

1. LOG ON TO THE ANATOMY AND PHYSIOLOGY EDMODO PAGE
2. FOLLOW THE INTRUCTIONS BELOW TO COMPLETE THE ACTIVITY

Click on the links on the Edmodo page. Only type in the links included on this sheet if absolutely necessary

3. WATCH THE VIDEO "CRASH COURSE – BIG GUNS, MUSCULAR SYSTEM"

<https://www.youtube.com/watch?v=jqy0i1KXU04>

Take some notes and when you are ready complete the quiz "Big Guns – Muscular System"

4. WATCH THE VIDEO "MUSCLE STRUCTURE AND FUNCTION"

https://www.youtube.com/watch?v=ren_IQPOhjc

Answer the following questions while you watch the video:

1. The skeletal muscles of animals, including humans are _____.
2. Muscle cells are _____ and contain _____ nuclei.
3. Muscle cells consist of _____.
4. Myofibrils show the striated pattern of muscle as repeating subunits called _____.
5. Muscle fibers are stimulated by _____.
6. The two major proteins that make up a myofibril are _____ and _____.
7. The actual mechanism for muscle contraction are the _____.
8. The release of _____ from the sarcoplasmic reticulum is necessary for muscle contraction to occur.
9. The energy molecule _____ is responsible for the change in the myosin heads that cause muscle contraction.

5. WATCH THE VIDEO "MUSCLE CONTRACTIONS"

<https://www.youtube.com/watch?v=ioAfEK0mTRY>

Answer the following questions while you watch the video:

1. Sketch and label a "myofiber"
2. Describe what happens to the I-bands and H-zones when muscle contracts and relaxes.
3. What ion is released after stimulation of a muscle by the nervous system?
4. What happens to the muscle when calcium is released?
5. What happens to a muscle when calcium is removed?
6. Distinguish between the two major proteins that cause muscles to contract.
7. When a muscle contracts _____ pulls on _____.
8. When calcium is released a muscle _____.
9. When calcium is absorbed a muscle _____.

6. COMPLETE THE ACTIN AND MYOSIN INTERACTIVE

http://www.wiley.com/college/pratt/0471393878/student/animations/actin_myosin/actin_myosin.swf

Complete the following while you work on the interactive:

1. The skeleton of a cell is called a _____.

What is its function?

List the three components of a cytoskeleton.

1.

2.

3.

2. Actin assembles to form long protein polymers called _____.

3. Microfilaments are "dynamic structures". Explain how this is important to a cells functions. Give an example.

4. Myosin converts _____ energy into _____ energy, and its source of chemical energy is _____.

5. A muscle cell is made up of _____.

6. Muscle fibers are long _____ cells.

7. Individual muscle fibers are made of _____.

8. Myofibrils are made of contractile units called _____.

9. The _____ is the contractile unit of a muscle cell.

10. _____ proteins are thick filaments.

11. _____ proteins are thin filaments.

12. Sketch and label the actin/myosin complex

13. What part of myosin hooks to and drags the actin filaments?

14. The molecule _____-fuels myosin's mechanical activity.

15. The conformational change that occurs in myosin as a result of ATP binding and hydrolysis is called the _____.

7. COMPLETE THE MUSCLE STIMULATION LAB

http://www.mhhe.com/biosci/genbio/virtual_labs/BL_21/BL_21.html

Complete the following while you do the virtual lab

Fill out the table below:

LOAD	Upper Forelimb	Lower Forelimb	Calf	Thigh
0g				
5g				
10g				
20g				
40g				
80g				

When you have finished the virtual stimulation lab click on the journal at the bottom of the page and answer the 5 questions.

1.

2.

3.

4.

5.

8. PLAY THE POKE A MUSCLE GAME

<http://www.anatomyarcade.com/games/PAM/PAM.html>

This game will help you learn the names of the major muscle groups

9. PLAY THE MATCH A MUSCLE GAME

<http://www.anatomyarcade.com/games/matchingGames/MatchAMuscle/matchAMuscle.html>

This game will help you learn the names of the major muscle groups

10. WANT SOME EXTRA CREDIT?

http://www.biologycorner.com/anatomy/muscles/muscle_anatomy_crossword.html

Print and complete the "Muscle Anatomy" crossword puzzle.