4th Grade Chapter 11

"Angles" Reteach Lessons 11.1-11.5

Name _____ Lesson 11.1 Reteach

Angles and Fractional Parts of a Circle

Find how many $\frac{1}{6}$ turns make a complete circle.

Materials: fraction circles

Step 1 Place a $\frac{1}{6}$ piece so the tip of the fraction piece is on the center of the circle. Trace the fraction piece by drawing along the dashed lines in the circle.

Step 2 Shade and label the angle formed by the $\frac{1}{6}$ piece.

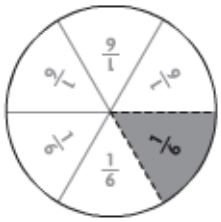
Step 3 Place the $\frac{1}{6}$ piece on the shaded angle. Turn it clockwise (in the direction that the hands on a clock move). Turn the fraction piece to line up directly beside the shaded section.

Step 4 Trace the fraction piece. Shade and label it. You have traced 2 sixths in all.

Step 5 Repeat until you have shaded the entire circle.

There are six angles that come together in the center of the circle.

So, you need six $\frac{1}{6}$ turns to make a circle.

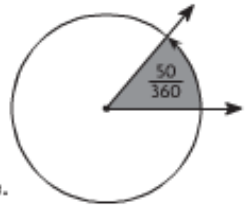


Name _____ Lesson 11.2 Reteach

Degrees

Angles are measured in units called **degrees.** The symbol for degrees is °. If a circle is divided into 360 equal parts, then an angle that turns through 1 part of the 360 measures 1°.

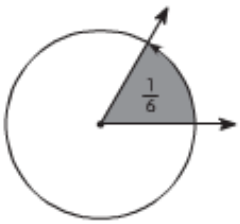
An angle that turns through $\frac{50}{360}$ of a circle measures 50°.



Find the measure of an angle that turns through $\frac{1}{6}$ of a circle.

Step 1 Find a fraction that is equivalent to $\frac{1}{6}$ with 360 in the denominator. **Think:** $6 \times 60 = 360$.

$$\frac{1}{6} = \frac{1 \times 60}{6 \times 60} = \frac{60}{360}$$



Step 2 Look at the numerator of $\frac{60}{360}$.

The numerator tells how many degrees are in $\frac{1}{6}$ of a circle.

So, an angle that turns through $\frac{1}{6}$ of a circle measures 60°.

Name _____

Lesson 11.3
Reteach

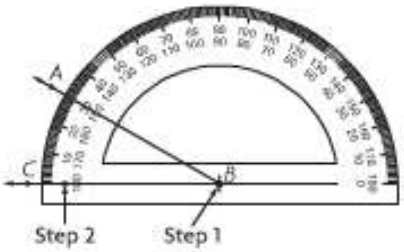
Measure and Draw Angles

A **protractor** is a tool for measuring the size of an angle.

Follow the steps below to measure $\angle ABC$.

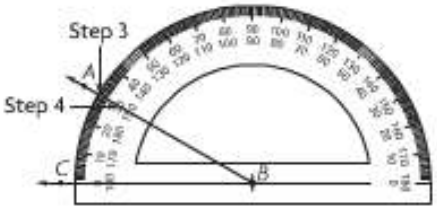
Step 1 Place the center point of the protractor on vertex *B* of the angle.

Step 2 Align the 0° mark on the protractor with ray *BC*. Note that the 0° mark is on the outer scale or top scale.



Step 3 Find where ray *BA* intersects the same scale.

Step 4 Read the angle measure on the scale.



The m$\angle ABC$ = 30°.

Name _____

Lesson 11.4
Reteach

Join and Separate Angles

The measure of an angle equals the sum of the measures of its parts.

Use your protractor and the angles at the right.

Step 1 Measure $\angle ABC$ and $\angle CBD$. Record the measures.

m$\angle ABC$ = 35°; m$\angle CBD$ = 40°

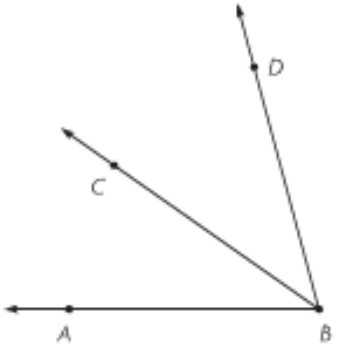
Step 2 Find the sum of the measures.

35° + 40° = 75°

Step 3 Measure $\angle ABD$. Record the measure.

m$\angle ABD$ = 75°

So, m$\angle ABC$ + m$\angle CBD$ = m$\angle ABD$.



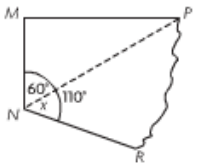
Name _____

Lesson 11.5
Reteach

Problem Solving • Unknown Angle Measures

Use the strategy *draw a diagram.*

Mrs. Allen is cutting a piece of wood for a set for the school play. She needs a piece of wood with a 60° angle. After the cut, what is the angle measure of the part left over?



Read the Problem

What do I need to find?	What information do I need to use?	How will I use the information?
I need to find the angle measure of the part left over, or m∠*PNR*.	I can use the angle measures I know: m∠*MNP* = 60° and m∠*MNR* = 110°.	I can draw a bar model to find the unknown angle measure, or m∠*PNR*.

Solve the Problem

I can draw a bar model to represent the problem.

Then I can write an equation to solve the problem.

m∠*MNP* + m∠*PNR* = m∠*MNR*

60° + *x* = 110°

x = 110° − 60°, or 50°

So, m∠*PNR* = 50°

The angle measure of the part left over is 50°.