

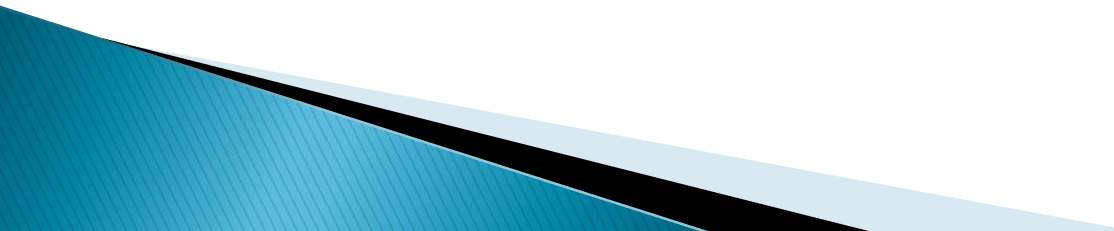
Delving Deeper with the Pythagorean Theorem

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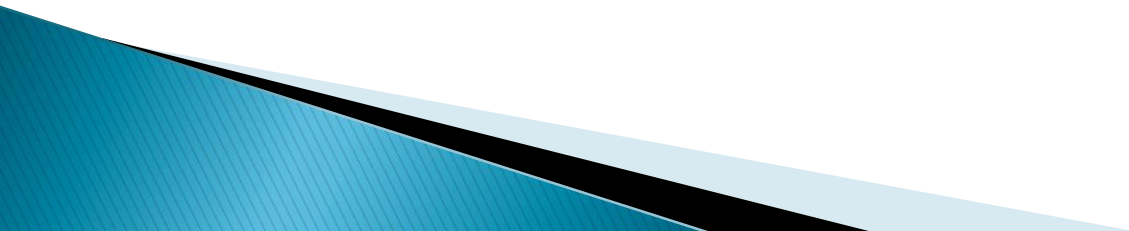
Agenda

- ▶ Notice/Wonder
 - ▶ Irregular Shapes
 - ▶ Finding Squares
 - ▶ Finding Triangles
 - ▶ Claim, Support
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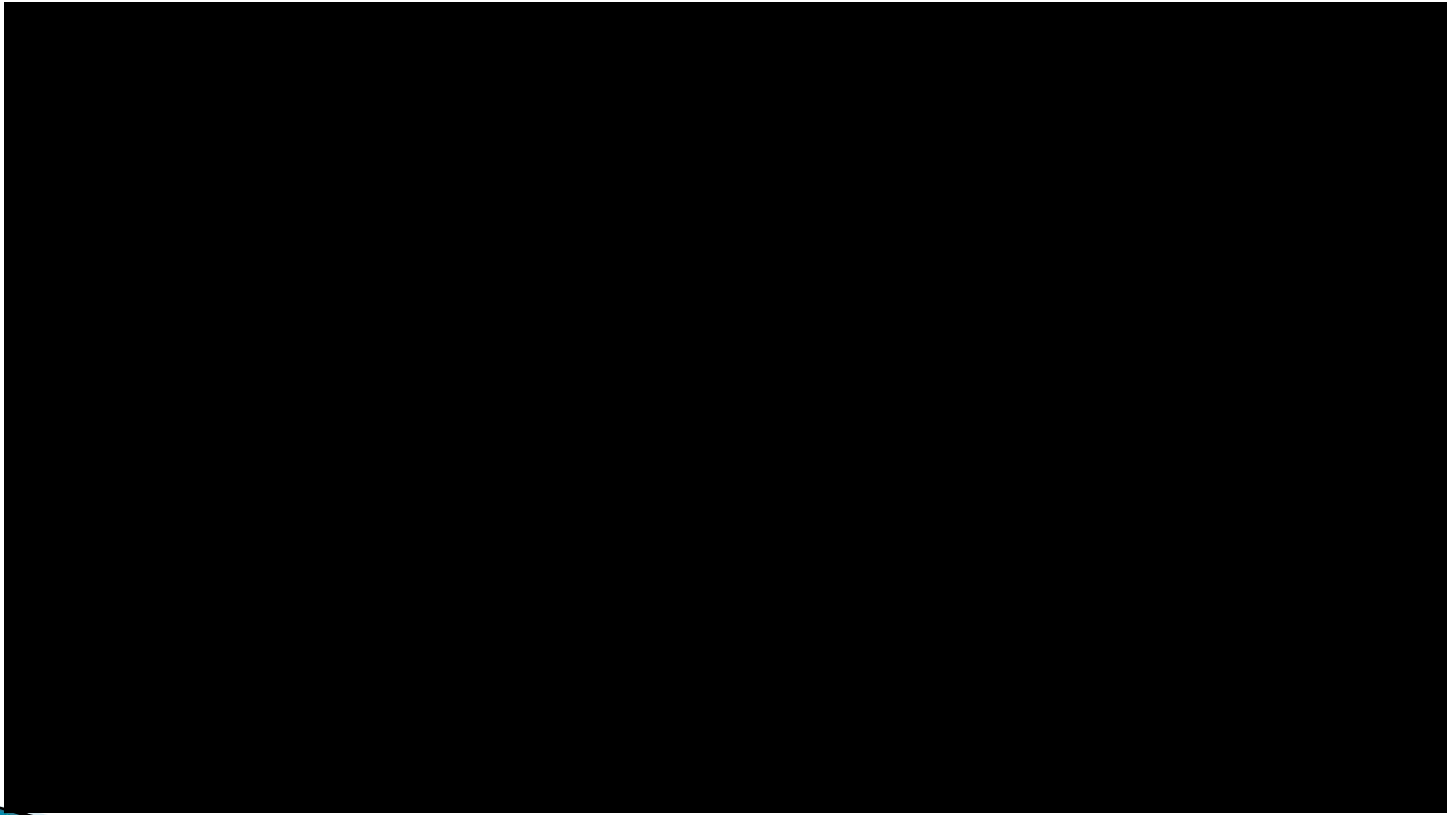
Disclaimer

