

The Neuroscience of Bible Study

Ten Practical Tips from Brain Science for Memorizing Scripture

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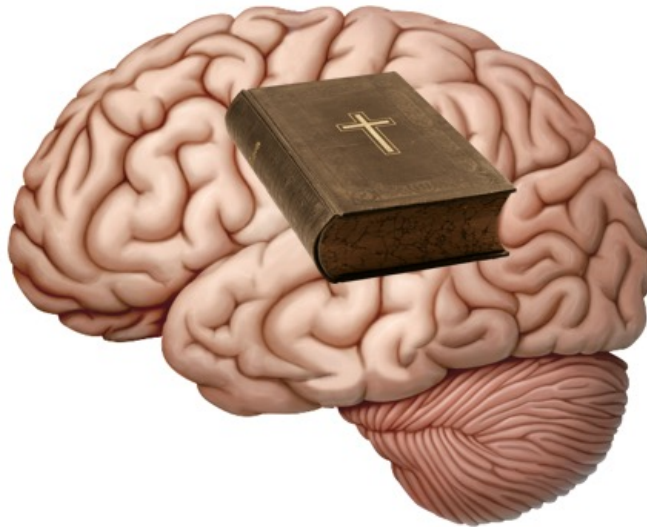
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1. Think About Meaning

For those of a certain age, it may feel like your memory is not as strong as when you were younger, but age can also improve memory. The older you are, the more life you have lived, the richer a storehouse of memories lie deep within your brain. Memories in the brain are created by associations. Thoughts connect to thoughts, words to words, images to images. A lifetime of experiences creates a multitude of opportunities for you to build associations in your brain between a new verse and memories from your past.

Before you try to memorize a new bible verse, take some time to dwell on what it means. Think about how it relates to you, personally. Were there recent events in your life that are relevant to this verse? Were there challenges you faced which are reflected in this verse? The more you connect the words in the verse to your own life and experiences, the easier it will be to memorize the verse.

Here is another key to understanding how memory works in the brain: The deeper we process new information, the harder we work to understand the meaning in what we are memorizing, the more likely we are to remember it later.

Whether you are trying to memorize a paragraph in a book, the lyrics of a song, or a verse in the bible: context is key. If you read a verse in isolation, its meaning may not be fully evident. Try reading the verse just prior, and the verse that follows, to see how they all fit together into a larger narrative. By linking the meaning of one verse to the context in which it appears, you gain depth of understanding and easier memorization.

You can also try rewriting a verse in your own words. Like taking notes in class, challenging yourself to boil a verse down to an essential summary of key points forces you to think about the core meaning. Once you have that summary in mind, recalling the exact words of the scripture will be easier.

One way to link memorizing a verse to your own life, is to start by choosing a verse that is relevant to what you are feeling today. If you are sad and stressed, you might focus on a verse of encouragement (taken here from the King James Version, as are all verses in this guide), such as:

God is our refuge and strength, a very present help in trouble. Psalm 46:1

Or if you have recently experienced conflict with someone, you could choose:

Wherefore, my beloved brethren, let every man be swift to hear, slow to speak, slow to wrath: for the wrath of man worketh not the righteousness of God. James 1:19-20

2. Start Small

New memories are built up, one association at a time. Step by step. It takes time for new information to enter the brain circuits for memory, and then even more time for those new memories to settle into a permanent place in your brain from where you can later recall them. Don't overload your brain with too much information at once.

Think of your memory like the drain pipes in your kitchen sink: if you pour too much in at once, it will overflow to the floor. However, a slow steady stream will allow you to keep adding more and more.

Before new verses can become part of your long-term memory, they need start in your short-term memory. Short-term memory is like a buffer, or waiting room, for information that is on the way to being stored in long-term memory. Short-term memory is limited in capacity. Research has shown that we can only keep between 5 and 7 new items in short-term memory at any one time (which is why phone numbers are only 7 digits long, plus an area code).

To be safe, let's assume your short-term memory capacity is just 5 items. This suggests you should break a longer verse into chunks of about 5 words or less. Once you have memorized each of the chunks, you can string them together. Consider, for example,

For by grace are ye saved, through faith; and not of yourselves: it is the gift of God: not of works, least any man should boast. Ephesians 2:8-9

That is 26 words long; far more than our short-term memory capacity! Let us cut it down into seven bite-sized chunks of five words or less:

*For by grace
are ye saved,
through faith;
and not of yourselves:*

*it is the gift of God:
not of works,
least any man should boast.*

Start by memorizing the first chunk ("For by grace"), and then, when you are comfortable with that, try the second chunk, "Are ye saved". When you can do both, try stringing them together to repeat, "For by grace are ye saved". That is two chunks, only five more to go. Step by step you, you can learn it all.

