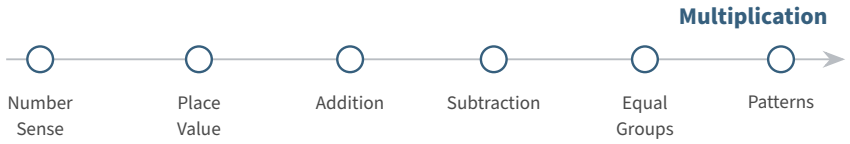
A PARENT-GUIDED RESOURCE FROM MULTIPLICATION FLIP

Multiplication Readiness Check

Look beneath the answers and notice how your child thinks.

Thirty carefully chosen questions across six foundations that multiplication uses again and again.



There is no need to rush. Give your child time to think, draw, build, revise, and explain. Good mathematics is worth thinking about.

FOR LEARNERS APPROACHING OR BEGINNING MULTIPLICATION
Understanding first. Efficient strategies next. Fluency grows from both.

MULTIPLICATION FLIP
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How to use this check

PARENT GUIDE

YOU MAY WANT

A pencil, counters or coins, scrap paper, linking cubes if available, and plenty of thinking time.

Read the questions aloud when helpful. Let your child use objects, drawings, mental strategies, or written work. Ask for explanations often.

You may complete the six sections in one sitting or spread them over several days. If attention fades, stop and return later. The goal is to see mathematical thinking clearly, not to finish quickly.

WHAT TO NOTICE

Accuracy	Does the response make mathematical sense?
Strategy	What idea did the child use to get there?
Efficiency	Did the child use structure, a known relationship, a benchmark, or a helpful representation instead of starting from scratch?
Explanation	Can the child explain why the method works?
Flexibility	Can the child show another way when it is reasonable to do so?

Efficient does not mean fast. An efficient strategy reduces unnecessary work by using mathematical structure. A child may think slowly and still use a very strong strategy.

HELPFUL PROMPTS

"Show me how you are thinking."

"Can you draw it?"

"Is there another way?"

"What do you already know that might help?"

TRY NOT TO

Teach a shortcut during the question.

Correct every mistake immediately.

Praise speed more than reasoning.

Turn a difficult moment into pressure.

The answer tells you what happened. The strategy shows you what the child understands.

1. Number Sense

FLEXIBLE QUANTITIES AND BENCHMARKS

QUESTION 1

Show the number 12 in **three different ways**. You may use drawings, objects, words, or equations.

Way 1: _____ Way 2: _____ Way 3: _____

QUESTION 2

Which number is closer to 50: 47 or 54? Explain without counting every step.

_____

QUESTION 3

Complete the decompositions in ways that make sense to you.

$18 = 10 + \_\_\_\_\_$ $18 = 9 + \_\_\_\_\_$ $18 = \_\_\_\_\_ + \_\_\_\_\_$

QUESTION 4

Which is greater, 39 or 42? Explain how you know without counting up from 1.

_____

QUESTION 5

Before calculating exactly, is $19 + 21$ closer to 30, 40, or 50? Explain.

_____

EFFICIENT STRATEGY TO NOTICE

Look for decomposition, benchmarks such as 10 and 50, comparison by distance, and friendly-number thinking. A child who sees $19 + 21$ as "about $20 + 20$" is using structure rather than starting from ones.

The multiplication connection: facts become easier to derive when numbers can be broken apart and recombined flexibly.

PARENT OBSERVATION

What number relationships seemed natural? Where did your child still rely on counting every item or every step?

_____

_____

2. Place Value

TENS, ONES, TRADING, AND REGROUPING

QUESTION 1

Show 36 as tens and ones. Then trade one ten and show the same number another way.

$36 =$ _____ tens and _____ ones Another way: $36 =$ _____ tens and _____ ones

QUESTION 2

In 472, what does the digit 7 mean? Then write 472 in expanded form.

The 7 means: _____ Expanded form: _____

QUESTION 3

Show 54 in **two different regroupings**.

First: _____ Second: _____

QUESTION 4

Which is greater: **4 tens and 13 ones** or **5 tens and 2 ones**? Explain.

_____

QUESTION 5

Without using a multiplication table, explain why $6 \times 10 = 60$. A drawing or place-value explanation is welcome.

_____

EFFICIENT STRATEGY TO NOTICE

Look for unitizing: one ten is treated as one unit made of ten ones. Strong place-value reasoning allows a child to trade one ten for ten ones without changing the total and to interpret digit value rather than merely name a place.

The multiplication connection: partial products, multiplying by 10, and multi-digit multiplication all reuse this place-value structure.

PARENT OBSERVATION

Did your child understand that regrouping changes the representation but not the amount?

_____

_____

3. Addition

COMBINING QUANTITIES STRATEGICALLY

QUESTION 1

Find $8 + 7$. Show **two ways** if you can.

First way: _____ Another way: _____

QUESTION 2

Find $9 + 6$. Explain how making a friendly number could help.

_____

QUESTION 3

Find $28 + 28$ mentally or with a drawing. Show your thinking.

_____

QUESTION 4

Find $39 + 24$ without beginning with the standard written algorithm.

_____

QUESTION 5

A friend says $25 + 19$ can be thought of as $25 + 20 - 1$. Do you agree? Use the idea to find the sum and explain why it works.

