

A Life Sciences Experience

By: Nancy Volk

MOST*

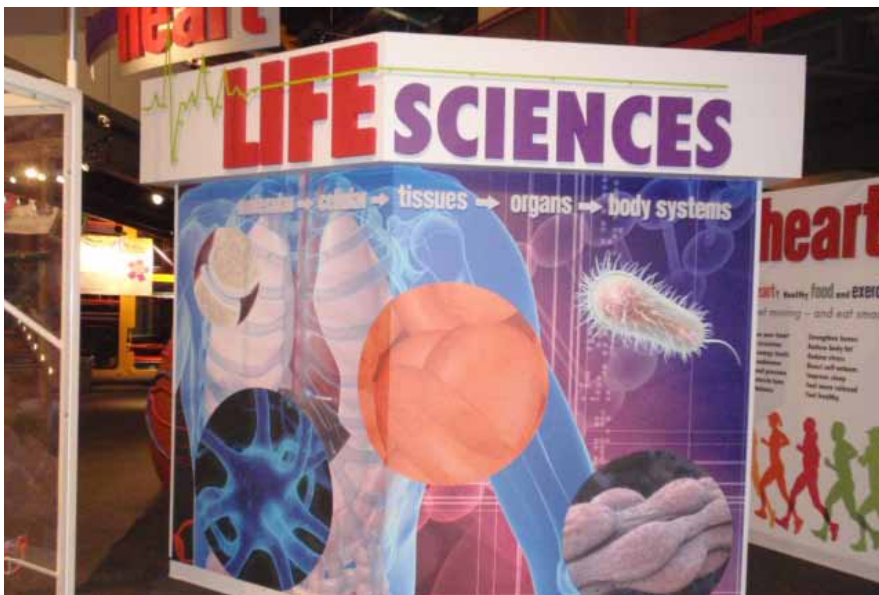
Visiting the MOST

To make your visit to the Milton J. Rubenstein Museum of Science & Technology as in depth and meaningful as possible:

- A) Explore and complete some of the on-line pre-visit activities with your students.
- B) Design a pre-visit, during and post-visit plan that includes activities and demonstrations that you select.
- C) Discuss your plan with a MOST educational staff member prior to your visit. Request the backpack program for a “hands on” set of activities for the Earth Science Discovery Cave.
- D) Plan your large group to be divided in a ratio of 8 to 10 students per chaperone.
- E) Cue the chaperones about their roles. They should be engaged with the students and assisting them with their hunt for answers and monitoring the materials provided.
- F) Relax and have fun!

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Welcome to Life Sciences at the the MOST.

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Hear

1) What is sound?

2) What is ear wax?

3) What is an otoscope?

4) What is one cause for hearing loss?

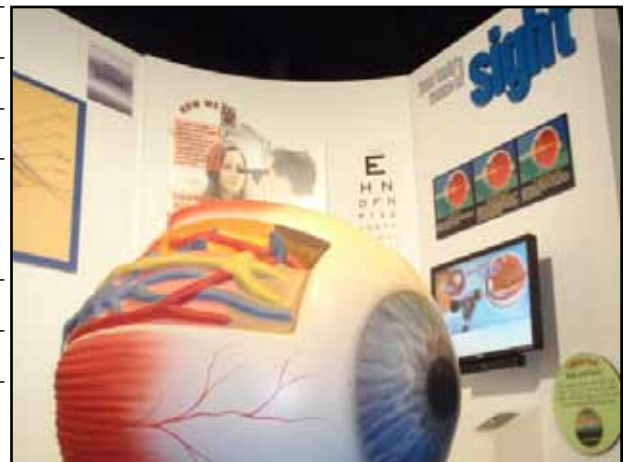


See

1) Explain the process of seeing?

2) What are the roles of rods and cones in seeing?

3) What feature allows human depth perception?



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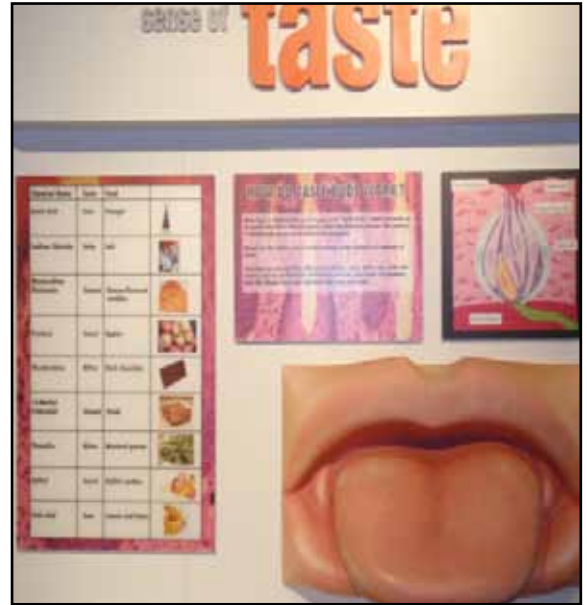
Taste

1) Where is theobromine found and how does it taste?