If you aren't ready to memorize a long verse, you can begin by memorizing short verses. Once you are comfortable with learning shorter verses, you can move on to more challenging longer verses. Here is one of the shortest and easiest to memorize:

Pray without ceasing. 1 Thessalonians 5:17

3. Use Memory Shortcuts

Did you ever struggle to remember someone's name, and then they say, "I'll give you a hint, it begins with 'D'", and suddenly you remember her name is Delores? Memories are like pathways of associations through the brain. Sometimes we just need to be led (with a hint or a clue) to the first stepping stone of that path; from there we can make the rest of the way on our own. Memorizing verses, sentences or any other long lists of words is easier if we are given a hint about the first letter of each word. Where do these hints come from and how to we remember the hints?

When you were in grade school, your teacher may have shared some tricks to help students learn long lists of place names. Need to recall the names of all five Great Lakes? If you can remember just a single word, "HOMES", you can use that as a cue to recall that the letters, H, O, M, E, and S, are the first letters of Huron, Ontario, Michigan, Erie, and Superior. This is called an "acronym" and it is a neat trick, or memory shortcut, to bundle together a string of hints.

One of the most well-known bible verses begins as follows:

Ask, and it shall be given you; seek, and ye shall find; knock, and it shall be opened unto you. Matthew 7:7

The first word of this verse, “Ask” is also an acronym to help you remember the first words of all three clauses of the verse: Ask, Seek, Knock.

Another memory short cut is to focus not on all the words in the verse, but just the key words, and then let your brain fill in the rest. Consider

For the wrath of God is revealed from heaven against all ungodliness and unrighteousness of men, who hold the truth in unrighteousness. Romans 1:18

At 22 words, that is heavy challenge to memorize. However, if you pare it down to the keywords, there are only 10: *wrath, God, revealed, heaven, ungodliness, unrighteousness, men, hold, truth, unrighteousness*. Try focusing on those 10 words (perhaps, chunking them into two sets of 5). Once you can recall the 10 words, your mind and experience with language will help you fill in the other missing words.

4. Create Visual Images

Different parts of the brain store information in different forms. The sounds of a memory (what you hear when you listen to a verse) are stored in a different part of the brain than the visual images that you associate with a verse. Visual images, especially images that are unique, unusual, and striking, are especially memorable. By turning verses into memorable images, you can increase the likelihood of being able to recall them. Another well-known verses in the Bible is:

The Lord is my shepherd; I shall not want. He maketh me lie down in green pastures: he leadeth me beside the still waters. Psalm 23:1-2

To remember this verse, think of yourself as a movie director, creating a short film with you as the star. In Scene 1 you are sitting looking contented (without want); in Scene 2 you lie down in a pasture of grass to nap; and in Scene 3 you walk beside a calm lake. Visualize this as a movie in your head, repeating over and over. Once you can create this visual movie in your head, the Psalm itself will flow naturally as a description of what you are visualizing.

Movie directors plan a movie by first drawing the images they will film. You can do the same thing. The act of drawing a picture of yourself lying in a pasture or being led beside a still body of water will cement these memories in your brain, including the brain’s motor control system which is used when you draw the images.

You can also visualize the text of Psalm 23:1-2, the 24 words themselves, so that you imagine what they look like on a page. Pay attention to the shape of the words. See the initial short section, the break with a semicolon (“;”), then the short second half of the first sentence. Notice where more unusual words appear like “maketh” and “leadeth.” Remember the final words of each phrase, “pastures” and “waters.” By creating a visual image of the text itself, you can help yourself read the text in your mind.

Another way to take advantage of the power, strength, and durability of visual memories is to build a “**Memory Palace.**” This works by taking your visual memory for a place you know well and linking this familiar place with something new that you want to learn. Close your eyes and take a mental walk through your living room (or any other room that is familiar to you). In your mind, visualize a walk around and notice what you pass as you are walking. Perhaps you will first see a door, then a chair, then a cabinet, a bookcase, and finally a framed painting. That’s the old familiar memory. It is a path by five different objects in your room. Now take that walk in your mind again but this time, imagine something new on each of the familiar objects, something you can easily visualize. By the door, put mat. On the chair, place a big checkmark. In the cabinet put a picture of Paul Newman in the movie, *Cool Hand Luke*. Under the bookcase, place an essential bathroom appliance. And in the framed painting, goes a sketch of two actors in a play. With those five images in mind, you then do a walk through your memory palace (really your fantasy living room). Describe what you see in each of the five places: doormat, checkmark, Luke, a john, and an act. Congratulations, you have just memorized (almost) the names of the first five books of the New Testament: Mathew, Mark, Luke, John, and Acts.

