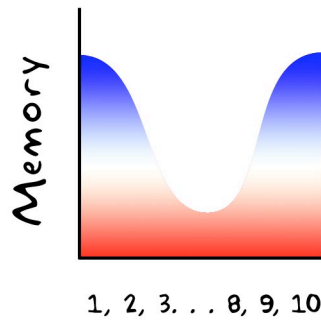


“What do you remember?”

The brain’s tendency to remember first and last

Memory is one of the most interesting and subjective functions of the brain. Studying memory can help us to understand how the brain is organized and how it works. *The overarching theme of this lesson is that our brain has a tendency to remember what came first (“primacy”) and what came last (“proximity”).*



Grade level: 4-6+

Presentation time: 25 minutes

Lesson plan organization:

Each lesson plan is divided into three sections: *Introducing the lesson*, *Conducting the lesson*, and *Concluding the lesson*. Each lesson has specific principles with associated figures, class discussion (D), and learning activities (A).

Materials:

- Word list (provided)
- Large paper and markers
- Tape or push-pins (to hang paper)

Preparation

Make a chart on the large piece of paper, with “Number of students responding” on the y axis and the 25 words from the word list, in order, listed along the x axis. Add a column for “trick words” on the end of the x axis.

This lesson plan is provided by the Neurobiology and Behavior Community Outreach Team at the University of Washington: <http://students.washington.edu/watari/neuroscience/k12/LessonPlans.html>

Introducing the lesson

D: Memory

Ask students to think about memory and how they remember things. The following questions are a guide:

- a. We're going to explore how your brain works today. To get us started, I'm going to ask you some questions. What did you have for breakfast this morning? What did you do last summer vacation? When was a time you were really happy? (*Various answers*)
- b. How do you know all of these things? (*Someone should mention that they just remember.*) That's right: your brain stores information that it remembers. What other kinds of things can you remember? Is it just things that happened to you? (If necessary, you can prompt them with questions such as: Do you remember who our first President was? Do you remember how to turn on the computer?) That's right – our brains can remember all kinds of things, not just things that happened to us. They can remember facts, and stories, and how to do things. Whenever you *learn* something, that's another kind of memory. Memory is a very important function of the brain.
- c. So there are many types of memory – but do you remember *everything*? Can you remember what you had for breakfast a year ago? How about who our seventeenth President was? You don't remember everything. How does the brain choose what to remember? (*Various answers – hopefully something like "I remember important things."*) Yes! There are many tricks that the brain uses to decide what is important enough to remember. We're going to learn a couple of those tricks today.

Conducting the lesson

A: Memory test

I'm going to read a list of words, and I want you to remember as many of these words as possible, okay? Concentrate hard. Ready? (*Read the list aloud, pausing for about one second between words.*)

- | | | |
|-------------|-------------|------------|
| 1. Mouse | 12. Needle | 23. Apple |
| 2. Banana | 13. Star | 24. Moon |
| 3. Ball | 14. Fish | 25. Window |
| 4. Peanut | 15. Glue | |
| 5. Wind | 16. Flower | |
| 6. Tape | 17. Paper | |
| 7. Tree | 18. Horn | |
| 8. Bird | 19. Glass | |
| 9. Acorn | 20. Shoe | |
| 10. Bicycle | 21. Biscuit | |
| 11. Cookie | 22. Pencil | |

