Geometry and Time

Student Workbook
Geometry and Time

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Lesson 1: Shapes That Are Solid

- Let’s sort and describe solid shapes.

Warm-up: Which One Doesn’t Belong: Shapes

Which one doesn’t belong?

A

![Square](image)

B

![Cube](image)

C

![Circle](image)

D

![Triangle](image)
1.1: Sort Solid Shapes

1. Sort some of the shapes into categories in a way that makes sense to you.
   Explain how you sorted the shapes.
2. Sort some of your shapes into categories in a different way. Explain how you sorted the shapes.
1.2: Describe and Find Shapes

- Pick a bag.

- Each partner feels the shape in the bag without looking at it and thinks about which shape it is.

- Each partner tells which shape they think it is and why.

- Look in the bag to check.

- Pick a different bag.
Lesson 2: Build Shapes from Other Shapes

- Let’s use solid shapes to build new shapes.

Warm-up: Notice and Wonder: A Shape Bridge

What do you notice?
What do you wonder?
Lesson 3: Shapes That Are Flat

• Let’s sort flat shapes and explain how we sorted.

Warm-up: Which One Doesn’t Belong: All the Shapes

Which one doesn’t belong?

A

B

C

D
3.2: Shape Sort Gallery Walk

Group 1: They sorted

Group 2: They sorted
Group 3: They sorted
Lesson 4: Draw Flat Shapes

- Let’s describe and draw shapes.

Warm-up: Notice and Wonder: Dot Paper

What do you notice?
What do you wonder?
4.1: Draw Shapes on Dot Paper

• Pick a shape card.

• Each partner draws the shape on dot paper.

• Take turns describing the shape you drew.
4.3: Centers: Choice Time

Choose a center.

Capture Squares

Compare

How Close?

\[ \square + \square \square = \square \]
Lesson 5: Some Triangles, All Triangles

- Let’s explore what makes a shape a triangle.

Warm-up: Which One Doesn’t Belong: Shapes

Which one doesn’t belong?

A

B

C

D
5.1: Triangles and “Not Triangles”

1. These are triangles.

What is the same about all these triangles?

______________________

______________________

______________________
2. These are not triangles.

What makes these shapes different from the triangles?
5.2: Draw Triangles

1. Draw 3 different triangles.

2. Draw 3 different shapes that are not triangles.
5.3: Centers: Choice Time

Choose a center.

Geoblocks

How Are They the Same?

Compare

How Close?

\[ \square + \square = \underline{} \]
Lesson 6: Rectangles and Squares

- Let’s explore what makes a shape a rectangle or a square.

Warm-up: Number Talk: Some Sums

Find the value of each expression mentally.

- 57 + 10

- 57 + 11

- 57 + 21

- 57 + 42
6.1: Rectangles and Squares

1. These are rectangles.

What is the same about all these rectangles?
2. These are not rectangles.

What makes these shapes different from the rectangles?
3. These are squares.

What is the same about all these squares?
4. These are not squares.

What makes these shapes different from the squares?
6.2: Draw Rectangles and Squares

1. Draw 5 rectangles.

How do you know these are rectangles?
2. Draw 3 shapes that are not rectangles.

How do you know these are not rectangles?
3. Draw 5 squares.

How do you know these are squares?
4. Draw 3 shapes that are not squares.

How do you know these are not squares?
Lesson 7: Put Together Flat Shapes

- Let’s build a new shape from smaller shapes.

Warm-up: Notice and Wonder: Dogs

What do you notice?
What do you wonder?
7.2: Shape Pictures

1. Build something using the pattern blocks.

   Trace what you made and record how many pattern blocks you used.
2. Make the same object you just made, using different pattern blocks.

Record how many pattern blocks you used.

If you have time: Build the same object again, using the most pattern blocks you can.
Record how many pattern blocks you used.
Section Summary

We learned about solid shapes.

We learned about flat shapes.

We described and named shapes.

This shape is a triangle because it has 3 straight sides and 3 corners.
These shapes are all rectangles because they have 4 straight sides and 4 square corners.

