

SPECTRUM[®]

MATH

Grade 2

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Spectrum[®]

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Spectrum Introduction

For more than 20 years, Spectrum® workbooks have been the solution for helping students meet and exceed learning goals. Each title in the Spectrum workbook series offers grade-appropriate instruction and reinforcement in an effective sequence for learning success.

Spectrum partners with you in supporting your student's educational journey every step of the way! This book will help them navigate Grade 2 math and will give you the support you need to make sure they learn everything they need to know. Inside you will find:

Chapter Introductions

These introductions provide useful information about the chapter. They may include:

Helpful Definitions

These terms either appear in the chapter or are important for the skills being taught.

Tools and Tips

Tools and tips to support and reinforce skills are explained here.

Chapter 1: Addition and Subtraction Facts through 10 ...

Helpful Definitions

math fluency the ability to quickly recall equations such as addition and subtraction facts

While it is important for your student to understand how addition and subtraction work, it is also important for them to learn to solve problems quickly and correctly in their heads. The addition and subtraction problems in this chapter should fall into this category.

fact family a set of addition and subtraction facts that are related by being made from the same numbers. For example, the numbers 5, 4, and 9 are a fact family.

$$\begin{array}{l} 5 + 4 = 9 \\ 4 + 5 = 9 \\ 9 - 5 = 4 \\ 9 - 4 = 5 \end{array}$$

word problem a math problem expressed with words, usually describing a real-life scenario where the math concept could occur

Skills Checklist

- Demonstrate fluency for addition and subtraction through 10
- Solve word problems using addition and subtraction through 10
- Understand the relationship between addition and subtraction through 10
- Understand the relationship between counting on and back and addition and subtraction
- Find the unknown number in addition and subtraction equations within 10

Tools and Tips

Fact Families
Seeing how numbers are related in a fact family builds the understanding of the relationship between addition and subtraction. Addition can undo subtraction and vice-versa. To help your student with fact families, make up word problems like this:

There are 4 black kittens and 3 white kittens. What is the sum of black plus white? What is the sum of white plus black? How many are left awake when the white kittens nap? How many are left awake when the black kittens nap?

Clue Words
In the future, your student will need to identify what math operation needs to be done to solve a word problem. To help your student prepare for this, point out the clue words that make a word problem either addition or subtraction.

Addition	Subtraction
in all	fewer
sum	left
total	take away
altogether	minus
plus	difference
add	remain

However, clue words can sometimes point students to the wrong operation. So, it is very important to make sure your student understands the context of each problem before solving. This is where acting out problems, drawing what's happening, or using hands-on items like pennies, fish crackers, or paper clips to act out the problem can give your student a solid understanding of which operation the problem is asking them to do.

Skills Checklist

This checklist helps ensure your student is practicing grade-level skills.

Lessons

Lesson 2.1 Counting and Writing 10 through H
Complete
1. [base ten blocks] ____ ten ____ ones = ____

These pages begin with a definition, step-by-step instructions where needed, and examples, followed by independent practice.

Enrichment

How many more students play soccer than play guitar?

These problems appear throughout the book. They allow your student to dig deeper and apply the skill they learned in a different way than it is practiced on the page. The two types of problems will ask your student to think critically and explain reasoning .

Pretests

Pretest Chapter 1
Add
1. $\begin{array}{r} 4 \\ +0 \\ \hline \end{array}$ 2. $\begin{array}{r} 6 \\ +0 \\ \hline \end{array}$ 3. $\begin{array}{r} 2 \\ +1 \\ \hline \end{array}$ 4. $\begin{array}{r} 3 \\ +2 \\ \hline \end{array}$ 5. $\begin{array}{r} 1 \\ +1 \\ \hline \end{array}$ 6. $\begin{array}{r} 3 \\ +0 \\ \hline \end{array}$

These quick skill assessments serve as a starting point for the chapter. They will include the skills covered in the chapter and allow your student to gage what they already know and what they need extra practice with.

