

**J. Frank White Academy 2011-2012 Unit Design**  
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**The J. Frank White Academy**  
**Harrogate, TN**

**Get Body Smart with Scalpel Art**  
**Middle-School Unit**  
**For the Dr. David Velarde Scalpel Art Program**

## The J. Frank White Academy 2011-2012 Unit Design

<b>Unit Title:</b> Get Body Smart with Scalpel Art <b>Course:</b> Middle-School Art	<b>Unit Length:</b> Three weeks plus <b>Date Created:</b> October 2011
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<p><b>Goals/Art Standards/Benchmarks:</b> (see standards that apply to Science and Language Arts as well).</p> <p>The student will</p> <p>1.1 Demonstrate an understanding of the application of current media, techniques, technologies, and processes.</p> <p>1.3 Communicate ideas both verbally and non-verbally (i.e., in written or oral discussions about works of art).</p> <p>1.3 Communicate ideas effectively to the viewer both verbally and non-verbally (e.g., class critiques, displays, assignments, class discussions).</p> <p>1.4 Apply successfully the qualities and characteristics of a chosen medium (e.g., make informed selection of materials based on anticipated physical/aesthetic qualities).</p> <p>2.5 Recognize that structures and functions can be used to communicate ideas (i.e., discuss the message created through the use of elements and principles within a work of art).</p> <p>4.2 Demonstrate an understanding of the influence and impact of artists through history and across cultures.</p> <p>The student will reflect upon and assess the characteristics and merits of their work and the work of others.</p> <p>6.1.2 Examine similarities between visual art and another academic discipline.</p>
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### Unit Overview

These lessons have been designed to develop as scaffolding activities to build upon previous skills. If your class schedule offers the time to reduce the skeletal system into sections, consider fragmenting what parts of the skeletal system students need to learn each week. (i.e. the hip, the shoulder, the arm, the hand...) Fragmenting the lesson provides ample opportunities for students to actually learn and understand all of the structures of the skeletal system. This lesson may be taught as a collaborative art component with either a Biology, or Anatomy and Physiology Class. Students should have a basic introduction to the human skeletal system in their science class.

### Unit Components

Light/Dark and Geometric forms	Tints and Shades on the Femur	Hip and Femur	Skeletal System	Day of the Dead	
<b>Unit Vocabulary/ Concepts/Topics</b>	<b>Unit Vocabulary/ Concepts/Topics</b>	<b>Week 2-Vocabulary/ Concepts/Topics</b>	<b>Week 3-Vocabulary/ Concepts/Topics</b>	<b>Extension-Day of the Dead Lesson</b>	<b>Unit Vocabulary/ Concepts/Topics</b>

<ul style="list-style-type: none"> <li>•Geometric forms</li> <li>•Sphere</li> <li>•Cylinder</li> </ul>	<ul style="list-style-type: none"> <li>▪ Femur</li> <li>▪ Neutrals</li> <li>▪ Tints</li> <li>▪ Shades</li> </ul>	<ul style="list-style-type: none"> <li>▪ Pelvis</li> <li>▪ Sacrum</li> <li>▪ Coccyx</li> <li>▪ Femur</li> </ul>	<ul style="list-style-type: none"> <li>▪ Cranium</li> <li>▪ Mandible</li> <li>▪ Scapula</li> <li>▪ Clavicle</li> <li>▪ Spine</li> <li>▪ Vertebrae</li> <li>▪ Thorax</li> <li>▪ Sternum</li> <li>▪ Humerus</li> <li>▪ Ulna</li> <li>▪ Radius,</li> <li>▪ Carpals</li> <li>▪ Metacarpals</li> <li>▪ Phalanges</li> <li>▪ Pelvis</li> <li>▪ Sacrum</li> <li>▪ Coccyx</li> <li>▪ Femur</li> <li>▪ Patella</li> <li>▪ Tibia</li> <li>▪ Fibula</li> <li>▪ Metatarsals</li> <li>▪ Phalanges</li> </ul>	<ul style="list-style-type: none"> <li>•<i>calacas</i></li> <li>•<i>calaveras</i></li> <li>•<i>cempasuchils</i></li> <li>•<i>cffrendas</i></li> <li>•<i>pan de muerto</i></li> <li>•<i>papel picado</i></li> </ul>	<ul style="list-style-type: none"> <li>•</li> <li>•</li> <li>•</li> <li>•</li> <li>•</li> <li>•</li> </ul>
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**Learner/Performance Objectives: The student will . . .**