2) How are taste and smell connected?

3) Fill out the chart using the information on the tongue panel.

| <u>Taste</u> | <u>Type of Food</u> |
|--------------|---------------------|
| SWEET | _____ |
| BITTER | _____ |
| SOUR | _____ |
| SALTY | _____ |
| UMAMI | _____ |



Smell

1) Humans can detect the difference between how many odors?

2) What are the seven smell categories listed?



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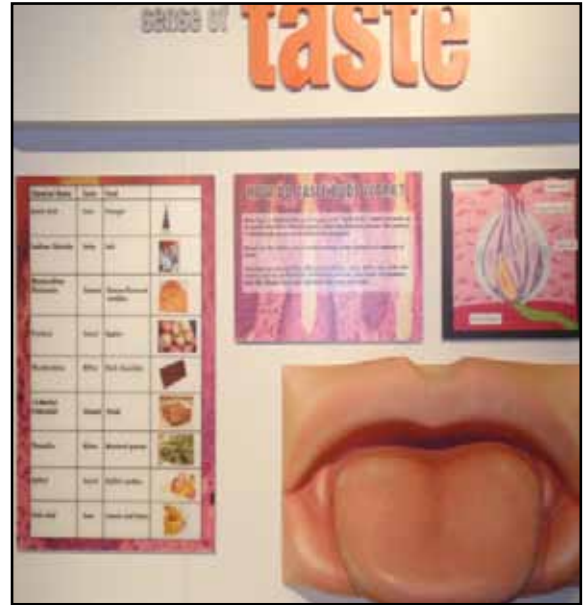
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Touch

1) What is the largest organ of the human body?

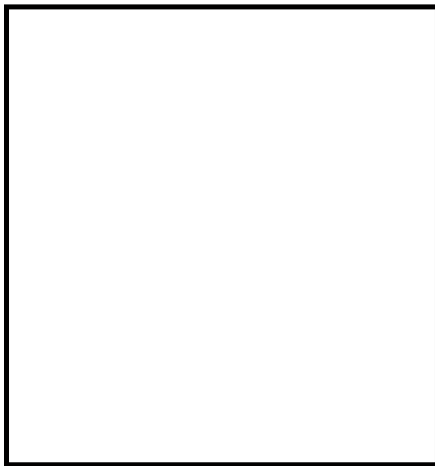
2) What jobs does our skin perform?

3) How does hair grow?



4) **Touch Exploratorium: Can you "see" with your hands?**

Draw what you feel for each of the containers and identify the object if possible.



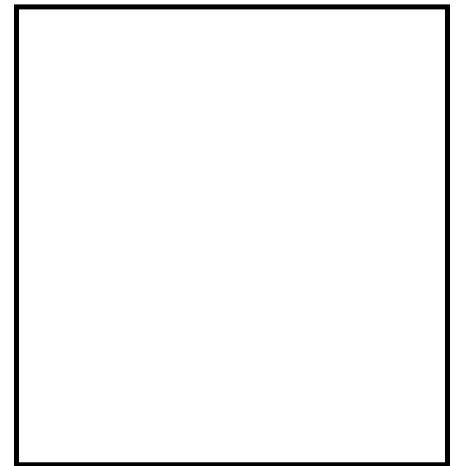
1

What is it?



2

What is it?



3

What is it?

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Your Circulatory System

Go to the **Your Circulatory System** section of the exhibit.

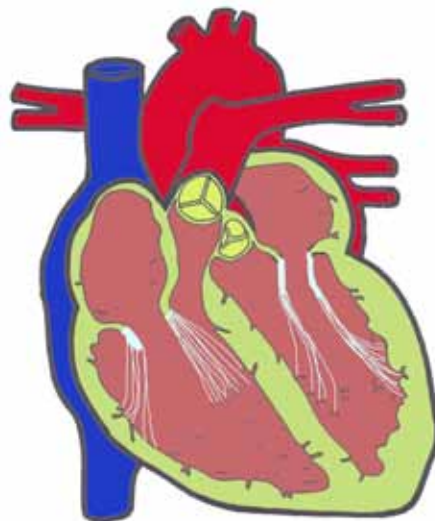
1) What organs in the body are part of the circulatory system?

2) What is the function of the circulatory system?

