Module Overview ........................................................................................................................... i
Topic A: Attributes of Geometric Shapes ................................................................. 8.A.1
Topic B: Composite Shapes and Fraction Concepts ............................................. 8.B.1
Topic C: Halves, Thirds, and Fourths of Circles and Rectangles ...................... 8.C.1
Topic D: Application of Fractions to Tell Time ....................................................... 8.D.1
Module Assessments ................................................................................................................. 8.S.1
1. Identify the number of sides and angles for each shape. Circle each angle as you count. The first one has been done for you.

a. _____ sides
   _____ angles

b. _____ sides
   _____ angles

c. _____ sides
   _____ angles

d. _____ sides
   _____ angles

e. _____ sides
   _____ angles

f. _____ sides
   _____ angles

g. _____ sides
   _____ angles

h. _____ sides
   _____ angles

i. _____ sides
   _____ angles
2. Study the shapes below. Then answer the questions.

A   B        C         D       E            F

a. Which shape has the most sides? _________

b. Which shape has 3 more angles than shape C? _________

c. What shape has 3 fewer sides than shape B? _________

d. How many more angles does shape C have than shape A? _________

e. Which of these shapes have the same number of sides as angles? _________

3. Ethan said the two shapes below are both six-sided figures but just different sizes. Explain why he is incorrect.

_________________________________________________________________

_________________________________________________________________

_________________________________________________________________
Name ___________________________ Date ______________

1. Study the shapes below. Then answer the questions.

   A                B                C                D

   a. Which shape has the most sides? _________
   b. Which shape has 3 fewer angles than shape C? _________
   c. What shape has 3 more sides than shape B? _________
   d. Which of these shapes have the same number of sides as angles? _________
Lesson 1 Homework

1. Identify the number of sides and angles for each shape. Circle each angle as you count.

   a. 
      
      _____ sides
      _____ angles

   b. 
      
      _____ sides
      _____ angles

   c. 
      
      _____ sides
      _____ angles

   d. 
      
      _____ sides
      _____ angles

   e. 
      
      _____ sides
      _____ angles

   f. 
      
      _____ sides
      _____ angles

   g. 
      
      _____ sides
      _____ angles

   h. 
      
      _____ sides
      _____ angles

   i. 
      
      _____ sides
      _____ angles
2. Study the shapes below. Then answer the questions.

A      B           C         D     E        F

a. Which shape has the most angles? _________
b. Which shape has 4 more angles than shape F? _________
c. What shape has 5 fewer sides than shape D? _________
d. How many more angles does shape A have than shape B? _________
e. Which of these shapes have the same number of sides as angles? _________

3. Joseph’s teacher said to make shapes with 6 sides and 6 angles on his geoboard. Shade the shapes that share these attributes, and circle the shape that does not belong. Explain why it does not belong.

_________________________________________________________________
_________________________________________________________________
_________________________________________________________________
Lesson 2 Problem Set

Name ____________________________ Date ______________

1. Count the number of sides and angles for each shape to identify each polygon. The polygon names in the word bank may be used more than once.

<table>
<thead>
<tr>
<th>Hexagon</th>
<th>Quadrilateral</th>
<th>Triangle</th>
<th>Pentagon</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Shape" /></td>
<td><img src="image2.png" alt="Shape" /></td>
<td><img src="image3.png" alt="Shape" /></td>
<td><img src="image4.png" alt="Shape" /></td>
</tr>
<tr>
<td><img src="image5.png" alt="Shape" /></td>
<td><img src="image6.png" alt="Shape" /></td>
<td><img src="image7.png" alt="Shape" /></td>
<td><img src="image8.png" alt="Shape" /></td>
</tr>
<tr>
<td><img src="image9.png" alt="Shape" /></td>
<td><img src="image10.png" alt="Shape" /></td>
<td><img src="image11.png" alt="Shape" /></td>
<td><img src="image12.png" alt="Shape" /></td>
</tr>
<tr>
<td><img src="image13.png" alt="Shape" /></td>
<td><img src="image14.png" alt="Shape" /></td>
<td><img src="image15.png" alt="Shape" /></td>
<td><img src="image16.png" alt="Shape" /></td>
</tr>
</tbody>
</table>

Name ____________________________ Date ______________

2. Build, identify, and analyze two-dimensional shapes with specified attributes.

Date: 1/30/14

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2. Draw more sides to complete 2 examples of each polygon.

<table>
<thead>
<tr>
<th></th>
<th>Example 1</th>
<th>Example 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>a. Triangle</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>□□ lines were added.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>There are ______ total sides.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>b. Hexagon</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>□□ lines were added.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>There are ______ total sides.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>c. Quadrilateral</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>□□ lines were added.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>There are ______ total sides.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>d. Pentagon</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>□□ lines were added.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>There are ______ total sides.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3. a. Explain why both polygon A and B are hexagons.

______________________________________________
______________________________________________

b. Draw a different hexagon than the two that are shown.

4. Explain why both polygon C and D are quadrilaterals.

______________________________________________
1. Count the number of sides and angles for each shape to identify each polygon. The polygon names in the word bank may be used more than once.

Hexagon  Quadrilateral  Triangle  Pentagon

a. 

b. 

c. 

d. 

e. 

f. 

Name ________________________________ Date ________________
Lesson 2 Homework

Name ____________________________ Date _____________

1. Count the number of sides and angles for each shape to identify each polygon. The polygon names in the word bank may be used more than once.