**Assessments/Evidence**

<ol style="list-style-type: none"> <li>1. Define and use unit vocabulary.</li> <li>2. Through direct observation of the human skeletal system students will learn to draw the human skeletal system in proportion to each of its components.</li> <li>3. Through analysis of structure and proportion of the human skeletal system the student will recognize the differences in the shapes of the bones.</li> <li>4. Through the use of the Scalpel art brushes students will develop a heightened coordination between their sense of tactile balance and visual expression.</li> <li>5. Through careful application students will learn to model</li> </ol>	<ul style="list-style-type: none"> <li>•<b><u>Selected response (e.g., multiple choice, matching, true/false)</u></b></li>   <li>•<b><u>Constructed response (e.g., fill-in-the-blank, short answer, label, graphic)</u></b> <ul style="list-style-type: none"> <li>• Student reflection</li> <li>• Measurement sheet</li> </ul> </li>   <li>•<b><u>Product (e.g., essay, model, project)</u></b> <ul style="list-style-type: none"> <li>• Geometric forms composition</li> <li>• Femur composition</li> <li>• Skeletal proportion sheet</li> <li>• Skeletal identification sheet</li> <li>• Skeletal composition</li> <li>• Sequential essay and employment applications</li> </ul> </li> </ul>
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<p>the skeletal system in a 3-D format applying shading techniques when using the Scalpel art brushes.</p> <p>6. The student will increase their understanding, observation and analysis skills by discussing then visually expressing the structures of the human skeletal system.</p> <p>7. Through analysis of the structure of human skeletal system, students will learn to recognize and identify its parts.</p>	<ul style="list-style-type: none"> <li>• Day of the Dead sculpture</li> <li>• <i>Day of the Dead calacas</i></li> <li>• Day of the Dead essay</li> </ul> <p>•<b>Performance (e.g., speech, recital, demonstration)</b></p> <ul style="list-style-type: none"> <li>• Group discussion and sharing</li> <li>• Group critique and evaluation</li> </ul> <p>•<b>Process (e.g., conferences, observations, logs)</b></p> <ul style="list-style-type: none"> <li>• Teacher direct observation throughout lesson</li> <li>• Constructive evaluation to group and individuals</li> </ul>
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**Unit:**

**Resources/Materials:**

<ul style="list-style-type: none"> <li>• Student copies of Image of skeletal system</li> <li>• Vocabulary words</li> <li>• Set of Scalpel brushes</li> <li>• Metal cans</li> <li>• Spheres</li> <li>• Images of geometric forms</li> </ul>	<ul style="list-style-type: none"> <li>• Rulers</li> <li>• Watercolor paints/acrylics</li> <li>• Sketch paper</li> <li>• Pencils</li> <li>• Images of human femur, hips and skeletal system</li> </ul>
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**Prerequisite Content and Learning Skills**

