



How Can You Help Your Child Become Fluent With Multiplication and Division Facts?

Three **KEYS** to Helping Your Child *Learn* Basic Facts for *Life* AND *Like* Math

LEARN

Focus on Real Math Fluency...use STRATEGIES

(rather than just memorize the facts with worksheets or flash cards)



Why?

- Your child is much more likely to remember facts later on
- Your child is much less likely to have stress and anxiety
- The strategies will be used with greater numbers, fractions, and higher-level mathematics to support your child as a confident mathematician

LIFE

Help your child 'see' the reasoning STRATEGIES that generalize to numbers beyond basic facts.



Developing fluency involves children deriving strategies to approach problems and recognizing that they are capable of reasoning and finding relationships.

To get to that point, though, a child needs multiple opportunities to interact with number sense ideas and strategies. An example of one of the strategies, doubling, can be found on the following page.

LIKE

Make practice enjoyable and meaningful.



- Play games.
- Talk through STRATEGIES.
- Focus on strategy selection, not speed. Speed will come with strategy practice.

Based on Math Fact Fluency: 60+ Games and Assessment Tools to Support Learning and Retention by J. Bay-Williams and G. Kling.

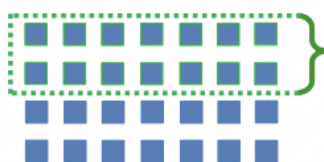
The Doubling Strategy

What does doubling look like? When is doubling useful?

Doubling: $\times 4$

It works great for the 4s facts, and is sometimes called Double and Double Again. Have a look!

Marvin arranged his new set of Legos into four rows. Each row has seven pieces.



I know...
2 groups of 7 is
14:
 $2 \times 7 = 14$

Doubling 14 is
28: $14 + 14 = 28$

Thinking about $14 + 14$ is more efficient than skip counting, $7 + 7 + 7 + 7$.

Extending Doubling: $\times 6$ and $\times 8$

Doubling works for other even numbers, like 6 facts and 8 facts. Once your child knows their 3s facts, they double to solve for 6s; once they know their 4s facts, they double to solve 8s. Have a look at a fact that is commonly difficult for children: 7×6 or 6×7 .



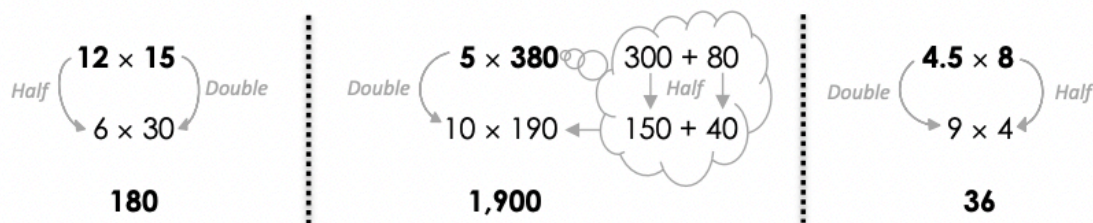
6×7 means 6 groups of 7.
I know $3 \times 7 = 21$.
I double 21 to get 42.
 $6 \times 7 = 42$.

Extending Doubling: Beyond Basic Facts

(see "fact #5" above)

Doubling and halving turns problems into ones that can be solved mentally – *very useful!*

Examples:



Multiplication Strategy Rationale

Research-based *learning* facts:

1. Students start learning multiplication facts by skip counting. That is natural, but they must progress to more efficient reasoning strategies.
2. Implementing reasoning strategies may initially be slower than counting, but eventually it is faster and will lead to quick recall (automaticity), with the added (critical) benefit of long-term retention (rather than forgetting a fact and having to drop back to skip counting).
3. Visuals and stories help students to understand the reasoning strategy.
4. Mathematical reasoning emerges as children notice patterns and relationships through repeated opportunities. Playing purposeful math games is a great way to do this (see pages 3 and 4)!
5. Reasoning strategies themselves are important to learn because they generalize to larger numbers. Learning the strategies builds stronger math skills!

Thank you for your support in developing fact fluency with your child!

GAMES

Here are some games you can play with your child to help them develop their fluency with multiplication and division:

[Switch](#)

[Fixed Factor War](#)

[Multiplication Salute](#)

[The Factor Game](#)

The questions on the bookmark below are great ones to ask your child as you play the games with them.

Questions to Ask for Fact Fluency Games

- *How did you solve that fact?*
- *Why did you choose that strategy?*
- *Are there other ways you could solve for that fact?*
- *What other facts might be solved with that* strategy?*
- *When do you like to use that* strategy (when is that strategy a good idea)?*

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