Connected Mathematics Project 3

Lappan, et al.



Notice/Wonder



Irregular Shapes

On the dot paper, draw two irregular shapes, using only lines.

Find the area of each shape.



Irregular Shapes

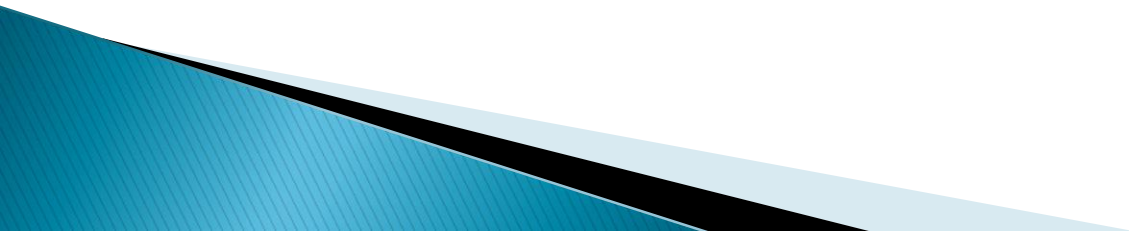
Check your work with your elbow partner when you are finished.

Share Your strategies with one another.

Try your shape again using a different strategy than the one you used before.



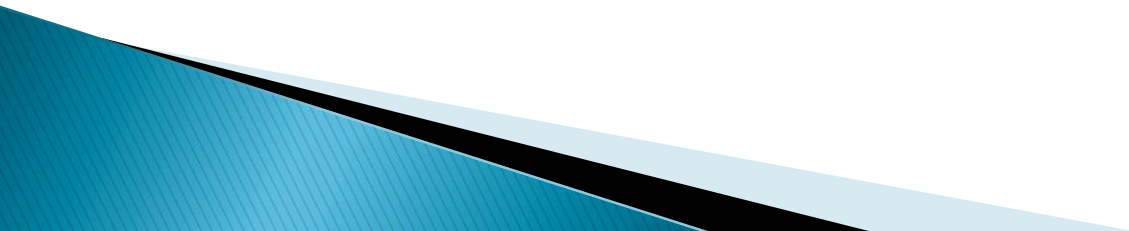
Strategies



Squares

Divide your dot paper into five dot by five dot sections.