Hexagon  Quadrilateral  Triangle  Pentagon

a. ___________________  b. ___________________  c. ___________________

d. ___________________  e. ___________________  f. ___________________

g. ___________________  h. ___________________  i. ___________________

j. ___________________  k. ___________________  l. ___________________
2. Draw more sides to complete 2 examples of each polygon.

<table>
<thead>
<tr>
<th></th>
<th>Example 1</th>
<th>Example 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Quadrilateral</td>
<td>_____ lines were added.</td>
<td>( \wedge )</td>
</tr>
<tr>
<td></td>
<td>There are _____ total sides.</td>
<td></td>
</tr>
<tr>
<td>b. Pentagon</td>
<td>_____ lines were added.</td>
<td>( \wedge )</td>
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<tr>
<td></td>
<td>There are _____ total sides.</td>
<td></td>
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<tr>
<td>c. Triangle</td>
<td>_____ lines were added.</td>
<td>( \wedge )</td>
</tr>
<tr>
<td></td>
<td>There are _____ total sides.</td>
<td></td>
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<tr>
<td>d. Hexagon</td>
<td>_____ lines were added.</td>
<td>( \wedge )</td>
</tr>
<tr>
<td></td>
<td>There are _____ total sides.</td>
<td></td>
</tr>
</tbody>
</table>

3. Explain why both polygon A and B are pentagons.

________________________________________________________________________

________________________________________________________________________

4. Explain why both polygon C and D are triangles.

________________________________________________________________________
Lesson 2 Application Template

Build, identify, and analyze two-dimensional shapes with specified attributes.

Date: 1/30/14
Lesson 2: Build, identify, and analyze two-dimensional shapes with specified attributes.

Date: 1/30/14
Lesson 3: Use attributes to draw different polygons including triangles, quadrilaterals, pentagons, and hexagons.

Date: 1/30/14

1. Use a straightedge to draw the polygon with the given attributes in the space to the right.

   a. Draw a polygon with 3 angles.
      
      Number of sides: _____
      Name of polygon: ________________

   b. Draw a five-sided polygon.
      
      Number of angles: _____
      Name of polygon: ________________

   c. Draw a four-angled polygon.
      
      Number of sides: _____
      Name of polygon: ________________

   d. Draw a six-sided polygon.
      
      Number of angles: _____
      Name of polygon: ________________

   e. Compare your polygons to those of your partner.
      Copy one example that is very different from your own in the space to the right.
2. Use your straightedge to draw 2 new examples of each polygon that are different from those you drew on the first page.

a. Triangle

b. Pentagon

c. Quadrilateral

d. Hexagon
Name _____________________________ Date ________________

1. Use a straightedge to draw the polygon with the given attributes in the space to the right.

Draw a five-sided polygon.

Number of angles: _____
Name of polygon: ________________

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Lesson 3 Homework

Name ___________________________ Date ______________

1. Use a straightedge to draw the polygon with the given attributes in the space to the right.

   a. Draw a polygon with 4 angles.

      Number of sides: _____
      Name of polygon: ________________

   b. Draw a six-sided polygon.

      Number of angles: _____
      Name of polygon: ________________

   c. Draw a three-angled polygon.

      Number of sides: _____
      Name of polygon: ________________

   d. Draw a five-sided polygon.

      Number of angles: _____
      Name of polygon: ________________
2. Use your straightedge to draw 2 new examples of each polygon that are different from those you drew on the first page.
   a. Quadrilateral
   
   
   
   b. Hexagon
   
   
   
   c. Pentagon
   
   
   
   d. Triangle
   
   
   

Lesson 3: Use attributes to draw different polygons including triangles, quadrilaterals, pentagons, and hexagons.

Date: 1/30/14
1. Use your ruler to draw 2 parallel lines that are not the same length.

2. Use your ruler to draw 2 parallel lines that are the same length.

3. Highlight the parallel sides on each quadrilateral, and put a box around each right angle. Use your index card to find each right angle.

   a.  
   b.    
   c.  
   d.    

   e.  
   f.    
   g.  
   h.    

4. Draw a parallelogram with no square corners.
5. Draw a quadrilateral with 4 square corners.

6. Measure and label the sides of the figure to the right with your centimeter ruler. What do you notice? Be ready to talk about the attributes of this quadrilateral. Can you remember what this polygon is called?

7. A square is a special rectangle. What makes it special?

_________________________________________________________________
_________________________________________________________________
1. Highlight the parallel sides on each quadrilateral, and put a box around each square corner. Use your index card to find each square corner.

a.  

b.  

c.  

d.  

Name _______________________________  Date ________________
Lesson 4 Homework

Name ___________________________ Date ________________

1. Use your ruler to draw 2 parallel lines that are not the same length.

2. Use your ruler to draw 2 parallel lines that are the same length.

3. Draw a quadrilateral with two sets of parallel sides. What is the name of this quadrilateral?

4. Draw a quadrilateral with 4 square corners and opposite sides the same length. What is the name of this quadrilateral?
5. A square is a special rectangle. What makes it special?

_________________________________________________________________
_________________________________________________________________

6. Color each quadrilateral with 4 square corners red.
Color each quadrilateral with no square corners blue.
Color each quadrilateral with one set of parallel sides green.
Copy onto heavy tag board and cut.

<table>
<thead>
<tr>
<th>1 cm</th>
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</tbody>
</table>
1. Circle the shape that could be the face of a cube. Check with your ruler.

