

Area of triangles

CURRICULUM ALIGNMENT

MEA.MSR.4a

determine and calculate units of measurement in fractional and/or decimal form to solve practical problems.

NUM.FRC.4a

explore (model, compare and convert) the relationships between fractions, decimals and percentages.

INTERACTIVES Shape Measurer · challenge, display, explore

WHAT THIS LESSON TEACHES

The area of a triangle is half the base times the perpendicular height. The height must be measured straight up at a right angle to the base.

→ Base 8 cm and height 3 cm gives area half of $24 = 12 \text{ cm}^2$.

→ Base 12 cm and height 5 cm gives area half of $60 = 30 \text{ cm}^2$.

MODEL THIS ON THE BOARD

FINDING THE AREA

- 1 Name the base **10** cm and the perpendicular height **6** cm.
- 2 Multiply to find the rectangle area: $10 \times 6 = 60$.
- 3 Take half to find the triangle area: $60 \div 2 = 30 \text{ cm}^2$.

ANSWER KEY

a) 12 cm^2 b) 30 cm^2 c) 28 cm^2 Q1: 18 cm^2 Q2: 22 cm^2 Q3: 30 cm^2 Q4: 28 cm^2

a) Always — This is the rule for any triangle.

b) Never — The height is always the straight-up distance, never the slanted side.

c) Always — Any triangle on the full base and height of the rectangle covers half.

d) Never — It would give a wrong larger area.

EXTENSION SHEET · STRETCH ANSWERS

S1: 22.5 cm^2 S2: 20 cm^2 S3: 30 cm^2