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Neuroplasticity:

Building Mental Muscle

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Mission: "wellness without walls™"

I. INTRODUCTIONS
1. Nämaste! ("*My inner peace meets, greets, and salutes your inner light*")
2. Gratitude
3. Our Purpose Today:
4. This program is really about:
5. Theme:

II. THEORY
1. Neuroplasticity
   A. Definition:
   B. Good news:
   C. Unchangeable:

2. Mental Powers:
   LEFT:
   1. Math
   2. Language
   3. Memory: Short Term Memory and Long Term Memory
   4. Spatial Skills

   RIGHT:
   5. Cognitive Thinking: Problem Solving
   6. Creativity & Originality

3. Caveats for Games:
   A. Language dependent
   B. Mobility requirements (feet, legs, standing, moving)
   C. Sagittal, Frontal, Transverse Plane Movement
   D. Multi-Tasking

III. PRACTICAL

Training Neuroplasticity requires combining below something from option A with B.

A. Movement Options:

Seated:
1. Seating toe and Heel raises
2. Seated Marching in place or with an "out, out, in in" pattern

Legs:

Standing:
1. Toe and Heel raises
2. Marching in place
3. Marching with #1
4. Marching with an "out out, in, in" pattern
5. Marching in clockwise and counterclockwise circles big enough to avoid dizziness
6. Marching or walking a set path

Arms:

Figure "8" pattern crossing the middline of the body with hands together or apart

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B. Simple Brain Games

1. MATH & MEMORY:

Numbers:

Addition: Take the number given and increase by 3s, then recall after 7 digits, and then repeat the sequence backwards.

Phone: What's your phone number? Repeat the last 2 digits. Repeat the last 2 digits backwards. Add the last 2 digits together. Repeat those single digits backwards. Repeat the last 4 digits forwards and backwards. Repeat the last 7 digits forwards and backwards.

2. LANGUAGE:

Color: State your favorite Color. Spell it. Spell it backwards.

3. MEMORY

Groceries: Repeat a grocery list adding one item at a time. Try to keep the list in order.
Numbers: Repeat something from section 1 to train long term memory
First Memory in detail
Parents if appropriate: list the ages of your children in chronological order and then reverse the process including stating the years backwards (i.e. 1980 becomes 0891)

4. Spatial Skills

Face Game: Use the fingers of your right hand to touch your nose and the fingers of your left hand to touch your right ear. On command, switch so that the left touches the nose and the right hand touches the left ear. Repeat with the eyes closed.

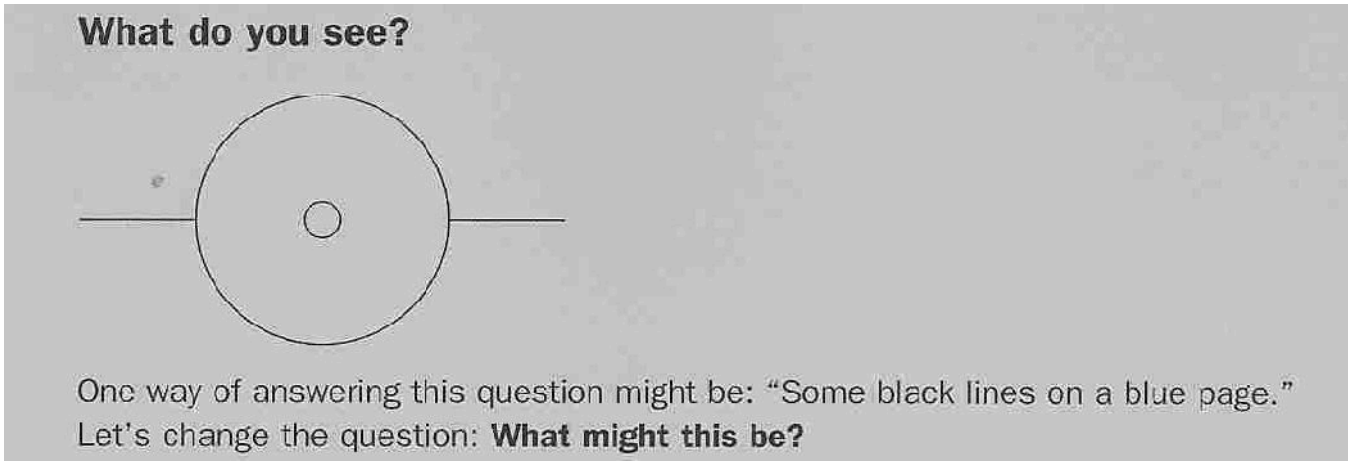
March in place. When you hear the name of a vegetable, squat to the left. When you hear the name of a fruit, squat to the right (Jonathan Ross, ACE).

March in place. Listen to 2 Japanese words. When you hear _____, do this _____. When you hear _____, do this.