We built larger shapes from smaller shapes.
Lesson 8: Center Day 1

• Let's work with shapes and add or subtract numbers.

Warm-up: Number Talk: Add 3 Numbers

Find the value of each expression mentally.

• $6 + 4 + 8$

• $6 + 8 + 4$

• $6 + 8 + 5$

• $6 + 5 + 9$
8.2: Centers: Choice Time

Choose a center.

Picture Books

How Are They the Same?

Capture Squares
Lesson 9: Equal Pieces

- Let’s split shapes into equal-size pieces.

Warm-up: Which One Doesn’t Belong: Pieces of Shapes

Which one doesn’t belong?

A

B

C

D
9.1: Build a Circle

Synthesis:

Which of these shows equal pieces that make a circle?
9.2: Fold into Equal Pieces

1. Cut out one circle and one square.
   
   Fold each shape so that there are 2 equal pieces.

   Be ready to explain how you know your shape has 2 equal pieces.

2. Cut out one circle and one square.

   Fold each shape so that there are 4 equal pieces.

   Be ready to explain how you know your shape has 4 equal pieces.
## 9.3: Halves or Fourths

<table>
<thead>
<tr>
<th>split into halves</th>
<th>not split into halves</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Diagram" /></td>
<td><img src="image2" alt="Diagram" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>split into fourths</th>
<th>not split into fourths</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image3" alt="Diagram" /></td>
<td><img src="image4" alt="Diagram" /></td>
</tr>
</tbody>
</table>
1. Split each shape into halves.

2. Split each shape into fourths.

3. Split each shape into fourths.
4. Split each shape into halves.

5. Split each shape into halves.

6. Split each shape into fourths.
Lesson 10: One of the Pieces, All of the Pieces

- Let’s describe equal pieces of shapes.

Warm-up: Which One Doesn’t Belong: Split Shapes

Which one doesn’t belong?

A

B

C

D
10.1: Color a Piece

1. Split the square into halves.

Color in one of the halves.
How much of the square is colored in?

2. Split the circle into fourths.

Color in one of the fourths.
How much of the circle is colored in?
10.2: Card Sort: Shaded Pieces

1. Sort the cards into categories in a way that makes sense to you. Explain how you sorted the cards.
2. Sort your cards into these categories.
   Write the letter of each card in the space for its category.

A fourth or quarter is shaded | A half is shaded
| The whole shape is shaded | Not equal pieces |
10.3: Describe Equal Pieces

Here are some ways to describe the shapes.

- split into fourths
- split into halves
- split into quarters
- a half shaded
- a quarter shaded
- a fourth shaded
- two of the halves shaded
- four of the fourths shaded

Label each shape with at least one phrase from the lists.

1.

2.

3.
Lesson 11: A Bigger Piece

• Let’s compare the size of halves and fourths.
11.1: Which is Bigger?

1. ◦ Each partner cuts out their circle.
   ◦ Decide who will cut into halves and who will cut into fourths.
   ◦ Fold your circle into halves or fourths then cut it.
   ◦ Compare your pieces with your partner.
   ◦ What do you notice?
   ◦ Be ready to explain your thinking in a way that others will understand.
2. ○ Repeat with your squares.

○ Compare your pieces with your partner.

○ What do you notice?

○ Be ready to explain your thinking in a way that others will understand.
3. Write 2 things you notice about your pieces.
11.2: Priya and Han Share Roti

Priya and Han are sharing roti.

- Priya says, “I want half of the roti because halves are bigger than fourths.”

- Han says, “I want a fourth of the roti because fourths are bigger than halves because 4 is bigger than 2.”

Who do you agree with?

Show your thinking using drawings, numbers or words.

Use the circle if it helps you.
Section Summary

We learned that circles and rectangles can be split into two equal pieces which are called halves and four equal pieces which are called fourths or quarters.

A half of the square is shaded.

A fourth or a quarter of the circle is shaded.

Two of the halves are shaded.
Four of the fourths are shaded.
Lesson 12: Center Day 2

- Let’s work with shapes and numbers.

Warm-up: How Many Do You See: 2 or 3 Parts

How many do you see?
How do you see them?

