain_basics_know_your_brain.pdf

How your brain works.

From Discovery Health.

<http://science.howstuffworks.com/life/inside-the-mind/human-brain/brain.htm>

Brain facts.

The Society for Neuroscience offers *Brain Facts*, a 96-page primer on the brain and nervous system. Designed for a lay audience as an introduction to neuroscience.

<http://www.brainfacts.org/about-neuroscience/brain-facts-book/>

The secret life of the brain.

This 2002 PBS series covers a lifetime of brain development, from infancy to old age. The series and the Web site use visual imagery and compelling human stories to help the audience understand the difficult underlying scientific concepts.

<http://www.pbs.org/wnet/brain/index.html>

Neuroscience for kids (and, frankly, probably most of us adults).

Can't plow through the way neuroscientists write their research articles and findings? Then Neuroscience for Kids is for you! It's an easy-to-read Web site that's been created for all students and teachers who would like to learn about the brain and the nervous system, neuroimaging and other techniques that neuroscientists use, and recent brain research of interest.

<http://faculty.washington.edu/chudler/neurok.html>

Detailed brain basics at the Brain Connection.

Find out about the brain's part in hearing, seeing, moving, the nature of specific disorders, and much more.

<http://brainconnection.positscience.com/library/?main=bbhome/main>

Brain connections: Your source guide to information on brain diseases and disorders.

Here you'll find contact info for more than 240 organizations in the United States likely to help those looking for information, referrals, and other guidance in connection with brain-related disorders.

<http://www.dana.org/news/publications/publication.aspx?id=19148>

[Back to top](#)

What Learning Does to Your Brain

Want to keep up with the findings of brain research?

The Dana Foundation offers multiple ways to keep up with the latest findings—occasional progress reports, a monthly newsletter called *Brain in the News*, and more.

<http://www.dana.org/news/publications/>

Rethinking the Brain.

Child Care Aware (the National Association of Child Care Resource and Referral Agencies) explains the importance of early life in brain development and how early experiences can have long-lasting effects. Parents, educators and child care providers can use this knowledge to intervene in ways that lead to better functional outcomes for children.

<http://childcareaware.org/parents-and-guardians/resources/additional-resources/rethinking-the-brain>

Behavior matters: How research improves our lives.

La conducta sí importa: Cómo la investigación mejora nuestras vidas.

These publications explore how research has improved our lives in specific areas: health, psychology, communications and human connection. The link below will take you to the page where you can access each of these.

<http://www.decadeofbehavior.org/specialpublications.cfm>

Neuroplasticity: A big term for an important trait of our brains.

<http://faculty.washington.edu/chudler/plast.html>

What? Our brains are made of plastic? Nay. But the plasticity of our brains is an amazing attribute. Read all about

it at the no-pain, easy-to-understand link above.

More on plasticity and how learning changes your brain.

<http://www.sharpbrains.com/blog/2008/02/26/brain-plasticity-how-learning-changes-your-brain/>

[Back to top](#)

Applying Brain Research to Education

Core concepts.

This site discusses fundamental principles that one should know about the brain and nervous system, the most complex living structure known in the universe. Neuroscience Core Concepts have broad application for K-12 teachers and the general public, offering the most important insights gained through decades of brain research.

http://www.sfn.org/index.aspx?pagename=core_concepts

Using brain-based teaching strategies to create supportive early childhood environments.

This 6-pager comes from the The National Association of Early Childhood Specialists in State Departments of Education.

<http://www.naeyc.org/files/yc/file/200807/BTJPrimaryInterest.pdf>

Practical classroom applications from current brain research.

<http://www.brains.org/>

How can brain research be integrated into the classroom?

Teacher tap can tell you.

<http://eduscapes.com/tap/topic70.htm>

Brain-friendly teaching: From sensory to long-term memory.

http://www.educationworld.com/a_curr/profdev/profdev156b.shtml

Brain-based research prompts innovative teaching techniques in the classroom.

This article comes from Edutopia.

<http://www.edutopia.org/key-largo-technology-brain-research>

[Back to top](#)

Brain Research and Disability

How the special needs brain learns (2nd edition).

This second edition from 2007 builds on the latest data by examining both simple and complex learning strategies that can be adapted for students with learning disabilities such as ADHD/ADD; speech, reading, writing, and math disabilities; emotional and behavioral disorders; autism; and Asperger's syndrome. \$35.

<http://www.nprinc.com/brain/hsnb.htm>

Using brain-based research to help students with special needs.

A 5-page summary, from the Principal's Partnership.

<http://www.principalspartnership.com/specedbrain.pdf>

What's the real deficit in AD/HD?

From the Dana Foundation.

<http://www.dana.org/media/detail.aspx?id=28932>

Autism: Specific areas of the brain linked to ASDs .

Using advanced imaging technology, a research team headed by Dr. Martha R. Herbert of the Massachusetts General Hospital and the Harvard Medical School in Boston has identified specific portions of the brain's white matter that are abnormally large in children with autism and developmental language disorder. Read more at:

<http://www.autismtoday.com/articles/MGH-Study-Details-Brain-Changes-In-Autism-Language-Disorder.htm>

On behavior and the brain.

<http://serendip.brynmawr.edu/bb/>

Dyslexia and the brain: What does current research tell us?

From LDonline.

http://www.ldonline.org/article/Dyslexia_and_the_Brain%3A_What_Does_Current_Research_Tell_Us%3F

Brain research, reading, and dyslexia .

From Great Schools.

<http://www.greatschools.org/special-education/LD-ADHD/brain-research.gs?content=668>

[Back to top](#)

Would you like to visit one of the other pages in [Effective Practices in the Classroom and School?](#)

If so, here are helpful quick-jump links.

- [Understanding How the Brain Learns \(you're already here\)](#)
- [Understanding Universal Design](#)
- [Connecting with the Special Education Curriculum](#)
- [Addressing the General Education Curriculum](#)

[Back to top](#)