

**Sixth Grade Session 1**

**Key Ideas and Details**

* I can make and support inferences using evidence from the text.
* I can determine the central idea of a text.
* I can analyze the relationships between individuals, ideas, and events.

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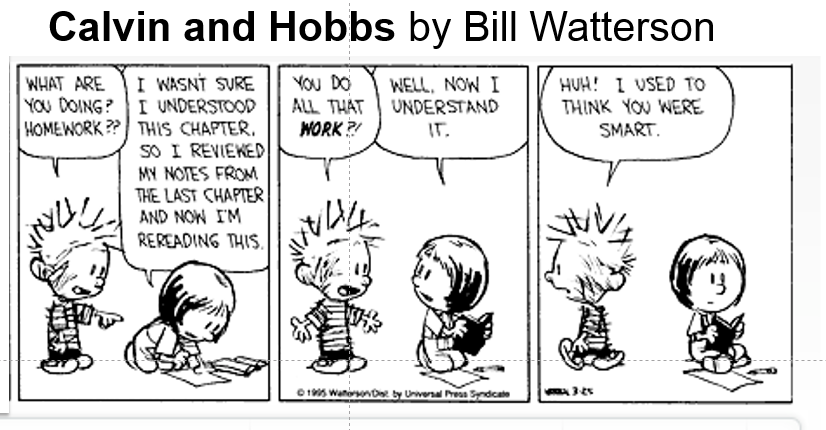
**Text 1**

Infographic



**Text 2**

Comic Strip



# Image result for book icon

Article

**Text 4**

# Neuroplasticity Studies Reveal Your Brain’s Amazing Capacity to Grow!

**By Dr. Mercola**

As time goes by, science provides more and more evidence that your brain is malleable (able to change and grow) and continually changing in response to your lifestyle, physiology, and environment.

This concept is called neuroplasticity, or brain plasticity—meaning, you are literally reforming your brain with each passing day. It used to be thought that your brain was static, or unchanging, except during some critical developmental periods, but today, we know this isn’t true.

Your brain possesses the remarkable ability to reorganize pathways, create new connections and, in some cases, even create new neurons throughout your entire lifetime.

Our views of the nature of the brain have changed in a similar way as our views of DNA. It used to be thought that DNA did not change—in other words, you’re stuck with what you’re born with.

The point is, you have much more control over your body, mind, and brain than you might think. If you can mold and shape your brain, you are not entirely at the mercy of your genetics or the neural pathways you brought into this world or formed as a child—and this is great news!

## Neurons That Fire Together, Wire Together— And Neurons That Fire Apart, Wire Apart

[Neuroplasticity](http://articles.mercola.com/sites/articles/archive/2012/12/09/brain-plasticity.aspx) is, in simple terms, the ability of your brain to change and adapt in response to experience. You can think of those neurological changes as your brain's way of tuning itself to meet your needs.

Think about what happens when you’re learning a new skill. The more you focus and practice something, the better you become, and this is a result of new neural pathways that form in response to your learning efforts. At the same time, your brain is undergoing “synaptic pruning”—elimination of the pathways you no longer need.

Until recently, it was believed that the human brain, which consists of approximately 100 billion neural cells, could not generate new ones. The old model assumed that you were born with a finite number of brain cells, and when a cell died, no new cell grew in its place.

This old model is no longer relevant, as it’s been proven that certain areas of your brain can generate new cells (neurogenesis), as well as creating new neural pathways.

According to “What is Neuroplasticity:”

“It was once believed that the human brain had a relatively small window to develop new pathways in our life span, then after that the pathways became immutable.

This old theory thought our ability to generate new pathways dropped off sharply around the age of 20, and then became permanently fixed around the age of 40.

New studies have shown through the use PET, and MRI brain scanning technology, that new neural cells are generated throughout life as well as new neural pathways. Even the elderly are capable of creating measurable changes in brain organization. These changes are not always easy but can happen through concerted focus on a defect area.”