Posttests

Posttest Chapter 3
Add
1. $\begin{array}{r} 8 \\ +6 \\ \hline \end{array}$ 2. $\begin{array}{r} 6 \\ +9 \\ \hline \end{array}$ 3. $\begin{array}{r} 2 \\ +9 \\ \hline \end{array}$ 4. $\begin{array}{r} 4 \\ +9 \\ \hline \end{array}$ 5. $\begin{array}{r} 7 \\ +8 \\ \hline \end{array}$ 6. $\begin{array}{r} 7 \\ +5 \\ \hline \end{array}$

These end-of-chapter assessments test to see if your student gained the skills they needed from the chapter they just completed. You can compare these tests to the pretests and measure your student's growth.

Learning Checkpoints

Learning Checkpoint Chapters 1-2
Add or subtract
[base ten blocks] [base ten blocks] [base ten blocks] [base ten blocks] [base ten blocks]

These reviews break up the book into halfway points to prepare your student for the final test.

Final Test

Final Test
Add
1. $\begin{array}{r} 5 \\ +3 \\ \hline \end{array}$ 2. $\begin{array}{r} 8 \\ +2 \\ \hline \end{array}$ 3. $\begin{array}{r} 0 \\ +0 \\ \hline \end{array}$ 4. $\begin{array}{r} 1 \\ +3 \\ \hline \end{array}$ 5. $\begin{array}{r} 6 \\ +4 \\ \hline \end{array}$ 6. $\begin{array}{r} 2 \\ +2 \\ \hline \end{array}$

This test covers the skills learned in the book. Use this comprehensive test to assess what your student has learned and to identify what they still need to work on.

Answer Key

The answers to the lessons, reviews, and tests are provided in an answer key.

Chapter 1: Understanding and Using Numbers

Helpful Definitions

skip counting: a technique that is used to count numbers in a fixed interval, also called a skip

Rather than counting one by one, students can skip from number to number in a set skip such as by 2s: 0, 2, 4, 6, 8, 10

odd numbers: whole numbers that are not able to be divided by 2 into equal whole numbers

even numbers: whole numbers that can be divided by 2 into equal whole numbers

array: a visual arrangement of objects in rows and columns

Skills Checklist

- Skip count in set intervals
- Determine if a group of numbers (up to 20) is odd or even
- Find the total number of objects in an array
- Write equations about arrays

Tools and Tips

Multiplication and Division Foundations

This chapter begins to build the foundations of multiplication and division. Though not taught until grade 3, the concepts in this chapter will ensure students have the skills they need when the time comes.

Skip counting is an early foundation for understanding multiplication and division. When students skip count, they are also naming multiples of the number they are skip counting by. This will help when multiplication is introduced.

If they are asked "What does 2×5 equal?", they can also think of it as skip counting by 2 five times:

$$\begin{array}{cccccc} 1 & 2 & 3 & 4 & 5 & \\ 2, & 4, & 6, & 8, & 10 & \\ 2 & \times & 5 & = & 10 & \end{array}$$

Common Skip Counting Quantities

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
101	102	103	104	105	106	107	108	109	110
111	112	113	114	115	116	117	118	119	120

Using arrays to count is also a helpful introduction to multiplication. Arrays help students with the understanding that no matter what order two numbers are multiplied, the answer will be the same.



$$4 + 4 + 4 = 12, 4 \times 3 = 12$$



$$3 + 3 + 3 + 3 = 12, 3 \times 4 = 12$$

Counting with Money

Money is used in this chapter as a means by which to count. The following representations of money are used:

penny



1¢

1 cent

nickel



5¢

5 cents

dime



10¢

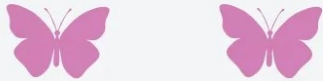
10 cents

Name _____

Pretest Chapter 1

Write odd or even.

1.



2.



3.



4.



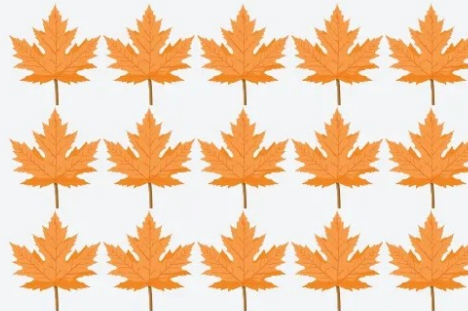
Write an equation to match each array.

