Area of a triangle

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Parts of a triangle

- Base: any side of a triangle can be called the base
- Altitude: the perpendicular segment from a vertex to a line on the base

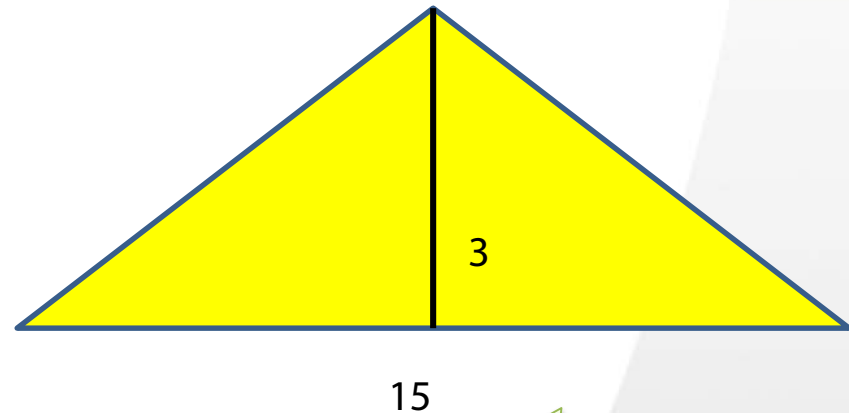- The height of the triangle is determined by the length of the altitude

altitude

base

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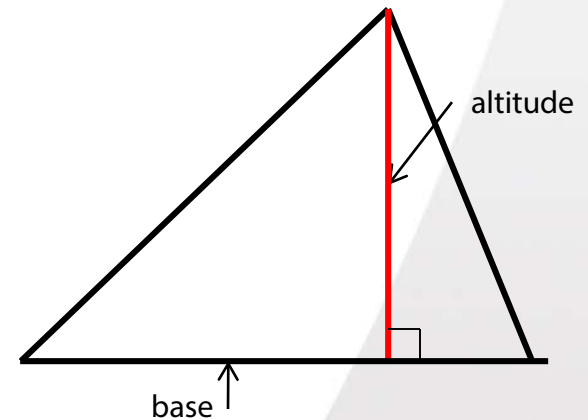
Area of a triangle: An example

$$A = \tfrac{1}{2}bh \quad \leftarrow \text{height}$$

$\uparrow$
base

Step 1: A= ½ (15)(3)

Step 2: A= ½ (45)

Step 3: A=22.5

3

15

Helpful Hint:
Remember to review order of operations. Students must square r before they multiply by π

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Ideas for application

- Use area formula to find the area of a rectangle. Then, divide the rectangle into two triangle and find the area of both triangles. Compare solutions to show that the area of the rectangle and the area of the two triangles are the same.
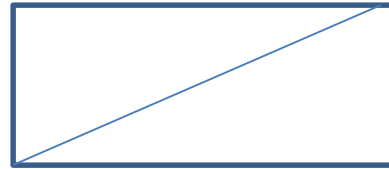
- Provide triangles on graph papers so students can calculate the length of the base and altitude as well as the area of the triangle.

- Have students with and without disabilities work together to prove that any side of a triangle can be chosen as the base.

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Suggestion to increase difficulty

- Provide the area and one variable and have the student find the missing attribute

  – For Example, if 22.5=1/2(15)h, what is the value of h?

- Provide students with less familiar shapes made up of triangles and ask them to find the area by dividing the shape into triangles and adding their volume

  – For example

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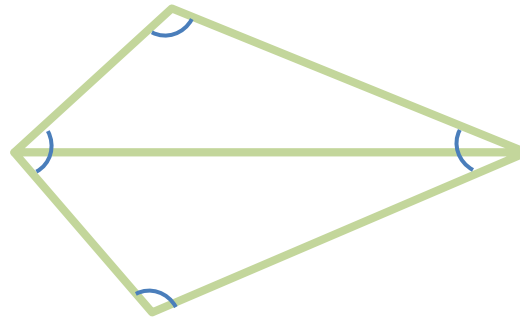
Making connections

- Finding the area of a triangle addresses the following 6th and 7th grade Core Content Connectors
  - 6.ME.2a3 Apply the formula to find the area of triangles
  - 6.NO.2c4 Solve word problems involving the addition, subtraction, multiplication, or division of fractions
  - 7-8.NO.3c1 Use the rules for mathematical operations to verify the results when more than one operation is required to solve a problem

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