

LETTER HOME

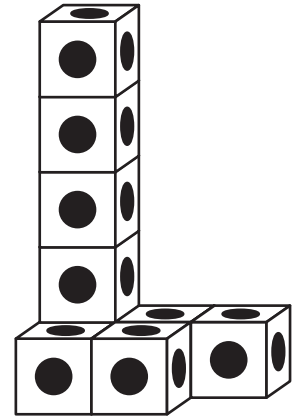
Cubes, Volume, and Repeated Addition

Dear Family Member:

What kind of structures has your child made with building blocks? houses? towers? skyscrapers? This unit extends students' experiences with building blocks and poses additional challenges. While constructing models made of cubes, students will explore the concept of volume using grouping and counting strategies. In particular, they will use repeated addition which lays the foundation for multiplication.

Students use height, width, and volume to describe and compare cube models. As we explore spatial relationships and ways to communicate them, you can provide additional support at home by doing the following activities:

- **Comparing Objects.** Find objects around your home for your child to compare. Ask your child which object is taller, which is longer from left to right and front to back, and which has more volume.
- **Copycat Buildings.** You and your child can take turns creating an original building from blocks or sugar cubes and then copying each other's structure. After completing each pair of buildings—the original and the copy—discuss with your child why the structures exactly match or do not match.



A cube model

Math Facts and Mental Math

This unit continues the development of the addition facts and related subtraction facts in Group B: $3 + 0$, $4 + 0$, $4 + 1$, $5 + 1$, $6 + 1$, $5 + 2$, $6 + 2$, $5 + 3$, $7 + 1$, $8 + 1$.

As you practice these facts with the flash cards at home, encourage your child to use good strategies to find the answers. Good strategies for Group B include:

Counting. To solve $6 + 1$, I think 6 in my head and count on 1 more to 7, or to solve $7 - 2$, I think 7 in my head and count back 2 to 5.

Zero. I know that any number plus zero is equal to that number, so $4 + 0 = 4$. I also know that any number minus zero is equal to that number, so $4 - 0 = 4$.

Thinking Addition. To solve $8 - 5$, I can think what number do I add to five to equal eight, or $5 + \quad = 8$. My answer is 3.

Thank you.

Sincerely,

Unit 13: Home Practice

Part 1 Addition Flash Cards: Group B

Take home your Addition Flash Cards: Group B. Ask a family member to choose one flash card at a time for you to solve. Sort the flash cards into three piles: Facts I Know Quickly, Facts I Can Figure Out, and Facts I Need to Learn. Clip the cards in the Facts I Know Quickly pile together and place them back into the envelope. Practice the facts in the last two piles again.

Part 2 Addition Facts

$8 + 5 = 13$

I thought about making ten.
First I moved 2 from 5 to make ten.

$(8 + 2) + 3 = 13$

Tara

Use Tara's strategy to solve these problems.

A. $9 + 5 =$

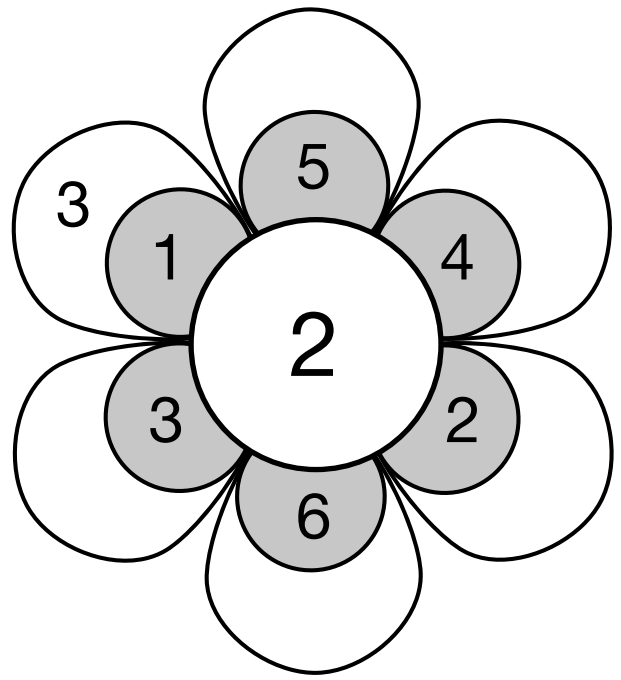
B. $8 + 6 =$

C. $7 + 5 =$

D. Tell how you solved Question C.

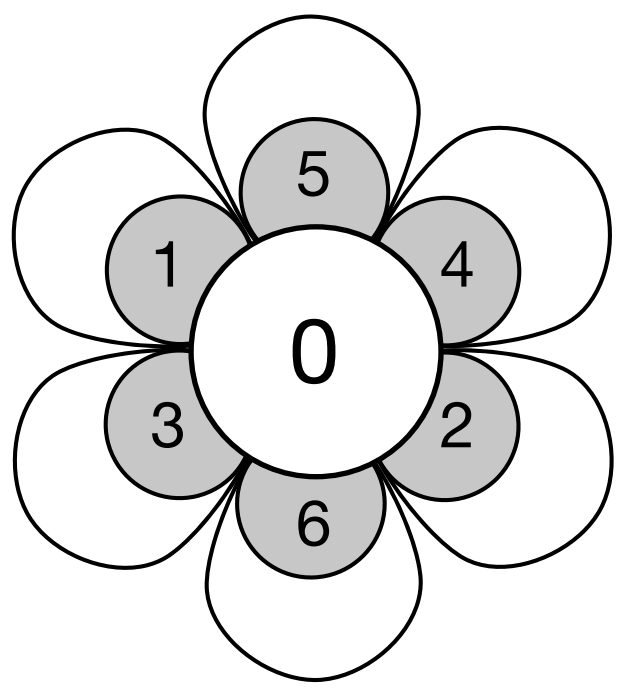
Part 3 Patterns with Sums

Add to find the number on the outside of each flower.