3) What color is your blood?

4) How much blood does the human heart pump every day?

5) How are veins and arteries alike and different?



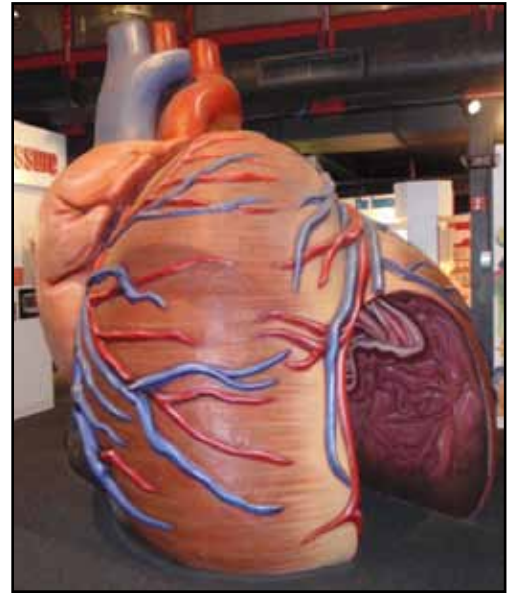
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Your Circulatory System

Now walk through the giant human heart model in the exhibit. Listen carefully to simulated heart beat as you go. The first part of the sound of the beating heart is commonly referred to as "lub" and represents the contraction of the atria. The second part of the beat, the "dub", represents the contraction of the ventricles.



What things are healthy to do for your heart?

As you go through the heart, see if you can identify the parts of the heart. When you exit the heart, find your chaperone. She(he) will assist you with the next activity.

An active heart is a healthy heart! Try finding your pulse by placing your first two fingers over your wrist on the left hand side or on your neck between your ear and the base of your throat. When the chaperone signals count your heart beats for a minute. Record this information

Resting heart rate _____.

Now find a space where you can run in place, jump in place or do jumping jacks without hitting another person. Do your activity for 3 to 5 minutes. Your chaperone will cue you to stop and find your pulse. When you find the pulse time it again for 60 seconds. Record your information.

Active heart rate _____.

How big was the difference? _____

What can this information tell us about a person's heart?

Explain the results. Compare your pulse to that of the model. The model heart is set for a healthy 18 year old male.

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The Nervous System

Find the Nervous System area of the exhibit.

1) What can you do to strengthen the spine?

2) All nerves in the body send information to the spinal chord and then to the _____.

Virtual Basketball

3) What happens to any color that matches the green background?

4) What is the purpose of the green background?

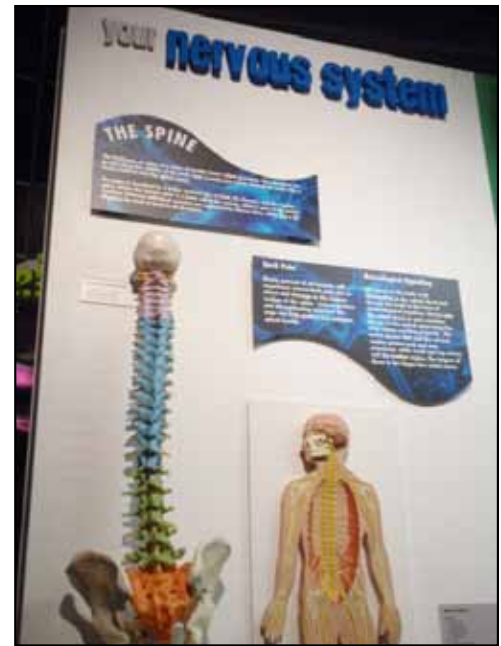
5) Does the depth at which you stand make a difference?

6) What do you need to do to capture the electronic game ball?

7) What do you do to pass the basketball to a teammate?

8) How tall are you?

5) How high can you jump?



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Development Stages

Find the Development Stages area of the exhibit.

1) What are neurons?

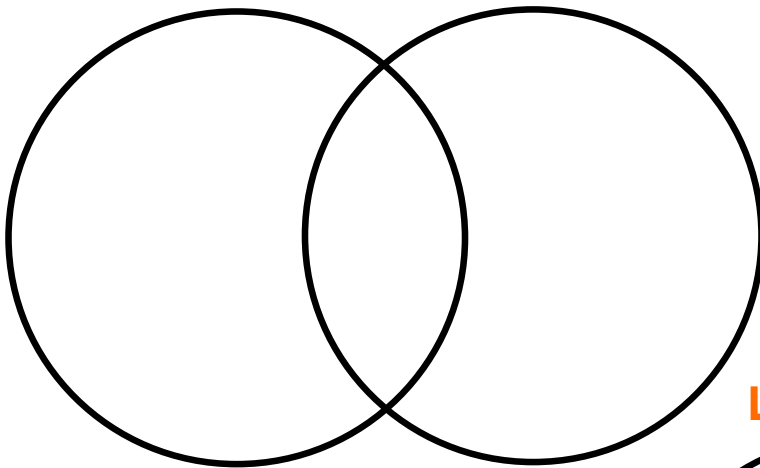
2) How are dendrites and axioms alike and different?

