3.16: WHAT'S YOUR BRAIN SUPERPOWER?
ANSWER KEY

Investigating Memory and Learning

Activity 2: Learning Patterns

Look at each pattern below and write what comes next in the pattern. If there's time, try the challenge!

Pattern 1	Red, Blue, Green, Red, Blue, Green, Red, Blue, Green
Pattern 2	2, 4, 8, 16, 32, 64, 128 Each number is the previous number multiplied by 2.
Pattern 3	
Pattern 4 *(There are many answers that could work here!)*	Dog, Grape, Eagle, Egg, _____, _____ Each word starts with the last letter of the previous word. One sample response is "goat, tree." You may have also noticed that the words alternate between animals and foods. Well done if you figured this out! A sample response for this pattern would be "goat, taco."
Challenge	Make your own pattern that hides a secret rule. See if a classmate can crack it.

Activity 3: Attention and Focus

Round 1 (Easier)

Set a 30-second timer. Start the timer, and count how many times the **letter A** appears in the paragraph below. When the timer goes off, record your answer on the line.

> A curious mind always asks questions. Asking questions allows us to dig deeper, gather more data, and see patterns we may have missed before.

Answer: 13

Reset the 30-second timer. Start the timer, and count how many times the **letter E** appears in the paragraph below. When the timer goes off, record your answer on the line.

> Every time we explore something new, our brain creates new connections. These connections help us learn better and remember faster. Even small experiences can lead to big changes in how we think.

Answer: 32

Round 2 (Harder)

Set a 45-second timer. Start the timer, and count only the **letter E**, but **ignore all bolded words**. When the timer goes off, record your answer on the line.

> Every learner **shines** in unique ways. Whether it's exploring **visual** memory, solving puzzles, or staying **calm** under pressure, our brains create new **networks** every day. These **abilities** come from practice, sleep, effort, and sometimes, genetics.

Answer: 29

Reset the 45-second timer. Start the timer, and count only the **letter A**, but ignore all underlined words. When the timer goes off, record your answer on the line.

> Every learner **shines** in unique ways. Whether it's exploring **visual** memory, solving puzzles, or staying **calm** under pressure, our brains create new **networks** every day. These **abilities** come from practice, sleep, effort, and sometimes, genetics.

Answer: 7

Investigation Reflection

1. Which activities were easiest for you? Which were the most challenging?
   Every brain works a little differently. Did you find the memory challenges easy? Maybe you were able to easily spot the pattern that came next. Or maybe you were able to focus on counting letters, even with the distractions of bold and underlined words.

2. You are about to learn about some potential brain-boosting genes. How do you think genes work to improve memory and learning?
   Remember that genes code for proteins. In an upcoming module, you'll learn more about how certain proteins can help with the growth and functioning of the human brain.

3. Besides genes, what other factors might affect how people learn, remember, or focus?
   A lot of things can affect how people learn, remember, and focus–things like how much sleep you get, if you're stressed, or if you're hungry. It also matters HOW you were taught something, or if it's something you care about. Even though genes may impact learning and memory, there's a lot more to the story.

4. Do you think people should be able to have their genes edited to improve memory and learning? Why or why not?
   This is a complex ethical question with no straightforward answer! Consider coming back to this question later to see if your thinking has changed after you have learned more about genetic engineering.