Number sentences

$$2 + 1 = 3$$



Number sentences

Part 4 Addition and Subtraction Practice

A. $8 - 3 = \square$

B.
$$\begin{array}{r} 4 \\ - 0 \\ \hline \square \end{array}$$

C.
$$\begin{array}{r} 8 \\ - 2 \\ \hline \square \end{array}$$

D. $\square = 9 - 1$

E. $7 + \square = 8$

F.
$$\begin{array}{r} 7 \\ - 2 \\ \hline \square \end{array}$$

G. $3 = 0 + \square$

H. $5 - 1 = \square$

I. $6 + \square = 7$

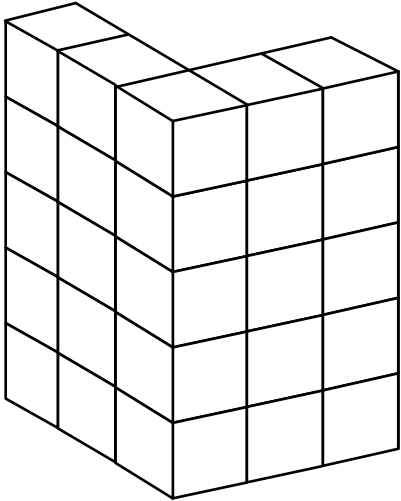
J.
$$\begin{array}{r} 5 \\ + 1 \\ \hline \square \end{array}$$

K. Show or tell how you solved Question E.

Part 5 Cube Models

Find the height and volume. Write a number sentence that shows how you find the volume. Include unit.

A.

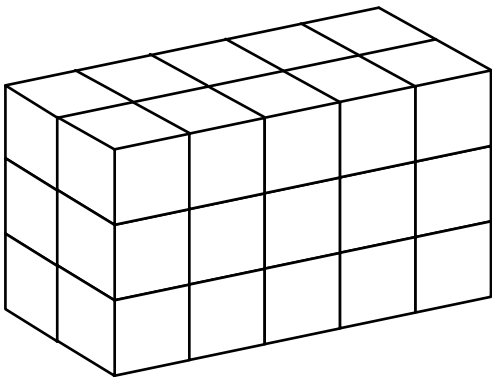


Height: _____

Volume: _____

Number Sentence: _____

B.



Height: _____

Volume: _____

Number Sentence: _____

Part 6 How Much Money

Find the total amount of money in each problem.

Write a number sentence.

1.      _____ ¢

Number sentence _____

2.       _____ ¢

Number sentence _____

3.    _____ ¢

Number sentence _____

4.        _____ ¢

Number sentence _____

Addition Flash Cards: Group B



Two
more

$$\begin{array}{r} 2 \\ + 5 \\ \hline \end{array}$$

Group B

Two
more

$$\begin{array}{r} 2 \\ + 6 \\ \hline \end{array}$$

Group B

One
more

$$\begin{array}{r} 4 \\ + 1 \\ \hline \end{array}$$

Group B

One
more

$$\begin{array}{r} 5 \\ + 1 \\ \hline \end{array}$$

●	●	●	●	●
×				

Group B

Zero

$$\begin{array}{r} 3 \\ + 0 \\ \hline \end{array}$$

Group B

Zero

$$\begin{array}{r} 4 \\ + 0 \\ \hline \end{array}$$

Group B

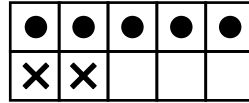


One
more

$$\begin{array}{r} 6 \\ + 1 \\ \hline \end{array}$$

Group B

Two
more



$$\begin{array}{r} 5 \\ + 2 \\ \hline \end{array}$$

Group B

Two
more

$$\begin{array}{r} 6 \\ + 2 \\ \hline \end{array}$$

Group B

One
more

$$\begin{array}{r} 7 \\ + 1 \\ \hline \end{array}$$

Group B

One
more

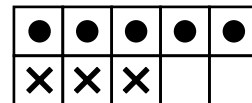
$$\begin{array}{r} 1 \\ + 8 \\ \hline \end{array}$$

Group B

Three
more

$$\begin{array}{r} 5 \\ + 3 \\ \hline \end{array}$$

Group B

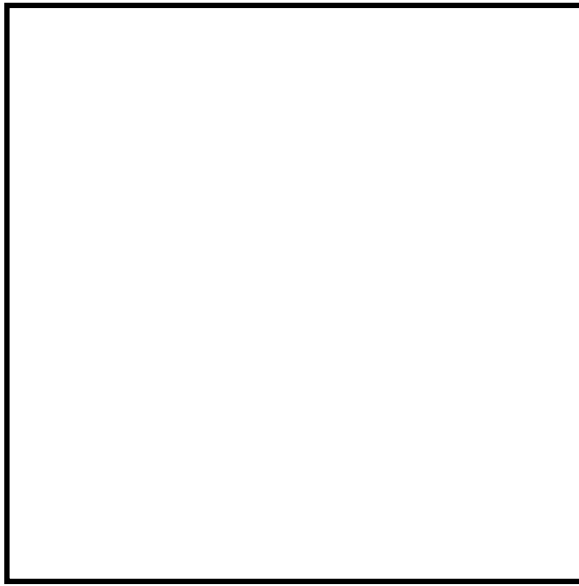


Addition Facts I Know

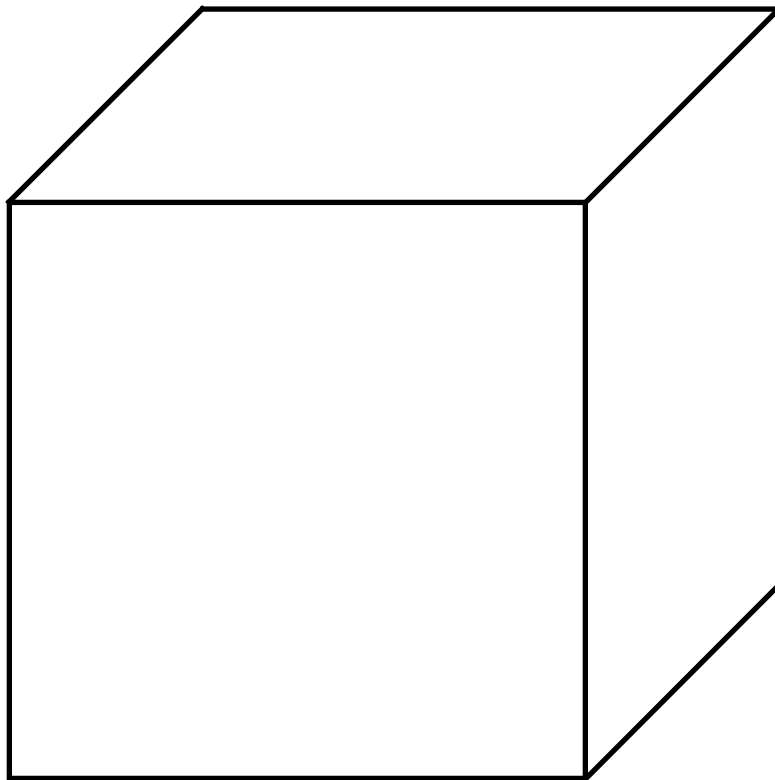
Circle the facts you know quickly.

