

Lesson 1

This lesson will teach 4×4 , $16 \div 4$, 4×8 , 8×4 , $32 \div 8$, $32 \div 4$, 8×8 and $64 \div 8$.
It takes about 30 minutes.

Materials Needed:

Array 1 (Provided)
64 Counters (Pennies or Beans Work Fine)
Post Fluency Builder (Provided)

Lesson 1 - Part 1

1. **Ask** your child to put 16 counters in the box in the upper left hand corner of their Array.

Once all 16 counters are placed:

2. **Inform** them that they have just created 4 groups of 4.
3. **Show** them the four separate groups (or lines).
4. **Show** them that each separate group has 4 counters.
5. **Inform** them that four groups of 4 is the same as 4×4 .
6. **Ask** how many counters they have.
7. **Ask** what 4×4 must equal (16).
8. **Remind** them that they have 16 counters.
9. **Remind** them that these 16 counters can be broken into four groups.
10. **Inform** them that when you break the counters into groups you are dividing.
11. **Ask** them how many counters are in each group (or line).
12. **Ask** them what $16 \div 4$ must be (4).

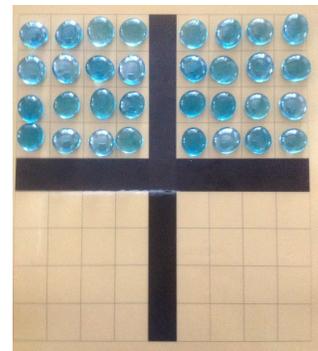


Lesson 1 - Part 2

1. **Ask** your child to add counters to the box in the upper right hand corner.

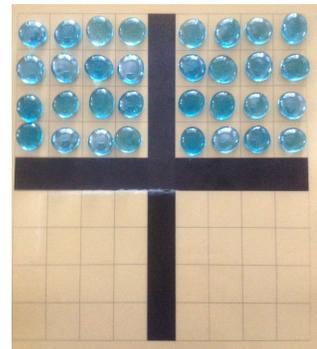
Once these counters are placed:

2. **Ask** how many counters were placed in the second box (16).
3. **Remind** them that they also have 16 counters in the first box.
4. **Ask** them to mentally add $16+16$ to find out how many counters they have now.
5. **Ask** them to tell you their answer (32).
6. **Inform** them that they have also created 4 groups of 8.
7. **Show** them the four separate groups (or lines).
8. **Show** them that each line now has 8 counters.
9. **Ask** what 4×8 must be (32).
10. **Inform** them that there are also lines that go up and down.
11. **Show** them that there are 8 lines that go up and down.
12. **Show** them that each of these lines has 4 counters.
13. **Remind** them that this is 8 groups of 4.
14. **Remind** them that 8 groups of 4 is the same as 8×4 .
15. **Ask** what 8×4 must be (32).
16. **Inform** them that this means 8×4 and 4×8 must be the same answer (32).



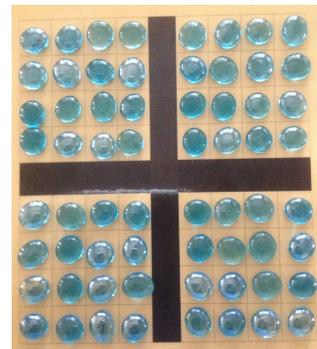
Lesson 1 - Part 2 cont.

1. **Show** them that these 32 counters can also be broken into 8 groups vertically.
2. **Ask** how many counters are in each up and down group (4).
3. **Ask** what $32 \div 8$ must be (4).
4. **Show** them that these 32 counters can also be broken into 4 groups horizontally.
5. **Ask** what $32 \div 4$ must be (8).



Lesson 1 - Part 3

1. **Ask** your child to develop a mirror image of the top by adding 32 more counters to the boxes in the bottom right and bottom left hand corner.
2. **Ask** them to mentally add $32+32$ to find out how many counters they have now.
3. **Ask** them to tell you their answer (64).
4. **Inform** them that they now have 8 groups of 8.
5. **Ask** them what 8×8 must be (64).
6. **Show** them that these 64 counters can be broken into 8 groups.
7. **Ask** them what $64 \div 8$ must be (8).



Lesson 1 - Part 4

1. **Provide** the post-lesson fluency builder to reinforce the concepts just learned.

Rooted Facts



Lesson 1

Fluency Builder

$4 \times 4 = \underline{\quad}$

$4 \times 8 = \underline{\quad}$

$8 \times 8 = \underline{\quad}$

$16 \div 4 = \underline{\quad}$

$32 \div 8 = \underline{\quad}$

$32 \div 4 = \underline{\quad}$

$8 \times 8 = \underline{\quad}$

$64 \div 8 = \underline{\quad}$

$4 \times 4 = \underline{\quad}$

$16 \div 4 = \underline{\quad}$

$4 \times 8 = \underline{\quad}$

$32 \div 4 = \underline{\quad}$

$32 \div 8 = \underline{\quad}$

$8 \times 4 = \underline{\quad}$

$8 \times 8 = \underline{\quad}$

$8 \times 8 = \underline{\quad}$

$64 \div 8 = \underline{\quad}$

$32 \div 4 = \underline{\quad}$

$64 \div 8 = \underline{\quad}$

$32 \div 8 = \underline{\quad}$

$4 \times 4 = \underline{\quad}$

$4 \times 8 = \underline{\quad}$

$8 \times 4 = \underline{\quad}$

$16 \div 4 = \underline{\quad}$

$4 \times 8 = \underline{\quad}$

$8 \times 4 = \underline{\quad}$

$32 \div 8 = \underline{\quad}$