**Mission / Vision Related Goals Strategies**

<ul style="list-style-type: none"> <li>• Basic understanding of visual structure of 3-D geometric forms (cylinders and spheres)</li> <li>• How to measure with ruler</li> <li>• When evaluating work as a group, students should take care not to criticize each other’s work but learn to evaluate it constructively</li> </ul>	<p style="text-align: center;"><b><i>THE J. FRANK WHITE ACADEMY MISSION STATEMENT</i></b></p> <p>life sKills exceleNce indivIduality colleGe preparation etHics Teamwork Success</p>	<p>Goals Related to JFWA Mission / Vision Statement</p> <p><b>K-</b> Students are acquiring lifelong communication and planning skills to work in a collaborative environment, and to work congenially in the context of varying viewpoints.</p> <p><b>N</b> –Students will strive towards a standard of excellence, in all work, and that reveals their personal best.</p> <p><b>I</b> – Students will be provided with ample opportunities for individual expression in their extension activities; Dali painting, Day of the Dead masks and <i>calacas</i>, etc.</p> <p><b>G</b> –Students will learn to associate artistic expression with learning and higher order thinking.</p> <p><b>H</b> –Students will learn to value their own work as a personal expression.</p>
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	<p><b>KNIGHTS</b>, life skills for success!</p>	<p><b>T</b> –Students will learn there is diversity in discussing ideas and approaches through visual and written expression.  <b>S</b> –Students will learn that through effort and perseverance that they can be successful.</p>
<p><b>Formative Assessment Plan (Types, Placement, Frequency)</b></p>	<p><b>Higher Order Thinking Skills</b></p>	<p><b>Activities/Practices/Strategies</b></p>
<ul style="list-style-type: none"> <li>• Group discussion daily</li> <li>• Students summary of media center work</li> <li>• Individual work for skeletal identification</li> <li>• Group work for skeletal identification</li> </ul>	<p><b>H.O.T. activities:</b></p> <ul style="list-style-type: none"> <li>•Student reflection</li> <li>•Measurement activity</li> <li>• Provide constructive responses that evaluate your classmate’s artwork without offending the</li> <li>-Summative essay for sequential reflection and employment associations</li> <li>-Summative essay for Day of Dead</li> </ul>	<p><b>Select/Create Enrichments/Extensions</b></p> <ul style="list-style-type: none"> <li>•tutoring peers</li> <li>•developing practice exercises</li> <li>•developing related media materials</li> <li>•completing special projects, experiments</li> <li>•developing games, problems, and contests</li> <li>•using advanced computer-assisted lessons</li> <li>•locating background materials for future or current topics</li> <li>•developing additional formative assessments</li> <li>•planning to teach a mini-unit</li> <li>•creating bulletin boards and displays</li> <li>•applying knowledge to a new situation</li> </ul>

## **Instructional Plan**

### **Week One**

**Objectives:** Students will practice how to create light and dark areas when drawing geometric forms that are similar to the bones of the human skeletal system.

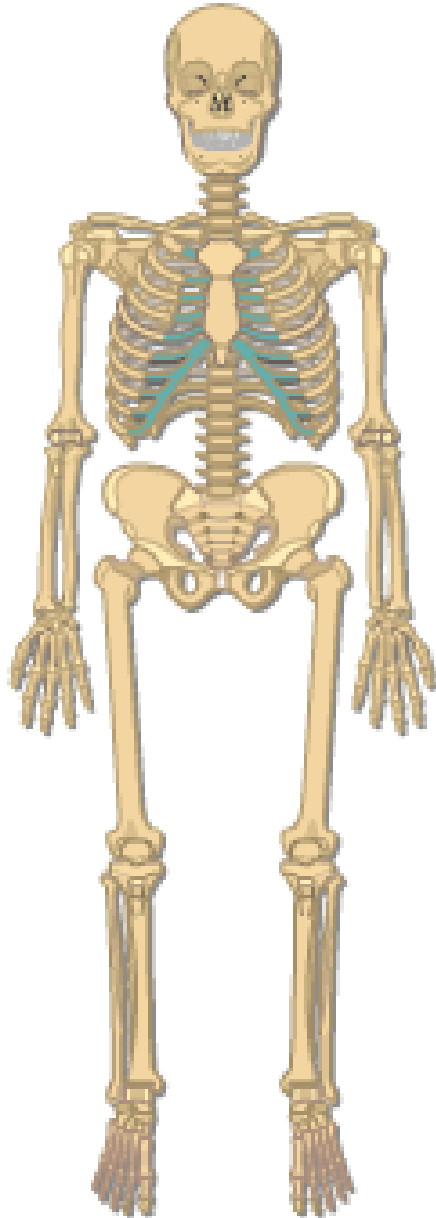
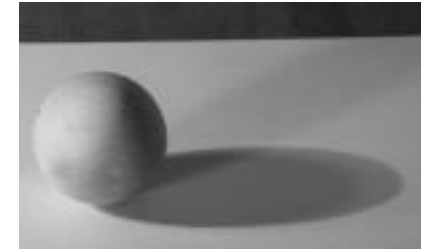
**Supplies:**

- Metal cans and plastic spheres of various sizes in central location on student tables
- Sketch paper
- Pencils and watercolor
- Scalpel brushes

#### **Day One**

Steps:

1. The teacher will demonstrate how to draw and shade cylinders and spheres.
2. Students will practice drawing cylinders and spheres in a 3-D format.
3. To create contrast students will practice applying the pencil with more pressure for darker areas and less pressure for lighter areas.
4. Students will practice sketching various values in light and dark to distinguish from lighter and darker areas.
5. Students will practice drawing the forms separately, as well as compositions with the forms overlapping.
6. Conclusion of day one; students will discuss what techniques are creating the most success, and what areas need to be improved.



