

GOOD YEAR BOOKS

Sample Pages

Sample pages from this product are provided for evaluation purposes. The entire product is available for purchase at www.socialstudies.com or www.goodyearbooks.com

To browse eBook titles, visit
<http://www.goodyearbooks.com/ebooks.html>

To learn more about eBooks, visit our help page at
<http://www.goodyearbooks.com/ebookshelp.html>

For questions, please e-mail access@goodyearbooks.com

Free E-mail Newsletter—Sign up Today!

To learn about new eBook and print titles, professional development resources, and catalogs in the mail, sign up for our monthly e-mail newsletter at
<http://www.goodyearbooks.com/newsletter/>

For more information:

10200 Jefferson Blvd., Box 802, Culver City, CA 90232
Call: 800-421-4246 • Fax: 800-944-5432 (U.S. and Canada)
Call: 310-839-2436 • Fax: 310-839-2249 (International)

Copyright notice: Copying of the book or its parts for resale is prohibited.

PRIMARY ALGEBRA

Hope Martin

STUDENT WORKBOOK

Student Name: _____

Classroom: _____

Teacher: _____

Note: The separate Teacher's Edition includes solutions to all questions, mathematics background for each activity, extensions, and more.

Good Year Books

Our titles are available for most basic curriculum subjects plus many enrichment areas. For more Good Year Books, contact your local bookseller or educational dealer. For a complete catalog with information about other Good Year Books, please write to:

Good Year Books
A Division of Social Studies School Service
10200 Jefferson Boulevard
Culver City, CA 90232-0802
(800) 421-4246
www.goodyearbooks.com

Cover Design and Illustrations: Sean O'Neill
Text Design: Doug Goewey

Copyright ©2009 Hope Martin.
Printed in the United States of America.
All Rights Reserved.

ISBN-13: 978-1-59647-273-0

No part of this book may be reproduced in any form or by any means without permission in writing from the publisher.

Art Credits

Fotolia.com: coin photos (all except half-dollar), pp. 61–62, 91–94, © Mario Bruno; bananas illustration, pp. 26–27, by Dawn Hudson; French fries photo, p. 50, © khz.

iStock.com: ghost illustration, p. 53, © Brendon De Suza; toy train, jack-in-the-box, teddy bear illustrations, p. 64, © Alison Hess; half-dollar photo, pp. 61–62, 95, © Samuel Kessler; playing card illustrations, pp. 67–69, © Carol Woodstock.

Library of Congress: photo of Helen Keller, p. 45; portrait of Benjamin Franklin, p. 42, by Chas. Wilson Peale; photo of Florence Nightingale, p. 49, by Perry Pictures; portrait of George Washington, p. 44, by Gilbert Stuart.

Sean O'Neill: Legs illustration, p. 55; function machine illustrations, pp. 17–21; illustration of Martin Luther King, Jr., p. 46; illustration of Rosa Parks, p. 48.

U.S. Department of State: photo of Colin Powell, p. 43.

Wikipedia.org: photo of one-dollar bill, pp. 62, 96.

Contents

| | |
|---------------------------------|---|
| Introduction for Students | 1 |
|---------------------------------|---|

Activities

| | |
|--|----|
| Over and Over Again—Patterns That Repeat | 3 |
| Pattern Block Patterns That Grow | 6 |
| What Comes Next? | 8 |
| Patterns in the 100-Table | 11 |
| Using Patterns to Help Us Count | 13 |
| The Function Machine | 17 |
| What's My Rule? | 22 |
| Sudoku Puzzles | 24 |
| Number Riddles | 36 |
| Find the Year Puzzles | 42 |
| Math Jokes | 50 |
| Find the Missing Number | 56 |
| Domino Equations | 58 |
| Equations with Money | 61 |
| Find the Missing Toy | 64 |



| | |
|--------------------------------------|----|
| Balance the Scales with Shapes | 65 |
| Balance the Scales with Cards | 67 |
| The Unbalanced Scale | 70 |
| Spinner Math | 73 |
| Domino Algebra Game | 76 |
| Frog Jumps | 78 |
| Children's Literature | 80 |
| Interesting Web Sites | 83 |

