



LESSON OF THE MONTH:

CORE MUSCLES

Title: Core, Balance and Sports

CONTENT AREA:

Science, Health and P.E.

GRADE LEVEL:

Middle School

STANDARDS:

Structure and Function in Living Systems

- Living systems at all levels of organization demonstrate the complementary nature of structure and function. Important levels of organization for structure and function include cells, organs, tissues, organ systems, whole organisms, and ecosystems.
- Specialized cells perform specialized functions in multicellular cooperate to form a tissue, such as a muscle. Different tissues are in turn grouped together to form larger functional units, called organs. Each type of cell, tissue, and organ has a distinct structure and set of functions that serve the organism as a whole.

NASPE

- Demonstrates competency in motor skills and movement patterns needed to perform a variety of physical activities.

PURPOSE:

Students will identify the core muscles and their functions, and engage in exercises that will strengthen this muscle group.

LENGTH OF TIME:

1 hour

MATERIALS:

Chalk/Whiteboard

Pencils

Copies of *Core Muscles Student Sheet 1*

Copies of *Core Exercises Student Sheet 2*

Core Muscles Resource Sheet



Fast Facts

The core muscles-

Location - The major core muscles run the entire length of the torso and can be found in the general area of the abdomen and mid to lower back (not the shoulders).

Function - The core muscles consist of many different muscles that stabilize the spine and pelvis. These muscles make it possible to stand upright and move on two feet. The core muscles are the muscles that allow the transfer of power to the arms and legs because the muscles of the trunk are what steady the spine from the pelvis to the neck. The core muscles also function to keep your internal organs in place.

Benefits of core strength - Weak core muscles can contribute to several different kinds of pain, with lower back pain as the most prevalent. By strengthening, the muscles that support the spine and posture, a person can dramatically reduce pain felt in the lower back. A strong core will help with balance, improve coordination for sports and can improve posture. Sports and regular daily activities all depend greatly on the use of the core. With a strong core everyday activities such as putting away the groceries can begin to become easier.

WHOLE GROUP:

1. Discuss the core muscles using the information in the fast facts.
2. Ask the students to list how the core muscles play a part in their daily activities and record their responses on the board. Keep this list in a visible place because student responses will be added to it later.
3. Distribute Core Muscles Student Sheet to the students. Together with the students, label the core muscles and discuss the purpose of each of the muscles.
4. Now that the students are more aware of the location and function of their core muscles, ask the students if they can list any more activities that utilize those muscles. Add their answers to the list of activities created earlier.



Note to Teacher: Resource Sheet 1 is available for the teacher to use as a key to labeling the core muscles, and as an aid to discuss the functions of the main core muscles.



Note to Teacher: Before class begins, find an area where the students can exercise. Student Sheet 2 is a description of the exercises the students will be doing; however a picture with the same description of each exercise can be found on the following link. <http://web.tigerwoodsfoundation.org/programs/twlcLessons/fitPlan/coreWorkout> Additional fitness routines can be found by following this link as well.

SMALL GROUP:

1. Place the students into small groups of 2-4 in preparation for the core muscle exercises.
2. Pass out The Core Muscle Exercises Student Sheet and ask the students to read through the exercises.
3. Model each exercise for the students and have the students repeat the exercise after you.
4. Rotate through the groups of students checking for proper execution of the exercises.

WHOLE GROUP:

1. After completing the exercises, discuss with the students what muscles they felt working while doing the exercises.

FOLLOW-UP QUESTION:

