Cardiorespiratory Relay

Explanation:
The respiratory system includes the nose, mouth, trachea, diaphragm, and lungs. While air is in the lungs, an important exchange is made. Blood that is circulating around the lungs exchanges carbon dioxide for oxygen. Carbon dioxide is then exhaled as the diaphragm relaxes.

The cardiovascular system includes the heart, arteries, capillaries, veins and blood. Arteries are the vessels or tubes for the oxygen carrying blood. Capillaries are the smallest of the blood vessels, and is where the blood exchanges oxygen for carbon dioxide. Veins are the vessels that transport the de-oxygenated, carbon dioxide carrying blood back to the heart and lungs. Blood is the ultimate delivery truck for all the cells in the body. It delivers life-saving, energy-producing oxygen to the cells and then picks up carbon dioxide and takes it away. Doing activities that require the heart to pump faster for a long period of time strengthens the heart. The respiratory system works more efficiently after cardiorespiratory endurance training.

Directions:
1. Divide class into groups of four.
2. Two students begin at the starting cone which represents the respiratory system. The other two students are stationed at a mat (represents a muscle) on the other side of the gym.
3. The students at the cone (respiratory system) have a scooter. The scooter represents the cardiovascular system.
4. On the signal one student on the mat begins performing curl-ups while the other student holds the feet and counts the number completed. At the same time, one student from the cone (respiratory system) sits on the scooter (cardiovascular system) and pushes himself/herself to the mat (muscle). This student represents oxygen being transported to the muscle.
5. When the student (oxygen) on the scooter (cardiovascular system) reaches the mat (muscle), an exchange occurs. The student who performed the sit-ups is now carbon dioxide and must be transported back to the lungs by the scooter (cardiovascular system). The new oxygen enters the muscle and holds the feet of the other student, who is performing sit-ups keeping that muscle active.
6. When the student (carbon dioxide) on the scooter (cardiovascular system) returns to the cone (respiratory system) another exchange is made for fresh oxygen.
Cardiorespiratory Relay - continued

7. This process continues until each group has performed one hundred sit-ups (accumulative).
   - Students should be able to see that the most efficient group to deliver fresh oxygen to the muscle is most likely the first group to accumulate one hundred sit-ups.
   - Doing activities that require the heart to pump faster for a long period of time strengthens the heart.
   - The respiratory system works more efficiently after cardiorespiratory endurance training.

Assessment ideas:
1. Have students draw the cardiovascular and respiratory systems
2. Ask students the following questions
   - Which system transports the oxygen?
   - Name 3 parts of the cardiovascular system
   - What does the trachea do?
3. Have students jog in place (or any similar exercise)
   - Demonstrate the action as done by a person with a high level of cardiorespiratory fitness
   - Demonstrate the exercise as done by a person with a low level of cardiorespiratory fitness

Diagram:

= Scooter
= Mat
= Cone
= Student

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