

Pythagorean Practicum

Prep

Papers should be copied –

Intro page on one side and the job page on the back – for each of the 4 jobs

Need for each group of 4 students:

Container – plastic shoe box

Scissors

Ribbon – wide ribbon on spool, different colors for each group

Set of four job sheets

Intro to students

Will prove that the Pythagorean Theorem is true

Need to choose landmarks, make right angle with ribbon

Square roots

Power Point presentation on how to do a square root

In your journals

Write a few sentences for each of these questions.

Please use complete sentences and good grammar.

Pythagorean Practicum

- How did we demonstrate that the Pythagorean Theorem is true?
- What are some reasons why your calculated results were not exactly the same as the results from counting the number of steps for the hypotenuse?

In your composition book

Pythagorean Practicum

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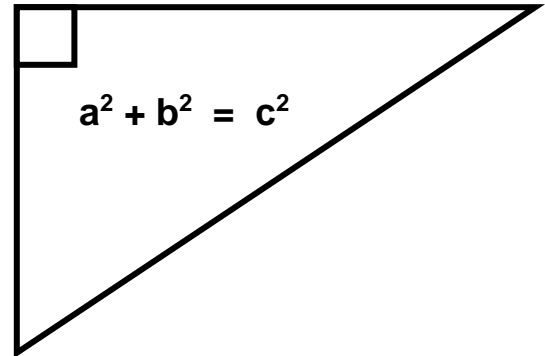
Group members;

Surveyor:

Scribe:

Draftsman:

Key Grip:



Jobs

Each student gets a job. The jobs are:

Surveyor – measure the distance between the landmarks

Scribe – write down the measurements and calculations

Draftsman – select and draw the landmarks

Key grip – set up the area, take care

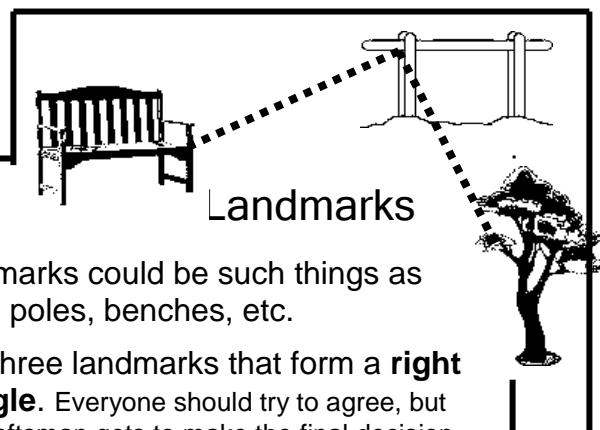
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You will:

Use non-standard units of measurement

Illustrate the Pythagorean Theorem and demonstrate that it is correct.

Calculate square roots



Landmarks could be such things as trees, poles, benches, etc.

Pick three landmarks that form a **right triangle**. Everyone should try to agree, but the Draftsman gets to make the final decision.

Tie ribbons between the landmarks, forming the right angle.

