

# Central Valley Home School

Kingsburg Elementary Charter School District



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Superintendent: Wes Sever, Ed.D.  
Assistant Superintendent: Melanie Sembritzki

Principal: Misti Jennings

## ***In the Year of the Boar and Jackie Robinson by Bette Bao Lord***

***4/27/20 – 5/1/20***

Morning Meeting: April, 27 @ 9:30 AM - 10: 15 - open to all CVHS students.

Topics include a book chat, *Grandfather Tang's Story* Read Aloud and tangram time.

### **July - Toscanini Takes a Walk**

**April 27** - Read pages 95-103. Once you've finished reading July, click this link to take a short quiz to assess your comprehension of the chapter. [July](#)

Shirley has a case of Dodger fever in this chapter. What does that mean? To learn more about the sport that Shirley loves, open your STEM Bin and work through the videos and resources provided.

### **August - Monsters**

**April 28** - Read pages 105-115. Once you've finished reading August, click this link to take a short quiz to assess your comprehension of the chapter. [August](#)

Shirley got a surprise gift from her parents. She thought it was a couch but was surprised to see it was also a bed. Shirley was pleased with her gift and stated it was "just another wonderful engine made in America."

Complete the pop fly activity from the STEM Bin.

### **September - Secrets**

**April 29** - Read pages 117-130.

Discuss/Journal - In this chapter, Shirley begins to notice change within herself. She worries her classmates have changed too and that perhaps the differences would be too great for the friendships to remain. Shirley was pleased to find they all still got along. She also met a new friend, Emily. The two girls got along well and even played together at Emily's house. During a playdate, Emily asked Shirley to promise to keep a secret and had her recite an oath and complete a ritual. Shirley knew this was wrong but did it anyway.

On page 130 it says, "A secret, like a chore, always seems to lead to another, one even more troublesome than the first." What does this mean, provide an example. Don't worry, you do not have to use a real life experience, unless you want to.

**April 30** - Read pages 130-141. Once you've finished reading September, click this link to take a short quiz to assess your comprehension of the chapter. [September](#)

**October and November - The World Series and Moon Cakes Without Grandfather**

**May 1** - Read pages 143-155. Once you've finished reading these two chapters, click this link to take a short quiz to assess your comprehension of the chapters. [Oct/Nov](#)

In Chapter 10, the Dodgers lose the World Series, Shirley is crushed.

In Chapter 11, Shirley and her parents almost forget about the Mid-Autumn Festival. They remember because Grandfather bakes and sends them moon cakes. This kind act makes them feel homesick yet happy at the same time.

To learn more about the Mid-Autumn Festival click below

<https://www.chinahighlights.com/festivals/mid-autumn-festival-facts.htm>

To learn more about Mooncakes, click below

<https://www.myrecipes.com/how-to/cooking-questions/is-potato-a-vegetable>

<http://blog.tutorming.com/expats/what-is-mooncake>

Monday Meeting with Mrs. Jennings - open to all CVHS students

May 4, 2020 @ 9:30 AM

Topics to include

- Book chat
- Students will show off their catapult designs
- Share their example from the Secrets chapter
- Read the final chapter of the book together

## Going, Going, Gone!

When you watch Major League Baseball, you're seeing STEM in action. The science of aerodynamics in every pitch is fascinating! Engineering is part of every bat, ball, glove and helmet. Team and individual player statistics can inform the opposing team's strategy and odds. In this STEM bin you will explore the fun scientific dynamics that make up America's favorite pastime, Baseball.

### **Vocabulary:**

Aerodynamics- Qualities of an object that affect how easily it is able to move through the air.

Force- strength or energy exerted

Gravity- force that attracts a body toward the center of the earth, or towards any other physical body having mass.

Drag Force- The resistance force caused by the motion of a body through a fluid, such as water or air.

Magnus Force- a lift force of tremendous importance to all athletes who want to bend the flight of a ball

Newton's Second Law- states that the acceleration of an object is dependent upon two variables - the net force acting upon the object and the mass of the object.

### Resources and Videos

[How a Baseball is Made](#) - An informational video showing the craftsmanship and effort that go into creating a major league baseball.