5.



_____ + _____ = _____

6.



_____ + _____ + _____ = _____

Name _____

Pretest Chapter 1

Write an equation to match each array.

7.



$$\underline{\quad} + \underline{\quad} + \underline{\quad} = \underline{\quad}$$

8.



$$\underline{\quad} + \underline{\quad} + \underline{\quad} + \underline{\quad} = \underline{\quad}$$

Write the missing numbers.

Count by 2s.

9.

14, 16, _____, _____, _____, 24, 26, _____, _____

Count by 10s.

10.



10,









50,



Count by 5s.

11.





10,





20,





Name _____

Lesson 1.1 Grouping Objects

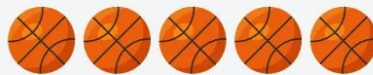
Write an equation to match each array.

1.



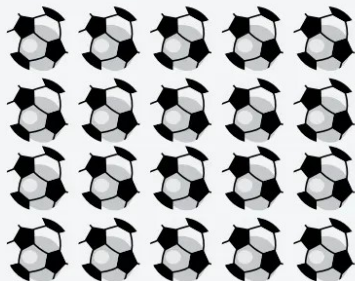
$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$

2.



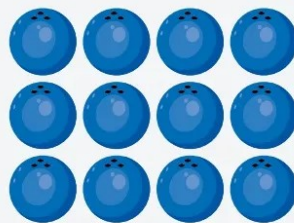
$$\underline{\quad} + \underline{\quad} + \underline{\quad} + \underline{\quad} + \underline{\quad} = \underline{\quad}$$

3.



$$\underline{\quad} + \underline{\quad} + \underline{\quad} + \underline{\quad} = \underline{\quad}$$

4.



$$\underline{\quad} + \underline{\quad} + \underline{\quad} = \underline{\quad}$$

5.



$$\underline{\quad} + \underline{\quad} + \underline{\quad} + \underline{\quad} = \underline{\quad}$$

6.



$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$

Name _____

Lesson 1.1 Grouping Objects

Write an equation to match each array.

1.



$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$

2.



$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$

3.



$$\underline{\quad} + \underline{\quad} + \underline{\quad} = \underline{\quad}$$

4.



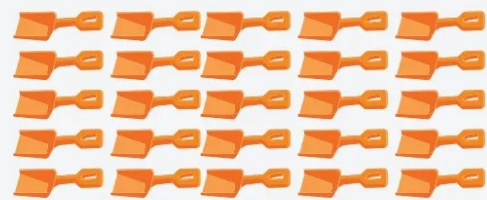
$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$

5.



$$\underline{\quad} + \underline{\quad} + \underline{\quad} = \underline{\quad}$$

6.



$$\underline{\quad} + \underline{\quad} + \underline{\quad} + \underline{\quad} + \underline{\quad} = \underline{\quad}$$



Draw an array that is not shown on the page and write an equation for it.

Name _____

Lesson 1.2 Skip Counting








Write the missing numbers.

Count by 2s.

1.       


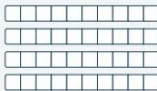

2, _____, 6, 8, _____, _____, 14

Count by 5s.

2.       

5, _____, _____, 20, _____, _____, 35

Count the 10s.

3.   

30, _____, _____

Count by 2s.

4. 12, _____, _____, 18, 20, _____, 24, 26, 28

Count by 5s.

5. _____, 60, _____, 70, _____, _____, 85

Count backward by 10s.

6. 100, 90, _____, 70, _____, 50, _____, _____, 20, 10

Name _____

Lesson 1.2 Skip Counting

Skip count to find the total number in each group.

1.



_____ flowers

2.



_____ stars

3.



_____ snails

Skip count by 5s or 10s. Write the missing numbers.

4. 25, _____, _____, 40, 45, _____, 55, 60

5. _____, _____, 80, 90, _____

6. _____, 50, _____, 60, _____, _____, 75