

Multiple Madness

Reporting Categories Computation and Estimation and Number and Number Sense

Topic Determining common multiples and factors

Primary SOL 4.5 The student will
a) determine common multiples and factors, including least common multiple and greatest common factor.

Related SOL 4.2a, b, c, 4.3a, b, c, d

Materials

- Number Cards for Multiple Madness (attached)
- Multiple Madness Hundred Chart (attached)
- Multiple Madness Recording Sheet (attached)
- Game markers (e.g., checkers, colored chips, colored cubes) in two different colors

Vocabulary

multiples, common multiples, least common multiple (LCM), multiplication/division related facts

Student/Teacher Actions (what students and teachers should be doing to facilitate learning)

Note: Prepare for this activity by creating a set of number cards (use attachment) for each pair of students.

1. Point out to students that the word *multiple* is the root word of the word *multiplication*. Ask students what *multiple* means. Explain that they are going to explore multiples of different numbers and find common multiples of two different numbers. Have students discuss the meaning of the word *common* and the term *common multiples*.
2. Model how to identify multiples of a number and common multiples of two numbers. For example, begin with the numbers 4 and 6. Display a hundred chart, and have the class guide you in identifying all the multiples of 4 and marking them with one color. Next, without removing the identified multiples of 4, have the class guide you in identifying all the multiples of 6 and marking them with a different color. The multiples that are marked in both colors are *common multiples* of 4 and 6.
3. Lead a discussion about common multiples, and have students list the common multiples of 4 and 6 in order from least to greatest. Discuss *least common multiple*, also known as LCM.
4. Distribute copies of the Multiple Madness Recording Sheet. Put students into pairs, and give each pair a set of number cards, a hundred chart, and two piles of colored game markers in two different colors. Have students play the Multiple Madness game as follows:
 - Each player gathers a pile of colored game markers in a color different from that of his/her opponent.

- Player 1 draws a number card from the pile and identifies the multiples of that number by marking them on the hundred chart with his/her colored game markers. He/she also records the multiples of the number at the bottom of the hundred chart.
 - Player 2 draws a number card and repeats the same steps.
 - If a player draws a previously drawn number, the player places the card back in the pile, shuffles the pile, and draws again.
 - Once players have identified and recorded the multiples of their numbers, they compare multiples and fill in a Venn diagram on the recording sheet. They also find the least common multiple—i.e., the smallest number in the overlapping parts of the two circles.
5. Discuss with the class things they discovered about the multiples of the pairs of numbers. Then, have students repeat the game, filling in their individual recording sheets to show their work.

Assessment

- **Questions**
 - Why is one of the rules for Multiple Madness to put the cards back in the pile and shuffle if both players draw the same number?
 - How can understanding multiples help you with other mathematical concepts? Give an example.
 - How many multiples can a number have?
- **Journal/Writing Prompts**
 - Draw a Venn diagram to show multiples of 4, 6, and 8. Describe how you would find the common multiples and LCM for these three numbers.
 - Explain how this mathematical concept could relate to real life situations.

Number Cards for Multiple Madness

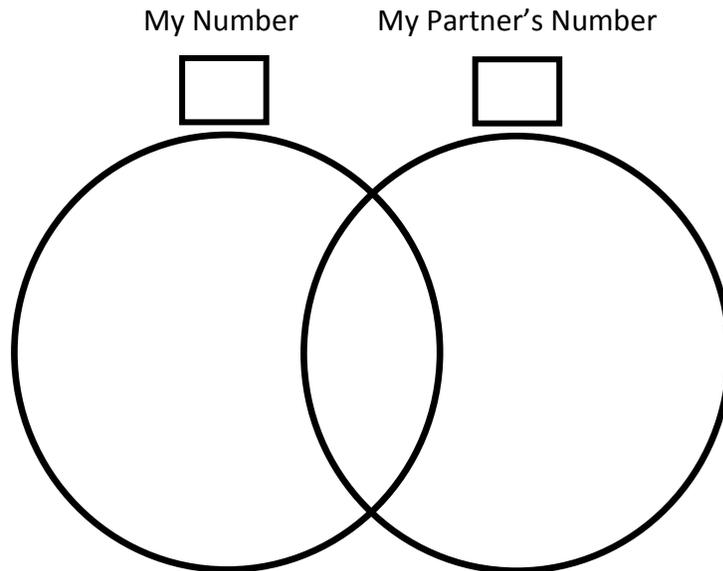
Copy the cards on cardstock, and cut out.

2	3	4
5	6	7
8	9	10
11	12	12
3	4	5
6	7	8
9	10	11

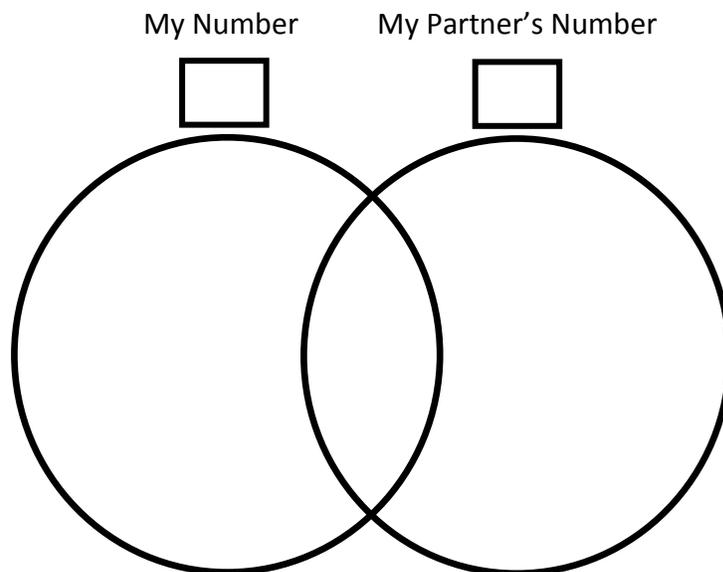
Multiple Madness Hundred Chart

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

Multiple Madness Recording Sheet



What is your least common multiple (LCM)? How do you know?



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