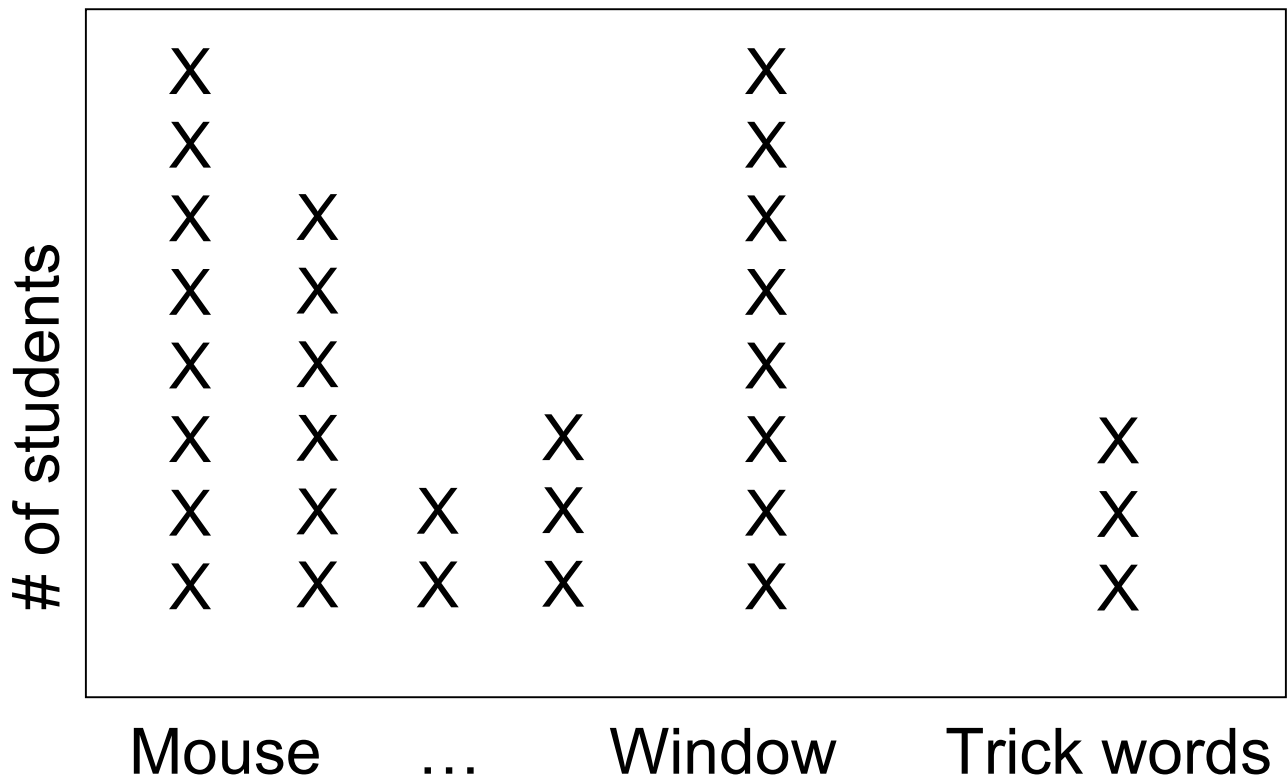
Does everyone remember the list? Okay, now I need you to count backwards from 100 down to 1! *(This is a distractor task that's supposed to take about thirty seconds.)*

Now, it's time to test you guys. If you remember hearing a word, quietly raise your hand until I count you. But watch out – some of these words weren't on the list! *(Read the following list and record how many people raise their hand next to each word.)*

- | | |
|-------------|-------------|
| 3. Ball | 17. Paper |
| 6. Tape | 20. Shoe |
| 9. Acorn | (d) Jelly |
| 12. Needle | 23. Apple |
| 15. Glue | 1. Mouse |
| (d) Monkey | 4. Peanut |
| 18. Horn | 7. Tree |
| 21. Biscuit | 10. Bicycle |
| 24. Moon | (d) Trout |
| 2. Banana | 13. Star |
| 5. Wind | 16. Flower |
| 8. Bird | 19. Glass |
| (d) Car | 22. Pencil |
| 11. Cookie | (d) Hat |
| 14. Fish | 25. Window |

All right: let's see how you guys did.

(Tape or pin the chart to blackboard; read the list in order and draw an "x" above the words for each student who raised their hand. At the end, tally up everyone who raised their hand for the distractors and put an "x" for each response in the "trick words" column. You should get something like the following page:



Concluding the lesson

What does this show us? (*Hopefully, something about how people remember the first words and the last words better than the words in the middle.*) That's right: that's one of the ways our brains decide what's important. Our brains are organized to think that the first things in a list are important, so we remember them, and the most recent things are still fresh in our memory, so we remember those, too. Why do you think this is? Why might it be important to remember the first things? (*Examples: the first things are usually new information, while sometimes the middle part has repeats; we tend to encounter the most important things first, like a new person's name or the #1 rule; in a new setting, it's important to learn a lot really quickly so you can get by.*) How about the last things? Why might it be important to remember those? (*Examples: the things that happened most recently are probably the most related to what's going to happen next; it helps you get around, like remembering where you put your homework last night, instead of where you put it last week.*) That's right. Right now, scientists are trying to figure out more about how the brain is organized and why, so they can help people remember better and cure brain diseases. It looks like you guys are already on the way to solving the mystery!