$\begin{array}{r} 0 \\ + 1 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ + 1 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ + 2 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ + 3 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ + 4 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ + 5 \\ \hline \end{array}$
$\begin{array}{r} 0 \\ + 2 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ + 2 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ + 3 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ + 4 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ + 5 \\ \hline \end{array}$	
$\begin{array}{r} 0 \\ + 3 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ + 3 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ + 4 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ + 5 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ + 6 \\ \hline \end{array}$	
$\begin{array}{r} 0 \\ + 4 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ + 4 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ + 5 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ + 6 \\ \hline \end{array}$		
$\begin{array}{r} 0 \\ + 5 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ + 5 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ + 6 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ + 7 \\ \hline \end{array}$		
$\begin{array}{r} 0 \\ + 6 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ + 6 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ + 7 \\ \hline \end{array}$			
$\begin{array}{r} 0 \\ + 7 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ + 7 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ + 8 \\ \hline \end{array}$			
$\begin{array}{r} 0 \\ + 8 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ + 8 \\ \hline \end{array}$				
$\begin{array}{r} 0 \\ + 9 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ + 9 \\ \hline \end{array}$				

2-D and 3-D Shapes



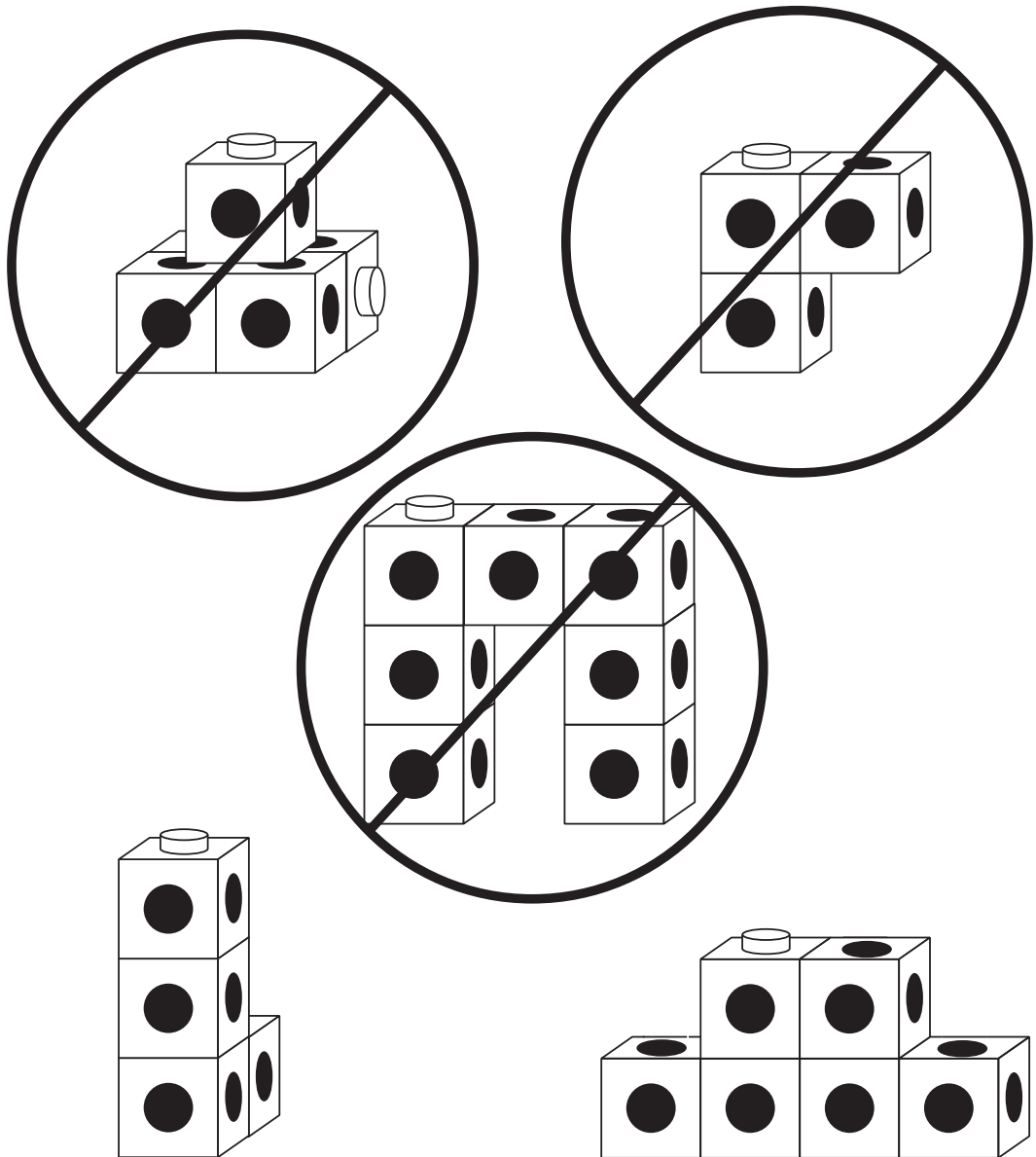
2-Dimensional Square



3-Dimensional Cube

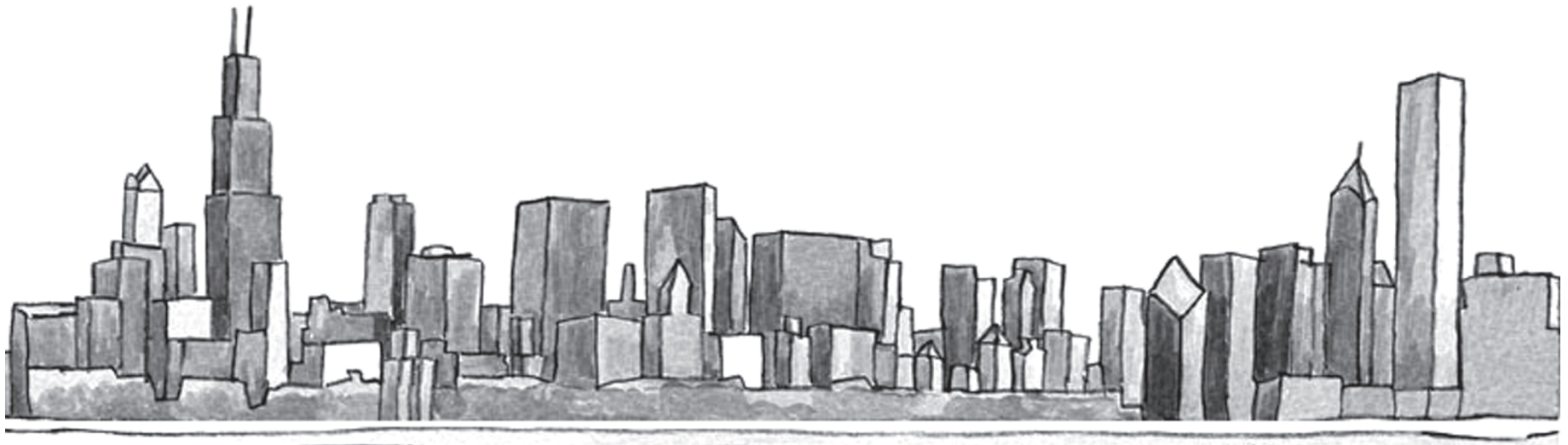
Rules for Cube Buildings

Cube models work only if we stack cubes properly.