#### **Days Two and Three**

**Objective:**

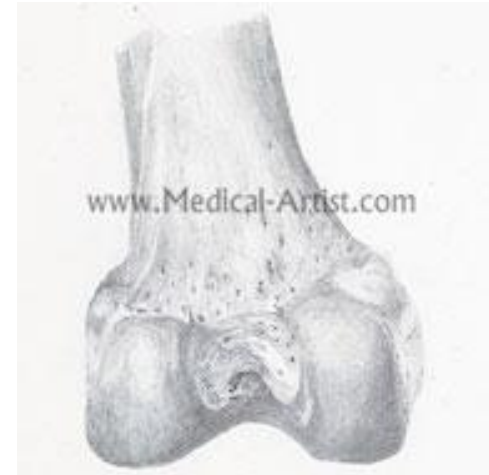
Students will continue practice on how to create light and dark areas drawing and painting on forms that are similar to the bones of the human skeletal system.

**Supplies:**

Same as Day One

**Steps:**

1. Students will continue drawing the geometric forms on their sketch paper and select one drawing that they believe is the most successful.
2. Students will develop one large composition where the forms are overlapping and encompasses at least  $\frac{3}{4}$  of the sketch paper.
3. Students will determine what areas will receive the lightest areas of this larger drawing and what areas will be darkest.
4. Students will use the Scalpel brushes to create accurate renderings of the cans.
5. Students will paint a composition of the forms using **neutral colors** (brown and blue) in watercolor to render the dark and light areas of the forms.
6. By adding beginning with white plus a neutral color students will create a **tint**.
7. By adding small amounts of black to a neutral color students will create a **shade**.
8. Class will evaluate the finished compositions as a group.
9. Students will write a sequential reflection on their painting and evaluate how they will apply new techniques they have learned when painting the human skeletal system.

**Days Four and Five****Objective:**

Students will practice how to create light and dark areas drawing and painting an image of the human femur of the human skeletal system.

**Supplies:**

- Images and/or 3-D models of the human femur bone
- Sketch paper
- Pencils and watercolor
- Scalpel brushes

**Steps:**

1. The teacher will demonstrate how to draw and paint the femur.
2. Students will practice lightly sketching the femur in a composition.
3. To create depth in their composition, students will determine a light source and practice shading the bone lightly with pencil.
4. Students will practice drawing this form from various perspectives, playing close attention to the proportions of each part of the bone to the other.
5. Students will paint a composition of the bone using neutral colors (browns and blues) in watercolor to render the dark and light areas of the forms.
6. Students will use the Scalpel brushes to create accurate renderings of the bone, to add shading and detail.
7. Class will evaluate the finished compositions as a group.

### Week Two

#### Objective:

Students will examine the structural relationship of the femur to the pelvis and learn to draw and paint this structure in a composition.

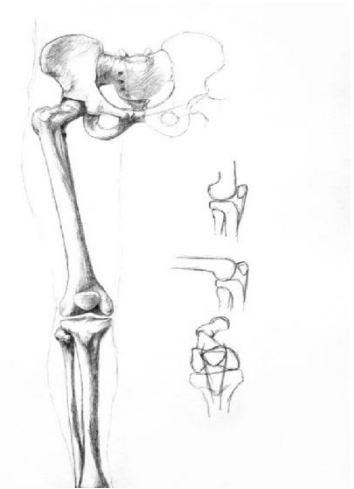
#### Supplies:

- Images and/or 3-D models of the human femur bone and pelvis
- Sketch paper
- Labels
- Pencils and watercolor
- Scalpel brushes

#### Steps:

The teacher will identify parts of the femur and hip structure, then demonstrate how to draw and paint the femur and its relationship to ½ of the pelvis.

1. Students will practice lightly sketching the femur and the hip bone in a composition.
2. To create depth in their composition, students will determine a light source and practice shading the bones lightly with pencil.
3. Students will practice drawing these forms from various perspectives, playing close attention to the proportions of each to the other.
4. Students will paint a composition of the bones using neutral colors (browns and blues) in watercolor to render the dark and light areas of the forms.
5. Students will use the Scalpel brushes to create accurate renderings of the bones.
6. Students should create print out separate labels for the parts of the bones and then attach them.
7. Students should create separate labels for their drawings and print out accurately, and then attach.
8. Class will evaluate the finished compositions as a group.