2. What is the most precise name of the shape you circled? ____________

3. How many faces does a cube have? _______

4. How many edges does a cube have? _______

5. How many corners does a cube have? _______

6. Draw 6 cubes, and put a star next to your best one.

<table>
<thead>
<tr>
<th>First cube</th>
<th>Second cube</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third cube</th>
<th>Fourth cube</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
7. Connect the corners of the squares to make a different kind of drawing of a cube. The first one is done for you.

<table>
<thead>
<tr>
<th>Fifth cube</th>
<th>Sixth cube</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Cube" /></td>
<td><img src="image2" alt="Cube" /></td>
</tr>
<tr>
<td><img src="image3" alt="Cube" /></td>
<td><img src="image4" alt="Cube" /></td>
</tr>
</tbody>
</table>

8. Derrick looked at the cube below. He said that a cube only has 3 faces. Explain why Derrick is incorrect.

_________________________________________________________________
_________________________________________________________________
_________________________________________________________________
Name ___________________________________  Date ______________

1. **Draw 3 cubes. Put a star next to your best one.**

   [Blank spaces for drawing]

   [Blank spaces for drawing]

   [Blank spaces for drawing]
1. Circle the shapes that could be the face of a cube. Check with your ruler.

![Shapes](image)

2. What is the most precise name of the shape you circled? __________

3. How many corners does a cube have? ______

4. How many edges does a cube have? ______

5. How many faces does a cube have? ______

6. Draw 6 cubes, and put a star next to your best one.

<table>
<thead>
<tr>
<th>First cube</th>
<th>Second cube</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third cube</th>
<th>Fourth cube</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
7. Connect the corners of the squares to make a different kind of drawing of a cube.

8. Patricia used the image of the cube below to count 7 corners. Explain where the 8\textsuperscript{th} corner is hiding.

_________________________________________________________________
_________________________________________________________________
_________________________________________________________________
**Lesson 6 Problem Set**

Name ___________________________  Date ________________

1. Identify each polygon labeled in the tangram as precisely as possible in the space below.

   a. ____________________________
   
   b. ____________________________
   
   c. ____________________________

2. Use the square and the two smallest triangles to make the following polygons. Draw them in the space provided.

   a. A quadrilateral with 1 pair of parallel sides.
   
   b. A quadrilateral with no square corners.
   
   c. A quadrilateral with 4 square corners.
   
   d. A triangle with 1 square corner.

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3. Use the parallelogram and the two smallest triangles to make the following polygons. Draw them in the space provided.

<table>
<thead>
<tr>
<th>a. A quadrilateral with 1 pair of parallel sides.</th>
<th>b. A quadrilateral with no square corners.</th>
</tr>
</thead>
<tbody>
<tr>
<td>c. A quadrilateral with 4 square corners.</td>
<td>d. A triangle with 1 square corner.</td>
</tr>
</tbody>
</table>

4. Rearrange the parallelogram and the two smallest triangles to make a hexagon. Draw the new shape below.

5. Rearrange your tangram pieces to make other polygons! Identify them as you work.
Lesson 6 Exit Ticket

Name ________________________________  Date ______________

Use your tangram pieces to make two new polygons. Draw a picture, and identify them.

1.

2.
Lesson 6 Homework

Name ____________________________  Date ________________

1. Identify each polygon labeled in the tangram as precisely as possible in the space below.
   a. ____________________________
   b. ____________________________
   c. ____________________________

2. Use the square and the two smallest triangles to make the following polygons. Draw them in the space provided.
   a. A triangle with 1 square corner.
   b. A quadrilateral with 4 square corners.
   c. A quadrilateral with no square corners.
   d. A quadrilateral with only 1 pair of parallel sides.
3. Rearrange the parallelogram and the two smallest triangles to make a hexagon. Draw the new shape below.

4. Rearrange your tangram pieces to make at least 6 other polygons! Draw and identify your favorites below.
Cut out the tangram into 7 puzzle pieces.
1. Solve the following puzzles using your tangram pieces. Draw your solutions in the space below.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Use the two smallest triangles to make one larger triangle.</td>
<td>b. Use the two smallest triangles to make a parallelogram with no square corners.</td>
</tr>
<tr>
<td>c. Use the two smallest triangles to make a square.</td>
<td>d. Use the two largest triangles to make a square.</td>
</tr>
<tr>
<td>e. How many equal shares does the large triangle in Parts (a-d) have?</td>
<td>f. How many halves make up the large triangle in Parts (a-d)?</td>
</tr>
</tbody>
</table>

2. Circle the shapes that show halves.

- [ ] Circle the shapes that show halves.

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3. Show how 3 triangle pattern blocks form a trapezoid with one pair of parallel lines. Draw the shape below.

a. How many equal shares does the trapezoid have? ________

b. How many thirds are in the trapezoid? _______

4. Circle the shapes that show thirds.

5. Add another triangle to the trapezoid you made in Problem 3 to make a parallelogram. Draw the new shape below.

a. How many equal shares does the shape have now? ________

b. How many fourths are in the shape? _______

6. Circle the shapes that show fourths.
Name ___________________________ Date ________________

1. Circle the shapes that show thirds.

[Circle the shapes that show thirds]

2. Circle the shapes that show fourths.

[Circle the shapes that show fourths]
1. Solve the following puzzles using your tangram pieces. Draw your solutions in the space below.

   a. Use the two largest triangles to make a square.
   b. Use the two smallest triangles to make a square.
   c. Use the two smallest triangles to make a parallelogram with no square corners.
   d. Use the two smallest triangles to make one larger triangle.

   e. How many equal shares do the larger shapes in Parts (a–d) have?
   f. How many halves make up the larger shapes in Parts (a–d)?