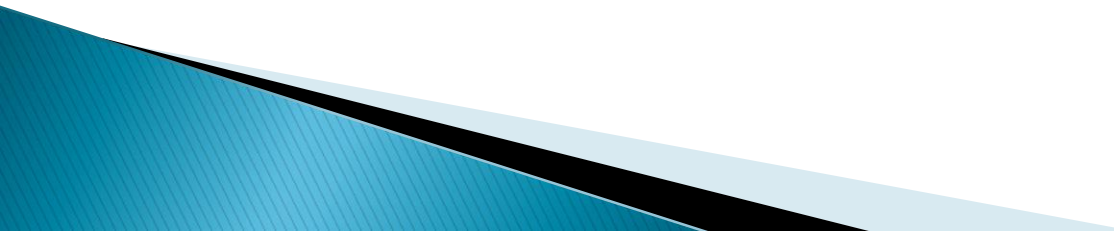
Find as many squares as you can with differing areas that fit in the section.



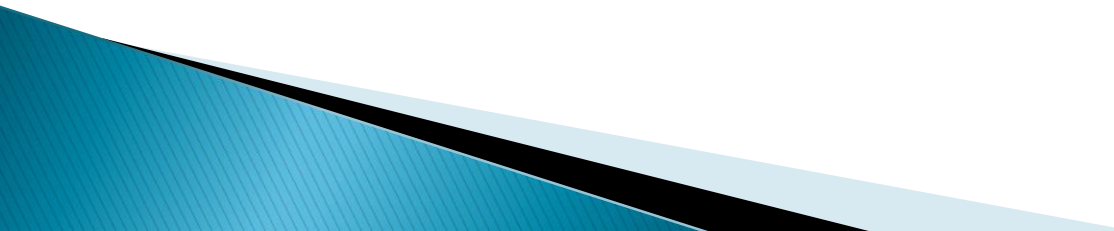
Questions when you have them all

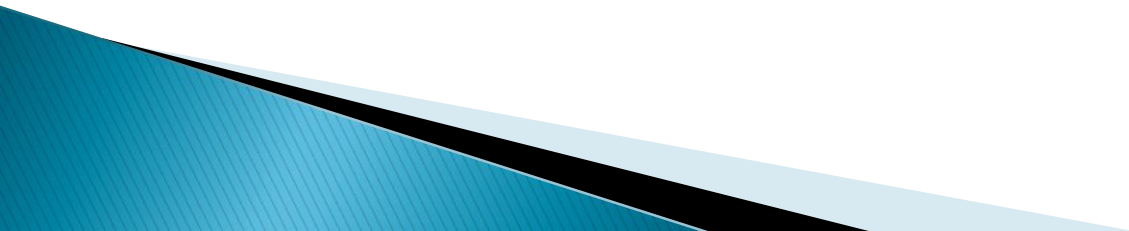
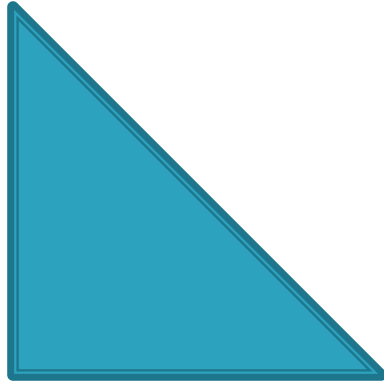
- ▶ How do you know you have them all?
- ▶ Can you prove/justify that you have all of the squares?
- ▶ What about a 6 by 6? 7 by 7? n by n ?

Square Root

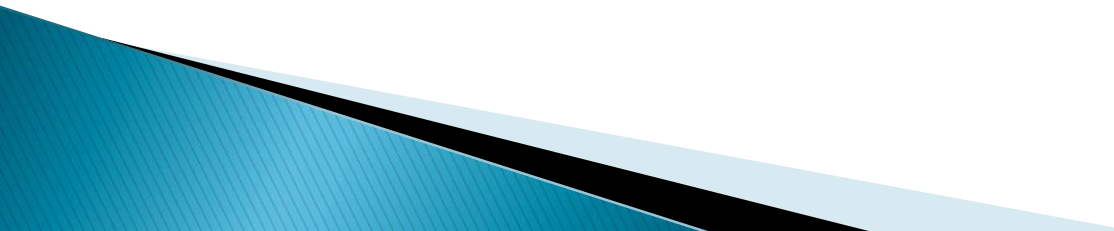
- ▶ The square root of 9 is 3 because 3 times 3 is nine.
 - ▶ How is this idea related to our work with squares?
- 

Pythagorean Theorem

- ▶ What are characteristics that all triangles share?
 - ▶ How do the three side lengths of any triangle relate to one another?
 - ▶ What do you know about acute triangles? Obtuse? Right?
- 



What relationships exist among the squares on the sides of a triangle?

