Name: _____Period:_____Date:_____
Ms. Randall Anatomy & Physiology
Unit Project: Dance Dance Dance

Muscles are unusual tissues that can change the energy in their cells to pulling power. Most muscles are attached to bones by strong white cords called tendons. One end of the tendon is attached to the muscle, the other end to the bone. Muscles move bones by pulling on tendons. Muscle movement is controlled by nerves which, in turn, are controlled by signals from the brain. At the right signal, the long, thin cells inside the muscle become shorter and thicker. As the muscle shortens, it pulls the bone it is attached to forward.

Muscles move the body by contracting against the skeleton. When muscles contract, they get shorter. By contracting, muscles pull on bones and allow the body to move.

Muscles can only contract. They cannot actively extend, though they can move or relax back into the non-contracted neutral position. Therefore, to move bones in opposite directions, pairs of muscles must work in opposition. Each muscle in the pair works against the other to move bones at the joints of the body. The muscle that contracts to cause a joint to bend is called the ***flexor****. The muscle that contracts to cause the joint to straighten is called the* ***extensor****. When one muscle is contracted, the other muscle from the pair is always elongated.*

*Most of these muscles function in "antagonistic pairs", which means that when one muscles contracts (shortens), the other in the pair relaxes with careful control to allow elongation (stretching). Coordinating muscles together in this way gives us the ability to move gracefully, for example touching the tip your nose without smacking yourself in the face. Also, to make precise movements, such as threading a needle. These movements also allow us to …****Dance!****!!*

Objective: To apply joint movement terms to dance.

Task: To relate and create a dance based on joint movements.

Directions: Design a dance with at least 5 body movements to it.

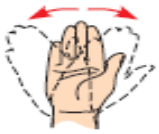
For each movement describe the following:

- Body part involved including bone, muscles and related connective tissue
- Body movement and its definition
- A picture of what the movement looks like
- Movements can be used more than once, however there must be at least 5 different types movements used.

Scoring Rubric : 25points

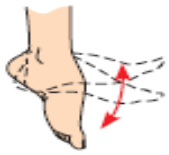
Category	Score of 5	Score of 4	Score of 3	Score of 2
Required Elements ***Score:***	Goes over and above all the required elements stated in the directions & instructions	Includes all of the required elements as stated in the directions/instructions	Missing one or more of the required elements as stated in the directions/instructions	Several required elements are missing from the project
Creativity ***Score:***	Exceptionally clever and unique in showing deep understanding	Thoughtfully and uniquely presented; clever at times in showing understanding of the material	A few original touches enhance the project to show some understanding of the material	Shows little creativity, originality and/or effort in understanding the material
Neatness and Attractiveness ***Score:***	Exceptionally attractive and particularly neat in design and layout	Attractive and neat in design and layout	Acceptably attractive but may be messy at times and/or show lack of organization	Distractingly messy or very poorly designed. Does not show pride in work.
Grammar ***Score:***	No grammatical or mechanical mistakes in the project	A few grammatical/mechanical mistakes which are not distracting	Several grammatical/mechanical mistakes which are distracting	Many grammatical or mechanical mistakes throughout the project. Clearly not proofread.
Understanding of Content ***Score:***	Shows a sophisticated understanding of the themes in the work	Shows an understanding of the major themes of the book	Displays a somewhat limited understanding of the book. May have a few misinterpretations.	Does not show an understanding of the text. Misses plot points and has quite a few misinterpretations.

Extra credit for performing the dance!



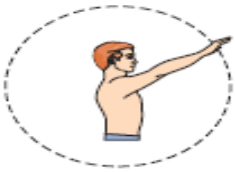
Gliding movements are the simplest type of joint movements. One flat bone surface glides or slips over another similar surface. The bones are merely displaced in relation to one another.

Flexion is a bending movement that decreases the angle of the joint and brings the articulating bones closer together. **Extension** increases the angle between the articulating bones. (**Hyperextension** is a bending of a joint beyond 180 degrees.)



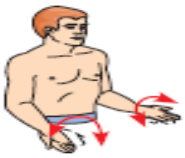
Flexion of the ankle so that the superior aspect of the foot approaches the shin is called **dorsiflexion.** Extension of the ankle (pointing the toes) is called **plantar flexion.**

Abduction is movement of a limb away from the midline or median plane of the body, along the frontal plane. When the term is used to describe movement of the fingers or toes, it means spreading them apart. **Adduction** is the movement of a limb toward the body midline. Bringing the fingers close together is adduction.



Circumduction is the movement in which the limb describes a cone in space: while the distal end of the limb moves in a circle, the joint itself moves only slightly in the joint cavity.

Rotation is the turning movement of a bone around its own long axis. Rotation may occur toward the body midline or away from it.



The terms **supination** and **pronation** refer only to the movements of the radius around the ulna. Movement of the forearm so that the palm faces anteriorly or superiorly is called *supination*. In *pronation*, the palm moves to face posteriorly or inferiorly.

The terms **inversion** and **eversion** refer to movements of the foot. In *inversion*, the sole of the foot is turned medially. In *eversion*, the sole faces laterally.

Protraction is a nonangular anterior movement in a transverse plane.
Retraction is a nonangular posterior movement in a transverse plane.

Elevation is a lifting or moving superiorly along a frontal plane. When the elevated part is moved downward to its original position, the movement is called **depression.** Shrugging the shoulders and chewing are examples of alternating elevation and depression.

Oppostion *of the thumb* is only allowed at the saddle joint between metacarpal 1 and the carpals. It is the movement of touching the thumb to the tips of the other fingers of the same hand.