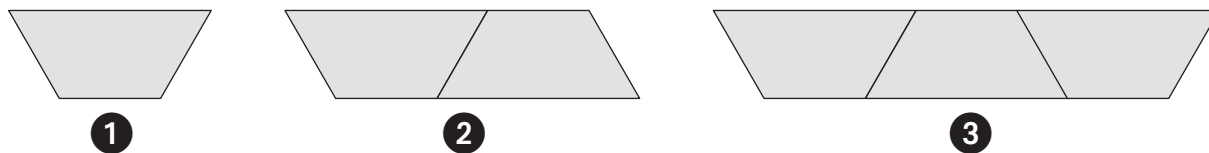
Appendix

| | |
|----------------------------|----|
| Pattern Block Pieces | 84 |
| 100-Chart | 90 |
| Play Money | 91 |
| Dominoes | 97 |
| Blank Spinners | 99 |

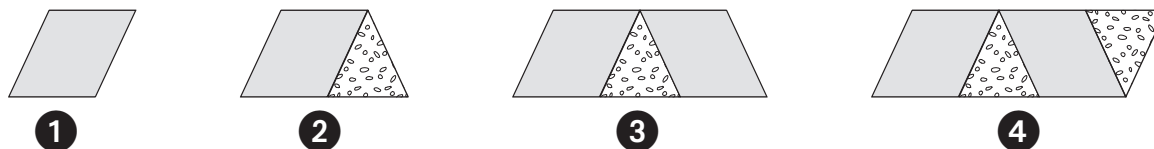
Pattern Block Patterns That Grow



Directions: Use your pattern blocks to make each of these growing patterns.



Each pattern above is called a “train.” What will the next, or “fourth train,” in this pattern look like? Draw a picture of it below. Explain how you solved this problem.



What will the “fifth train” in this pattern look like? How many triangles will there be? ____ How many trapezoids? ____ Draw a picture of the fifth train below. Explain how you solved this problem.

Work with your partner to find a “rule” that will help you figure out how many trapezoids and how many triangles there will be in the tenth train of this pattern. Explain how you solved this problem.

Design Your Own Pattern Block Patterns That Grow



Directions: Use pattern blocks to design an original growing pattern. You can use any blocks that you like, but remember: For it to be a **pattern**, you must be able to predict what will come next.

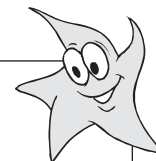
The first “train” of my pattern has: _____

The second “train” of my pattern has added _____ to the first.

The third “train” of my pattern has added _____ to the second.

Describe how your pattern grows.

This is a picture of the trains of my growing pattern:



[Large empty rounded rectangle for drawing the pattern trains]

What Comes Next?



Directions: Let's take a look at some number patterns. These are called sequences because there is a relationship among the numbers.

Examine each of these sequences. Then problem solve . . . “What comes next?”

- 1** “What comes next?” 1, 3, 5, 7, _____, _____, _____, _____,

In your own words, describe how the pattern is formed:

- 2** “What comes next?” 1, 3, 6, 10, _____, _____, _____, _____,

This pattern grows in a different way. In your own words, describe how the pattern is formed:

- 3** “What comes next?” 30, 26, 22, 18, _____, _____, _____, _____,

This pattern is different from the others. In your own words, describe how the pattern is formed:

- 4** “What comes next?” 1, 2, 3, 5, 8, 13, _____, _____, _____, _____,

This pattern is very different! In your own words, describe how the pattern is formed:

What Comes Next (continued)



Examine each of these sequences. Then problem-solve . . .

“What comes next?”

- 5 “What comes next?” 45, 40, 35, 30, _____, _____, _____, _____,
In your own words, describe how the pattern is formed:

- 6 “What comes next?” 1, 2, 4, 8, 16, _____, _____, _____, _____,
This pattern grows in a different way. In your own words, describe
how the pattern is formed:

- 7 “What comes next?” 24, 30, 36, 42, _____, _____, _____, _____,
This pattern is different from the others. In your own words, describe
how the pattern is formed:

- 8 “What comes next?” 5, 6, 9, 14, 21, 30 _____, _____, _____, _____,
This pattern is very different! In your own words, describe how the
pattern is formed:

Design Your Own Number Sequences



Directions: Now it's your turn to make up your own number sequences. Be as creative as you wish. Place your first four numbers in the boxes—check carefully to make sure that your numbers form a sequence. Then share your sequences with your partner—you solve his or hers and your partner will solve yours.