2. Circle the shapes that show halves.

   ![Triangle](triangle.png)
   ![Parallelogram](parallelogram.png)
   ![Square](square.png)
   ![Hexagon](hexagon.png)
3. Examine the trapezoid.

   a. How many equal shares does the trapezoid have? ________

   b. How many thirds are in the trapezoid? _______

4. Circle the shapes that show thirds.

5. Examine the parallelogram.

   a. How many equal shares does the shape have? ________

   b. How many fourths are in the shape? _______

6. Circle the shapes that show fourths.
Name ____________________________ Date ________________

1. Use one pattern block to cover half the rhombus.
   a. Identify the pattern block used to cover half of the rhombus. _____________
   b. Draw a picture of the parallelogram formed by the 2 halves.

2. Use one pattern block to cover half the hexagon.
   a. Identify the pattern block used to cover half of a hexagon. _____________
   b. Draw a picture of the hexagon formed by the 2 halves.

3. Use one pattern block to cover 1 third of the hexagon.
   a. Identify the pattern block used to cover 1 third of a hexagon. _____________
   b. Draw a picture of the hexagon formed by the 3 thirds.

4. Use one pattern block to cover 1 third of the trapezoid.
   a. Identify the pattern block used to cover 1 third of a trapezoid. ___________
   b. Draw a picture of the trapezoid formed by the 3 thirds.
5. Use 4 pattern block squares to make one larger square.
   a. Draw a picture of the square formed in the space below.
   
   b. Shade 1 small square. Each small square is 1 __________ (half / third / fourth) of the whole square.
   
   c. Shade 1 more small square. Now, 2 __________ (halves / thirds / fourths) of the whole square is shaded.
   
   d. And, 2 fourths of the square is the same as 1 __________ (half / third / fourth) of the whole square.
   
   e. Shade 2 more small squares. _____ fourths is equal to 1 whole.

6. Use one pattern block to cover 1 sixth of the hexagon.
   a. Identify the pattern block used to cover 1 sixth of a hexagon. ______________
   b. Draw a picture of the hexagon formed by the 6 sixths.
1. Name the pattern block used to cover half the rectangle. ________________

Use the shape below to draw the pattern blocks used to cover 2 halves.
Lesson 8: Interpret shares in composite shapes as halves, thirds, and fourths.

Name ____________________________ Date ______________

1. Name the pattern block used to cover half the rhombus. __________________
   Sketch the 2 pattern blocks used to cover both halves of the rhombus.
   
   ![Rhombus Diagram]

2. Name the pattern block used to cover half the hexagon. __________________
   Sketch the 2 pattern blocks used to cover both halves of the hexagon.
   
   ![Hexagon Diagram]

3. Name the pattern block used to cover 1 third of the hexagon. _______________
   Sketch the 3 pattern blocks used to cover thirds of the hexagon.
   
   ![Hexagon Diagram]

4. Name the pattern block used to cover 1 third of the trapezoid. _______________
   Sketch the 3 pattern blocks used to cover thirds of the trapezoid.
   
   ![Trapezoid Diagram]
5. Sketch 4 pattern block squares used to make one larger square.

   ![Pattern block square](image)

   a. Shade 1 small square. Each small square is 1 __________ (half / third / fourth) of the whole square.

   b. Shade 1 more small square. Now, 2 __________ (halves / thirds / fourths) of the whole square are shaded.

   c. And, 2 fourths of the square is the same as 1 __________ (half / third / fourth) of the whole square.

   d. Shade 2 more small squares. ____ fourths is equal to 1 whole.

6. Name the pattern block used to cover 1 sixth of the hexagon. ______________
   Sketch the 6 pattern blocks used to cover 6 sixths of the hexagon.
Lesson 9 Problem Set

1. Circle the shapes that have 2 equal shares with 1 share shaded.

2. Shade 1 half of the shapes that are split into 2 equal shares. One has been done for you.
3. Partition the shapes to show halves. Shade one half of each. Compare your halves to your partner’s.

a.

b.
1. Shade 1 half of the shapes that are split into 2 equal shares.

   a. 
   b. 
   c. 
   d. 
   e. 
   f. 
   g. 

Name _____________________________       Date ________________
Lesson 9 Homework

Name ____________________________ Date __________

1. Circle the shapes that have 2 equal shares with 1 share shaded.

![Shapes with 2 equal shares]

2. Shade 1 half of the shapes that are split into 2 equal shares. One has been done for you.

![Shaded shapes with 2 equal shares]
3. Partition the shapes to show halves. Shade one half of each.
Lesson 9: Partition circles and rectangles into equal parts, and describe those parts as halves, thirds, or fourths.

Date: 1/30/14
Lesson 9: Partition circles and rectangles into equal parts, and describe those parts as halves, thirds, or fourths.

Date: 1/30/14

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Lesson 10:
Partition circles and rectangles into equal parts, and describe those parts as halves, thirds, or fourths.

1. Do the shapes in Problem 1(a) show halves or thirds? __________
   
   a. Draw 1 more line to partition each shape into fourths.

