

Chapter 3 – Geometry and Measurement

3.1

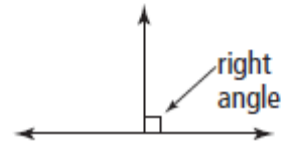
parallel

- describes lines in the same plane that never cross, or intersect
- they are marked using "arrows"



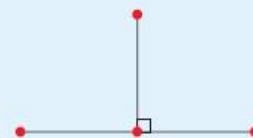
perpendicular

- describes lines that intersect at right angles (90°)
- they are marked using a small square



Key Ideas

- Parallel line segments are line segments in the same plane that do not intersect.
- The perpendicular distance between parallel line segments must be the same at each end of the line segments.
- Some ways to create parallel line segments include
 - using a ruler and a right triangle
 - using paper folding
- Perpendicular line segments are line segments that intersect at 90° .
- Some ways to create perpendicular line segments include
 - using a ruler and a protractor
 - using paper folding



3.2

Literacy 8 Link

Bisect

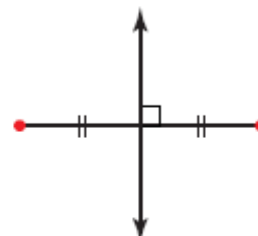
Bi means "two."

Sect means "cut."

So, to bisect means to cut in two.

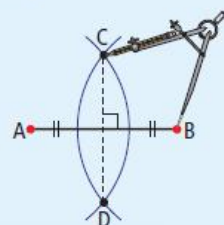
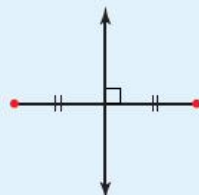
perpendicular bisector

- a line that divides a line segment in half and is at right angles to it
- equal line segments are marked with "hash" marks



Key Ideas

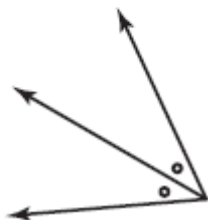
- A perpendicular bisector is a line that divides a line segment in half and is at right angles (90°) to the line segment.
- Some ways to create a perpendicular bisector include using a compass, using a ruler and a right triangle, and using paper folding.



3.3

angle bisector

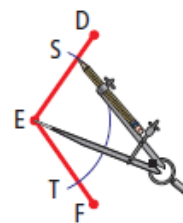
- the line that divides an angle into two equal parts
- equal angles are marked with the same symbol



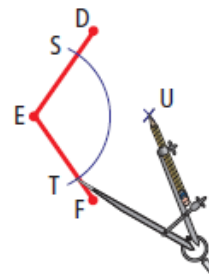
Solution

Method 1: Use a Compass

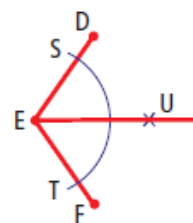
Draw and label the angle DEF. Place your compass point on E. Draw an arc as shown. Label the points of intersection S and T.



Place your compass point on S and draw an arc. Then place the compass point on T and draw an arc. Label the point of intersection U.



Use a ruler to draw a line segment from point E to point U. The angle bisector of $\angle DEF$ is EU. Extend EU to make an arrow.



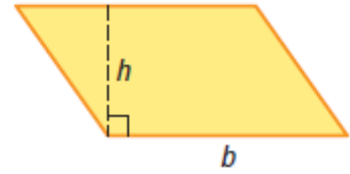
3.4

base

- a side of a two-dimensional closed figure
- common symbol is b

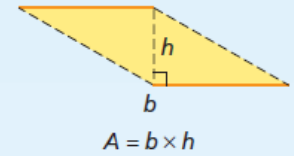
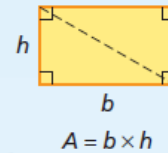
height

- the perpendicular distance from the base to the opposite side
- common symbol is h



Key Ideas

- The formula for the area of a rectangle can be used to determine the formula for the area of a parallelogram.
- The formula for the area of a parallelogram is $A = b \times h$, where b is the base and h is the height.
- The height of a parallelogram is always perpendicular to its base.



3.5

Key Ideas

- The formula for the area of a rectangle or parallelogram can be used to determine the formula for the area of a triangle.
- The formula for the area of a triangle is $A = b \times h \div 2$ or $A = \frac{b \times h}{2}$, where b is the base of the triangle and h is the height of the triangle.
- The height of a triangle is always perpendicular to its base.