### Week Three

#### Supplies:



- Images and/or 3-D models of the human skeletal system
- Skeletal proportion sheet
- Media Center
- Sketch paper
- Pencils and watercolor
- Labels
- Scalpel brushes

### Day One

#### Steps:

1. The teacher will distribute a skeletal proportion sheet to each student
2. Students will be instructed how to measure the skeletal system into seven or seven and one-half heads tall
3. Teacher will emphasize this skeletal system is based on an average adult height and that student proportions will vary
4. Students will partner with a friend and measure the length of one another's head. Students will write down the vertical measurements for each section of the human skeletal system, based on the image.

### Day Two

1. Students should bring pencils and their proportion worksheets to the media center.
2. The teacher will provide a vocabulary sheet and demonstrate how to access web site with interactive skeletal system quiz.
3. Web- sources have been provided at the conclusion of this lesson, but determine what sites are most appropriate for your grade level.
4. Students will work individually on interactive sites.
5. Students will type out a summary of 5 bulleted points of facts they learned about the skeletal system and either print or email to the teacher.
6. Students will work with partners to identify the parts of the skeletal system.

### Day Three

1. The teacher will review yesterday's lesson and have students identify the parts of the skeletal system on the overhead projector.
2. The teacher will demonstrate how to draw and paint the skeletal system and show the relationship of the parts to the whole.
3. Students will practice lightly sketching the entire skeletal system in a composition.
4. To create depth in their composition, students will determine a light source and practice shading the bones lightly with pencil.
5. Students will practice drawing these forms from a frontal perspective, playing close attention to the proportions of each to the other.
6. Students will paint a composition of the bones using neutral colors (browns and blues) in watercolor to render the dark and light areas of the forms.
7. Students will use the Scalpel brushes to create accurate renderings of the bones.
8. Students should create separate labels for their drawings and print out accurately, and then attach.
9. Class will evaluate the finished compositions as a group.
10. As homework, students should write a summative essay showing what sequential steps have been taken to accomplish their finished composition. Students will also research a topic that will discuss a form of employment that this unit could be applied to.. (for example; doctor, medical specialist, medical illustrator, ergonomic designer...).

### Extensions:

- Hang unlabeled work skeletal systems up as a class review activity.
- Have students study and draw individual components of the skeletal system to reinforce skills in remembering and understanding its structure.
- Invite younger grades into the classrooms and have students teach them how to draw parts of the skeletal systems. Hang all of the different parts up to create a whole skeletal system.
- Have students research the work of Salvador Dali and evaluate how abstract human form is used in his compositions; have students replicate a painting based on the Surrealist style.
- See Day of the Dead Lesson Plan

**Middle-School Resources for Skeletal Identification and Assessment;**

\*Please note due to content some sites may be graphic in nature, with some nudity and interior anatomical imagery. Always review the sites before showing any sources to your students.

Aschenbrenner, M. Sphere image. Learn to Art. *How to Shade a Sphere tutorial*. 2009.

</http://www.learntoart.com/index.php/about//>.

Culley, J. Femur and Hip image. Medical Illustrations and Artwork in Pencil.

</ <http://www.medical-artist.com/pencil-medical-art.html>//>.

Get body smart. Interactive-online animation.

