

**Station #1: Under Your Skin**

**Activity #1: Human Body Floor Puzzle**

**Supplies:** Human Anatomy Floor Puzzle (Melissa & Doug)

**Procedure:**

- Put the floor puzzle together (organ-side up)

**Activity #2: True-to-Life Human X-rays**

**Supplies:**

Laminated Roylco x-ray kit (from Steve Spangler Science, approx. \$27.00)

**Procedure:**

- Lay down white paper (at least 6 feet)
- Arrange the skeleton x-rays into the shape of a human body.
- Label the bones using the name tags

**Activity #3: Bone Trivia**

**Supplies:**

Trivia cards from “Skeletons in the Closet” game (Game costs about \$25 at school supply stores)

**Procedure:**

- Divide your group into two smaller teams (2-3 students in each team)
- Have Team #1 ask Team #2 trivia questions, then alternate
- Team with the most correct answers wins

## **Station #2: PowerPoint Presentation on the Human Body by Dr. Dan Moore**

Dr. Dan Moore is a radiologist at UTSW/Parkland.

### **Activity 1: PowerPoint Presentation**

#### **Supplies:**

Lap top computer  
Extension cord  
X-rays  
Light box (maybe)

#### **Procedure:**

- Present a PPT with images of the entire body.
- Pause periodically and talk about safety issues (why you should wear a protective helmet at all times, why you need to wear protective gear when skateboarding etc.)

### **Activity #2: How does a Hand Work?**

#### **Supplies:**

Use Smart Lab: You Control it Skeletal Hand model (\$12 at Steve Spangler)

#### **Procedure:**

- Use the trigger-operated hand to see how the individual digits work
- Review activities in the book

### **Activity #3: What does a Hand Look Like?**

#### **Supplies:**

X-ray of a hand  
Chalk  
Black paper

#### **Procedure:**

Study the picture of the X-ray of the hand  
Have the student draw a hand with white chalk on the black construction paper  
Label some of the bones

### **Station #3: Testing your Senses**

#### **Activity #1: Testing Out Your Sense of Smell**

##### **Supplies::**

Small match boxes with perforated lids, labeled A-F.

Items that produce odors (examples: onion, soap, coffee, sage, tomato sauce, toothpaste, garlic, orange/tangerine)

Paper for writing down answers

Pens, pencils or crayons

Answer Key (A=onion, B=soap, etc.)

##### **Procedure:**

- Each box has something with a distinctive smell in it
- Hand around the boxes giving time for every student to smell the contents.
- Work together to figure out what is in the boxes.
- A time limit is given to write down what was in the boxes.
- Pass the box to the RIGHT; fill in a table like the one below

Box	Your Guess
A	
B	
C	
D	
E	
F	

- When everyone has had a chance to sniff all the boxes, open them up and share the results—how many guessed correctly? What was the hardest one to recognize?

#### **Activity #2: Testing Out Your Sense of Touch**

##### **Supplies:**

Six large brown paper bags

2 apples, 2 oranges, 2 tennis balls

6 blindfolds

Paper and pencils

##### **Procedure:**

1. Put a blindfold on the students
2. Have the student try to identify each object with his/her elbow. Adult writes 'guess' into a table
3. Have the student try to identify each object with his/her foot.
4. Have the student try to identify each object with his/her hand

Which is more accurate? Elbow, Foot or Hand?

**Why:** Skin has touch receptors all over, but the skin on the hand has a LOT more than the foot or elbow.

Box	Your Guess
A	
B	
C	
D	
E	
F	

Box	Your Guess
A	
B	
C	
D	
E	
F	

Box	Your Guess
A	
B	
C	
D	
E	
F	

Box	Your Guess
A	
B	
C	
D	
E	
F	

Box	Your Guess
A	
B	
C	
D	
E	
F	

Box	Your Guess
A	
B	
C	
D	
E	
F	

**Station #4: MRI Sleuthing by Dr. Kimmo Hatanpaa**

Dr. Kimmo Hatanpaa is a physician-scientist (neuropathologist) at UTSW. He will show the students the brain model and talk about the different structures and what they do.

**Supplies:**

Brain Model (8 pieces, life-sized, from eBay; \$43.00)

Brain MRI on CD

Laptop

Extension cord

LARGE USB mouse (kid-friendly)

Stopwatch

**Procedure:**

- Split the five or six students into two groups of 2-3 each (Team A and Team B)
- Point to a structure in the model
- Give each team a chance to run through the MRI scan on the laptop and try to find the same structure in the scan as pointed out in the model. If the team cannot find it in 90 seconds, they will stop and give the second team a chance to find it. (Alternatively, show the brain model and take apart and then time them putting it back together)
- Continue this way through the time remaining.
- Keep a tally with the results (points earned for Team A v. Team B).

### **Station #5: Report on Growing Bacteria/Joint Mechanics**

Dr. Krystyna Isaacs is a science administrator today. She used to work with sterile cultures growing brain cells.

#### **Activity #1: Sharing Results from Growing Bacteria Experiment**

##### **Supplies:**

Photographs of bacteria/molds grown in petri dishes (from the students' do at home last month)

Tables describing the growth pattern (from the students)

Blackboard

Chalk

##### **Procedure:**

- Have each student describe what they swabbed and what they saw.
- Tally the information on the blackboard.
- Discuss any surprises or unexpected results.
- Brainstorm how it could have been done differently

#### **Activity #2: How do Joints Work?**

##### **Supplies:**

Use Young Scientist Series Set #7, Kit #19: Bones and Muscles

(approx. \$25.00) and/or Magic School Bus Human Body Kit (any museum store, or online, about \$25)

Hinge joint with paper fastener

2 newspapers rolled into a narrow tube about 20 cm long and taped tight with a ping-pong ball taped onto one end

Two halves of a rubber ball with a cavity bigger than the ping-pong ball

Vaseline

##### **Procedure:**

##### **A. Hinge joint:**

- Move the smaller strip up and down
- Observe the motion of the joint

Note that it can only move in one plane (up and down). This is called a HINGE joint.

Q. Where on your body can you find a hinge joint (A: elbow and the knee)

##### **B. Ball-and-socket joint:**

- Move the ball around in the  $\frac{1}{2}$  cavity of the rubber ball
- Observe the motion of the joint
- Now add some Vaseline to the rubber ball cavity.
- Observe the motion of the joint

Q. What happens when you reduce the friction with the Vaseline?

Q. Where on your body can you find a ball-and-socket joint? (A: Shoulder and hip)

**Station #6: Looking at Your Blood by Dr. Scott Cameron**

Dr. Scott Cameron is a physician-scientist at UTSW.

**Supplies:**

Laptop

Extension cord

Three microscopes

Slides-normal blood, leukemia and sickle cell anemia

**Procedure:**

Put one slide of each type on the microscope.

Present PowerPoint, alternating between slides on the screen and the microscope

Discuss leukemia and possibly sickle cell anemia