![Diagram of shapes]

![Diagram of shapes]

![Diagram of shapes]
12.2: Centers: Choice Time

Choose a center.

Picture Books

Match Mine

Capture Squares

Target Numbers
Lesson 13: It’s Time to Learn About Clocks

- Let’s tell and write times from a clock.

Warm-up: Notice and Wonder: Clocks

What do you notice?
What do you wonder?

1:00
2:00
3:00
4:00
5:00
6:00
7:00
8:00
9:00
10:00
11:00
12:00
13.1: Card Sort: Clocks

What do you notice about this clock?

What do you wonder?
13.2: Connect Clocks to Written Times

These clocks both show the same time.

What time do they show?

How do you know?

[Image of a clock showing 1:00]
13.3: Our School Day
Fill in the clocks to show what time each activity starts.

**Arrival**

8:00

**Reading**

:**:**

**Snack**

10:00
Math

12:00

Lunch

Recess
Lesson 14: Half of the Clock

- Let’s learn more about time to the half hour.

Warm-up: Number Talk: Work with 30

Find the value of each expression mentally.

- $30 + 10$
- $30 + 15$
- $30 + 30$
- $30 + 35$
14.1: Put Times in Order

What do you notice?
What do you wonder?
14.2: Half Past What?

What time is shown on each clock?

If the time is half past, color the clock red.

If the time is o’clock, color the clock blue.

Write the time in words using half past or o’clock.

1. [Clock Image]

2. [Clock Image]
6.

What time is it?
14.3: Notice and Wonder: The Hands on the Clock
Go Round and Round
Lesson 15: Write Times

• Let’s write times in hours and half hours.

Warm-up: True or False: Close To 30

Decide if each statement is true or false.

Be prepared to explain your reasoning.

• $30 = 30$

• $10 + 15 = 15 + 10$

• $10 + 10 + 10 = 3$
15.1: Count the Minutes

Start at 12.

Count the minutes around the clock until you get to half the clock.

Circle where you stop.
Synthesis:
15.2: All the Time in the World

1. For each clock, write the time.
   a. 
   ![Clock](image)
   : 
   :
   
   b. 
   ![Clock](image)
   : 
   :
c.

![Image of a clock showing 6:00]

---

d.

![Image of a clock showing 12:00]
2. For each clock, draw the minute hand and write the time.
   a.
b.

![Clock](image)

![Time](image)

c.

![Clock](image)

![Time](image)
d.

```
\[9:00\]
```

e.

```
\[10:15\]
```
3. This clock only has a minute hand. What time could it be? Draw an hour hand and write the time.

If you have time: What other times can you show on the clock?
Lesson 16: Hard Times

- Let’s show time in hours and half-hours.

Warm-up: Number Talk: Tens and Ones

Find the value of each expression mentally.

- \(8 + 32\)

- \(8 + 33\)

- \(8 + 38\)

- \(8 + 48\)
16.2: What’s the Time, Again?

1. 

Diego says this clock shows 6:00.

Priya says the clock shows 12:30.

Who do you agree with? Why?
Synthesis:
### 16.3: Sunday Schedule

Fill in the blanks to show your ideal Sunday schedule.

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Clock</th>
</tr>
</thead>
<tbody>
<tr>
<td>:</td>
<td></td>
<td><img src="image1" alt="Clock" /></td>
</tr>
<tr>
<td>:</td>
<td></td>
<td><img src="image2" alt="Clock" /></td>
</tr>
<tr>
<td>:</td>
<td></td>
<td><img src="image3" alt="Clock" /></td>
</tr>
</tbody>
</table>
Section Summary

We learned how to tell time to the hour and half hour.

We learned when the minute hand points to the 12, the hour hand points to a number. We say “___ o’clock.”

It is 2 o’clock.

It is 8 o’clock.

We learned when the minute hand has gone halfway around the clock and points to the 6, the hour hand points halfway between 2 numbers. We say “half past ___.”

It is half past 3.

It is half past 6.
We learned how to write time.

It is 2:00.

It is 4:30.
Lesson 17: Center Day 3

- Let's work with shapes and numbers.