[Physics of Baseball Flight](#) - A look at all of the forces that take effect on a baseball.

[The Magnus Force](#) - A quick read on Magnus Force along with 2 videos of experiments and ideas. You may want to try these at home.

<http://www.stemcobb.com/science-of-baseball.html> - An article and video on how one school district partnered with the Atlanta Braves to bring the science of baseball into the classroom.

### The Baseball Bat

The bat is not only an example of basic science and engineering principles on its own but is also used to display many others.

- *Simple Machine:* It's a big stick but also a simple machine, a lever. Specifically, it's a third-class lever, which means that the effort (force) is between the fulcrum and the resistance. The heaviest part of the bat, toward the top, is the resistance, while the fulcrum is at the other end of the bat.
- *Material:* Generally, bats are wide at the barrel and narrow at the handle, with varying widths and lengths; the exact measurements vary, as do the materials.
  - Aluminum bats are hollow and light, with bigger barrels, allowing a batter to send a baseball to the fences. Aluminum bats also create the trampoline effect, essentially an almost elastic-type energy that is caused by the bat absorbing some of the energy, creating extra force to send the ball farther and faster.

- Wooden bats are used in professional baseball as they have been since the game started. They are made from one piece of solid wood, such as ash, maple, and birch, and at one time even hickory. The composition of the wood, whether it's ring porous like ash or diffuse porous like maple, makes a difference in not only the weight of the bat but also its strength and durability. It is common for wooden bats to break or splinter – the extent to which they do so is based on what they're made of and where force is applied. It's been proven that wooden bats produce lower batted-ball speeds.
- *The Sweet Spot*: Finding the *sweet spot* on a bat produces a better hit. The spot is where the impact of the ball causes the least vibrations and the least impact is felt by the batter. This spot is located between two vibrational nodes and produces the maximum batted-ball speed and the maximum energy transferred to the ball.

Activity:

### **Pop Fly**

Students will be challenged to create a lever to launch their ball high in the air. Levers are simple engineering tools that we see and use everyday. Specifically with baseball, levers are used at every single at bat. The player swings their bat to make an object have a large movement with a little movement.

For safety, you will replicate this little movement with major movement using a ping pong ball.

Materials:

Tape

3-5 craft sticks

1 bouncy ball

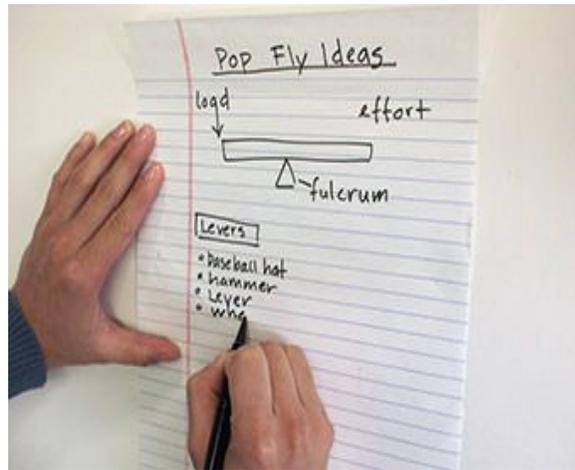
Rubber bands

Dixie Cup

Procedures:

- 1.) Create a solid base for your launcher. (ie. triangle/square- to hold other pieces that are upright).
- 2.) Think of how you would like to position your lever. A lever is not effective on its own. It needs to pivot or turn on something at a certain point in order to lift a load (your bouncy ball).
- 3.) Set your spool or duct tape a stick to your base to create the **fulcrum**. (Example of a fulcrum is: A screw on a pair of scissors).
- 4.) Once assembled, place your ping pong ball for loading. Here you can assemble a cup or other place holder to keep your bouncy ball in place.
- 5.) Launch it and let it fly!

\* TIP: If the ball doesn't fly high enough for you to catch, try moving the location of the fulcrum.



Science behind a catapult:

**Catapult** physics is basically the use of stored energy to hurl a projectile (bouncy ball), without the use of an explosive. The three primary energy storage mechanisms are tension, torsion, and gravity.