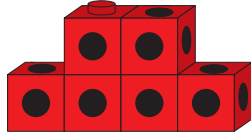


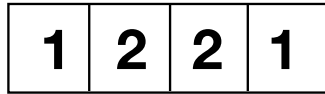
Student Activity Book

Building Plans (SAB pp. 509–510)
Questions 1–4

1.



2.



3. Possible responses:

$$1 + 2 + 2 + 1 = 6$$

$$1 + 4 + 1 = 6$$

$$2 + 4 = 6$$

$$3 + 3 = 6$$

4. A–B.* See discussion in the Lesson.

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Name _____ Date _____

Building Plans

Our Building Plan

- Build the model below.

Height = 2 units
Volume = 6 cubic units
- Make a building plan.

Back

Front

Left
Right
- Write a number sentence to describe the model.

_____ cubic units

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Name _____ Date _____

Sara's Buildings

- Sara made two buildings. Her plans are below.
 - Make Sara's buildings using her plans.
 - Which building do you think is the biggest? Explain why.

Back

1	1	1
1	1	1
1	1	1

Front

Building A

Back

	2	2
	2	2

Front

Building B

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*Answers and/or discussion are included in the lesson.

Name _____ Date _____

Find Volume

Sara and Sam's Building Plan

- Sara and Sam used cubes to make a building.



- Make Sara and Sam's building.

- Write two different number sentences that describe the volume in cubic units.

	Back			
	4	2	1	
Left	2	2	1	Right
	1	1	1	
	Front			

Find Volume (SAB pp. 511–514)

Questions 1–3

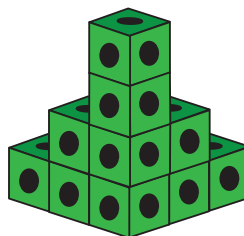
Number sentences will vary. Possible sentences are:

$4 + 2 + 1 + 2 + 2 + 1 + 1 + 1 + 1 = 15$ cubic units (counting by columns)

$9 + 4 + 1 + 1 = 15$ cubic units

(9 is the volume of the first floor, 4 is the volume of the second floor, and 1 is the volume of the 3rd and 4th floors.)

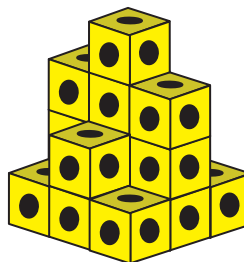
- A.



- $7 + 5 + 3 = 15$ (back to front)

$7 + 5 + 3 = 15$ (left to right)

- A.



- Models should match.

- 18 cubic units; Number sentences will vary. Possible sentences:

$1 + 2 + 1 + 3 + 4 + 3 + 1 + 2 + 1 = 18$ cubic units (counting by columns)

$5 + 8 + 5 = 18$ cubic units (counting rows from left to right)

$4 + 10 + 4 = 18$ (counting rows from front to back)

- *I added the number of cubes.

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Name _____ Date _____

Emily's Building Plan

✓ Check-In: Questions 2-3

- A. Use the plan below to build a building that looks like the one Emily built.

	Back			
	1	2	1	
Left	3	4	3	Right
	1	2	1	
	Front			

- Ask your teacher to show you the building he or she made using Emily's plan. Does it look like yours?

- What is the volume of the building? Write a number sentence. Include units.

- Show or tell how you found the volume.

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*Answers and/or discussion are included in the lesson.

Name _____ Date _____

3. A. Build a different building with all the same cubes.
 B. Draw a building plan of your building.

Back

C. What is the volume of your building? Include units.

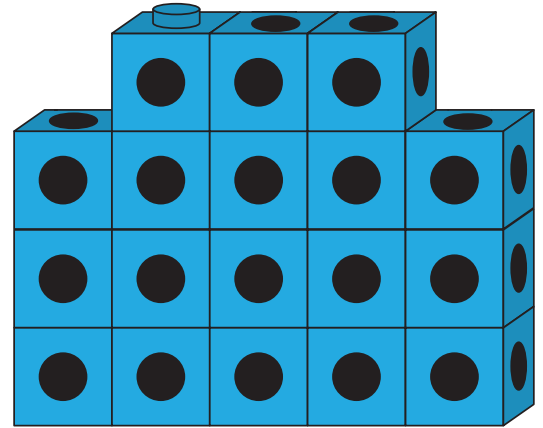
D. Compare the volume of Emily's building to the volume of your building. What do you notice?

