

Honors Physiology
The Muscular System
Excitation – Contraction Coupling Project

Directions: Recreate steps 1-6 from figure 9.10 on page **292** in your book onto a poster board or some other presentation means (for examples see below) using craft supplies or other creative tools! For **step 4**, use figure 9.12 on page **295** in your book to illustrate greater detail of the sliding filament theory. **In your own words**, include a brief description of each step. Use this as a study tool, and BE CREATIVE!

Remember:

Be creative! Tell the story of E-C Coupling

****You are showing Step 1-6** on page 292 in your textbook (Keep in mind that **Step 4** is broken down into 4 steps – Pg. 295) There should be 9 steps total.

- Follow the **RUBRIC PROVIDED!** (variety of items = creativity grade!)

→ **Label the following:**

Axon terminal	Actin (thin filament)	ATP (Adenosine triphosphate)
Sarcolemma (cell membrane)	Myosin binding site (on actin)	ADP (Adenosine diphosphate)
Sarcoplasmic reticulum (SR)	Acetylcholine (ACh)	P _i (inorganic phosphate)
Myosin tail	Calcium (Ca ²⁺)	Myosin (thick filament)
Mitochondria	Troponin	Myosin head
T-tubule (Transverse tubule)	Tropomyosin	

→ **Project ideas:** Poster, comic strip, digital presentation (ShowMe App for iPad, PowToons, Social Media platforms for example), children’s book, flip book, etc.

→ **List of craft supplies:** (Bring in to donate/share with the class!)

Q-tips, yarn, popsicle sticks, toothpicks, beads, pipe cleaners, cotton balls, etc.

Rubric:

All 17 items are labeled	/17
The recreation of figure 9.10 is easily identifiable	/10
Students used figure 9.12 to illustrate step 4 in greater detail	/10
Students were creative! (used craft items, digital resources, or some other creative element to tell the story of E-C coupling)	/05
Student included a brief description of each step	/10
Total	/52

****Don’t forget: Bring in 1 textbook per group** and any supplies your group may need!! (Posterboard, electronic device, craft supplies to share with the class, etc.)

This project is DUE: _____