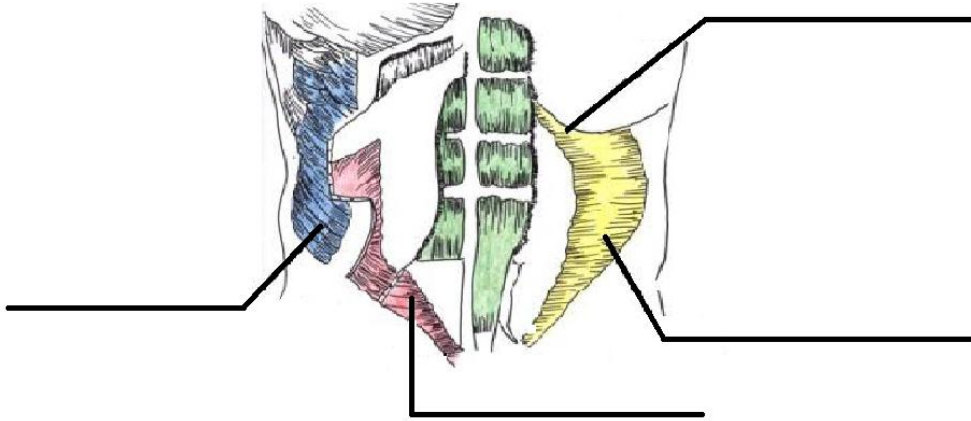
1. How can having strong core muscles improve your health in years to come?
2. After learning about the core muscles and completing the exercises, can you point out and name your core muscles?

EXTENSION ACTIVITIES:

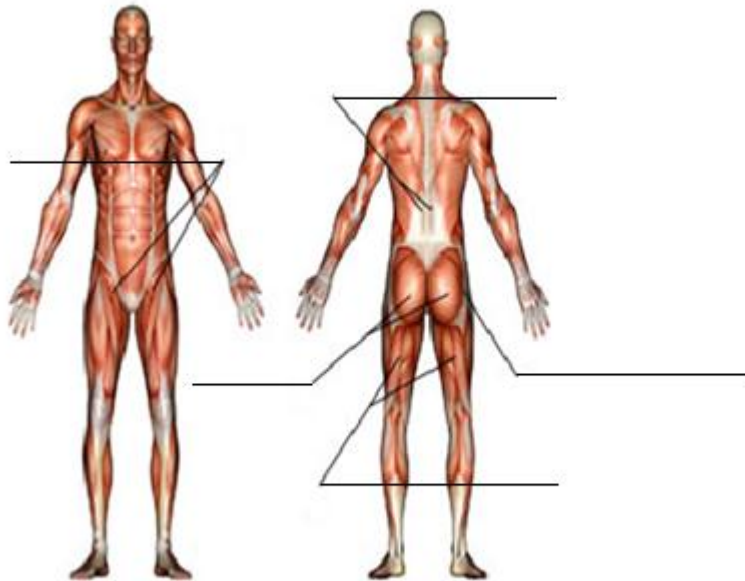
1. Ask the students to perform the core muscle exercises 2-3 times a week, for several weeks and keep an exercise log. After several weeks, have a discussion about the changes the students are noticing in their muscles and their daily activities.
2. Ask the students to come up with their own exercise routine that focuses on the core. Have the students lead the class in their routines.

STUDENT SHEET 1: THE CORE MUSCLES

Directions: Label the parts of the core muscles and describe their functions.



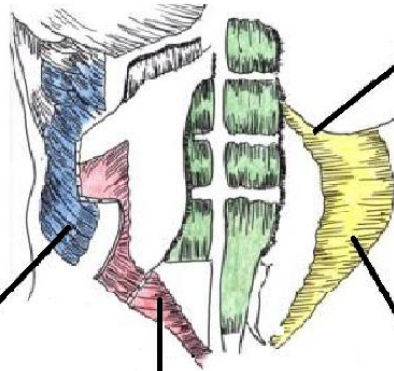
"Physiotherapy." Home. Web. 2. Nov. 2011. <http://azchirodoc.com/physiotherapy.aspx>.



"Beeble's Fitness Blog >> Blog Archive >> What Are Your Core Muscles? "Beeble's Fitness Blog >> .Web. 22 Nov. 2011
<http://beebleblog.com/2007/10/19/what-are-your-core-muscles/>

RESOURCE SHEET 1: THE CORE MUSCLES LABELED AND PURPOSE DESCRIBED

External Oblique: These muscles are on the side and front of the abdomen, around your waist. The external obliques help with rotation of the torso, compression of the abdomen and sideways bending.