Can you explain why these rules are needed for cube models to make sense?

Chicago Skyline



Height and Volume



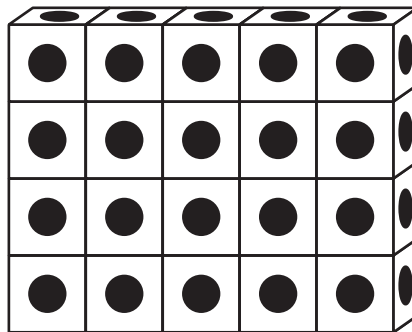
Dear Family Member:

We have been studying volume in math class using connecting cubes. Help your child find the volume and height of these structures using strategies such as skip counting or doubling.

Thank you.

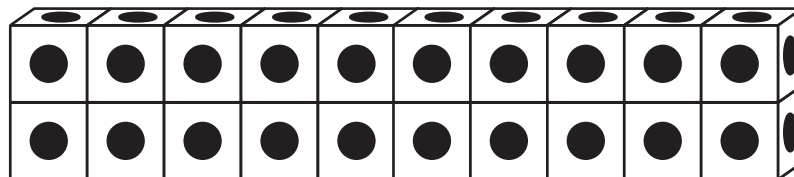
Find the volume and height of these buildings.

1.



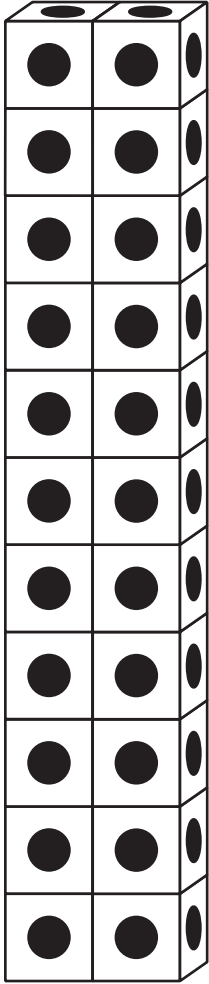
- A. height: _____ floors
- B. volume: _____ cubic units
- C. A number sentence that describes the volume of the building above is _____.

2.

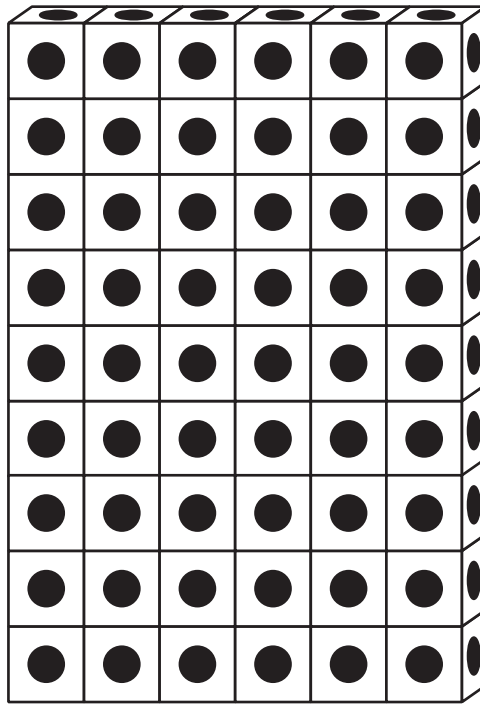


- A. height: _____ floors
- B. volume: _____ cubic units
- C. A number sentence that describes the volume of this building is _____.

