Spiraling
Through Whole Numbers and Decimals

SKILL	SKILL SEQUENCE	APPEARS IN THESE SPIRALS
1.	Place Value	1, 2, 3, 4, 11, 23, 25, 37
2.	Comparing Numbers	1, 2, 3, 4, 5, 11, 23, 24, 38
3.	Rounding Numbers	2, 3, 4, 5, 6, 11, 23, 25, 39
4.	Addition of Whole Numbers	3, 4, 5, 6, 7, 11, 23, 24, 32, 40
5.	Addition of Decimals	4, 5, 6, 7, 8, 10, 11, 23, 25, 32
6.	Addition of Whole Numbers with Regrouping	5, 6, 7, 8, 9, 10, 11, 23, 24, 32
7.	Addition of Decimals with Regouping	6, 7, 8, 9, 10, 11, 12, 23, 25, 32, 37
8.	Subtraction of Whole Numbers	7, 8, 9, 10, 11, 12, 12, 23, 24, 33, 38
9.	Subtraction of Decimals	8, 9, 10, 11, 12, 13, 14, 23, 25, 33, 39
10.	Subtraction of Whole Numbers with Regrouping	9, 10, 11, 12, 13, 14, 15, 23, 24, 33, 40
11.	Subtraction of Decimals with Regrouping	12, 13, 14, 15, 16, 22, 25, 33
12.	Multiplication Facts	13, 14, 15, 16, 17, 22, 24, 34
13.	Multiplication of a Whole Number by a Multiple of 10	14, 15, 16, 17, 18, 22, 25, 34, 37
14.	Multiplication of 1-digit and 2-digit Whole Numbers	15, 16, 17, 18, 19, 22, 24, 34
15.	Multiplication of Whole Numbers with Regrouping	16, 17, 18, 19, 20, 22, 25, 31, 34, 39
16.	Multiplication of Decimals	17, 18, 19, 20, 21, 22, 24, 26, 31, 34, 40
17.	Division Facts	18, 19, 20, 21, 22, 25, 26, 27, 31, 35
18.	Division of a Whole Number by a Multiple of 10	19, 20, 21, 22, 24, 26, 27, 28, 31, 35
19.	Division of 2- and 3-digit Whole Numbers	20, 21, 22, 25, 26, 27, 28, 29, 31, 35, 37
20.	Division of Whole Numbers with Remainders (1-digit Divisor)	21, 22, 24, 26, 27, 28, 29, 30, 31, 35, 38
21.	Division of Whole Numbers with Remainders (2-digit Divisor)	27, 28, 29, 30, 31, 36, 39
22.	Division of Decimals (1-digit Divisor)	28, 29, 30, 31, 36, 40
23.	Division of Decimals (2-digit Divisor)	29, 30, 31, 36
24.	Order of Operations	30, 31, 36

SCORING

Communicate About Math

Each spiral concludes with an open-ended question designed to develop students' abilities to communicate about mathematical processes. The main objective of this question is to provide students with opportunities to draw upon problem-solving strategies, to map out a mathematical process, and to communicate that information in written form. Consistent with recent N.C.T.M. standards, this question should not be assessed solely on calculating a *correct* answer. The process used and the student's ability to communicate about the process are equally important. Therefore, the following rubric could be used to assess all ***Communicate About Math*** questions.

4 Process described is based upon sound mathematical principles.

- Essay clearly defines each step of a carefully structured process.
- Final computation is correct.

3 Process described is somewhat inefficient, yet demonstrates an understanding of mathematical principles.

- Essay defines each step of the process. However, the steps are not presented in sequential order.
- Final computation is correct.

2 Process described deviates from sound mathematical principles.

- Gaps exist in the essay to the degree that it would be difficult to duplicate the process.
- Final computation is incorrect.

1 Process described lacks mathematical foundation.

- Essay is vague and unclear.
- Final computation is incorrect.

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Name _____

Date _____

SPIRAL 1

Identify the place value of each underlined digit.

1. 45<u>7</u>,019 _____

2. 16.9<u>4</u>3 _____

3. 9<u>2</u>,510,875 _____

4. 7,012.35<u>9</u> _____

5. 51,<u>6</u>02,177.2 _____

Give the value of the digit 5 in each number.

