

**Practical Implementation for SOL Standard 2: Anatomical Basis of Movement**  
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**Standard 2**

*Apply knowledge of the structures and functions of the body and how they relate to and are affected by human movement to learning and developing motor skills and specialized movement forms. (Anatomical Basis of Movement)*

This strand focuses student learning on understanding basic anatomy and physiology along with movement concepts and principles, to improve motor skills. While the skilled-movement goal involves learning how to perform physical activities skillfully, this goal directs students toward learning about movement. Concepts and principles from various fields of study support skillful movement performance. These fields of study include motor control, exercise physiology, and biomechanics/kinesiology. Active learning experiences will connect the anatomical content with activities being performed. **Elementary students** establish basic musculoskeletal vocabulary and use simple concepts as they develop their movements. **Middle school students** learn and apply more complex concepts of human movement. **High school students** develop a working knowledge of human anatomy and physiology concepts and principles, enabling them to independently apply concepts in order to acquire new skills or enhance existing skills.

How to read each of the standards

1. Look for the descriptive word to help determine level of assessment to measure student learning (i.e identify, apply, demonstration, etc.)
2. Understand the Critical Content of each SOL: this tells the teacher what the students should know and do by the end of the grade level. It also helps to keep the content developmentally appropriate for the students. (i.e. creating space, muscle groups, etc.)

Curriculum Framework (online resource)

1. Provides practical application of each of the standards.
  - a. <https://www.doe.virginia.gov/teaching-learning-assessment/instruction/physical-education>

**Standard 2: Anatomical Basis of Movement**  
**Pickleball**

SOL	Activity	Assessment
3.2a) apply concept of creating space	<i>Partner ball bounce</i> - Partner tosses the ball over the net. Partner 2 must let the ball bounce once before they toss the ball back over the net. (Play cooperatively making your partner move forward and backward and side to side - This will mimic drop shots and lobs)	Exit sheet with cognitive questions
7.2d) Analyze skill patterns and movement performance of self and others, detecting and correcting mechanical errors	<i>Partner forehand build up</i> - Students are in groups of three. Partner 1 hits a forehand to partner 2 and she catches the ball. Partner 2 hits a forehand to partner 1 and she catches the ball. Partner 1 hits a forehand to partner 2 and they hit the ball back to partner 1 (they catch the ball). This continues to see how many the pair can hit in a row.	Partner 3 has a check list of forehand cues <ul style="list-style-type: none"> <li>● Racket back, strike ball at front foot, FT to target</li> </ul>
9.2f) Apply concepts and principles of levers, force, motion and rotation	<p><i>Partner Ball machine</i> - The goal is to learn how to hit a topspin forehand shot. Partner 1 is a step away from the net with 6 pickleballs. They will underhand toss to their partner.</p> <p>To hit a topspin shot - the partner will switch their grip from a hammer to a frying pan position (lay the racket on the ground and pick it up or turn the racket 90 degrees in your hand).</p> <p>The tosser - 1) looks for proper racket position (wrist flexed and frying pan racket position) and 2) rotation of the body on contact (Low to high swing and the trunk rotations with the swing)</p>	Teacher can have a check list of the process cues: racket and wrist position, trunk rotation, swing angle

**Standard 2: Anatomical Basis of Movement**  
**Lacrosse**

<b>SOL</b>	<b>Activity</b>	<b>Assessment</b>
3.2a) apply concept of creating space	<i>Space passing</i> - students can be in groups of 2 or 3. Create a square with cones. The ball will start in the middle of the square. Players can only pass to a player that is moving and only one person can be at a cone.	Exit sheet with questions regarding how and when to move
7.2d) Analyze skill patterns and movement performance of self and others, detecting and correcting mechanical errors	<i>Partner Catching</i> - Partner 1 is tossing the ball to Partner 2. Partner 2 performs the cues (Show, Give, Cradle) to catch the lacrosse ball.	Partner 3 has a checklist with the cues (Show, Give, Cradle)
9.2f) Apply concepts and principles of levers, force, motion and rotation	<p><i>Wall Ball</i> - Students are in pairs. Partner 1 is facing a wall about 10 feet from the wall. Partner 1 tries to pass the ball off the wall as many times as they can without dropping the ball.</p> <p>Partner 2 - Observes partner for Side to target, Push/Pull lever action, rotation of shoulders and hips, FT points at target</p>	Teacher can have a checklist of the process cues (triple threat, side to target, Push/Pull lever action of the stick, FT points at the Target)

**Standard 2: Anatomical Basis of Movement**  
**Golf**

<b>SOL</b>	<b>Activity</b>	<b>Assessment</b>
3.2 b) Identify major muscles, including the hamstrings and triceps	Students will get into groups of two or three. One of the students will perform a swing with or without a club and the students in the group will identify the major muscles used.	At the end of the class the students will be given an assessment. The assessment will have a picture of a person performing a swing and they will circle the muscles used in the swing.
7.2 d) Analyze skill patterns and movement performance of self and others, detecting and correcting mechanical errors for selected movements.	<p>The students will get a golf club, 3 birdie balls, and a strike pad. The students will be working on the pitch shot. There are different targets at different distances. Students will try to hit three pitch shots to the same target before trying to go to a different target.</p> <p>Cues for Pitch: Narrow stance, ball in back of stance, swing path (9-3)-Grip (interlocking)</p>	<p>Have the students observe the teacher performing a pitch shot. Have the students write down what cues they observe.</p> <p>Have the students with a partner using a checklist. Check which cues they are able to observe.</p>
9.2 b) Apply the concepts and principles of lever, force, motion, and rotation in golf pitch shot	Students will be in pairs and they will get a strike pad, birdie ball, and golf clubs. The students will have targets at different distances. They will try to use different swing speeds to understand the force that is needed to get to the different targets. For the pitch shot	Assessment: The student will try to draw the swing path for their partner of the pitch shot (for three reps). They will then draw the flight path of the pitch (motion).