## How the Science of Neuroplasticity Changes the Game

Your brain’s plasticity is also controlled by your diet and lifestyle choices, including exercise. Despite what the media tells you, your brain is not "programmed" to shrink and fail as you age. The foods you eat, exercise, emotional states, [sleep](http://articles.mercola.com/sites/articles/archive/2014/09/18/poor-sleep-causes-brain-damage.aspx) patterns, and your level of stress—all of these factors influence your brain from one moment to the next. Neurologist [David Perlmutter](http://articles.mercola.com/sites/articles/archive/2013/09/29/dr-perlmutter-gluten.aspx) explains:

"We interact with our genes every moment of our lives, and we can do so very, very positively. Keeping your blood sugar low is very positive in terms of allowing the genes to express reduced inflammation, which increase the production of life-giving antioxidants. So that's***rule number one: You can change your genetic destiny.***

Rule number two: you can change your genetic destiny to grow new brain cells,specifically in the hippocampus, your brain's memory center! You are constantly growing new brain cells into your 50s, 60s, 80s, and 90s – throughout your lifetime – through a process called neurogenesis.”

**6th Grade Session 1: Key Ideas and Details**

1. Select TWO details from the article in the list below that provide evidence for the idea that our intelligence can grow.
2. [Neuroplasticity](http://articles.mercola.com/sites/articles/archive/2012/12/09/brain-plasticity.aspx) is, in simple terms, the ability of your brain to change and adapt in response to experience.

B. The more you focus and practice something, the better you become, and this is a result of new neural pathways that form in response to your learning efforts.

C. At the same time, your brain is undergoing “synaptic pruning”—elimination of the pathways you no longer need

. D. This old theory thought our ability to generate new pathways dropped off

sharply around the age of 20, and then became permanently fixed around the

age of 40.

E. New studies have shown through the use PET, and MRI brain scanning technology, that new neural cells are generated throughout life as well as new neural pathways.

F. We interact with our genes every moment of our lives, and we can do so very, very positively.

1. Select TWO details below that were emphasized in BOTH the article and the video.
2. A Growth Mindset is an essential secret to success.
3. You can grow your brain by taking on challenges.
4. Neurogenesis occurs throughout the entire lifetime.
5. Steve Jobs is a famous example of a Growth Mindset.
6. A healthy lifestyle is necessary for brain development.

F. Making new connections builds a stronger brain.

1. This question has two parts. First, answer Part A. Then, answer Part B.

**Part A**

Which statement below best summarizes the first five paragraphs of the article?

1. Some scientists believe that our brains, like our DNA is static and unchanging, while others think that our brains can change over time due to neuroplasticity.

B. The brain is an amazing, malleable organ that can adapt and change day by day in response to new environments and healthy habits can improve its function.

1. Neuroplasticity is a concept in neurology that tells us that the brain is malleable, or constantly changing, and our brains can learn and grow no matter our age.

D. Scientists once thought that our brain did not change, but now they are learning that our brains are malleable and change and adapt to experience throughout our lives.

**Part B**

Select three phrases from the first four paragraphs that support the central idea.

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1. Complete the chart below based on the information that you read in the article. Place the correct words and phrases in the appropriate place in the chart.

|  |  |
| --- | --- |
| **The Old Model** | **The New Model** |
|  |  |
|  |  |

|  |
| --- |
| The brain is malleable, ever changing |
| The ability to learn new things sharply decreases over time |
| Neurogeneration, the ability to grow new brain cells, occurs throughout our lives |
| The brain, like our DNA is unchanging |

1. This question has two parts. First, answer Part A. Then, answer Part B.

**Part A**

It can be inferred from the article that.

A. New advances the field of neurology have led researchers to revise their previous theories about how the brain works.

B. Scientists will be in conflict over the idea of neuroplasticity until new research proves which theory has the most evidence.

C. Older adults have a hard time remembering things because they can no longer generate cells in their hippocampus.

D. While our brains does change throughout our lifetime, our DNA, or genetic makeup remains the same throughout our life.

**Part B**

Which quote from the passage best supports your answer to Part A?

A. You can think of those neurological changes as your brain's way of tuning itself to meet your needs.

B. This old model is no longer relevant, as it’s been proven that certain areas of your brain can generate new cells (neurogenesis), as well as creating new neural pathways.

C. Until recently, it was believed that the human brain, which consists of approximately 100 billion neural cells, could not generate new ones.

D. Rule number two: you can change your genetic destiny to grow new brain cells,specifically in the hippocampus, your brain's memory center!

. 6. Select the sentence below that best summarizes the last two paragraphs of the article.

A. The way we eat and the fact that we constantly grow new brain cells means that we are in control of the future functioning of our brain.

B. Keeping your diet low in sugar is essential for a healthy heart and is also

proven to reduce inflammation and increase antioxidants.

1. Neuroplasticity is the reason why we are able to learn new things throughout

our lifetimes thanks to our malleable brain.

1. Older adults must eat healthy if they are to maintain their ability to generate new brain cells in their hippocampus.