

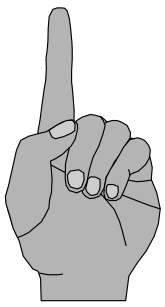


12 Spot

<p>THE BASICS</p>	<p>THE TOOLBOX</p>	<p>EDUCATION STANDARDS</p>	<p>Life Science Content Standard: Understanding the human neuromuscular system and how environment and lifestyle can be beneficial or detrimental to that system.</p>
<p> Grade Level: 4-12</p>	<ul style="list-style-type: none"> • 12 spots, cut out (use the 12 spot master sheet on page 169) • A watch or clock with a second hand 	<p>SAFETY CONCERNS</p>	<p>None.</p>
<p> Estimated Time: 30 min.</p>		<p>FOR KIDS WITH DISABILITIES</p>	<p>Visually-impaired students will need to use spots with Braille as opposed to the 12 Spot master sheet.</p>



Educational Objective:
To show that the proper function of the neuromuscular system and coordination depends on a healthy lifestyle, positive attitude, total focus on a goal, and avoiding drugs, alcohol, and prolonged stress.

What to Do:

- Make photocopies of the 12 Spot master sheet.
- Laminate the sheets on both sides using a laminating machine or 9 x 12-inch laminating sheets that can be found at any office supply store.
- Cut out the squares, and store each set in a separate plastic bag.

Questions to Ask Students As They Do This Activity:

- Try a round in which you and some students agree to praise some volunteers before they try 12 Spot. Choose a person who has tried but is not aware of the agreement. Smile at that person. Say, "You can do it. We know you are going to do really well this time."
- Try a negative approach. Say, "This is a test. You can quit at any time." Then say things like, "You might as well give up. This test is too difficult!" See how the times compare with the first round times.

- Did you feel stress during the activity?
- Could you handle the comments? Is it important for a person to feel able to handle a situation?
- Does alertness matter? What affects it?
- Did putting your finger on your belly button cause you to lose focus? What else might?
- How would drug use affect your ability?
- What if you were under stress?
- What if you used alcohol? Tobacco?
- What situations in life require people to perform well?

Why It Happens:

Task performance depends on **neurons** and **muscles**. Neurons carry signals in the **nerves, spinal cord**, and **brain**. Information goes to the brain, and signals make the muscles touch the correct number. Much can interfere with this process, like **drugs** and **stress**. Drugs interfere with the nervous system operation. Even **caffeine**, a legal stimulant, can cause problems and muscle tremors.

Alcohol depresses the part of the brain that controls impulsive behavior, so a person may feel talkative and stimulated. But the more you drink, the harder it is to make decisions. Nervousness and loss of coordination are part of regular drinking.

Smoking has harmful effects on the body. It slows down oxygen circulation. **Nicotine** stimulates nerve endings but then depresses them as the amount in the body increases. Smoking can cause muscle tremors.

Stress can cause the body to activate the sympathetic nervous system, which prepares the body for emergency situations. Short-term stress may have positive effects, but continued stress can hinder performance. Nicotine and caffeine can also activate the sympathetic nervous system. A positive attitude and focus on a task are factors in the successful completion of the task. Some people perform well despite criticism because they reject outside influences. Drugs and stress make positive attitudes and concentration difficult.



WEB SITES

- **KidsHealth**
<http://www.kidshealth.org/> (Grades 3-12)
- **PREVLINe: Prevention Online**
<http://www.health.org/> (Grades K-12)
- **Dole 5 A Day**
<http://www.dole5aday.com/> (Grades 3-5)

SOFTWARE

- **Body Works**
The Learning Company, 1997
(Grades 6-12)
- **My Amazing Human Body**
DK Interactive Learning, 1997
(Grades 3-6)

READING ROOM

- Parramon Editorial Team. **The Human Body: Understanding and Taking Care of Your Body.** Parramon, 1998. (Grades 7 and up.)
- Sanders, Pete, and Steve Myers. **Drugs.** Copper Beech Books, 1996. (Grades 5-8)
- Williams, Frances. **Human Body.** DK Publishing, 1997. (Grades 5-8)

Career Connections

Neurology is the study of the nervous system in respect to its structure, functions, and abnormalities. Neurologists treat patients and also do research on such diseases as Cerebral Palsy, Muscular Dystrophy, Parkinson's Disease, and Alzheimer's.

12 SPOT ACTIVITY SHEET

- Your leader will give you 12 spots, numbered from 1 to 12.
- Appoint a person as a timekeeper.
- Appoint a person as a checker. The checker must make sure the volunteer touches each of the 12 numbered spots.
- Place the numbered disks on the table in random order in front of the volunteer.
- The object of 12 Spot is to touch each of the disks in order as fast as you can. The timekeeper will begin timing at the word "Go!" and stop when the volunteer touches #12.
- Record the results of these trials on a separate piece of paper.
- Try the same pattern three times, and record the best time. Give each student a chance to try being the volunteer, the timer, and the checker.
- Now try it while placing a finger of one hand on your belly button, while using the other hand to touch the 12 spots. Is this more difficult? Did this cause you to lose focus on the object of the test?
- Make up your own 12 Spot rules and variations. Try them and record your times!

Rule	Time

1

2

3

4

5

6

7

8

9

10

11

12