Warm-up: Which One Doesn’t Belong: Clocks

Which one doesn’t belong?

A

B

4:30

C

D
17.2: Centers: Choice Time

Choose a center.

Can You Draw It?  
Match Mine

Capture Squares  
Target Numbers
Section A: Practice Problems

1. Pre-unit

Name each shape.

- Triangle
- Circle
- Square
2. **Pre-unit**

Color in all of the triangles.
Cross out all of the rectangles.

3. **Pre-unit**

Cross out all of the circles.
4. Jada felt a shape in a bag.
   She felt a point and a curve.
   Circle the shape that could be in the bag.

   A.

   B.

   C.

   D.

(From Unit 7, Lesson 1.)
5. This is the tallest skyscraper in the world.

Use the blocks to build a shape that looks like the skyscraper.

(From Unit 7, Lesson 2.)
6. Here is how Diego sorted some shape cards.

Draw each shape where it belongs on Diego’s chart.

(From Unit 7, Lesson 3.)
7. Here is a shape.

a. Draw the shape on dot paper.

b. Describe the shape.

(From Unit 7, Lesson 4.)
8. Is this shape a triangle? Why or why not?
9.  a. Draw 2 different rectangles and 2 different squares.

![Rectangle Diagram]

![Square Diagram]

b. How are the shapes the same? How are they different?

_________________________________________________________________

_________________________________________________________________

_________________________________________________________________

_________________________________________________________________

(From Unit 7, Lesson 6.)
10. 

a. Use pattern blocks to fill the outline in different ways.

b. Write the number of pattern blocks you used for each way.

(From Unit 7, Lesson 7.)

11. Exploration

a. Choose an object in the classroom or outside and use the geoblocks to build the object.

b. Share your object with a partner and try to guess what your partner built.
12. **Exploration**

a. What is the smallest number of pattern blocks you can use to fill in the puzzle?

b. What is the largest number of pattern blocks you can use to fill in the puzzle?

c. Can you fill in the puzzle using exactly 12 pattern blocks?
Section B: Practice Problems

1. a. Han drew this picture to show a circle split into fourths.

Do you agree with Han?

Show your thinking using drawings, numbers, or words.

b. Split the rectangle into fourths.

(From Unit 7, Lesson 9.)
2.  a. Split the circle into fourths.
   
   b. Color in four of the fourths.
   
   (From Unit 7, Lesson 10.)

3.  a. How much of each rectangle is shaded?

   b. Circle the rectangle that has a bigger shaded piece.

   (From Unit 7, Lesson 10.)
4. **Exploration**

a. Kiran says half of the square is shaded.

Do you agree with Kiran?

Show your thinking using drawings, numbers, or words.

b. Priya says half of the square is shaded.

Do you agree with Priya?

Show your thinking using drawings, numbers, or words.
5. **Exploration**

Han wonders if half of the circle is shaded. What do you think?
Section C: Practice Problems

1. a. What time does each clock show?

   ![Clock 1](image1)
   ![Clock 2](image2)

   ____:______
   ____:______

b. Show each time.

   3:00
   7:00

(From Unit 7, Lesson 13.)
2. Han says the clock shows half past 11.

Do you agree with Han?
Show your thinking using drawings, numbers, or words.

(From Unit 7, Lesson 14.)
3. What time does each clock show?
   a. 
   ![Clock A]
   b. 
   ![Clock B]
   c. 
   ![Clock C]

(From Unit 7, Lesson 15.)
4. **Exploration**

Show the time during the day when you might do each of these things.

a. wake up in the morning

![Clock](image1)

b. go to school

![Clock](image2)
c. have a snack

\[
\begin{array}{c}
11 & 12 & 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 & 9 \\
10 & & & & & & & & & & \\
\end{array}
\]

d. go for recess

\[
\begin{array}{c}
11 & 12 & 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 & 9 \\
10 & & & & & & & & & & \\
\end{array}
\]

e. have lunch

\[
\begin{array}{c}
11 & 12 & 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 & 9 \\
10 & & & & & & & & & & \\
\end{array}
\]
Credits

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