This lab exercise appeared in Section VIII: Memory, developed by **Leah Greene & Kristin Habashi Whitlock,** ***in Promoting psychological science: A Compendium of laboratory exercises for teachers of high school psychology (Miller, 2018). This exercise is provided here with permission from the editor.***

Lab Title: Does use of the peg word mnemonic lead to memory improvement?

Section 1: Performance Expectations

What will the student be asked to do?

- Plan and/or carry out a scientific investigation
- Analyze data
- Engage in argument or communicate information

Main Idea/Concept Demonstrated or Taught by Lab:

This lab allows students to investigate whether the peg word mnemonic is an effective memory aid. The experience allows students to compare memory retrieval when using peg words or maintenance rehearsal to recall a list of concepts.

After concluding this lab, students should be able to:

- Explain the benefits of using a mnemonic device
- Describe the peg word technique
- Apply the use of mnemonic devices to everyday life
- Participate in the lab as either experimenter or subject
- Interpret collected data and communicate results

Key Terms and Psychologists Associated with Main Idea/Concept:

Memory, visual encoding, shallow vs. deep processing, imagery, mnemonic device, peg words

Materials:

Copy instructions for the lab to distribute to the experimenter in each pair of students. The students assigned to be the subject will need paper and a writing utensil.

Instructions:

- Divide students into pairs. Have students decide who will play the experimenter or subject.
- Pass out the instructions to the experimenters.

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- Experimenters conduct two memory tests. In the first test, subjects are required to use maintenance rehearsal, then asked to recall the first list of 10 words. Before the second test, subjects learn the peg word mnemonic and recall the second list of 10 words.
- The experimenter records student performance on the two tasks. The team then compares the subject's performance, discusses the results, and comments on the effectiveness of the peg word technique and its usefulness at school. Students generate examples of mnemonics they have used in the past.
- At the conclusion of the testing, the teacher (or students) collects the data for the classroom. The class then discusses the findings of the tests and specifically addresses whether the peg word technique was effective.

Follow-up and Discussion

- When the testing is complete, and the assignments collected, calculate the results for each test and compare. As a class discuss the following questions:

1. Does our data support our hypothesis? Explain.
2. In general, why are mnemonic devices useful?
3. How could the research be improved, if replicated?
4. Outside of doing a memory test, where else could you use the peg word mnemonic? How could you use this technique at school?
5. What types of mnemonics have you used? Describe two examples of mnemonics that you have used for studying or learning a new skill.

Section 2: Crosscutting Concepts

Students will examine the cause and effect relationship between the uses of mnemonics on the recall of information.

Section 3: Lab Report

Introduction to Psychological Science: Memory

Lab: Does use of the peg word mnemonic lead to memory improvement?

In your pair, decide who will play the role of experimenter or subject

Experimenter:_____ Subject: _____

Instructions for the Experimenter:

#1: Read the following to your subject:

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"Mnemonic devices, like peg words, use visual imagery to improve our ability to recall information. Today ***my hypothesis*** *is that when you use a peg word mnemonic it will help you retain more information. You will be taking two memory tests. In the first test, I will read you a list of ten terms. You are ONLY allowed to repeat the word silently to yourself. Please do not use any other device to help you remember, other than maintenance rehearsal during this* test. *As I read the list, I will say the "Item number" and the term. When I am done, write down as many terms as you can recall. They need to be in the in the same order in which I read them to you. Are you ready? Let's begin."*

#2: List #1

Item #1: firetruck

Item #2: corncob

Item #3: desk

Item #4: coffee cup

Item #5: pencil

Item #6: apple

Item #7: magazine

Item #8: penguin

Item #9: handcuffs

Item #10: boot

#3: Record results (How many did your subject get correct?): _____

#4: Read the following to your subject:

"Now I am going to teach you the peg word mnemonic. When you use this mnemonic, you are creating a visual image that ties the peg word to the new word in the list. Let me show you how this works. Here are the peg words:

One is a bun

Two is a shoe

Three is a tree

Four is a door

Five is a five

Six is sticks

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Seven is heaven

Eight is a gate

Nine is wine

Ten is a hen

When you use a peg word, like bun, you create a visual that ties this to the first word in the list. In our last list, it was firetruck. What visual could you create that ties a bun to a firetruck?

Let's repeat the list a few times and make sure you are comfortable with the peg words."

#5: "Let's do our second test. This time use the peg words to help you recall the terms. I'll read the list like I did before, but this time I will pause long enough so that you can create a visual that ties the peg word to the term. Ready?"

List #2:

Item #1: radish

Item #2: bed

Item #3: trumpet

Item #4: peach

Item #5: football

Item #6: turkey

Item #7: Lettuce

Item #8: father

Item #9: plumber

Item #10: piano

#6: Record results (How many did your subject get correct?): _____

As a team, answer the following questions.

1. Does your data support the hypothesis? Explain.

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2. In general, why are mnemonic devices useful?

3. How could the research be improved, if replicated?

4. Outside of doing a memory test, where else could you use the peg word mnemonic? How could you use this technique at school?

5. What types of mnemonics have you used? Describe two examples of mnemonics that you have used for studying or learning a new skill.