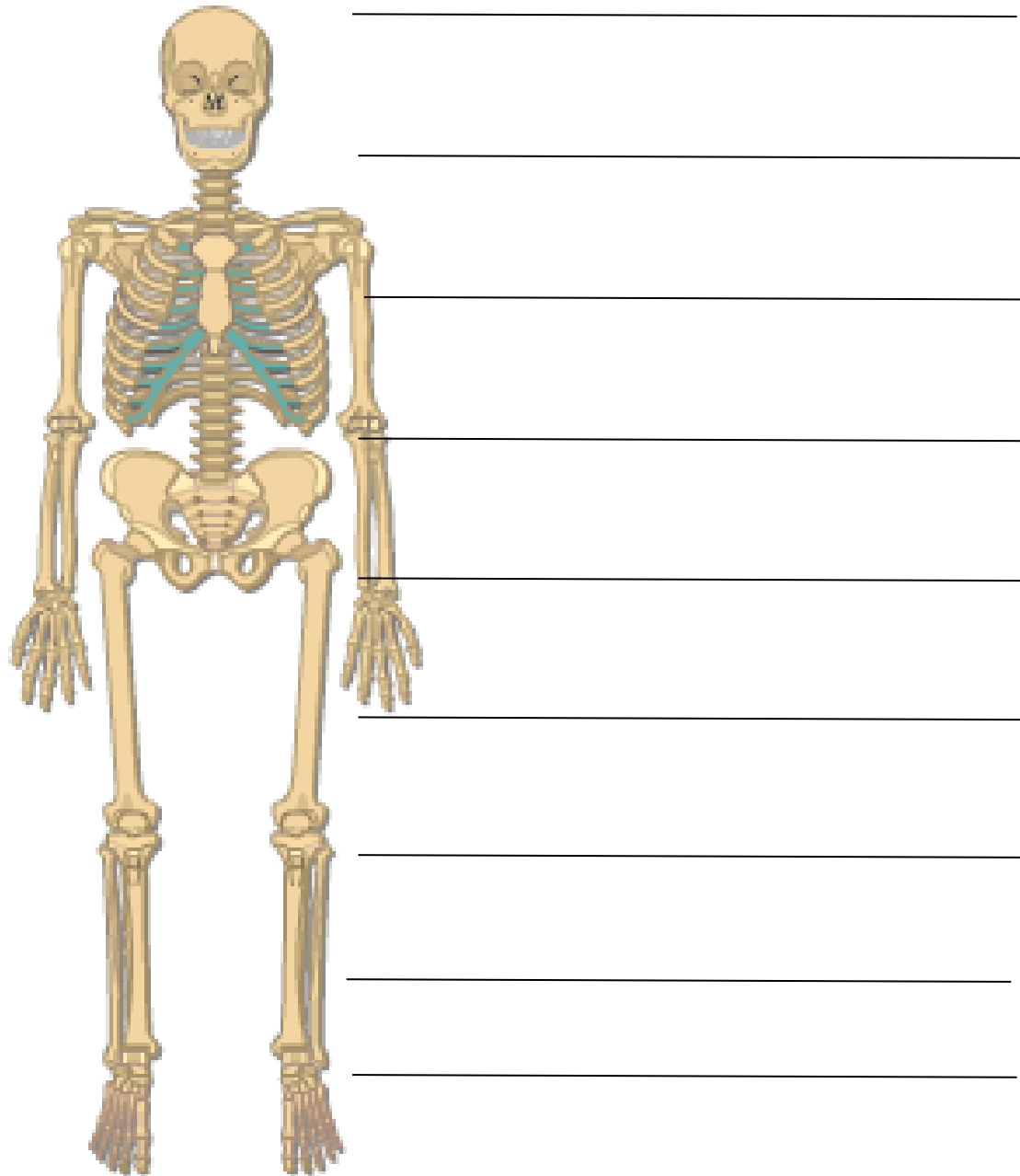
</<http://www.getbodysmart.com/ap/skeletalsystem/skeleton/menu/animation.html>//>.

Graupe, Adam. Anatomy Practice Quiz on Skeletal system. On-line Interactive Quiz. Pro.Profs.com. 2011.

</http://www.proprofs.com/quiz-school/story.php?title=skeletal-system\_30//>.

Schaffer, F. Human Body Reproducible Page. *Classmate*. 1985 Oct.

**Middle School Week Three - The Human Skeletal Proportion sheet (Average height of adult-7 ½ heads tall)**



### Credits

Mr. Jarryd Boster, M.A., Principal of the J. Frank White Academy. Harrogate, Tennessee

*“The implementation of these tools is just one step of many that we have taken to utilize the vast resources of Lincoln Memorial University and partner with its many departments and professional schools. As a college preparatory school it is important that we not only prepare our students to be accepted to college but give them the tools and facilitate experiences that will enrich their education and allow them to be successful throughout their lives.”*

Dr. Neal Cross, DCOM, Chair of Anatomy. Lincoln Memorial University. Harrogate, Tennessee.