_____

EFFICIENT STRATEGY TO NOTICE

Look for counting on rather than counting all, making 10, doubles and near doubles, partial sums, place-value decomposition, and compensation. The strongest strategy depends on the numbers in front of the child.

The multiplication connection: derived facts such as $7 \times 8 = (5 \times 8) + (2 \times 8)$ *still require the child to combine partial amounts efficiently.*

PARENT OBSERVATION

Which addition strategies did your child choose without being prompted? Which strategies required a suggestion?

_____

_____

4. Subtraction

DIFFERENCE, MISSING PARTS, AND FRIENDLY NUMBERS

QUESTION 1

Find $15 - 8$. Then complete $8 + \square = 15$. Explain how the two statements are connected.

QUESTION 2

Find $80 - 24$. Show a strategy that makes the subtraction manageable.

QUESTION 3

Find $52 - 19$. Can a nearby friendly number help?

QUESTION 4

Find $100 - 47$. You may subtract, count up, or use another strategy. Explain your choice.

QUESTION 5

Suppose you know $63 - 28 = 35$. Without starting over, what is $63 - 29$? Explain.

EFFICIENT STRATEGY TO NOTICE

Look for missing-addend thinking, decomposing the amount being subtracted, counting up when the difference is easier to see, compensation from friendly numbers, and using a nearby known result.

The multiplication connection: nearly-ten and nearby-fact strategies depend on subtraction, for example $9 \times 7 = 10 \times 7 - 7$.

PARENT OBSERVATION

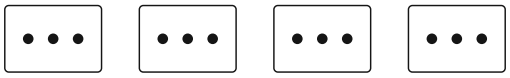
Did your child treat subtraction only as "take away," or could the child also think about distance, missing parts, and nearby numbers?

5. Equal Groups

GROUPS, GROUP SIZE, TOTAL, AND ARRAYS

QUESTION 1

Look at the picture. How many groups are there? How many are in each group? How many altogether? Write a multiplication equation.



Groups: _____ In each: _____ Total: _____ Equation: _____

QUESTION 2

Draw or build **5 groups of 2**. Then write the repeated addition and multiplication equation.

Repeated addition: _____ Multiplication: _____

QUESTION 3

Which collection shows equal groups? Explain what makes the other collection different.

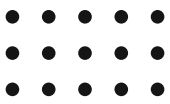
QUESTION 4

Explain the difference between **4 groups of 2** and **4+2**. A drawing may help.

_____

QUESTION 5

Read this array in two directions and write both multiplication equations.



Rows view: _____ Columns view: _____

EFFICIENT STRATEGY TO NOTICE

Look for the child to coordinate three quantities: the number of groups, the number in each group, and the total. Efficient thinking treats a whole group as a unit instead of recounting every object from one each time.

The multiplication connection: equal groups give meaning to multiplication; arrays make related facts and commutativity visible.

6. Patterns

EQUAL CHANGE, MULTIPLES, AND JUMPS

QUESTION 1

Continue the pattern and describe the rule.

2, 4, 6, _____, 10 Rule: _____

QUESTION 2

Continue the pattern and describe the rule.

5, 10, 15, _____, 25 Rule: _____

QUESTION 3

Start at 6. Add 4 three times. Write each landing and describe what stays the same.

6 → _____ → _____ → _____

QUESTION 4

What comes next? Explain how you know.

7, 12, 17, 22, _____ Explanation: _____

QUESTION 5

From 0, six equal jumps of 4 land at 24. Without starting the pattern again from 0, where will seven jumps of 4 land? Explain.

_____

EFFICIENT STRATEGY TO NOTICE

Look for language such as "add the same amount each time," prediction from a known term, and use of the previous result rather than restarting a chant from the beginning.

The multiplication connection: multiples are built by equal change. Efficient fact reasoning often grows from a known multiple to a nearby one.

PARENT OBSERVATION

Could your child explain the rule of a pattern, or only continue familiar sequences from memory?

_____

_____

Finding the clearest starting point

PARENT REFLECTION

Review the six sections and your notes. Do not total anything. Instead, look for the first place where your child regularly had to start from scratch, count everything, rely on one rigid procedure, or could not explain why a method worked.

Begin with the earliest foundation that needs more flexibility. Later multiplication strategies reuse earlier ideas, so strengthening the foundation often removes the obstacle more naturally than drilling multiplication facts harder.

Foundation	Efficient thinking you may have seen	A useful next focus
Number Sense	Decomposes, benchmarks, compares by relationships	Make 10, number bonds, flexible decompositions
Place Value	Trades tens and ones, interprets digit value	Regrouping, expanded form, tens as units
Addition	Makes 10, doubles, decomposes, compensates	Strategy choice rather than counting all
Subtraction	Uses missing parts, friendly numbers, nearby results	Compensation and inverse thinking
Equal Groups	Coordinates groups, group size, and total	Objects, equal groups, arrays, repeated addition
Patterns	Explains equal change and predicts from known terms	Equal jumps, multiples, related facts

THE FOUNDATION I WANT TO STRENGTHEN FIRST

THE MOST USEFUL STRATEGY I NOTICED

ONE QUESTION I WANT TO KEEP ASKING

KEEP THIS IN MIND

A child who is ready to learn multiplication does not need to use the fastest method every time. What matters is growing access to efficient, explainable strategies and the ability to connect new multiplication ideas to what the child already understands.

Build understanding. Notice structure. Choose efficient strategies. Then let fluency grow.