TIMS Towers 1

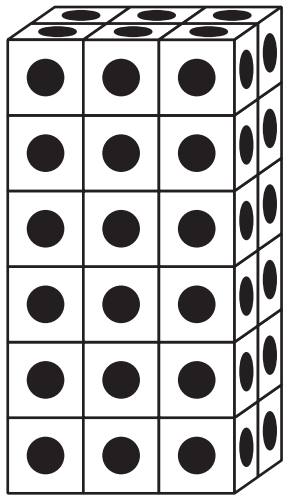


Tall Tower

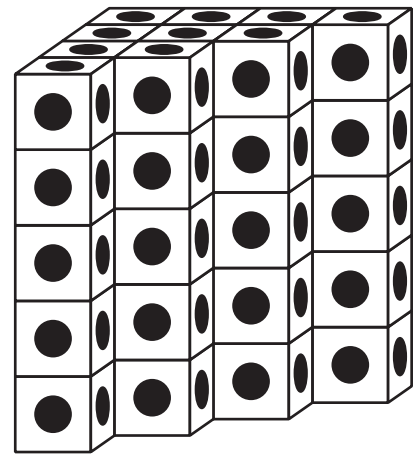


Sky-High Tower

TIMS Towers 2



Triple Double Tower

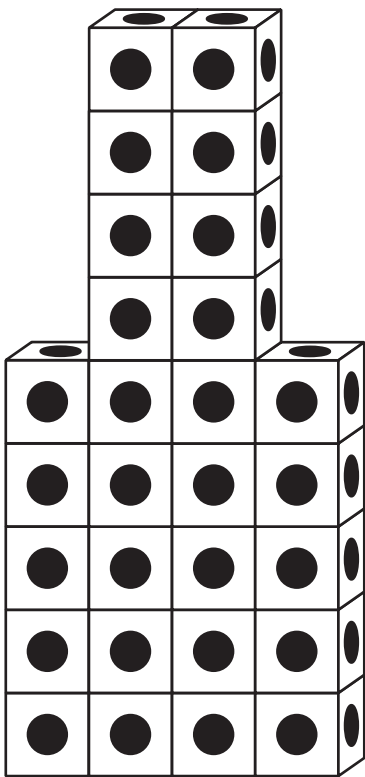


Sawtooth Tower

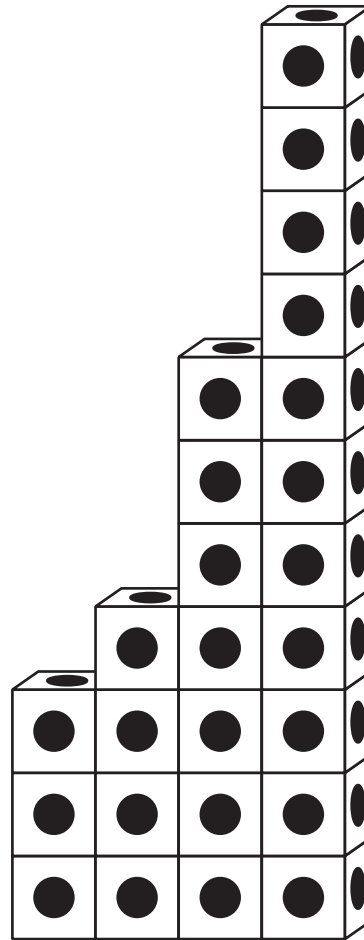
Two Towers



Find the volume of each tower. Include units.



Tower 1



Tower 2

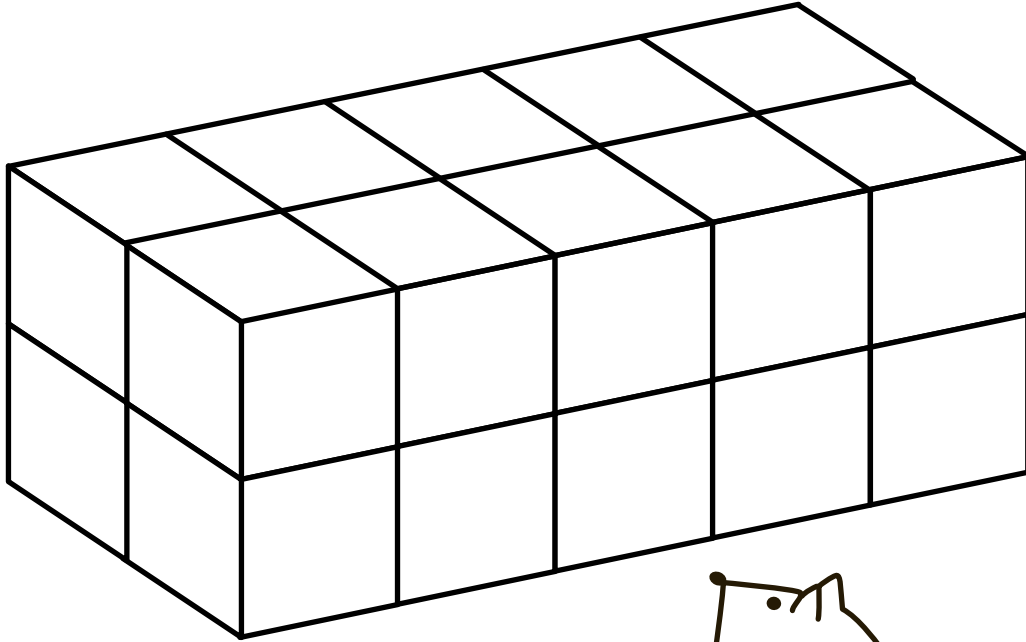
1. What is the volume of Tower 1? _____
2. What is the volume of Tower 2? _____

Name _____ Date _____

3. Which tower is taller? _____
4. Which tower has the greater volume? _____
5. Show or tell how you found the volume of Tower 1.

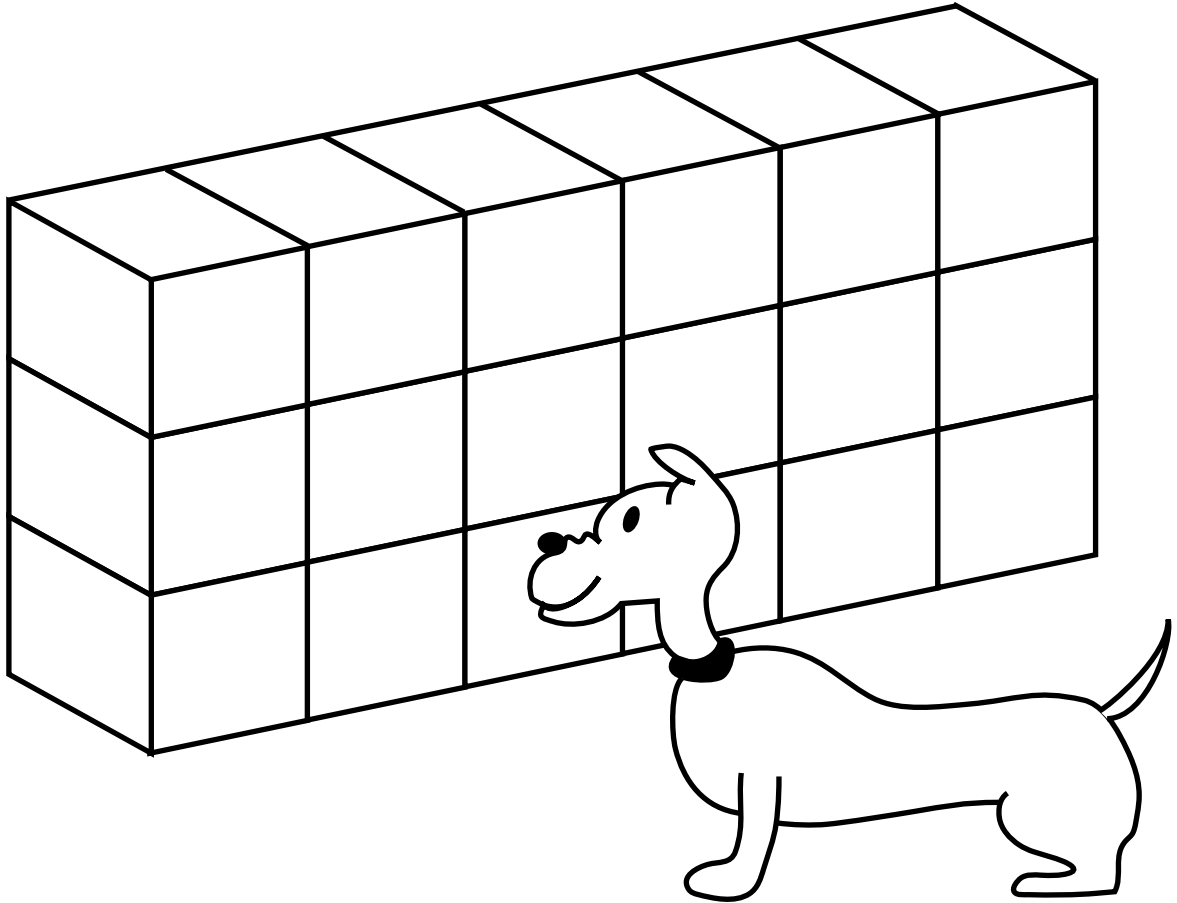
6. Write a number sentence to show how you found the volume of Tower 1.