2. Partition each rectangle into thirds. Shade the shapes as indicated.

   3 thirds
   2 thirds
   1 third

3. Partition each circle into fourths. Then, shade the shapes as indicated.

   4 fourths
   3 fourths
   2 fourths
   1 fourth
4. Partition and shade the following shapes as indicated. Each rectangle or circle is one whole.

   a. 1 fourth
   b. 1 third
   c. 1 half
   d. 2 fourths
   e. 2 thirds
   f. 2 halves
   g. 3 fourths
   h. 3 thirds
   i. 3 halves

5. Split the pizza below so that Maria, Paul, Jose, and Mark each have an equal share. Label each student’s share with his or her name.

   a. What fraction of the pizza was eaten by each of the boys?

   b. What fraction of the pizza did the boys eat altogether?
1. Partition and shade the following shapes as indicated. Each rectangle or circle is one whole.

   a. 2 halves
   b. 2 thirds
   c. 1 third
   
   d. 1 half
   e. 2 fourths
   f. 1 fourth
1. Do the shapes below show halves or thirds? _____________

   ![Shapes showing halves or thirds]

   a. Draw 1 more line to partition each shape above into fourths.

2. Partition each rectangle into thirds. Shade the shapes, as indicated.

   ![Rectangles partitioned into thirds]

   2 thirds 1 third 3 thirds

3. Partition each circle into fourths. Then, shade the shapes as indicated.

   ![Circles partitioned into fourths]

   1 fourth 3 fourths 4 fourths 2 fourths
4. Partition and shade the following shapes. Each rectangle or circle is one whole.

   a. 1 half
   b. 1 fourth
   c. 1 third
   d. 2 fourths
   e. 2 halves
   f. 2 thirds
   g. 3 thirds
   h. 3 fourths
   i. 3 halves

5. Split the pizza below so that Shane, Raul, and John all have an equal share. Label each student’s share with his name.

What fraction of the pizza did the boys get in all?
Lesson 10: Partition circles and rectangles into equal parts, and describe those parts as halves, thirds, or fourths.

Date: 1/30/14
1. For parts a, c, and e, identify the shaded area.

   a. 
   
   _____ half  
   _____ halves

   b. Circle the shape above that has a shaded area that shows 1 whole.

   c. 
   
   _____ third  
   _____ thirds  
   _____ thirds

   d. Circle the shape above that has a shaded area that shows 1 whole.

   e. 
   
   _____ fourth  
   _____ fourths  
   _____ fourths  
   _____ fourths

   f. Circle the shape above that has a shaded area that shows 1 whole.
2. What fraction do you need to color to shade 1 whole?

   a.  
       ![Diagram](image1)
   
   b.  
       ![Diagram](image2)

   c.  
       ![Diagram](image3)

   d.  
       ![Diagram](image4)

   e.  
       ![Diagram](image5)

   f.  
       ![Diagram](image6)

3. Draw to complete each shape.
   
   a. This is 1 half.  
      Draw 1 whole.
   
   b. This is 1 third.  
      Draw 1 whole.
   
   c. This is 1 fourth.  
      Draw 1 whole.
1. What fraction do you need to color to shade 1 whole?

a. 

b. 

c. 

d. 

Lesson 11: Describe a whole by the number of equal parts including 2 halves, 3 thirds, and 4 fourths.

1. For parts a, c, and e, identify the shaded area.

   a. Circle the shape above that has a shaded area that shows 1 whole.
      
      ______ half ______ halves

   b. Circle the shape above that has a shaded area that shows 1 whole.
      
      ______ third ______ thirds ______ thirds

   c. Circle the shape above that has a shaded area that shows 1 whole.
      
      ______ fourth ______ fourths ______ fourths ______ fourths

   d. Circle the shape above that has a shaded area that shows 1 whole.

   e. Circle the shape above that has a shaded area that shows 1 whole.
2. What fraction do you need to color to shade 1 whole?

a. 

b. 

c. 

d. 

e. 

f. 

3. Draw to complete each shape.

a. This is 1 half.
   Draw 1 whole.

b. This is 1 third.
   Draw 1 whole.

c. This is 1 fourth.
   Draw 1 whole.
Lesson 11: Describe a whole by the number of equal parts including 2 halves, 3 thirds, and 4 fourths.

Date: 1/30/14
Lesson 11: Describe a whole by the number of equal parts including 2 halves, 3 thirds, and 4 fourths.

Date: 1/30/14

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Fourth</td>
<td>1 Fourth</td>
<td>1 Fourth</td>
<td>1 Fourth</td>
</tr>
</tbody>
</table>
Lesson 11: Describe a whole by the number of equal parts including 2 halves, 3 thirds, and 4 fourths.

Date: 1/30/14
Lesson 12 Problem Set

1. Partition the rectangles in 2 different ways to show equal shares.

   a. 2 halves

      [Rectangle 1] [Rectangle 2]

   b. 3 thirds

      [Rectangle 1] [Rectangle 2] [Rectangle 3]

   c. 4 fourths

      [Rectangle 1] [Rectangle 2] [Rectangle 3] [Rectangle 4]

2. Build the original whole square using the rectangle half and the half represented by your 4 small triangles. Draw it in the space below.
3. Use different colored halves of a whole square.
   a. Cut the square in half.
   b. Rearrange the halves to create a new rectangle with no gaps or overlaps.
   c. Cut each equal part in half.
   d. Rearrange the new equal shares to create different polygons.
   e. Draw one of your new polygons from Part (d) below.

4. Cut out the circle.
   a. Cut the circle in half.
   b. Rearrange the halves to create a new shape with no gaps or overlaps.
   c. Cut each equal share in half.
   d. Rearrange the equal shares to create a new shape with no gaps or overlaps.
   e. Draw your new shape from Part (d) below. One half is still shaded!
Lesson 12: Recognize that equal parts of an identical rectangle can have different shapes.