6. 23.**5**91 _____

7. 9,8**5**0,277 _____

8. **5**6,902,341 _____

9. 17,409.06**5** _____

10. 3**5**,119.02 _____

Compare the numbers. Write <, >, or =.

11. 25,892.3 _____ 52,899.7

12. 3,912.6 _____ 3,916.2

13. 17.008 _____ 17.1

14. 89,451.5 _____ 89,451.500

15. 40.002 _____ 4,000.2

Write the numbers in order from greatest to least.

16. 34.7; 347; 3.74 _____

17. 1,145; 11.45; 1.145 _____

18. 540.2; 5,402; 54.02 _____

19. 889.13; 898.31; 89.813 _____

PROBLEM SOLVING

20. Edgar jogged 2.109 km on Monday, 2.15 km on Wednesday, and 2.03 km on Saturday. On which day did he jog the greatest distance?

_____

Communicate About Math

Think about the process you would use to determine which is greater, 35.09 or 35.900. Write an essay that describes your process.

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Date _____

SPIRAL 19

Multiply.

1. 13×3

2. 41×2

3. 22×4

4. 415×82

5. $6{,}082 \times 877$

6. $12{,}353 \times 415$

7. 1.09×72.5

8. 22.875×4.012

Find each quotient.

9. $5\overline{)45}$

10. $7\overline{)63}$

11. $6\overline{)54}$

12. $9\overline{)72}$

Solve.

13. $100\overline{)5{,}000}$

14. $10\overline{)9{,}670}$

15. $1{,}000\overline{)600{,}000}$

16. $10\overline{)9{,}000}$

17. $67{,}000 \div 100$ _____

18. $400{,}000 \div 10$ _____

19. $19{,}000 \div 1{,}000$ _____

PROBLEM SOLVING

20. Adam withdrew $2300 from his bank account. He asked to be paid in $10 bills. How many bills did Adam receive?

_____

Communicate About Math

Think how you could find the quotient of 56,000 divided by 100. Write an essay that describes your process.

Spiraling
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SPIRAL 33

Find the difference.

1. 768 − 315	**2.** 9,065 − 5,014	**3.** 54,776 − 22,765	**4.** 32,970 − 12,860	**5.** 795,883 − 84,552
6. 47.08 − 6.05	**7.** 987.55 − 982.4	**8.** 3,498.06 − 1,354.02	**9.** 77.064 − 65.05	**10.** 4,871.92 − 660.22

Subtract.

11. 8,006 − 5,987 _____

12. 549,711 − 132,088 _____

13. 53,911 − 22,199 _____

14. 277,009 − 189,552 _____

15. 100,000 − 88,553 _____

16. 34.802 − 7.99 _____

17. 9,000.06 − 887.5 _____

18. 27.118 − 9.235 _____

19. 5,603.27 − 775.99 _____

PROBLEM SOLVING

20. Tom is twice as old as Dave. Bob is half as old as Ed. Ed is two years older than Dave. If Bob is 7, how old are the others?

_____

Communicate About Math

Dan left home with $25.50. He spent $4.95 for lunch and $18.67 at a store. How can Dan determine the amount of money he should have left? Write an essay describing a process he can use.

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Date _____

SPIRAL 38

Arrange the numbers in order from greatest to least.

1. 67.989; 67,989; 678.89 _____

2. 123.6; 21.63; 3.612 _____

3. 55.789; 7.598; 57.598 _____

4. 1,700.5; 1,750.7; 175.57 _____

5. 223.33; 32.223; 332.32 _____

Subtract.

6. 498 − 277	**7.** 9,055 − 4,055	**8.** 67,831 − 6,420	**9.** 4,855 − 1,731	**10.** 109,663 − 7,623

Multiply.

11. 213 × 3	**12.** 642 × 2	**13.** 833 × 3	**14.** 94 × 2	**15.** 621 × 4

Divide.

16. 455 ÷ 8 _____	**17.** 314 ÷ 9 _____	**18.** 566 ÷ 7 _____	**19.** 613 ÷ 5 _____

PROBLEM SOLVING

20. Every weekday, Rose practices the piano for 1 hour and 15 minutes. How long does she practice the piano over a three-week period?

_____

Communicate About Math

Each week, Bob collects $9.35 from each of the 112 customers on his newspaper route. How can Bob determine the total amount of money he should collect? Write an essay describing a process he could use.