A Gate for Ruffy



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A Gate for Gruffy



Time Match Cards

Digital 1

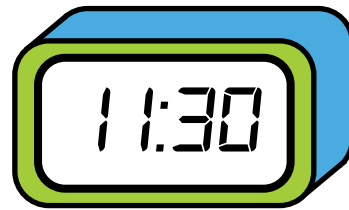
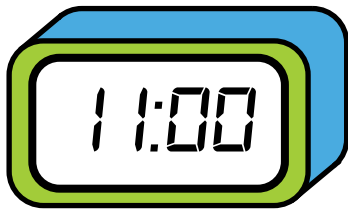


Digital 2

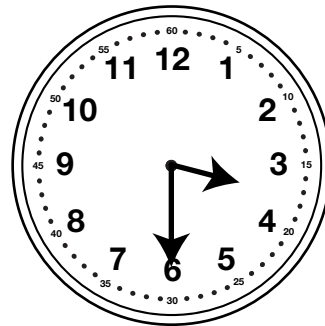
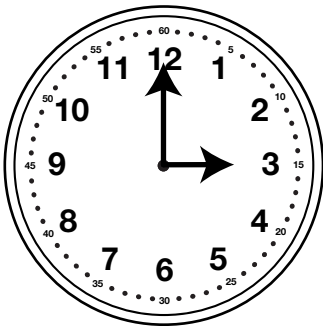
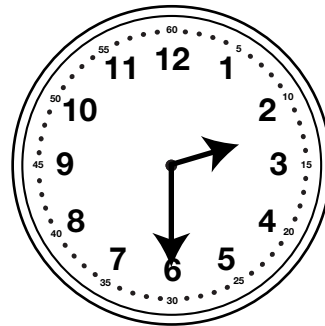
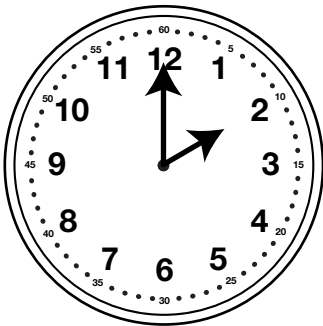
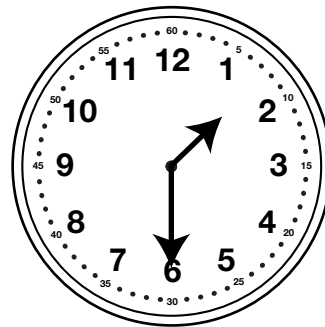
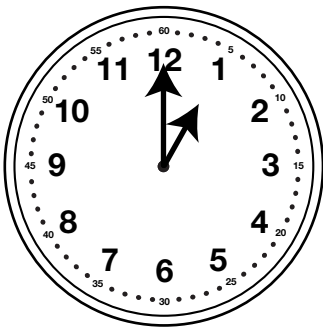
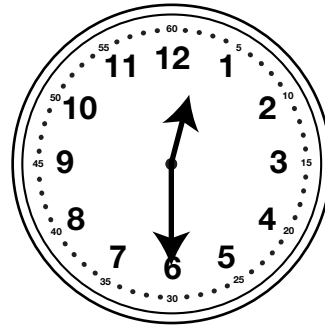
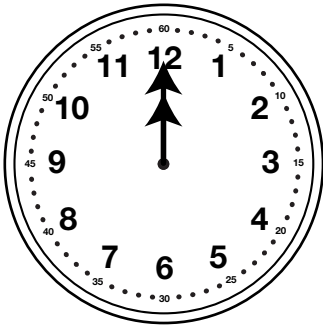


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Digital 3

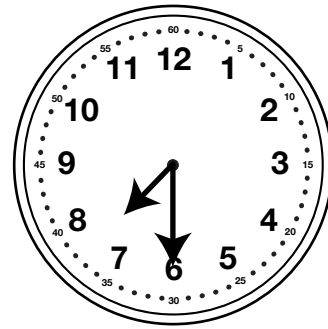
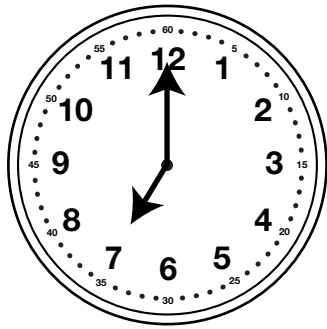
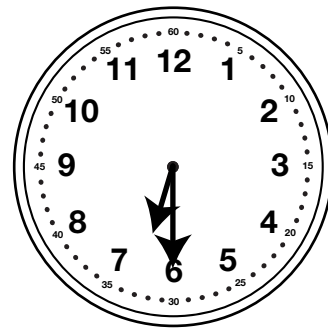
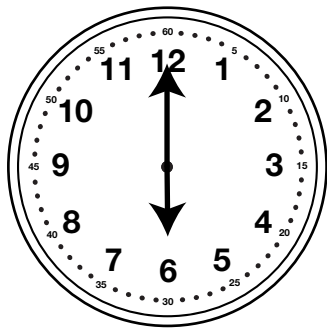
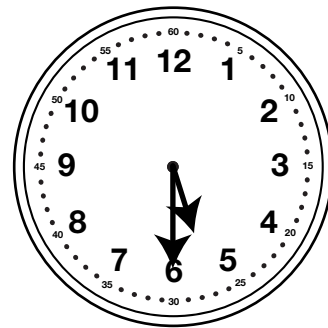
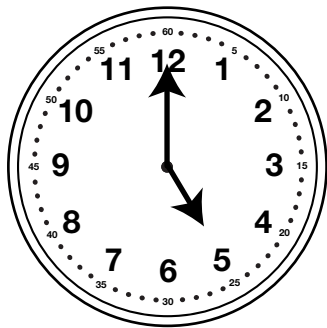
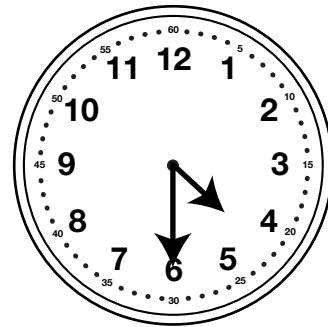
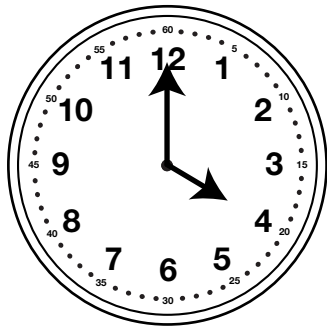