Date: 1/30/14
1. Partition the rectangles in 2 different ways to show equal shares.

a. 2 halves

b. 3 thirds

c. 4 fourths
1. Partition the rectangles in 2 different ways to show equal shares.

   a. 2 halves

   b. 3 thirds

   c. 4 fourths

   d. 2 halves
Lesson 12: Recognize that equal parts of an identical rectangle can have different shapes.

Date: 1/30/14

2. Cut out the square at the bottom of this page.
   a. Cut the square in half. Shade one half using your pencil.
   b. Rearrange the halves to create a new rectangle with no gaps or overlaps.
   c. Cut each equal part in half.
   d. Rearrange the new equal shares to create different polygons.
   e. Draw one of your new polygons from Part (d) below. One half is shaded!

3. Cut out the circle at the bottom of this page. Shade one half.
   a. Cut the circle in half. Shade one half using your pencil.
   b. Rearrange the halves to create a new shape with no gaps or overlaps.
   c. Cut each equal share in half.
   d. Rearrange the equal shares to create a new shape with no gaps or overlaps.
   e. Draw your new shape from Part (d) below. One half is still shaded!
Lesson 13: Construct a paper clock by partitioning a circle into halves and quarters, and tell time to the half hour or quarter hour.
1. Tell what fraction of each clock is shaded in the space below using the words *quarter*, *quarters*, *half*, or *halves*.

   ![Clocks with shaded parts](image)

   a. 
   b. 
   c. 
   d. 

2. Write the time shown on each clock.

   a. 
   b. 
   c. 
   d. 

---

**Lesson 13: Problem Set**

Construct a paper clock by partitioning a circle into halves and quarters, and tell time to the half hour or quarter hour.

Date: 1/30/14

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3. Match each time to the correct clock by drawing a line.

- Quarter to 4
- Half past 8
- 8:30
- 3:45
- 1:15

4. Draw the minute hand on the clock to show the correct time.

3:45  11:30  6:15
1. Draw the minute hand on the clock to show the correct time.

Half past 7

12:15

A quarter to 3
Lesson 13 Homework

Name __________________________           Date ____________

1. Tell what fraction of each clock is shaded in the space below using the words *quarter, quarters, half, or halves*.

   ![Clocks]

   _______  _______  _______  _______

2. Write the time shown on each clock.

   a. _______  b. _______  c. _______  d. _______

   ![Clocks]

Lesson 13: Construct a paper clock by partitioning a circle into halves and quarters, and tell time to the half hour or quarter hour.

Date: 1/30/14
3. Match each time to the correct clock by drawing a line.
   - Quarter to 5
   - Half past 5
   - 5:15
   - Quarter after 5
   - 4:45

4. Draw the minute hand on the clock to show the correct time.

3:30 11:45 6:15
Lesson 13: Construct a paper clock by partitioning a circle into halves and quarters, and tell time to the half hour or quarter hour.

Date: 1/30/14

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1. Fill in the missing numbers.

60, 55, 50, ____, 40, _____, _____, _____, 20, _____, _____, _____, _____

2. Fill in the missing numbers on the face of the clock to show the minutes.
3. Draw the hour and minute hands on the clocks to match to correct time.

3:05
3:35
4:10
4:40
6:25
6:55

4. What time is it?
Lesson 14 Exit Ticket

Name ___________________________ Date ____________

1. Draw the hour and minute hands on the clocks to match to correct time.

- Clock 1: 12:55
- Clock 2: 5:25
Lesson 14 Homework

Name ___________________________ Date ________________

1. Fill in the missing numbers.

0, 5, 10, _____, _____, _____, _____, 35, _____, _____, _____, _____, _____, _____, _____, 45, 40, _____, _____, _____, 20, 15, _____, _____, _____

2. Fill in the missing minutes on the face of the clock.

_____ or 0_____

3. Draw the minute hands on the clocks to match to correct time.

3:25  7:15  9:55
Lesson 14 Homework

4. Draw the hour hands on the clocks to match the correct time.

- 12:30
- 10:10
- 3:45

5. Draw the hour and minute hands on the clocks to match to correct time.

- 6:55
- 1:50
- 8:25
- 4:40
- 7:45
- 2:05

6. What time is it?

[Clock images with times]
Lesson 15

Objective: Tell time to the nearest five minutes; relate a.m. and p.m. to time of day.

Suggested Lesson Structure

- Fluency Practice (10 minutes)
- Application Problem (5 minutes)
- Concept Development (35 minutes)
- Student Debrief (10 minutes)
- Total Time (60 minutes)

Fluency Practice (10 minutes)

- Subtraction with Renaming 2.NBT.7 (5 minutes)
- Happy Counting by Fives 2.NBT.2 (1 minute)
- Grade 2 Core Fluency Differentiated Practice Sets 2.OA.2 (4 minutes)

Subtraction with Renaming (5 minutes)

Materials: (S) Personal white board, place value chart

Note: This fluency drill reviews the application of a chip model while recording with the algorithm. Allow students work time between each problem, and reinforce place value understandings by having students say their answer in both unit form and the regular way. Students will use their personal boards and a place value chart to solve.

T: (Write 300 – 118 horizontally on the board.) Let’s use a chip model to subtract. On your boards, record your work using the algorithm.

S: (Solve on their personal boards.)

T: 300 – 118 is...?
S: 182!


Happy Counting by Fives (1 minute)

T: Let’s do some Happy Counting!

T: Let’s count by fives, starting at 0. Ready? (Rhythmically point up until a change is desired. Show a
Lesson 15:
Tell time to the nearest five minutes; relate a.m. and p.m. to time of day.