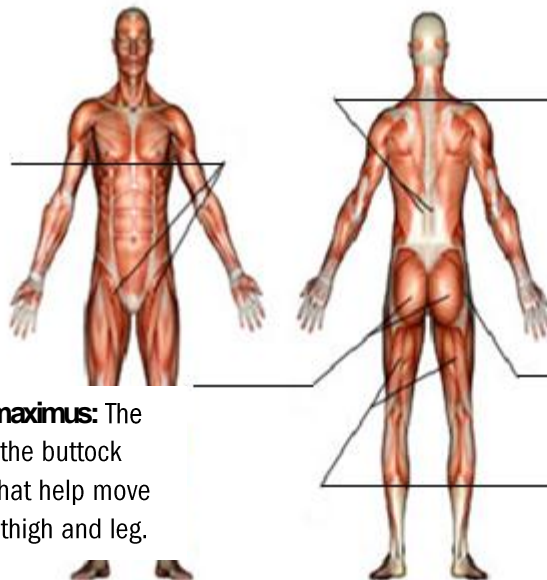


Rectus abdominis: A long muscle that extends over the front part of the abdomen, "the six pack." These muscles help with breathing and keeping the internal organs intact.

Transverse abdominis: The deepest of the abdominal muscles, found under the internal obliques. It wraps around your spine for protection and stability.

Internal oblique: These muscles can be found under your external obliques and run in the opposite direction. The internal obliques help to flex the spinal column, sideways bending, trunk rotation and compressing the abdomen.

Hip flexors: The group of muscles that bring the thigh up towards the abdomen. You use your hip flexors in daily activities such as walking, stepping up and bending over.



Erector Spinae: Consisting of three muscles along the neck to the lower back. Help to extend the upper body to sit and stand.

Gluteus maximus: The largest of the buttock muscles that help move the back, thigh and leg.

Gluteus minimus: The smallest of the buttock muscles help with moving the leg away from the body.

Hamstrings: The back thigh muscles that are involved in walking, running, jumping and controlling some movement in the trunk.

STUDENT SHEET 2: THE CORE MUSCLE EXERCISES

Introduction

When core muscles are strong, the rest of the body functions much more efficiently. The stronger the core, the more stable the upper and lower torso are, and therefore, the stronger the entire body. In addition, a strong core helps to reduce the chance of injury to other parts of the body and can greatly improve posture and athletic performance.

Materials (Per Student)

- Yoga mat or towel
- 1 light weight (2-5pounds)

Procedure- Core muscle workout

1. Read through each exercise first.
2. Complete each exercise following the repetitions as it is noted.

1. Crunches:

- Lie flat on back with knees up and feet on the ground. Lower back should be pressed against the floor.
- Place arms behind head to support neck.
- Lift upper back and shoulders off the ground until abdominal muscles feel tight, and hold.
- Slowly lower back down to starting position.
- Repeat 25 times.

2. Bicycle Crunches:

- Lie flat on back and place arms behind head. Lower back should be pressed against the floor.
- Lift legs in the air and bend knees so that legs form a 90 degree angle.
- Alternate bringing the left elbow to the right knee and the right elbow to the left knee.
- Continue crunching for 45 seconds.

3. Boat-pose with oblique twist:

- Sit on the floor leaning back slightly, knees bent and feet on the ground (boat pose).
- Hold one light weight in the center of the body.
- Twist from torso to the left and touch left elbow to the floor.
- Quickly twist torso to the right and touch right elbow to the floor.
- Repeat in a continuous motion for 45 seconds.

4. Opposite-arm opposite-leg reach:

- Start with hands and knees on the floor and pull the belly up toward the spine.
- Reach the right arm straight out in front and stretch the left leg straight behind.
- Hold for 20-60 seconds.
- Repeat with the opposite arm and leg.

5. Plank:

- Start on stomach and bring elbows and forearms underneath the shoulders.
- Pull the belly up toward the spine and tuck the toes.
- Push up on elbows and forearms so the body is in one straight line (be sure back is flat and not arched or hunched).
- Hold for 20-60 seconds

6. Side Plank:

- Start on the left side, hips and feet stacked one on top of the other.
- Prop upper body up on bent left forearm (make sure elbow is aligned under the shoulder) and send right arm up toward the sky.
- Press the hips up while keeping the abdominals tight.
- Hold for 10-30 seconds.
- Repeat on the right side.