Analog 1

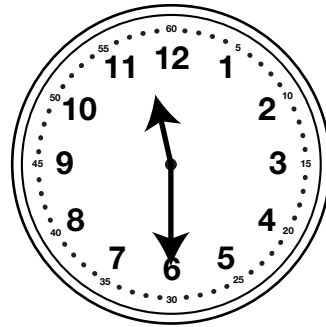
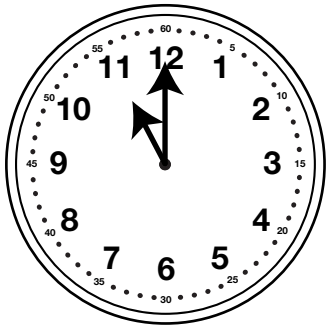
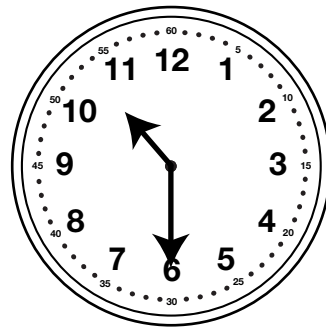
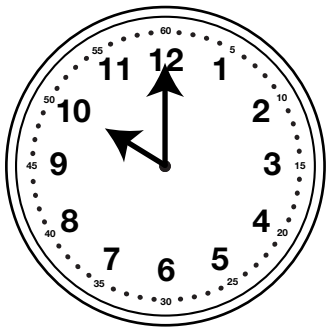
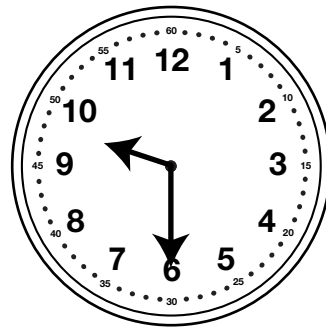
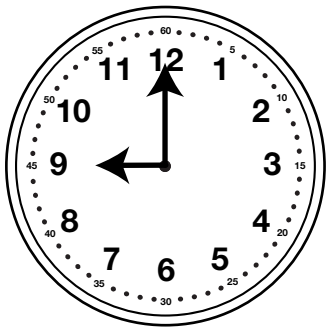
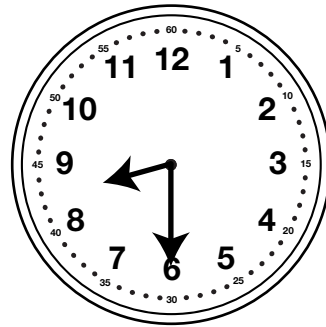
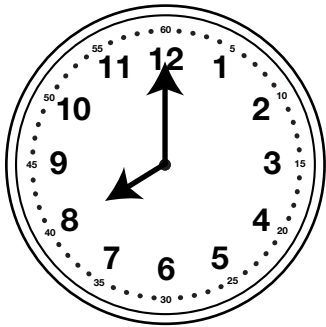


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Analog 2




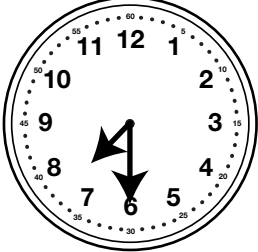

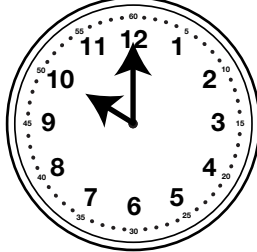
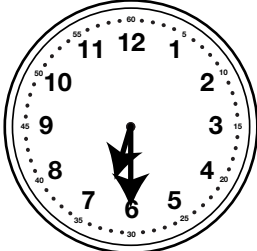

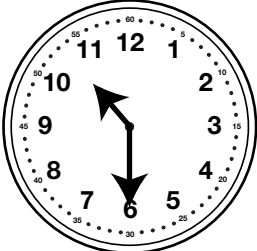

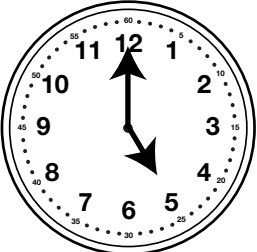


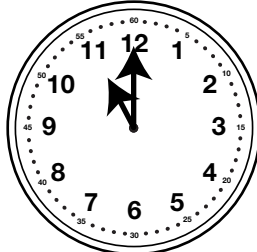

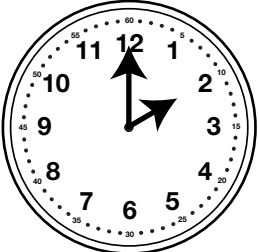
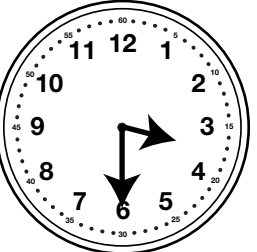

Analog 3



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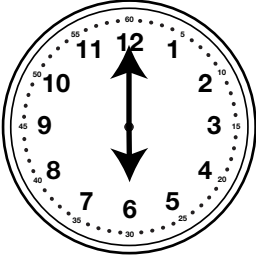


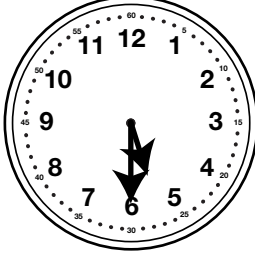

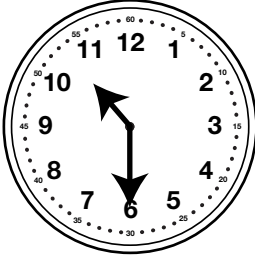
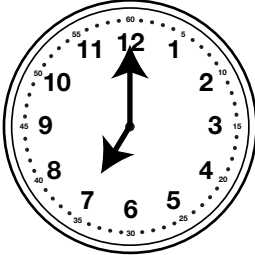