| | | | | | | | | | | | | | | |
|----------------------|---|----------------------|---|----------------------|---|----------------------|---|-------|---|-------|---|-------|---|-------|
| <input type="text"/> | , | <input type="text"/> | , | <input type="text"/> | , | <input type="text"/> | , | _____ | , | _____ | , | _____ | , | _____ |
|----------------------|---|----------------------|---|----------------------|---|----------------------|---|-------|---|-------|---|-------|---|-------|

| | | | | | | | | | | | | | | |
|----------------------|---|----------------------|---|----------------------|---|----------------------|---|-------|---|-------|---|-------|---|-------|
| <input type="text"/> | , | <input type="text"/> | , | <input type="text"/> | , | <input type="text"/> | , | _____ | , | _____ | , | _____ | , | _____ |
|----------------------|---|----------------------|---|----------------------|---|----------------------|---|-------|---|-------|---|-------|---|-------|

| | | | | | | | | | | | | | | |
|----------------------|---|----------------------|---|----------------------|---|----------------------|---|-------|---|-------|---|-------|---|-------|
| <input type="text"/> | , | <input type="text"/> | , | <input type="text"/> | , | <input type="text"/> | , | _____ | , | _____ | , | _____ | , | _____ |
|----------------------|---|----------------------|---|----------------------|---|----------------------|---|-------|---|-------|---|-------|---|-------|

| | | | | | | | | | | | | | | |
|----------------------|---|----------------------|---|----------------------|---|----------------------|---|-------|---|-------|---|-------|---|-------|
| <input type="text"/> | , | <input type="text"/> | , | <input type="text"/> | , | <input type="text"/> | , | _____ | , | _____ | , | _____ | , | _____ |
|----------------------|---|----------------------|---|----------------------|---|----------------------|---|-------|---|-------|---|-------|---|-------|

| | | | | | | | | | | | | | | |
|----------------------|---|----------------------|---|----------------------|---|----------------------|---|-------|---|-------|---|-------|---|-------|
| <input type="text"/> | , | <input type="text"/> | , | <input type="text"/> | , | <input type="text"/> | , | _____ | , | _____ | , | _____ | , | _____ |
|----------------------|---|----------------------|---|----------------------|---|----------------------|---|-------|---|-------|---|-------|---|-------|

| | | | | | | | | | | | | | | |
|----------------------|---|----------------------|---|----------------------|---|----------------------|---|-------|---|-------|---|-------|---|-------|
| <input type="text"/> | , | <input type="text"/> | , | <input type="text"/> | , | <input type="text"/> | , | _____ | , | _____ | , | _____ | , | _____ |
|----------------------|---|----------------------|---|----------------------|---|----------------------|---|-------|---|-------|---|-------|---|-------|

| | | | | | | | | | | | | | | |
|----------------------|---|----------------------|---|----------------------|---|----------------------|---|-------|---|-------|---|-------|---|-------|
| <input type="text"/> | , | <input type="text"/> | , | <input type="text"/> | , | <input type="text"/> | , | _____ | , | _____ | , | _____ | , | _____ |
|----------------------|---|----------------------|---|----------------------|---|----------------------|---|-------|---|-------|---|-------|---|-------|

Patterns in the 100-Table— Counting by 3s



Directions: Count by 3 in the table below, and shade in each third number. For example, count 1, 2, 3, and color in the number 3. Continue counting 1, 2, 3, ..., and what number do you come to? That's right—6. Shade in the 6. Continue, counting carefully, and shade in the number you get to when you say “3.”

| | | | | | | | | | |
|----|----|----|----|----|----|----|----|----|-----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
| 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 |
| 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 |
| 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 |
| 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 |
| 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 |
| 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |

Write out all of the numbers that are shaded. Do you see a pattern? Describe it.

Patterns in the 100-Table— My Own Number



Directions: Choose another number and use that number to count off a pattern on this hundreds table.

I chose the number _____. The first number I will shade will be a _____.

The next number I will shade in will be a _____.

| | | | | | | | | | |
|----|----|----|----|----|----|----|----|----|-----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
| 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 |
| 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 |
| 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 |
| 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 |
| 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 |
| 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |