Multiplication Facts

Intervention Mini-Lessons

Click to find the lesson for the factor students are struggling with.

Skip Counting	2s	5s	10s	4s
1s	3s	8s	6s, 7s, 9s and 12s	
Printable Hundreds chart				
Printable Multiplication Chart				

Skip Counting to Solve 2s, 5s, and 10s

Materials

- Hundreds chart
- Highlighters – 3 different colors for each student.

Directions

This is a teacher led small group activity.

1. The goal of this activity is for students to see the patterns in the ones place when skip counting to solve 2s, 5s, and 10s.
2. Say: ***When we skip count starting at 0, we are saying the multiples of a number. We are going to skip count by 10s. As we skip count, we will highlight each number we say.***
3. Lead students in skip counting by 10 and highlighting each multiple.
4. After students have skip counted and highlighted to 120, say: ***What patterns do you notice in the numbers we highlighted?***
5. Students should notice that every multiple of 10 has a zero in the ones place.
6. One the hundreds chart, write the corresponding multiplication fact next to each multiple of 10. (10 = 10 x 1, 20 = 10 x 2, etc.) If students begin to notice a pattern, let them write the corresponding fact for the remaining multiples.
7. Say: ***How can we describe a pattern that would help us remember tens facts?***
8. Repeat with 5s and 2s, highlighting in a different color and looking for patterns.
9. Demonstrate how to use skip counting to solve a multiplication problem. Say: To solve 5 x 7 I can skip count by five 7 times, 0, 5, 10, 15, 20, 25, 30, 35. 5 x 7 = 35.
10. Give each student a multiplication fact to solve and ask them to explain or demonstrate how they found the product.

Doubles to Solve 2

Materials

- Counters

Directions

This is a teacher led small group activity.

1. The goal of this activity is for students to see the relationship between doubles (stage 3) and multiplying by 2.
2. Say: ***A veterinarian is doing checkups on 7 dogs. Part of the checkup is to look in each ear. How many ears will the veterinarian look in?***
3. Allows students to use the counters to model their thinking. Have students shared their methods. Write 7+7=14, double 7 is 14, and 7x2=14.
4. Repeat with different word problems involving groups of 2 (hands, feet, shoes, wheels on a bike, chopsticks, wings on a bird).
5. As you do more problems, ask: ***What do you notice about doubles and multiplying by 2?***

Place Value to Multiply by 10

Materials

- Place value chart
- Place value blocks

Directions

This is a teacher led small group activity.

1. The goal of this activity is for students to see the relationship between place value and multiples of 10.
2. Say: ***How can we show a group of 10 with place value blocks? How can we show a group of 10 with a place value chart?*** (We can show groups of 10 as 1 ten.)
3. Say: ***How do I know how many are in 4 tens?*** (4 tens is the same as 40 ones, because there are 4 tens and 0 ones, or 4 tens is the same as 40 ones, because we can count by ten 4 times.)
4. Say: ***4 groups of 10 is the same as 4 x 10, how can what we know about place value help us multiply by 10?*** (The factor goes in the tens place, and we don't have any ones, students may say we can "add a zero," help students to rephrase this using place value language.)
5. Ask students to find 7 x 10 using place value.
6. Repeat with different 10s facts.
7. As you do more problems, ask: ***How can you explain the pattern in 10s facts?***

Doubling and Halving to Solve 5s

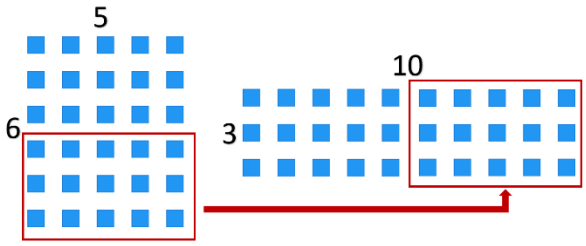
Materials

- Counters

Directions

This is a teacher led small group activity.

1. The goal of this activity is for students to use doubling and halving to solve fives.
2. Ask students to build an array to represent 6 x 5. (Students should build an array that shows 6 rows of 5.)
3. Ask students to move the bottom 3 rows to the right of the top three rows, as shown in the picture.



4. Say: ***What is our new array?*** (3 x 10) ***Why do you think we moved 3 rows of the 6?*** (3 is half of 6)
5. Say: ***Can we do the same thing with a 5 x 4 array.*** (Students should notice that we can change a 5 x 4 array to 2 x 10.
6. Say: ***How can this thinking help us remember 5s facts and give an example?*** (We can use half of the other factor and multiply it by 10, so 5 x 8 is the same as 10 x 4).
7. Students may notice this works best for even numbers. Some students may only apply the strategy to even numbers, others may realize that odd number products fall between two even number products (5 x 6 = 30 and 5 x 8 = 40 so 5 x 7 = 35). Other students may realize the odd numbered factors have a five in the ones place. (5 x 7, think: half of 7 is 3 and a half, half of 10 is 5, so 5 x 7 is 35).

Doubling to Solve 4s

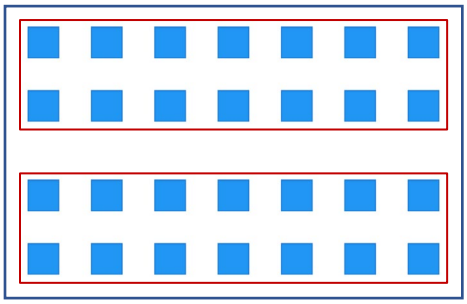
Materials

- Counters

Directions

This is a teacher led small group activity.

1. The goal of this activity is for students to use doubling to solve 4s facts.
2. Ask students to create an array that shows 2 x 7 an identical array below the first one.
3. Ask students to slide their second array up to join, the first. Say: ***What is the new array?*** (4 x 7) (See the picture below, for an example)



4. Say: ***What are similar about these arrays?*** (Both show rows of 7, both show an array of 2 rows of 7, but the 4 x7 array has two groups of 2 x 7.)
5. Say: ***How many groups of 2 do I need to make 4?*** (2 groups of 2 is 4, so 2 x 2 =).
6. We can think about any number times 4 as 2 x 2 multiplied by that number. Say: **We can solve fours facts by doubling twice. For example: 7 doubled is 14, 14 + 14 = 28 so 4 x 7 = 28.**
7. Give each student a different fours fact and ask them to explain or model how to double a double to find the product.
8. Say: ***Why can we solve fours facts by doubling doubles?***

Understanding Multiples of 1

Materials

- Counters

Directions

This is a teacher led small group activity.

1. The goal of this activity is for students to understand the identity property of multiplication and apply it to multiplication situations.
2. Begin by asking students to create one group of six with their counters. Ask how many counters they have.
3. Ask students to create six groups of 1, ask how many groups they have.
4. Using a white board, or other display, show students we can represent 1 group of 6 as the equation 1 x 6 = 6 or 6 groups of 1 as the equation 6 x 1 = 6.
5. Repeat with 8 counters, 9 counters, and 12 counters.
6. Ask student if they notice a pattern in the products when the multiply by 1. (Students should identify that any number multiplied by one is itself).
7. Tell students, this pattern has a name, the “Identity Property of Multiplication.”
8. Have students practice using the Identity Property of Multiplication,” by finding the product of 4 x 1, 1 x 5, and 2 x 1.
9. Before releasing students to practice independently ask them to explain how they know the product of any number and one.

Using the Distributive Property of Multiplication Over Addition to solve 3s

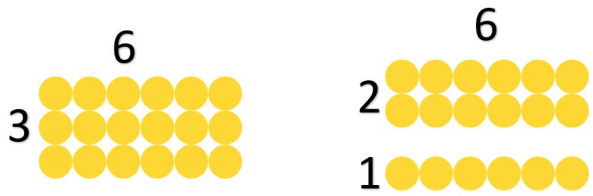
Materials

- Counters

Directions

This is a teacher led small group activity.

1. The goal of this activity help students who cannot skip count by 3, to build fluency with distributing 3 groups into 2 groups and 1 more group.
2. Ask student to model 3 rows of 6.
3. Ask student to slide one row down from the first two, as shown in the illustration.



4. Ask students to find the total number of counters without counting. Prompt students to think about how they find the product when multiplying by 2 and by 1.
5. Use a white board or other display to show students that we can represent 3 x 6 as (2 x 6) + (1 x 6). Label this “Distributive Property.”
6. Have students practice using the distributive property to solve, 3 x 3, 3 x 7, 3 x 8, and 3 x 12.
7. If students struggle, support them by having them draw or create models with counters.
8. Before releasing students to practice independently ask them to explain how they can use the Distributive Property to solve problems with multiplying by 3.

