

May 11-15 Week 8 : Science Lesson (4th Gr.)

Animal Structures

What Animal Structures Are Used for Support, Movement, and Protection?

Visit the [CVUSD Elementary Science Specialist](#) website for past lessons, screencast lessons, science teacher hangouts (live help from science teachers) and other resources. It is all just a [click](#) away.

ENGINEERING CHALLENGE: BUILD A PAPER "JUMPING FROG OF CASTRO VALLEY" THAT JUMPS MORE THAN NINE INCHES.

By the end of this lesson you will:

1. Describe how muscles help animals to move.
2. Explain the difference between a skeleton and an exoskeleton.
3. Classify animals as having skeletons, exoskeletons, or no skeletons.
4. Build a paper jumping frog that can jump more than a foot.



To get started:

Print out a copy of the [Mini-Journal](#), *or you may take notes on a sheet of paper*. Put your first & last name, teacher's name, date, and your Science Lab Table # at the top of each page. Hang on to your Mini-Journals. They represent your thinking and your effort, and we are working on a system to possibly collect them.

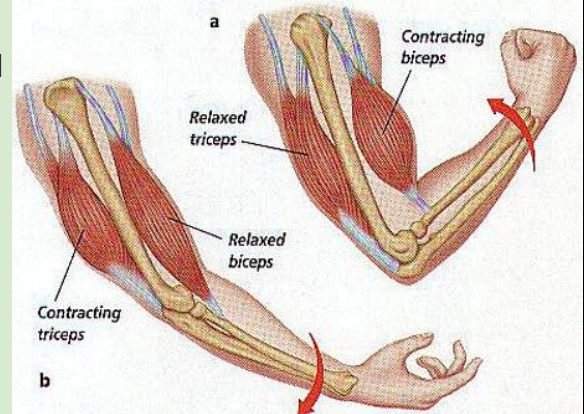
THINK

Follow each link in this column.

Muscles make your body move. Muscles move your eyes while you read this. Muscles stretch the lens in your eye so you can focus on these words. Muscles move your arms and legs. Your heart is a muscle that pumps blood around your body. Here is a [cool model that shows how your arm works](#)

Think About ...

DO: Move your arm and feel your muscles contract (bunch up) and relax (stretch out) as you raise and lower your hand.



Watch [this slow motion video of frogs jumping](#).

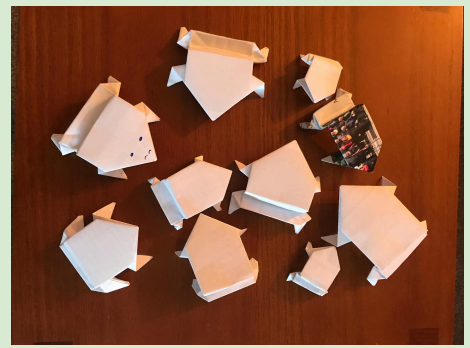
Think about which leg muscles are contracting and which are relaxing to make the frog jump..

[Here is another slow motion video of a frog jumping.](#)



Notice the way the frog lands. In the next section you will build paper jumping frogs that will fly through the air with about the same grace.

Here are a few of the many PAPER frogs I have created and tested. I changed the size of the paper. I changed the shape from a square to a rectangle. I even changed the number of layers of paper. Would thicker paper work better than thinner paper?



DO & LEARN

Watch this video

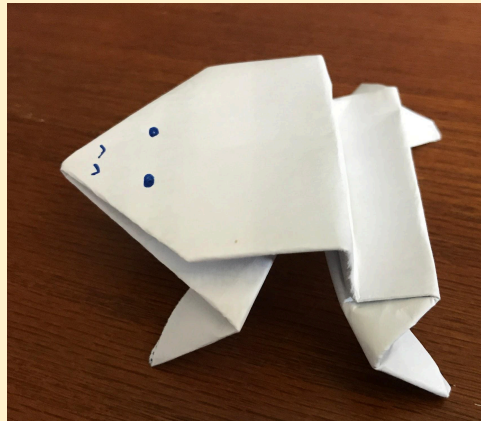
Do This . . . record your answer on paper (Mini-Journal, paper, or notebook) when prompted to record **In Your Mini-Journal**

How do you move? [Watch this video to learn how your muscular system, skeletal system and nervous system work together to make you move.](#)

Draw a diagram, a stick figure is fine, that shows how the nervous system, the skeletal system, and the muscular system work together to move your arm. **Show** the brain telling the biceps to contract and the triceps to relax. **Explain** how the muscles make the arm move.

This link takes you to [instructions on how to make a jumping origami frog](#).

Here is [a video of Mr. Reynes making a jumping Frog](#) out of paper



Your Challenge: Make a frog that “jumps” more than twelve inches?

Think

When you press down on the frog with your finger, the folds of paper are being pressed together. Energy is being stored in the bent, folded paper. When your finger slips from the frog’s back, the stored energy is released, the legs expand, and the frog jumps.

EXIT TICKET

HOW FAR DID YOUR FROG JUMP? DID YOU MAKE MORE THAN ONE FROG? DID YOU TRY DIFFERENT SIZES OF FROG OR DIFFERENT THICKNESSES OF PAPER?

Show What You Know	Go to YOUR Google Form EXIT TICKET
<p><i>On your Google Form Exit Ticket, you will be able to show what you know about muscles & movement.</i></p> <ul style="list-style-type: none"> • Click on YOUR Science Teacher's Exit Ticket Link & it will take you to a Google Form • Be sure to click on the SUBMIT button when you are done with the Exit Ticket. 	<p>Final EXIT TICKET</p> <p><u>REYNES Wk 8 Exit Ticket</u></p> <p><u>FOY-COUCHE Wk 8 Exit Ticket</u></p> <p>You can go back into the Google Form later to change your answers if you like. Each time you make changes, be sure to click on the SUBMIT button before you leave the Exit Ticket.</p>

JUST FOR FUN ... GOING FURTHER (OPTIONAL)

<i>DO THIS</i>	<i>THINK ABOUT THIS</i>
<p>Mr. Reynes tells the story of the wide mouth frog.</p>	<p>Make this story your own and tell it to someone else. But wash your hands or use hand sanitizer before you put your fingers in your mouth.</p>