**Standard 2: Anatomical Basis of Movement**  
**Volleyball**

<b>SOL</b>	<b>Activity</b>	<b>Assessment</b>
3.2e) Identify major muscles, including hamstrings and triceps	<i>Setting to self</i> - Partner tosses to self and tries to hit consecutive sets in a row. (1 catch, 2 catch, 3, catch, 4 catch). (focus on tricep and biceps for the set)	Exit sheet with picture of the body. Students can color the different areas of the body associated with the muscles.
7.2b) Apply biomechanical principles (e.g. center of gravity, base of support) to understand and perform skillful movements	<i>Partner passing</i> - Partner 1 tosses to partner 2. Partner 1 uses the correct base of support (athletic stance) for the forearm pass. Partner 1 tosses at different levels and at different angles. Progress to passing off a wall.	Exit sheet to discuss 1- what a correct base of support looks like when performing a pass. 2- Why do you want to have a wide base of support?
9.2e) Analyze movement performance and utilize feedback to learn or to improve movement	<p><i>Plus 1</i>- Students will be in pairs. Group 1 will toss the ball over the net and Group 2 will set it back to Group 1 who catches the ball. Group 1 will toss the ball over the net Pair 1 will set once over the net then Group 2 will set twice on their side of the net, Group 1 will catch. Continue adding one set per side each time.</p> <p>Group 3 will analyze the movement of Group 1 for appropriate sets (hands in triangle, contact on finger pads, FT)</p>	Peer assessment for the students to be able to analyze the setting process cues and provide feedback to the groups.

**Standard 2: Anatomical Basis of Movement  
Strength & Conditioning**

SOL	Activity	Assessment
3.2e) Identify one activity & the muscles & bones that help the body perform the activity	<i>Crab Walk Hustle</i> – Cones laid out in a circle, with students in crab walk position. When I call out hustle, they will start crab-walking in one direction (for ~20 sec.) After 20 seconds, I will call out an exercise (jumping jacks, squats, etc.)	For an assessment, you could have students fill out an exit slip, where they circle a picture of the muscles they use during the crab walk (tricep, quads, core).
7.2 c) Describe the anatomical planes of motion in which movement occurs, including sagittal plane, frontal plane, and transverse plane.	<i>Sagittal Swagger</i> – After explaining what the sagittal plane is (line that separates the body in 2 halves – left & right) and how it functions in relation to fitness, an activity you could do is have stations set up for different exercises that have movement on the sagittal plane (squats, crunches, calf-raises, walking/running – bicep curls, tricep extensions, bench press, front raises). Students could be broken up into groups of 3-5 and work through each station first using only body weights and smaller weights. Next time around they can increase weights. Each station would last 3-5 minutes.	A way to assess this would be to have students have students show an exercise that moves on the sagittal plane before they leave the class as an exit ticket. You can check off their name once they show you a correct exercise.
9.2 c) Explain the body's response to the principles of specificity, overload, and progression (SOP) in relation to frequency, intensity, time, and type of exercise (FITT).	<i>FITT Activity Log</i> – Have students create a FITT goal that is best suited to their specific needs. Have them detail F (frequency) of which they participate in physical activity during the week, I (intensity), T (time), & T (type). Have them record FITT for the activities to do in class that day, then tell them to try and do the same thing at home.	Assess student learning by collecting their activity logs and see if they picked appropriate FITT goals and whether or not they did appropriate exercises for the appropriate amount of time.

**Standard 2: Anatomical Basis of Movement**  
**Basketball**

SOL	Activity	Assessment
3.2a) <b>Apply</b> the concept of creating space while moving.	<i>Partner passing</i> - in groups of 2 or 3, students begin close together making bounce passes to each other. Students will then begin to pass and move inside of the square. Partner 1 will pass to Partner 2 and then Partner 1 will find a new space.	Create an exit sheet with questions regarding bounce passes, chest passes, and space between partners.
7.2d) <b>Analyze</b> skill patterns and movement performance of self and others, detecting and correcting mechanical errors for selected movements.	<i>Peer-Check</i> - Students will be in partners for a shooting drill. Partner 1 will shoot the ball 5 times from wherever they want (within reason). Partner 2 will have a skill checklist and be the assessor. The cues will be BEEF. Balance, elbow in and under ball, eyes on the target, and follow through after the shot. Then partners will switch roles.	Partners will take turns assessing one another. I will provide a skill checklist, one partner will shoot the ball, and the other will assess, looking for the BEEF cues.
9.e) <b>Analyze</b> movement performance and use feedback to learn or to improve the movement skills of self and others.	<i>Videotape feedback</i> - Students will be in pairs. Partner 1 will be dribbling to a spot and shooting, partner 2 will be recording. Shooting partner will dribble and take 4 shots (dribble to each spot, shoot once at a spot). Then, partners will switch roles. Once both have gone, they will each watch their own video, analyze their performance, and see if they hit the basketball cues for dribbling and shooting.	Create a rubric of what you want to see from students' performance sheets while dribbling and for BEEF (or use previous one) when shooting.