Pythagorean Practicum Surveyor

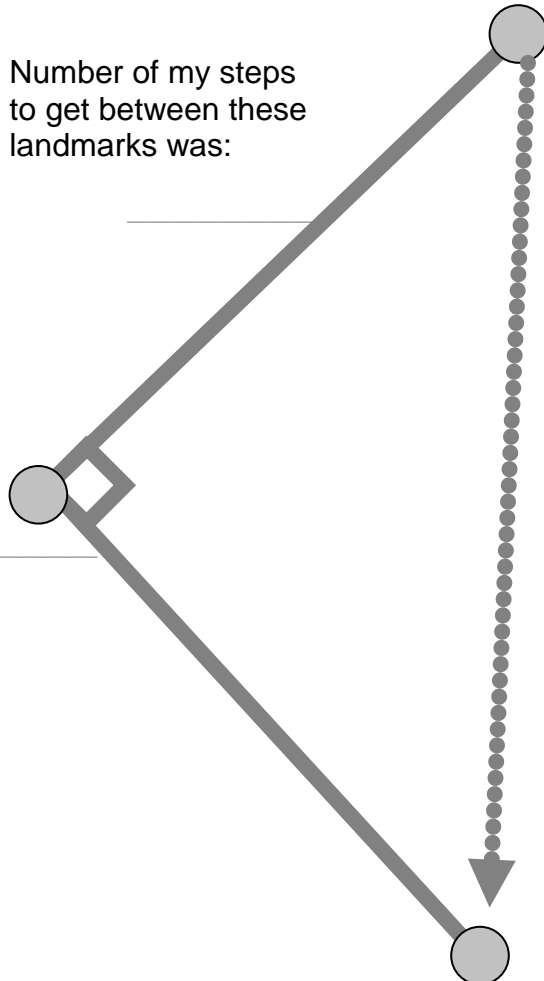


Surveyor's name: _____

Measure the length of each of the sides of the right angle.
Use your own feet and count the steps.
Be sure to measure accurately. When you step it off, put your heel right in front of your toes.

Since your feet are not necessarily standard twelve inch feet, after you count the steps your units will be something like "Jason Feet" or "Dana Feet", rather than just "feet."
Tell the Scribe the lengths so that he/she can write them down.

This landmark is: _____



Number of my steps
to get between these
landmarks was: _____

This landmark is: _____

After the Scribe writes the calculation for the hypotenuse, you are to count your steps for the third side of the triangle.

Start at one of the landmarks and walk straight to the other, counting your steps the same way you did for the other sides.

Number of steps for hypotenuse: _____

Number of
my steps to get
between these
landmarks was:

My units are called:

This landmark is:

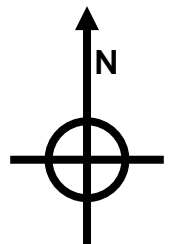
Pythagorean Practicum Draftsman



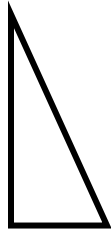
Draftsman's name:

With the help of your group, select three landmarks that form a right angle.
In the space below,

- Make a map of the area
- Draw & label the three landmarks that your group will be using
- Indicate where the right angle is
- The top of the map should be north



Pythagorean Practicum Scribe



Scribe's name:

Get the dimensions from the Surveyor.

a =

b =

Our units are named: _____

With the help of your group,
calculate the third side – c – the hypotenuse
Show the calculations here:

*If your smallest side is less than 10
units long, your calculation must be
accurate to the nearest tenth.*

*If your smallest side is bigger than 10
units long, your calculation must
accurate to the nearest whole number.*

After you complete the calculation, have the Surveyor find out how many steps are in the hypotenuse. Write the surveyor's result for hypotenuse:

How are your calculations different than the Surveyor's result?

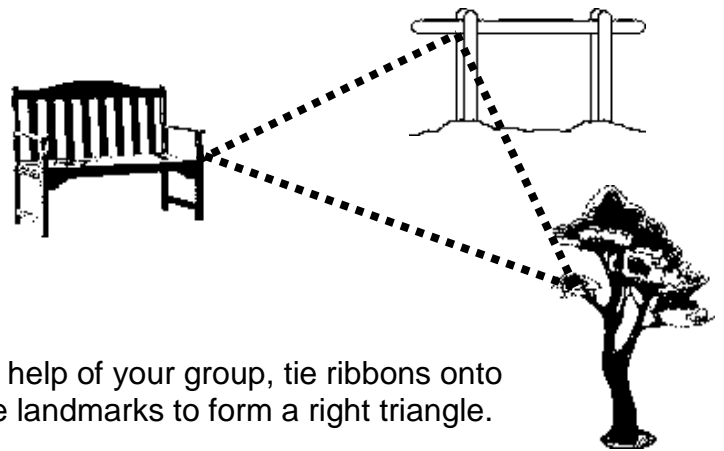
Pythagorean
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Key grip



Key Grip's name:

You will keep track of all the supplies.

You are responsible for getting the ribbons tied to make a right angle, with the help of your group members.



With the help of your group, tie ribbons onto the three landmarks to form a right triangle.

Please indicate what color(s) your ribbons are:

It is your responsibility to make sure that all your group's supplies are gathered up and brought back to the classroom.

Please be sure to be careful with the ribbon so that it is not a tangled mess.

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