Date: 1/30/14

Grade 2 Core Fluency Differentiated Practice Sets (4 minutes)

Materials: (S) Core Fluency Practice Sets from G2–M8–Lesson 3

Application Problem (5 minutes)

At Memorial School, students have a quarter hour for morning recess and 33 minutes for a lunch break. How much free time do they have in all? How much more time for lunch than recess do they have?

Note: Students have the opportunity to solve another two-step problem involving addition and subtraction with time. At this stage, some will not need to draw a tape diagram, but for those who struggle, encourage them to do so.

Concept Development (35 minutes)

Materials: (T) Story template as a display or booklet, document projector (if available) (S) Story template as a booklet (optional), crayons (optional)

Note: Students will be asked to tell the current time of day. The vignette uses an example of a morning class.
Lesson 15:

Tell time to the nearest five minutes; relate a.m. and p.m. to time of day.

Date: 1/30/14

1. Choose whether the activity below would happen in the a.m. or the p.m.

   a. Waking up for school
   b. Eating dinner
   c. Reading a bedtime story
   d. Making breakfast
   e. Having a play date after school
   f. Going to bed
   g. Eating a piece of cake
   h. Eating lunch

Name ___________________________  Date ________________
Lesson 15 Problem Set

2. Draw the hands on the analog clock to match the time on the digital clock. Then, circle a.m. or p.m. based on the description given.

a. Brushing your teeth after you wake up

\[7:10\] a.m. or p.m.

b. Finishing homework

\[5:55\] a.m. or p.m.

3. Write what you might be doing if it were a.m. or p.m.

a. a.m. __________________________

b. p.m. __________________________

4. What time does the clock show?

_____ : _____
Lesson 15: Tell time to the nearest five minutes; relate a.m. and p.m. to time of day.

Date: 1/30/14

1. Draw the hands on the analog clock to match the time on the digital clock. Then, circle a.m. or p.m. based on the description given.

   a. The sun is rising

   ![Clock 1](image1)

   6:10 a.m. or p.m.

   ![Clock 2](image2)

   b. Walking the dog

   ![Clock 3](image3)

   3:40 a.m. or p.m.
1. Choose whether the activity below would happen in the a.m. or the p.m.

<table>
<thead>
<tr>
<th>Activity</th>
<th>a.m. / p.m.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eating breakfast</td>
<td></td>
</tr>
<tr>
<td>Doing homework</td>
<td></td>
</tr>
<tr>
<td>Setting the table for dinner</td>
<td></td>
</tr>
<tr>
<td>Waking up in the morning</td>
<td></td>
</tr>
<tr>
<td>After-school dance class</td>
<td></td>
</tr>
<tr>
<td>Eating lunch</td>
<td></td>
</tr>
<tr>
<td>Going to bed</td>
<td></td>
</tr>
<tr>
<td>Heating up dinner</td>
<td></td>
</tr>
</tbody>
</table>

2. Write the time displayed on the clock. Then choose whether the activity below would happen in the a.m. or the p.m.

<table>
<thead>
<tr>
<th>Activity</th>
<th>time displayed on the clock</th>
<th>a.m. / p.m.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brushing your teeth before school</td>
<td><strong>:</strong></td>
<td></td>
</tr>
<tr>
<td>Eating dessert after dinner</td>
<td><strong>:</strong></td>
<td></td>
</tr>
</tbody>
</table>
3. Draw the hands on the analog clock to match the time on the digital clock. Then, circle a.m. or p.m. based on the description given.

   a. Brushing your teeth before bedtime
      
      \[8:15\] a.m. or p.m.

   b. Recess after lunch
      
      \[12:30\] a.m. or p.m.

4. Write what you might be doing if it were a.m. or p.m.

   a. a.m. __________________________

   b. p.m. __________________________

   c. a.m. __________________________

   d. p.m. __________________________
Lesson 15:

Tell time to the nearest five minutes; relate a.m. and p.m. to time of day.

Date: 1/30/14
Lesson 15: Tell time to the nearest five minutes; relate a.m. and p.m. to time of day.

Date: 1/30/14
Write the time, and circle a.m. or p.m.
Lesson 15: Tell time to the nearest five minutes; relate a.m. and p.m. to time of day.

Date: 1/30/14

Write the time, and circle a.m. or p.m.
Lesson 15: Tell time to the nearest five minutes; relate a.m. and p.m. to time of day.

Date: 1/30/14

Write the time, and circle a.m. or p.m.
Write the time, and circle a.m. or p.m.

Tell time to the nearest five minutes; relate a.m. and p.m. to time of day.

Date: 1/30/14
Write the time, and circle a.m. or p.m.

Tell time to the nearest five minutes; relate a.m. and p.m. to time of day.

Date: 1/30/14
Write the time, and circle a.m. or p.m.
Write the time, and circle a.m. or p.m.
Lesson 15:
Tell time to the nearest five minutes; relate a.m. and p.m. to time of day.
1/30/14

Write the time, and circle a.m. or p.m.
1. How much time has passed?
   a. 6:30 a.m. → 7:00 a.m.
   b. 4:00 p.m. → 9:00 p.m.
   c. 11:00 a.m. → 5:00 p.m.
   d. 3:30 a.m. → 10:30 a.m.
   e. 7:00 p.m. → 1:30 a.m.
   f. [Clock Images]
   g. [Clock Images]
   h. [Clock Images]
2. Solve.
   a. Tracy arrives at school at 7:30 a.m. She leaves school at 3:30 p.m. How long is Tracy at school?

   b. Anna spent 3 hours at dance practice. She finished at 6:15 p.m. What time did she start?

c. Andy finished baseball practice at 4:30 p.m. His practice was 2 hours long. What time did his baseball practice start?

d. Marcus took a road trip. He left on Monday at 7:00 a.m. and drove until 4:00 p.m. On Tuesday, Marcus drove from 6:00 a.m. to 3:30 p.m. How long did he drive on Monday and Tuesday?
Lesson 16 Exit Ticket

Name ________________________________ Date ______________

1. How much time has passed?
   
   a. 3:00 p.m. → 11:00 p.m. _____________
   
   b. 5:00 a.m. → 12:00 p.m. (noon) _____________
   
   c. 9:30 p.m. → 7:30 a.m. _____________
Lesson 16: Solve elapsed time problems involving whole hours and a half hour.

1. How much time has passed?
   a. 2:00 p.m. → 8:00 p.m. 
      _____________
   b. 7:30 a.m. → 12:00 p.m. (noon) 
      _____________
   c. 10:00 a.m. → 4:30 p.m. 
      _____________
   d. 1:30 p.m. → 8:30 p.m. 
      _____________
   e. 9:30 a.m. → 2:00 p.m. 
      _____________
   f. [Clock images]
      _____________
   g. [Clock images]
      _____________
   h. [Clock images]
      _____________

2. Solve.

Name ___________________________ Date ________________
Lesson 16:

Lesson 16 Homework

Solve elapsed time problems involving whole hours and a half hour.

Date: 1/30/14

a. Kylie started basketball practice at 2:30 p.m. and finished at 6:00 p.m. How long was Kylie at basketball practice?

b. Jamal spent 4 and a half hours at his family picnic. It started at 1:30 p.m. What time did Jamal leave?

c. Christopher took 2 hours doing his homework. He finished at 5:30 p.m. What time did he start his homework?

d. Henry slept from 8 p.m. to 6:30 a.m. How many hours did Henry sleep?
1. Complete the chart. Use the word bank below to identify the name of each shape. Not all of the names will be used.

<table>
<thead>
<tr>
<th></th>
<th>a.</th>
<th>b.</th>
<th>c.</th>
<th>d.</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td><img src="image1" alt="Shape A" /></td>
<td><img src="image2" alt="Shape B" /></td>
<td><img src="image3" alt="Shape C" /></td>
<td><img src="image4" alt="Shape D" /></td>
</tr>
<tr>
<td>b.</td>
<td>_______ sides</td>
<td>_______ sides</td>
<td>_______ sides</td>
<td>_______ sides</td>
</tr>
<tr>
<td>c.</td>
<td>_______ angles</td>
<td>_______ angles</td>
<td>_______ angles</td>
<td>_______ angles</td>
</tr>
<tr>
<td>d.</td>
<td>Name of shape:</td>
<td>Name of shape:</td>
<td>Name of shape:</td>
<td>Name of shape:</td>
</tr>
</tbody>
</table>

**Word Bank**

<table>
<thead>
<tr>
<th>hexagon</th>
<th>cube</th>
<th>square</th>
<th>triangle</th>
<th>pentagon</th>
<th>quadrilateral</th>
</tr>
</thead>
</table>

e. Sarah and Henry were asked to draw a hexagon. Sarah believes that only her drawing is correct. Explain why both shapes are hexagons.

Sarah’s Hexagon

Henry’s Hexagon
2.  
   a. Draw a shape with three sides. Make one of the angles of the shape a right angle. Which shape in Problem 1 has the same number of angles?

   b. Draw a shape with 4 right angles. Which shape in Problem 1 has the same number of angles?

3. Solve the following problems.
   a. Draw the shape that is one face of a cube.

   b. How many faces are on a cube? ________________

   c. How many corners are on a cube? ______________

   d. How many edges are on a cube? ________________

4. Complete each statement by circling the correct answer based on the figure below.

   a. One small triangle is what portion of the figure?
      1 fourth          1 half            1 third

   b. One square is what portion of the figure?
      1 fourth          1 half            1 whole

   c. One rectangle that is not a square is what portion of the figure?
      1 half              1 fourth        1 whole
1. Match each description to the correct shape name by drawing a line. Draw an example for each shape to the right.

   - five angles: triangle
   - three sides: quadrilateral
   - four angles: hexagon
   - six square faces: pentagon
   - six sides: cube

2. Partition each whole circle into equal shares of 2 halves, 3 thirds, and 4 fourths.

   - 2 halves
   - 3 thirds
   - 4 fourths
3. Solve.
   a. 1 whole = _____ halves  
       1 whole = _____ thirds  
       _______ fourths = 1 whole

   b. Use vertical lines to partition rectangle:
       A into halves.
       B into thirds.
       C into fourths.

   c. Use horizontal lines to partition rectangle:
       D into halves.
       E into thirds.
       F into fourths.
d. Circle all of the rectangles that are partitioned into fourths, and cross out any rectangle that is not partitioned into fourths.

![Rectangles](image)

4. Draw the hands on the analog clock to match the time shown on the digital clock. Then, circle a.m. or p.m. based on the description given.

   a. Time to go to school.

   ![Clock](image)

   **8:10** a.m. or p.m.

   b. Time for lunch.

   ![Clock](image)

   **12:25** a.m. or p.m.

   c. Time for dinner.

   ![Clock](image)

   **5:45** a.m. or p.m.
5. Write the time shown on each analog clock.

a. 

b. 

c. 

6. Write the time shown on each analog clock.
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Human Resources Director, Cattaraugus-Allegany BOCES, 1825 Windfall Road, Olean, NY 14760; 716-376-8237.