Unit 7, Lesson 11

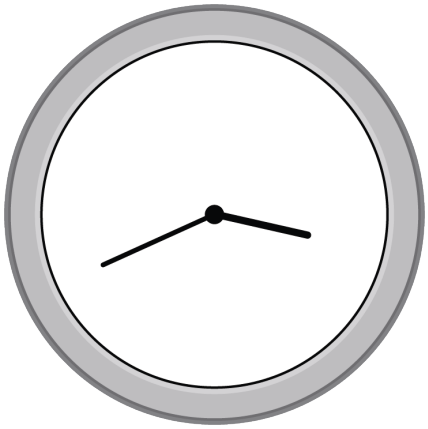
Use a Protractor to Draw Angles

Let's draw some angles.

Warm-up

Estimation Exploration: Long Hand and Short Hand

How many degrees is the angle formed by the long hand and the short hand of the clock?



Make an estimate that is:

too low	about right	too high

Activity 1

Draw These Angles

1. Draw a line that is neither vertical nor horizontal. Put a point somewhere on this line. Use your protractor to draw a perpendicular line through this point. Be as precise as possible. (No folding this time!)

2. Here is a ray that starts at point *M*.



Use a protractor to draw:

   a. A ray starting at point *M* to create a 40° angle.

   b. Another ray starting at point *M* to create a 20° angle.

   c. One more ray starting at point *M* to create a 95° angle. Label each angle with its measurement.

3. There is one angle that is not labeled with a measurement and is greater than 180°. Label the angle with an arc. How many degrees is this angle? Explain how you know.

Activity 2

Angles Made to Order

Your teacher will give you 4 blank cards. Label each card with a letter A–D.

1. On each labeled card, draw an angle that meets the requirement with the same letter. Use a ruler and a protractor.
   a. an angle that is less than 35°
   b. an angle that is between 35° and 80°
   c. an angle that is greater than 80° but less than 120°
   d. an angle that is greater than 120° but less than 180°
2. Trade cards with your partner.
   a. Record the angle measurement for each angle. Check to make sure each angle meets the requirement.
   b. Have your partner correct the angle if it does not meet the requirement. Save the cards for the next lesson.

If you have time:

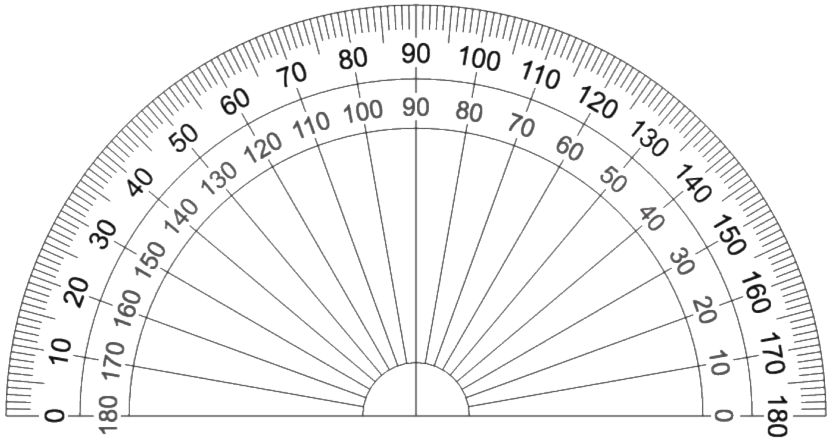
1. Create a drawing that shows several angles. Then write some descriptions about your drawing. Be as specific as possible.
2. Ask a partner to recreate the drawing, based on your descriptions. Does their drawing look like your drawing? If not, adjust your descriptions and ask them to try again.

Section B Summary

We learned ways to describe and measure the size of an angle.

We described angles as a turn of one ray away from the other. We learned that a degree is a measure of the turn around a circle and that 1 degree is $\frac{1}{360}$ of a full turn of a ray through a circle.

Finally, we learned that a protractor is a tool used to measure angles that also can be used to create angles of a certain measure.



A protractor has two sets of numbers that can be used to measure an angle. We learned to use a protractor to measure and draw different angles.