*Many thanks to Dr. Neal Cross for access to 3-D models of full human skeletal system, scale models of the human leg and arm for use in my art classes.*

Mrs. JooHee Kim, assistant associate to Dr. Neal Cross. *Many thanks to Ms. Joo Hee Kim for her assistance in coordinating lectures and materials for the Academy A & P applications.*

Cindy Hankins-Koppel, M.Ed., Art Teacher at the J. Frank White Academy

*“The Academy is very excited about employing the use of Dr. Velarde’s Scalpel Art brushes, and cleverly designed instruments, into our advanced art class curriculum. Art classes at the Academy are already structured to integrate core content into the classroom environment to support learning in other areas. The application of Dr. Velarde’s Scalpel Brushes into our art program will greatly benefit Academy students as they learn to construct meaning and tactile association to the study of Anatomy and Physiology.”*

*By increasing their skills in the critical analysis of art and observation through drawing and painting with Velarde’s scalpel brushes, Academy students will develop a heightened sense of balance in their hand-eye coordination. Art analysis and expression require higher order thinking and will fundamentally provide a foundation for Academy students to translate these skills into the ability to analyze the information a patient provides with a deeper understanding as well as increasing their observation skills in diagnosis.”*

Ms. Jeannice Jones, student teacher for Lincoln Memorial University.

*Thanks to Jeannice Jones for collaborating with the structure of my classroom to write a lesson that would integrate with the application of the Scalpel brushes, the skeletal system and create a mutit-cultural lesson for the Day of the Dead.*

Mrs. Sheila Welch, A and P teacher for the J. Frank White Academy.

**Dr. David Velarde, *Many thanks to Dr. Velarde for creating a system that promotes learning in our school with the opportunities to integrate the arts to core content applications. [www.scalpelartsupply.com](http://www.scalpelartsupply.com),[www.chainbooks.com](http://www.chainbooks.com)***

## **Day of the Dead Project by student teacher (J. Jones);**

### **Objectives**

- Students will study the physical characteristics of the skull and then design a Day of the Dead Skull.
- Students will create *calacas* after studying the skeletal system.
- The students will choose a country and create a Prezi, power-point, or travel brochure on how that country commemorates the Day of the Dead Holiday
- The students will type a summative essay about this assignment

### **Skeleton-**

- Must include all of the bones and labels for major bone structure
- Proportional (bones are in relation to each other)
- Show guidelines
  - Include division lines of each head (7 ½ -8 heads)
  - Include where each bone is located in each section
- Using the Scalpel brushes create volume in the structure of the bones
- Paint the skeletal system in a cartoon like manner
- Use decorative patterns and colors associated with the Day of the Dead celebration

### **Day of the Dead Skull- (drawing and/or sculpture)**

- Include all the parts of the skull
- The scale of the art should be at minimum; the size of your hand
- Decorated with (bright, colorful designs)

### **Choose either of these; Prezi, power-point, or travel brochure**

- Include country's location (use a map)
- Include what the country is known for (its traditions, customs, holidays, art...)
- Include country's religion
- Include how and when this country celebrates the Day of the Dead (pictures, videos, altars)
- Include a comparative structure of the Mexican Day of the Dead (include traditions, altars...)
- Compare how the human skeletal system is portrayed between each country for the Day of the Dead celebration in each country
- Consider the color, imagery, contrast, repetition of themes
- Students may include videos and music
- Sources-cite all sources and imagery in MLA format
- Maximum presentation time 7 minutes

- **Essay- typed w/ correct spelling/punctuation/grammar, double-spaced, 12 font, Times New Roman, and at least 1 page** (~Note: Do not turn in paper folded or balled up.) **See Objective questions;**

**Objective Questions:**

1. Compare/ contrast the celebration of Day of the Dead to your favorite holiday.
2. What did you learn about Day of the Dead by doing this project?
3. Countries around the world have different holidays similar to The Day of the Dead to commemorate and honor their loved ones, what celebration(s) would you create if you were asked to honor someone in your family? Provide examples of décor, traditions and food associated with your celebration.
4. In what ways is the *El dia de los Muertos* celebration similar to the traditional ways of honoring the dead in the United States?

**Sources**

Georgia Stories. 2010. [http://www.gpb.org/georgiastories/studyguide/el\\_dia\\_de\\_los\\_muertos/](http://www.gpb.org/georgiastories/studyguide/el_dia_de_los_muertos/).

**Extension Activities**

Students will create a humorous *calacas* to commemorate a member of society.  
Students will write a satirical poem in association with the *calacas*.