Bonus: Dead Bug Drill

5. Cognitive Thinking: Problem Solving

You're going to do a dinner party. You will serve only red items in an environment made up of as many red things as possible. To purchase everything, you will visit two places in this order. The first stop is the farmer's market where you can purchase only fruits and vegetables. The second stop is the grocery store where you can purchase everything else. List as quickly as you can what you will purchase at the farmer's market and then at the grocery store. You may not "go back" to the first list you make.



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The phonological loop

The phonological loop works in two parts—a memory store and a rehearsal system. A speech-based memory trace will survive for only a couple of seconds unless the rehearsal system is used to reinforce it.

TRY THIS EXPERIMENT

Read each of the following sequences out loud. After reading each one, cover it up and recite it again from memory.

A. **hit, can, dog, toe, hit**

B. **ban, hat, map, cat, ban**

You probably found A easier than B, because sound is a factor and B had more similar-sounding words. Experiments show that success ranges from 80 percent for A to 10 percent for B.

NOW TRY THESE

C. **huge, big, great, wide, large**

D. **old, late, cool, fat, good**

Most people find that their results for C and D are similar, showing that meaning does not have as much effect on short-term memory as sound.

FINALLY, TRY THESE

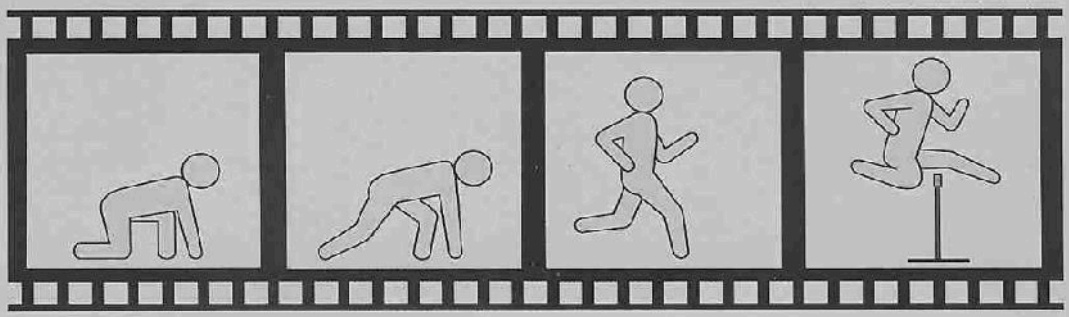
E. **opportunity, pneumonia, chancellor, refrigerator, organization**

F. **hope, mumps, school, green, side**

Here, the main factor is length, and you probably found E much harder than F. Your memory of "opportunity" will have begun to decay before you got to "organization."

Visual memory trace

Have you ever made a figure eight or your initials in the air with a sparkler or a bright flashlight? And when you go to the movies, what you're actually seeing is a series of still images run through the projector, which you see as movement. Our brains hold each image for a fraction of a second until we see the next one. This demonstrates an aspect of our short-term memory that was first discovered in 1740 by a Swedish scientist, Segner. He measured the visual memory trace (VMT) to be about one-tenth of a second.



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3. Find a positive way of expressing each of the following ideas:
   a) Three out of ten people can't operate the new system.
   b) I disagree with most of what Sue says.
   c) I'm hopeless at estimating how much paper we'll need.
   d) It's no good talking to George when he's in that mood.
   e) Everyone knows that's a stupid idea.

Vocal

1. See how changing the tone of your voice affects sound and meaning.
   a) Read the following sentence out loud eight times, putting the emphasis on a different word each time. Notice the effects on the sound and meaning of the sentence.
   The office has been painted green and white.
   b) Now think of a feeling (anger, joy, sorrow, or fear) and read the sentence aloud with that feeling in mind. How is the sound affected?
   c) Now read the sentence aloud in a monotone. Think about how this would sound to a listener.

2. Read each of the following sentences aloud (a) as if it's a question, (b) as if it's bad news, and (c) as if it's an exciting discovery.
   The photocopier has broken down again.
   Tom wants a cheese sandwich for lunch.
   We've just recruited an excellent new accountant.
   Notice what happens to your tone, pitch, speed, and volume in each case.

Visual

1. Stand in front of a mirror. Say each of the following sentences aloud, trying to match appropriate gestures and facial expressions to the words.
   a) I'm really pleased to meet you.
   b) This is a huge problem.
   c) I'm annoyed that you've arrived late again.
   d) I'm a bit embarrassed about mentioning your poor spelling.
   e) It's my fault, I'm sorry.
   Now say them again, this time trying to use gestures and facial expressions that will convey an opposite (or at least different) message to the words. Notice which you found easiest and hardest to do. Which feelings are you most comfortable expressing?

2. Observation: Next time you have the chance, turn on a TV talk show and turn the sound down. Watch one participant's gestures, posture, and facial expressions. What clues might these give you about the person and what they are saying? (Of course, you'll be able to check this only if you record the show to compare later. But it is still an interesting exercise to see just how much you can pick up without words.)