5. Write it Down

Writing verse down, often multiple times, helps in two different ways. First, the act of writing each word on paper over and over helps to create new pathways in the brain for the verse, until each word naturally flows from the other, one word triggering the next. The first few times you are looking at the verse you may be just copying what you are reading. Then you can move on to copying the first half, while writing the last half from memory. Bit by bit you are able to write more and more of it from memory alone. Eventually you will have written the verse down 5, 10, or even 20 times.

What should you do with all those scraps of paper on which you have written the verse? Some good advice for memorizing scripture can be found in the Bible:

And thou shall write them upon the posts of thy house, and on thy gates. Deuteronomy 6:9

Take all those pieces of paper on which you have written the verse and post them around your house – on the doorposts, as well as walls and on the door of the fridge (if you wrote the verse on Post-It notes this is especially easy to do). Then, as you walk through your home, or reach for a snack, you will see notes of verse and the memories will become more solidly ingrained in your brain through repetition and familiarity.

If you have a shower with a glass door, you can tape these verses on the outside facing in so that as you shower, you can read them through the glass. While you lather and soap, continue to practice these verses. Deuteronomy has more tips on memorization:

Therefore shall ye lay up these my words in your heart and in your soul, and bind them for a sign upon your hand, that they may be as frontlets between your eyes.
Deuteronomy 11:18

Writing a verse on the back of your hands is a good way to be sure you have always have the verse...handy.

6. Test Yourself

In school, did you ever think you knew something well but when you got to the final exam, you could not recall anything? You believed you knew the material, but you had never been challenged to use it in a real test situation. This can happen if you only practice storing new memories, but don't try recalling them. You need to be tested. You need to practice digging deep into your brain's memory circuits. If you do that often enough, it will come naturally. Testing is not just a way to evaluate your progress, it is an essential component of learning itself.

Flash cards are a helpful way to study. On one side you can write the book and verse number and on the other side you write the verse. Stack the cards so you see the book and verse information facing up. As you pick up each card, see if you can recall the verse written on the other side. If you miss, that's OK, just put the card back in the stack and see if you get it again later. Alternatively, try writing the first three words of a verse on one side of each card, and the full verse on the other side. Then, when you see

Charity suffereth long

this will cue you to try and recall the full verse written on the back:

Charity suffereth long, and is kind; charity envieth not; charity vaunteth not itself, is not puffed up.
1 Corinthians 13:4

Flash cards are a great way to study when you are alone, but it is much easier, and more fun, to study with others. Studying with your friends also motivates you to study more because studying becomes integral with the joy of socializing with people you enjoy. Find a friend, or two, and try testing each other, helping each other learn new verses. In this way you work together to keep both of your minds sharp:

Iron sharpeneth iron; so a man sharpeneth the countenance of his friend. Proverbs 27:17

7. Walk and Rehearse

Do you usually study verse while sitting in an easy chair, lying on the couch, or snacking at the kitchen table? Being sedentary works against you when trying to learn. The brain needs blood to function, and only the heart can send blood to where your brain needs it the most. If you really want to boost your brain power for learning, get up and get moving. Get your heart beating faster so it pumps more blood to the memory circuits in your brain. You will find that the verses you practice while moving will be learned faster than those you try to learn while sitting, or laying, at home.

Exercise is the best way to keep your brain strong so you can learn new information, including Bible verses, the names of new people you meet, and where you last put your keys and wallet. When we exercise, our brain grows new brain cells that are like blank slates onto which new memories are written. If you are planning a Bible study session at 11am, consider scheduling a vigorous work out, or a brisk walk, at 10am to create those new brain cells you will need to store the new bible verse memories.

Your brain is the most precious part of your body. You can live a full life without legs, without arms, even without your eyes. But when your brain goes, you lose the essence of who you are. Physical activity, especially exercise that gets your heart rate pumping,

is the best way to take care of your body, including your brain. Here is a verse about staying physically active that you might consider for your walk:

Know ye not that they which run in a race run all, but one receiveth the prize? So run, that ye may obtain. 1 Corinthians 9:24

8. Say it Out Loud.

Just as writing a verse out can help with memorization, speaking the words aloud is an excellent way to burn them into your memory. Consider turning the radio off when you drive and reciting a verse out loud instead. If you commute to work, set yourself the challenge of adding a new verse each day to rehearse out loud.

There are often many times during the day when you are waiting around, perhaps in line at the grocery store or bank. You don't want to scare anyone by breaking into loud preaching, but silently to yourself, you can use these times to softly repeat the verses you are learning. Here is one verse that addresses the power of speaking out loud:

Death and life are in the power of the tongue: and they that love it shall eat the fruit thereof.
Proverbs 18:21

9. Set it to Music

Most of the world's religions include group singing of scripture as an essential part of their rituals and practices. Singing binds us together as a community. But singing also helps us remember the words of the scripture. Scientific studies have shown that text learned with a melody is remembered better than text that is learned alone without music. Why is that? One reason is that singing scripture involves using many more parts of your brain working together, as compared to just saying or reading scripture. When singing, one part of the brain is involved in remembering, and reproducing, the timing of the music, while other parts of the brain are keeping the rhythm.

Studies of stroke victims who have lost their ability to speak has found that often these same people can sing, even when they can't speak. This suggests that there are whole areas of the brain involved in singing that are separate from, and in addition to, the parts of the brain we usually use to speak.

For many years, long before the beginning of brain research, churches helped congregants learn scripture by setting it to music. Many famous hymns and worship songs were written specifically as aids for Bible verse memorization. Some of these bible songs are hundreds of years old while others are more recent and draw on popular and current musical styles.

Perhaps the verse you want to learn has already been set to music. If no such song exists, don't be shy. You can always set a verse to another melody you know and love, or compose a new melody, yourself. Can you think of a tune to sing to this verse?

Make a joyful noise unto the Lord, all ye lands. Serve the Lord with gladness, come before his presence with singing. Psalm 100:1

10. Sleep on it

Two-thirds of Americans don't get enough sleep, making them less able to concentrate during the day. This, in turn, makes it harder to encode new memories and retrieve old ones. There is a growing body of scientific evidence that demonstrates how sleep is critically important for helping the brain organize and store memories. This works two ways. First, it is important to get sleep *before* you learn something new. People who are sleep deprived have great difficulty learning and storing new information. Second, it is important to get a full night's sleep *after* you learn something new because this is when the material you learned the day before is organized, unconsciously rehearsed (while you sleep!), and then put into a permanent place in long-term memory. If you skimp on sleep after you study scripture, you may find that the next day much of your progress in memorization has been lost.

One of the best times to study scripture is right before you sleep; consider setting aside 15 minutes each night to rehearse a verse. This is a great way to help commit that verse to long-term memory and capitalize on how sleep will improve memory. Here is a verse about sleep that you could try to memorize just before you put yourself to sleep:

When thou liest down, thou shalt not be afraid: yea, thou shalt lie down, and thy sleep shall be sweet. Proverbs 3:24

This booklet—a collaboration between a neuroscientist and a pastor—has demonstrated how research on the brain and memory can provide you with practical guidance on memorizing bible verses. Are you ready to apply what you have learned? Consider the following verse:

Wisdom is the principal thing; therefore get wisdom: and with all they getting get understanding. Proverbs 4:7

Which of the ten tips would you use to commit this to memory? You can mix and combine them as it suits you. One approach would be to think deeply about the meaning of the verse and how it applies to your life (Tip #1) while you visualize a movie that illustrates the concepts (Tip #4). Or you could set it to music (Tip #9) and then take a vigorous walk (Tip #7) while singing it out loud (Tip #8), and afterwards take a long afternoon nap (Tip #10) to give your brain an opportunity to strengthen the new memories you created through singing and walking. The more you learn about how your brain works, the better you can make it work for you.

Neuroscience is the study of the brain. The more we understand our brain, the more deeply we will know ourselves. Neuroscience is a growing field. Each year, scientists add to our knowledge of how the brain works, how memories are formed in the brain, and what happens when the brain fails due to age, trauma, or disease. To learn more about the neuroscience of memory, the latest research on preventing Alzheimer's disease, and the lifestyle choices that are key for maintaining brain health throughout your life, visit our website at

www.brainhealth.rutgers.edu

or call the Rutgers Aging & Brain Health Alliance at (973) 353-3673.