Using the Distributive Property of Multiplication to solve 8s

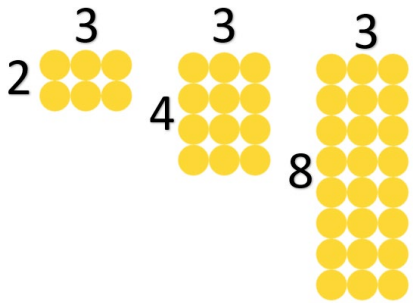
Materials

- Counters

Directions

This is a teacher led small group activity.

1. The purpose of this activity is for students to apply their understanding of the Distributive Property of Multiplication to solve 8s.
2. Ask students to create an array to show 2 rows of 3 using counters.
3. Ask students how many counters are in the array without counting, and how they knew. (Students will likely know the total is 6, because 3 + 3 = 6.)
4. Ask students to double their array, their new array should show, 4 rows of 3.
5. Ask students how many counters are in the array without counting, and how they knew. (Students will likely know the total is 12, because 6 + 6 = 12.)
6. Ask students to double their array, their new array should show, 8 rows of 3.
7. Ask students how many counters are in the array without counting, and how they knew. (Students will likely know the total is 24, because 12 + 12 = 24.)
8. Ask students what multiplication equation their array represents. (8 x 3).



9. Explain to students that we can find 8s by doubling 3 times, or by doubling the product of the factor x 4.
10. Write the equation 3 x 8 = 24, then write the equation 3 x 2 x 2 x 2 = 24 and 3 x 4 x 2 = 24.

11. Provide opportunities for students to practice by multiplying 4 x 8, 7 x 8, and 12 x 8.
12. If students struggle with doubles with larger numbers, show them another way to distribute 8s is to multiply by 5 and 3 and add the products. (You can model this with the counters, by making 5 rows of 7 and 3 rows of 7.)

Using the Distributive Property of Multiplication to solve 6s, 7s, 9s, and 12s.

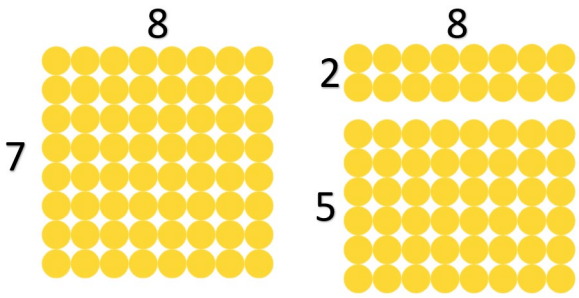
Materials

- Counters

Directions

This is a teacher led small group activity.

1. The purpose of this activity is for students to apply their understanding of the Distributive Property of Multiplication to recall multiplication facts.
2. Ask students which facts are easiest for them to remember quickly.
3. Explain to students that we can use easier to remember facts to recall facts that we are not fluent with.
4. Have students create an array that shows 7 rows of 8.
5. Ask students to write down to facts, which are easy for them and that add up to 7. (For example, 2 and 5, 1 and 3 and 3, or 3 and 4).
6. Tell students to separate their array to show 7 x 8 as their two factors as shown in the example below.



7. Have students represent their model as an equation. For example (2 x 8) + (5 x 8) = 56.
8. Have students turn to a partner explain how they know the product of 7 x 8.
9. Have student repeat this process with other facts they are continuing to struggle with. Each time you meet with students, have them review their strategies to recall the facts they continue to struggle with.
   Common distributions by factor:

6s	7s	9s	12s
1 + 5	2 + 5	10 – 1	10 + 2

3 + 3 3 x 2	6 + 1	3 + 3 + 3	11 + 1

Printable Hundreds Chart

0	1	2	3	4	5	6	7	8	9
1	11	12	13	14	15	16	17	18	19
2	21	22	23	24	25	26	27	28	29
3	31	32	33	34	35	36	37	38	39
4	41	42	43	44	45	46	47	48	49
5	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

Printable Multiplication Chart

1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
2	4	6	8	10	12	14	16	18	20	22	24
3	6	9	12	15	18	21	24	27	30	33	36
4	8	12	16	20	24	28	32	36	40	44	48
5	10	15	20	25	30	35	40	45	50	55	60
6	12	18	24	30	36	42	48	54	60	66	72
7	14	21	28	35	42	49	56	63	70	77	84
8	16	24	32	40	48	56	64	72	80	88	96
9	18	27	36	45	54	63	72	81	90	99	108
10	20	30	40	50	60	70	80	90	100	110	120
11	22	33	44	55	66	77	88	99	110	121	132
12	24	36	48	60	72	84	96	108	120	132	144