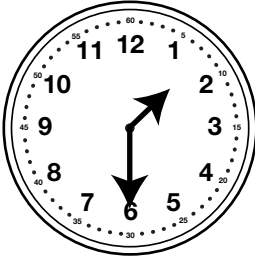

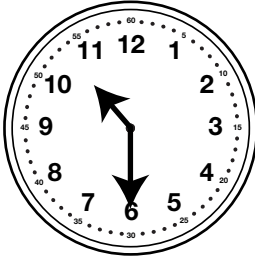
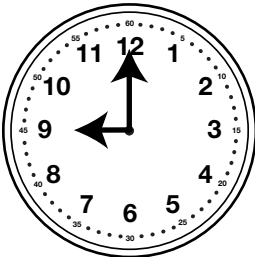

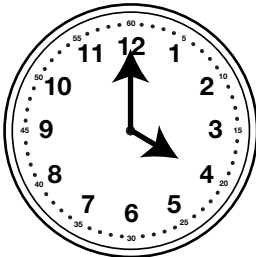

Time Match

Board 1



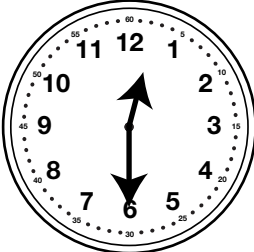
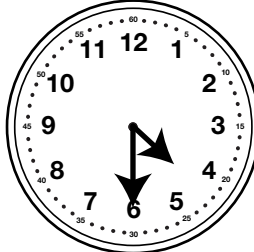
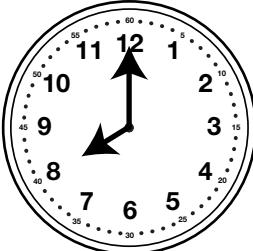

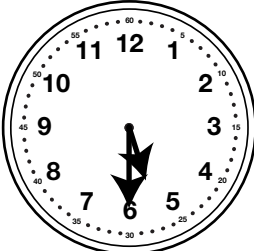

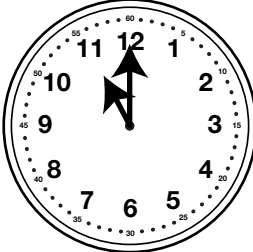
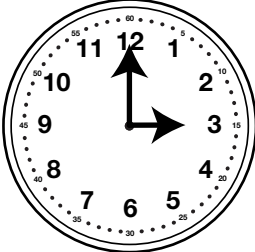



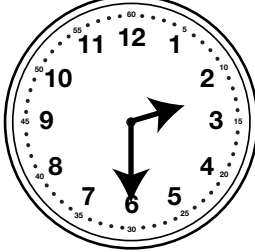

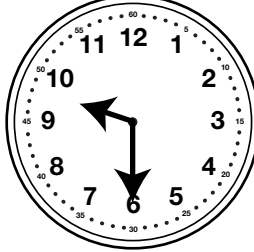
Time Match

Board 2

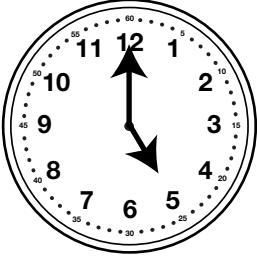

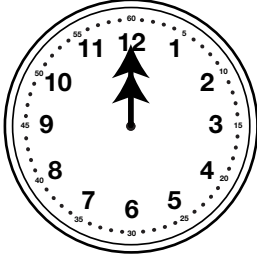

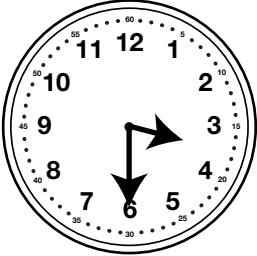


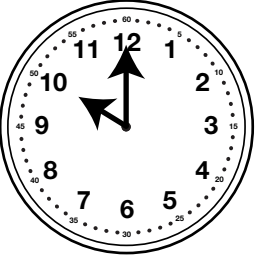

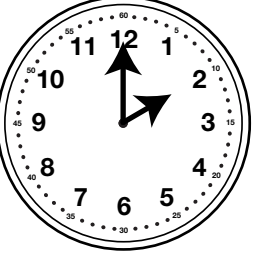
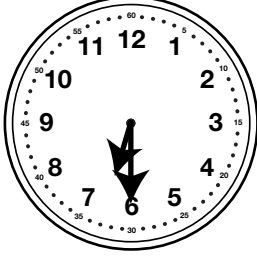

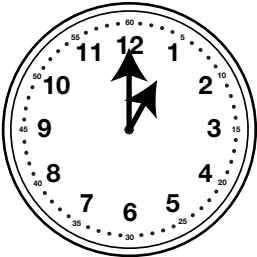


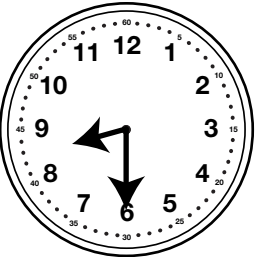
Time Match

Board 3




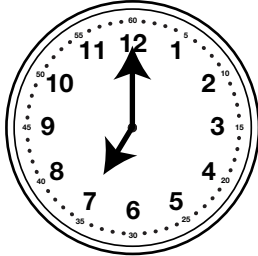
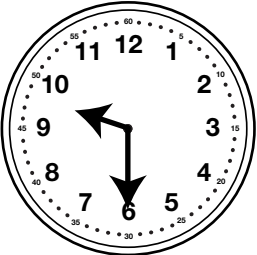

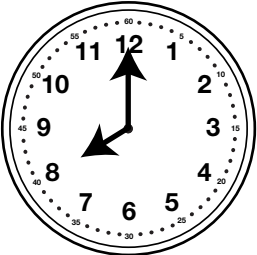


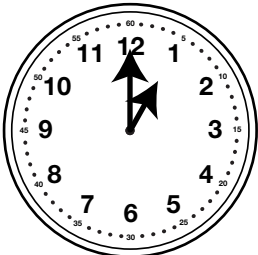

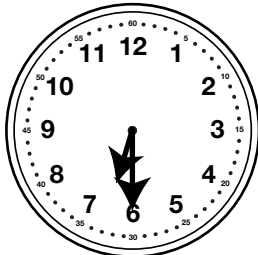
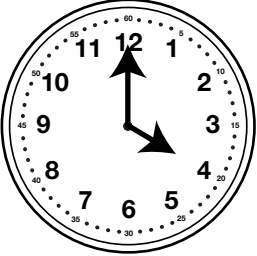

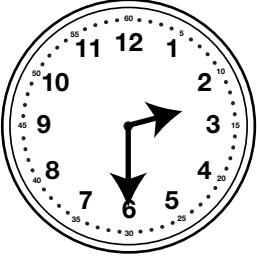

TIME Match

Board 4

TIME Match

Board 5

TIME Match

Board _____

