

LESSON 1.1 Skills Practice

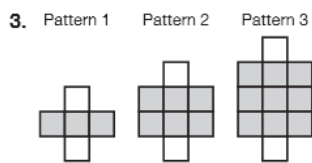
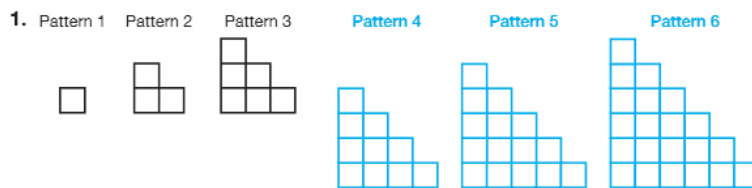
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Name _____ Date _____

Patterns: They're Grrrrrowing!
Exploring and Analyzing Patterns

Problem Set

Draw the next three terms for each pattern shown.

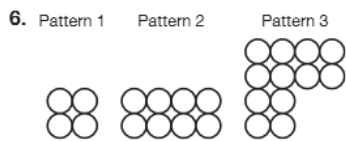
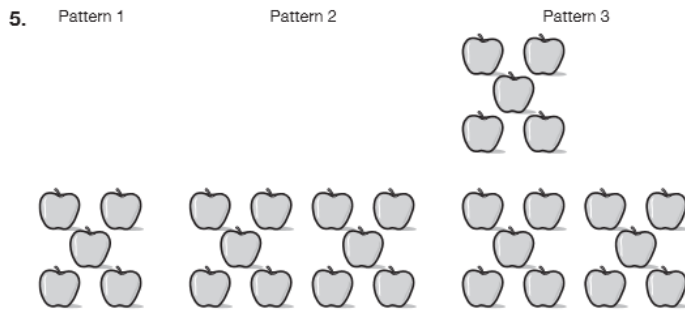
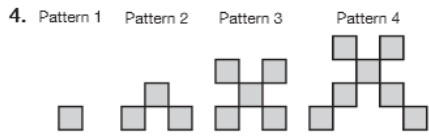


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1

LESSON 1.1 Skills Practice

page 2



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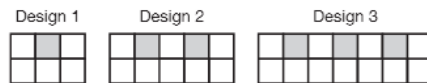
page 3

1

Name _____ Date _____

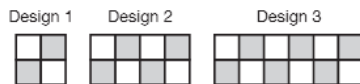
Answer the question for each pattern.

7. How many white tiles will be in Design 5 of the pattern? Explain your reasoning.



There will be 17 white tiles in Design 5 of the pattern. For every new design in the pattern, there are 3 white tiles added. So there will be $11 + 3 + 3$ or 17 white tiles in Design 5.

8. How many shaded tiles will be in Design 5 of the pattern? Explain your reasoning.



9. Gregory has a vegetable garden. This year, he gives two tomato plants to friends. Next year, those two friends each give away two tomato plants. The following year, those four friends give away two tomato plants. How many tomato plants have been given away? Show your work.

Time (years)	Number of Tomato Plants Given Away Per Year	Cumulative Total Number of Plants Given Away
1		
2		
3		

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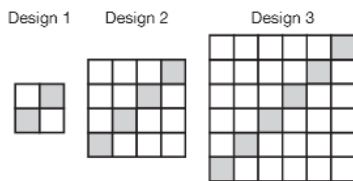
LESSON 1.1 Skills Practice

page 4

10. Charlene has a flourishing spider plant. She cuts three small pieces of the plant, called babies. She moves each baby into its own pot with soil. After one month, she is able to cut three babies off each of the original babies. She continues this pattern. How many baby plants will she have started after 5 months? Show your work.

Time (months)	Number of Baby Spider Plants
1	
2	
3	
4	
5	

11. How many white squares will be in Design 6 of the pattern? Explain your reasoning.



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LESSON 1.1 Skills Practice

page 5

1

Name _____ Date _____

12. Archie is playing an online game with friends. Each round of the game, he earns four times his current point total. The first three rounds are shown in the table. How many points does Archie have in round 6? Show your work.

Round	Number of Points
1	1
2	4
3	16

Determine the next number in each sequence. Explain your reasoning.

13. 6, 13, 27, 55, . . .

The next number in the sequence is 111. Each number in the sequence after the first number is two times the previous number plus one. So the next number would be $2 \cdot 55 + 1$ or 111.

14. 3, 5, 9, 17, . . .

1

LESSON 1.1 Skills Practice

page 6

15. 1, 4, 7, 10, . . .

16. 1, 5, 9, 13, . . .

17. 3, 8, 18, 38, . . .

18. 5, 8, 14, 26, . . .

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