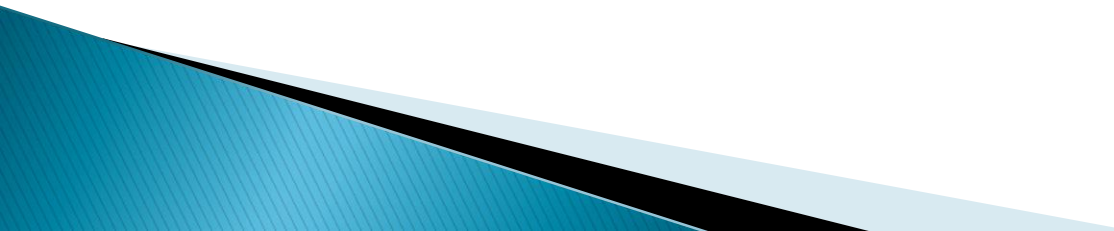
- ▶ Draw two triangles of each type (acute, right, obtuse)
 - ▶ Find the areas of the squares and their side lengths. Side C is always the longest side.
 - ▶ Record the data in your table and on the class chart.
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Student Noticings

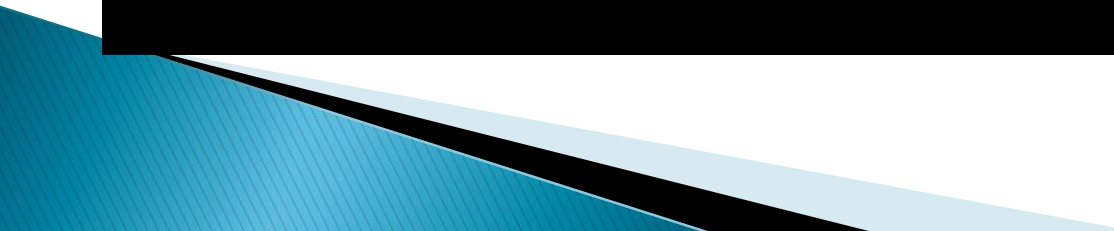
With your elbow partner, choose a student 'notice'.

Find evidence that supports the 'notice' or refutes it.

Closure

- ▶ What relationships did students notice?
 - ▶ Any that surprised you?
 - ▶ Any that you are still wondering about?
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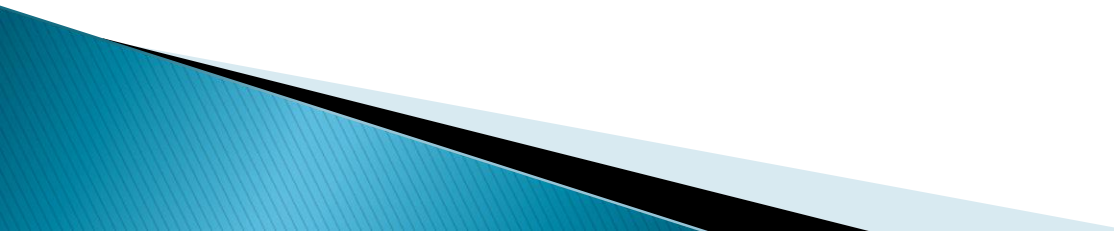
Water Wheel



Water Wheel

- ▶ What would happen in this water wheel video if the triangle was acute?
- ▶ Obtuse?

Closing

- ▶ What did you notice/wonder about using these activities with your students?
 - ▶ What benefits do you see of doing this with your students?
 - ▶ What drawbacks do you see?
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Thank you!

- ▶ Please fill out the conference evaluations!
- ▶ On an index card, write down one idea, connection or question that you have about this session. Leave it on the door as you leave.

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