3) A fetus develops how many neurons per minute?

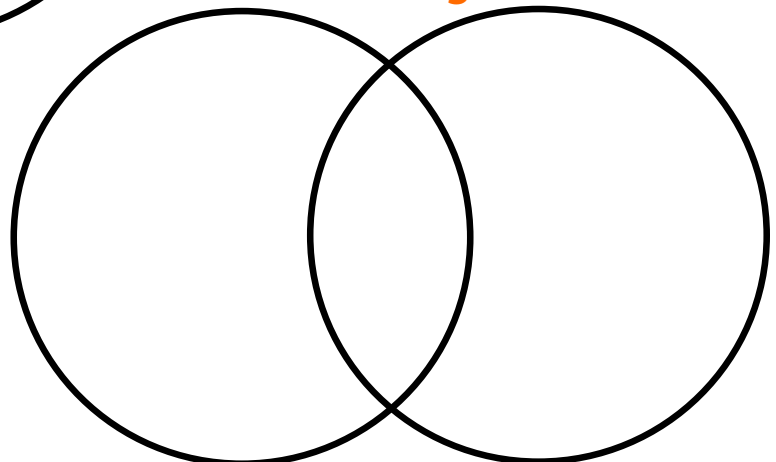
4) Use the information panels to fill the comparison diagrams below.



Girl Brains vs. Boy Brains



Left Side vs. Right Side



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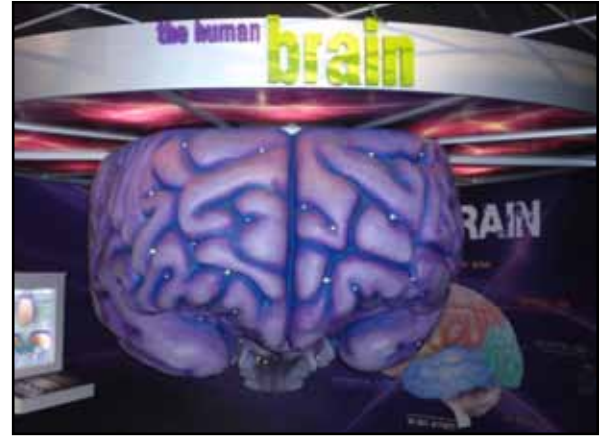
Reproduction

Find the section about reproduction in the exhibit.

- 1) There are two types of gametes. The female produces the _____ and the male produces the _____.
- 2) When the human embryo is nine weeks old it is called a _____.
- 3) What is a gene?

- 4) How many pairs of chromosome do we have?

- 4) XY combination produces a _____.
What two chromosomes produce a female? _____



Take a poll!

Count how many students are Dominant (D) or Recessive (R) for each trait listed below:

- | | | | |
|--------------------------------|-------|-------------------------------|-------|
| A Unattached Earlobes (D) | _____ | Attached Earlobes (R) | _____ |
| B Tongue Rolling (D) | _____ | Tongue Rolling (R) | _____ |
| C Dimples (D) | _____ | No Dimples (R) | _____ |
| D Widow's Peak (D) | _____ | Straight Hairline (R) | _____ |
| E Freckles (D) | _____ | No Freckles (R) | _____ |
| F Left Thumb on Top (D) | _____ | Right Thumb on Top (R) | _____ |
| G Inward Bent Pinky (D) | _____ | Straight Pinky (R) | _____ |
| H Thumb Straight (D) | _____ | Thumb Bends Back (R) | _____ |
| I Six Fingers on Each Hand (D) | _____ | Five Fingers on Each Hand (R) | _____ |

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Notes...

New York State Standards

Standard 4

Key Idea 1: 1.2a, 1.2b, 1.2c, 1.2e, 1.2f, 1.2g, 1.2h, 1.2i, 1.2j, 1.3a

Key Idea 2: 2.1a, 2.1b, 2.1c, 2.1e, 2.1g, 2.1i, 2.1j, 2.1k

Key idea 4: 4.1a, 4.1b, 4.1c, 4.1d, 4.1e, 4.1f, 4.1g, 4.1h,

Key Idea 5: 5.2d, 5.2e, 5.2h, 5.2j