


Grade 4 Mathematics

Number and Number Relations: Lesson 16

Read aloud to the students the material that is printed in **boldface type** inside the boxes. Information in regular type inside the boxes and all information outside the boxes should **not** be read to students. Possible student responses are included in parentheses after the questions.

NOTE: The directions read to students may depend on the available materials. Read only those parts of the lesson that apply to the materials you are using.

Any directions that ask you to do something, such as to turn to a page or to hand out materials to students, will have an arrow symbol () by them.

Purpose of Lesson 16:

- In this lesson, the tutor and the students will
 - ✓ use number sense to practice basic facts, and
 - ✓ find multiples of numbers.

Equipment/Materials Needed:

- Copies of Student Sheet 91
- Paper and pencils
- Chalkboard

Preparations before beginning Lesson 16:

- Run one copy of Student Sheet 91 for each student.
- Have paper and pencils available.

Lesson 16: Number and Number Relations

Say:

In this lesson, you are going to practice basic facts.

 Write these numbers on the board.

1 6 7 13

Say:

Which number does not belong? Explain why you think that it does not belong. (Some students may see that 6 and 7 equals 13; so they might say one does not belong. Some may see that $1 + 6 = 7$; so they may say 13 does not belong. Some may say 13 is a two-digit number and all of the rest are one-digit numbers, so 13 does not belong. Some may say six is the only even number, so six does not belong.) All of these answers are correct as long as the students defend their choices.

 Write these numbers on the board.

4 8 6 2

Say:

Which number does not belong? Explain why you chose that number. (Some may see $4 \times 2 = 8$, and choose 6. Some may see $4 + 2 = 6$, and choose 8. Some may see $6 + 2 = 8$, and choose 4.) All of these answers are correct as long as the students defend their choices.

 Write these numbers on the board.

7 9 63 16

Say:

Which number does not belong? Explain why you chose that number. (Some may see $7 \times 9 = 63$, and choose 16. Some may say that 16 is the only even number, so 16 does not belong. Some may see $7 + 9 = 16$, and choose 63.) All of these answers are correct as long as the students defend their choices.

Write these numbers on the board.

8	56	9	15
72	17	7	16
63	2	45	3

Say:

Choose any three numbers. Write a division sentence. (Some possible answers: $56 \div 8 = 7$; $56 \div 7 = 8$; $72 \div 8 = 9$; $72 \div 9 = 8$; $45 \div 3 = 15$; $45 \div 15 = 3$) **Choose three different numbers. Write a multiplication sentence.** (Some possible answers: $15 \times 3 = 45$; $2 \times 8 = 16$; $9 \times 7 = 63$) **Choose three different numbers. Write an addition sentence.** (Some possible answers: $8 + 9 = 17$; $15 + 2 = 17$; $9 + 7 = 16$) **Choose three different numbers and write a subtraction sentence.** (Some possible answers: $9 - 7 = 2$; $17 - 15 = 2$; $72 - 63 = 9$.)

Say:

Let's skip count by 4's to 40 and list the numbers. (4, 8, 12, 16, 20, 24, 28, 32, 36, 40) **When you list the facts for a number, you are showing the multiples of that number. So 4, 8, 12, 16, 20, 24, 28, 32, 36, and 40 are multiples of the number 4. Are there other multiples of four?** (Yes. There are many more. We listed only the ones to 40.)

Give Student Sheet 91 to the students. For the problems below, allow students to use the chart in Part A.

Say:

I am thinking of a number from 0 to 99. I am going to give you some clues about my number. See whether you can figure out my number. You can use the chart on this sheet to help you find my number.

- I am thinking of a number between 70 and 91. It is a multiple of nine. It is even. It is also a multiple of eight. What number am I thinking of? (72)**


2. **I am thinking of a number between 44 and 64. It is a multiple of five. It is even. It is also a multiple of six. What number am I thinking of? (60)**
3. **I am thinking of a number that is an even number. It is less than 50. The sum of the digits is five. It is a multiple of four. What number am I thinking of? (32)**

4. **I am thinking of a number that is an odd number. It is a multiple of three. It is also a multiple of five. It is less than 50, but greater than 40. What number am I thinking of? (45)**

 Have students work the problems in part B of Student Sheet 91.

Answers to Part B problems 1 – 4:

1. groups of 2, 3, 4, or 6
2. 27 years old
3. 24 of each or 3 packs of hot dogs and 4 packs of buns
4. either 24 or 28 students

 Have one student summarize today's lesson. Understanding multiples is critical to future work with fractions.

Student Sheet 91 (Number Relations: Lesson 16)

Part A

0	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

Part B

Answer the following questions.

1. Mr. Smith has 36 students in his class. He wants to divide them into groups. Each group should have the same number. He wants at least two students, but no more than six students, in each group. What sized groups could he make?
2. Julie's aunt's birthday is tomorrow. Auntie won't tell her age, but she did give Julie some clues. She said her age is a multiple of nine and a multiple of three, and that she is not over 30 years old. Julie knows that her aunt has finished college. How old is Julie's aunt?
3. George decided to give a party on the 4th of July. Hot dogs come eight to a package and buns come six to a package. How many hot dogs and buns should he buy so that none are wasted? He can't afford to buy more than 40 of each.
4. The principal asked Spence for the number of students in Ms. Dance's class. Spence said that the students were at tables and that there were four students at each table, but he couldn't remember how many tables were in the classroom. If there are fewer than 30, but more than 21 students in the class, how many students could be in the class?