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Building Plans in Cubeland SAB • Grade 2 • Unit 10 • Lesson 2 513

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3. A. Student's buildings will vary. possible building:



B. Students' building plans will vary. Possible building plan:



C. 18 cubic units;

$$3 + 4 + 4 + 4 + 3 = 18 \text{ cubic units}$$

D. The volume of Emily's building is the same as the volume of my building because I used the same number of cubes to make a different shape.

Name _____ Date _____

Find Volume
Check-In: Questions 2-3
Feedback Box

Question	Expectation	Check In	Comments
Apply the properties of addition to compose number sentences that represent the volume of a building. (Q# 2C, 2D)	E3		
Make connections between a building of cubes, the building plan, and number sentences. (Q# 2A, C, 3B, C)	E4		
Recognize that different shapes can have the same volume. (Q# 2B)	E6		
Count and add cubic units to find volume. (Q# 2C, D, 3C)	E8		

MIP25. Show my work. I show or tell how I arrived at my answer so someone else can understand my thinking. (Q# 2D)

MIP26. Use labels. Use labels to show what numbers mean. (Q# 2C)

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“What If” Volume Problems (SAB pp. 515–516)

Questions 1–6

1. 15 cubic units
2. 24 cubic units; number sentences will vary.
Possible sentences are: $15 + 9 = 24$ and $5 + 3 + 2 + 3 + 3 + 2 + 2 + 2 + 2 = 24$ cubic units
3. 36 cubic units; Number sentences will vary.
One possible sentence is:
 $4 + 4 + 4 + 4 + 4 + 4 + 4 + 4 + 4 = 36$ cubic units
4. 18 cubic units
5. Number sentences will vary.
Possible sentences: $18 + 9 + 9 = 36$ cubic units and $3 + 4 + 3 + 5 + 6 + 5 + 3 + 4 + 3 = 36$ cubic units
6. Number sentences will vary. Possible sentences are:
 $1 + 2 + 1 + 3 + 7 + 3 + 1 + 2 + 1 = 21$ cubic units
 $18 + 3 = 21$ cubic units

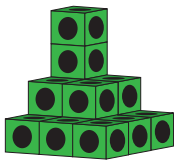
Name _____ Date _____

“What If” Volume Problems

Both Sara and Sam used this building plan to build the same buildings.

	Back										
	<table border="1" style="border-collapse: collapse; text-align: center;"> <tr><td>4</td><td>2</td><td>1</td></tr> <tr><td>2</td><td>2</td><td>1</td></tr> <tr><td>1</td><td>1</td><td>1</td></tr> </table>	4	2	1	2	2	1	1	1	1	
4	2	1									
2	2	1									
1	1	1									
Left		Right									
	Front										

Sara and Sam's Building Plan



1. What is the volume of this building?
_____ cubic units
2. What if Sam added one story to each column of his building? What will the new volume be? Write a number sentence to describe the new volume in cubic units.
_____ cubic units
3. What if Sara made all the columns on her building the same height as the tallest column? Write a number sentence to describe this volume in cubic units.
_____ cubic units

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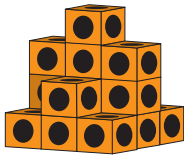
Name _____ Date _____

✓ **Check-In: Questions 4-6**

Miguel and Tara used this building plan to build the same buildings.

	Back										
	<table border="1" style="border-collapse: collapse; text-align: center;"> <tr><td>1</td><td>2</td><td>1</td></tr> <tr><td>3</td><td>4</td><td>3</td></tr> <tr><td>1</td><td>2</td><td>1</td></tr> </table>	1	2	1	3	4	3	1	2	1	
1	2	1									
3	4	3									
1	2	1									
Left		Right									
	Front										

Miguel and Tara's Building Plan



4. What is the volume of this building?
_____ cubic units
5. What if Miguel added two stories to each column of his building? What would the new volume be? Write a number sentence to describe the new volume in cubic units.
_____ cubic units
6. What if Tara decided to make the center column of her building seven stories high instead of four stories high? What would the new volume be? Write a number sentence to describe this volume in cubic units.
_____ cubic units

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