How Far Away Is Second Base?
And Other Questions The Pythagorean Theorem Can Answer
What Will You Be Doing?

To find the distance between home plate and second base, you will be:

• Finding facts about the mathematician Pythagoras
• Describing the Pythagorean Theorem and what it is used for
• Research a proof of the Pythagorean Theorem and describe it in your own words
• Practice using the theorem to solve problems involving right triangles
• Find the distance between home plate and second base using the Pythagorean Theorem
• Write your own story problem in which you must use the Pythagorean Theorem to solve it
The Rubric

Look at the attached rubric before beginning this exploration of the Pythagorean Theorem. It should be stapled to the back of the handout. Read through it; it tells you exactly what I’ll be looking for from you.
Who was Pythagoras?

Now that you know his famous theorem, you are probably wondering who this man was. Where was he from and what time period did he live in? Did his contributions to math begin and end with his theorem? Or did he further the study of more than just mathematics? Go to the following link to get your questions answered. Be sure to record your responses on the provided handout.

http://www.mathopenref.com/pythagoras.html
What exactly is the Pythagorean Theorem?

In this portion of our look at the Pythagorean Theorem, you will explore what the theorem says and decide when you should use it in both real life and more advanced mathematics. Use the following link and the handout to assist you with this task.

http://mathforum.org/dr.math/faq/faq.pythagorean.html
How do you know it will work?
Proving the Pythagorean Theorem

History has long been fascinated with the Pythagorean Theorem. The following link is a testament to that fact because it contains over 75 proofs varying in both length and complexity. Choose one and try to describe it in your own words. Provide the picture that goes with it.

Practice the Pythagorean Theorem

Before we can begin applying the Pythagorean Theorem, let’s master it using some right triangles. Complete the problems given on the handout. Then check your answers with the following link:

http://www.1728.com/pythgorn.htm

To use the link scroll down to the bottom of the page. You have to tell the calculator whether or not you are trying to find a side or the hypotenuse. Tell the calculator the information you are given and hit calculate.
Real-Life Problem Solving

#1. You are playing catcher for your baseball/softball team and a base runner for the opposing team is trying to steal second base. How far must you throw the ball to tag the runner out? (We won’t worry about how quickly you must make the throw.) Use the following diagram to help you solve the problem.
#2. You get home from school one day to find yourself locked out of the house. There’s an open window 25 feet above the ground that you could reach with the right-sized ladder. You will have to place the ladder 10 feet away from the base of the house because a bush is growing along the house. How tall of a ladder will you need?
#3. TV sets are usually measured diagonally. We want to purchase the largest TV set we possibly can. The largest space in our entertainment center is 25 inches long and 14 inches wide. What is the largest size TV we can fit in the space?
Using the Pythagorean Theorem

Use the previous story problems as a model to create your own problems that will require the Pythagorean Theorem to solve. Include a picture to model the situation and provide a complete solution.
THE END!!!!!!

Hopefully you enjoyed your exploration of old Pythagoras and his timeless theorem. It really is always around us.

My theorem rocks!!!!