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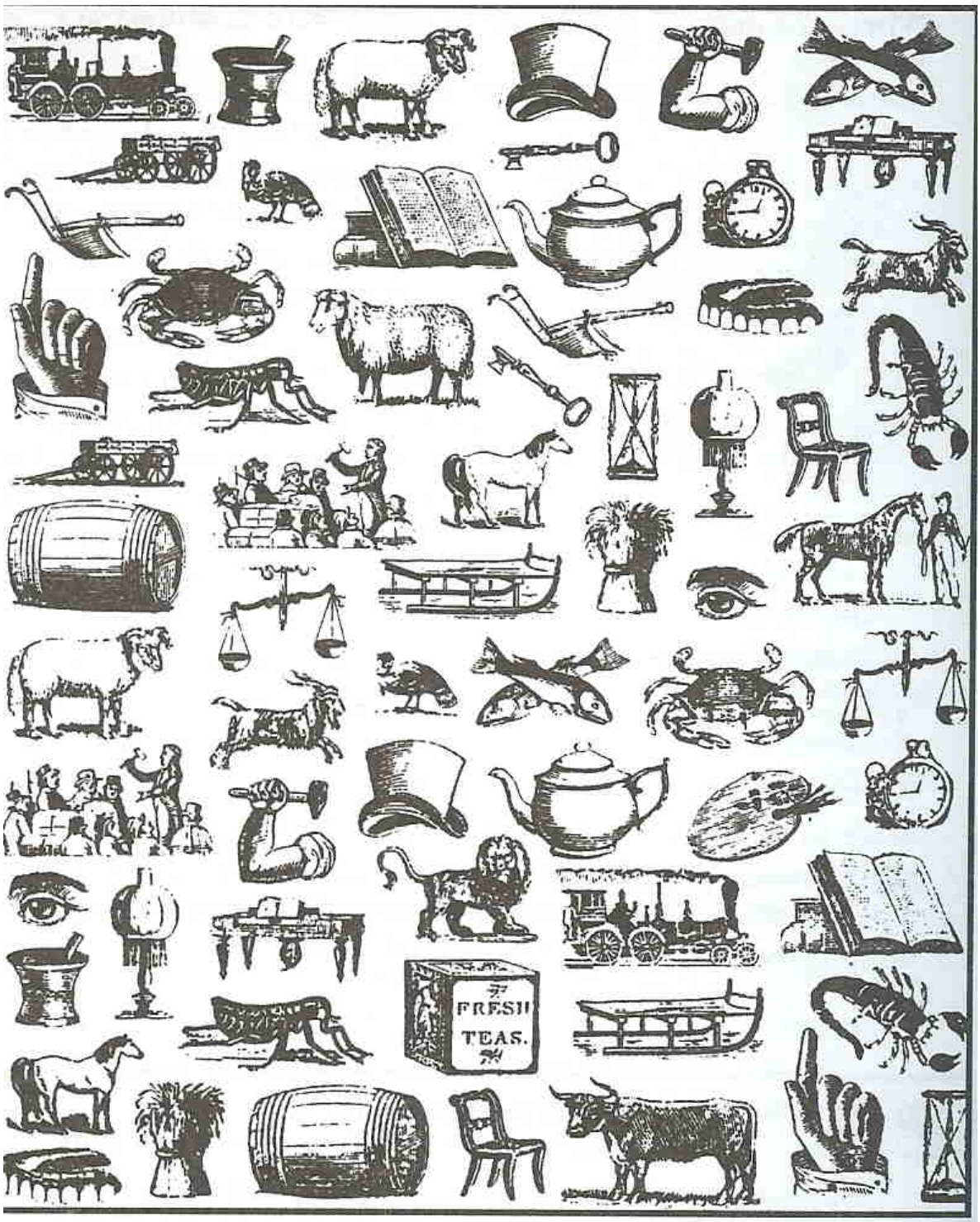
What appears only once?



Hint: Look for warm-blooded animals and the tea that is most pleasing to the palate.

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- SHORT TERM MEMORY WORKS BEST UP TO 7 ITEMS
- ↑CORTISOL = ↓ MEMORY (CORTISOL KILLS OFF BRAIN CELLS!)
- ↑ SLEEP + REST = ↑COGNITIVE PROBLEM SOLVING
- ↑GLUCOSE = ↑MEMORY
- ↑ANTIOXIDANTS + CHOLINE= ↑ MEMORY
- ↑BACKGROUND MUSIC + NOISE = ↓MEMORY
- ↑STORIES = ↑MEMORY, ↑LISTS = ↓MEMORY
- ↑DEPRESSION = ↓MEMORY
- ↑STRESS = ↓MEMORY
- ALCOHOL

Homework:

6seconds.org (FREE)
brainmap.com (FREE),
www.implicit.harvard.edu (FREE),
opencenter.org (FREE),
Brainage.com (PAID),
science.education.nih.gov
mensa.org (FREE and PAID),
funeducation.com,
myersbriggs.org (FREE and PAID),
mentalstrength.com (PAID)
hbdi.com (PAID),

Summary:

Resources:

Final Take-Home Messages: