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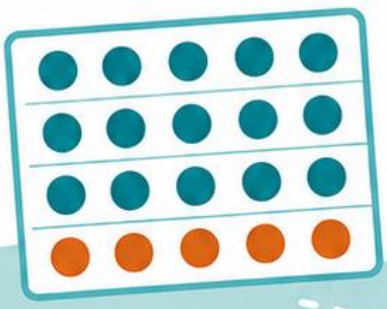
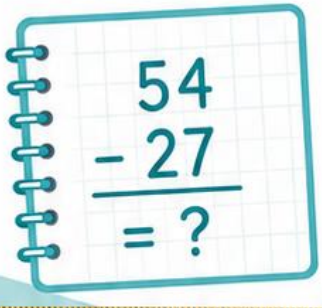
Brain Maker Summer Math Transition Guide

Second to Third Grade

A parent-friendly readiness guide built around generalized grade-level math skills





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Brain Maker

Second-to-Third Grade Transition Math Plan

Grade-Level Readiness Skills + Activity Page Teaching Map

Purpose: Build a strong second-grade foundation while previewing the third-grade math thinking students will meet next.

Instructional Shape: Paired teaching days - one direct teaching session and one hands-on reinforcement session.

Minimum Text Size: 12pt for readability. References may appear smaller on the end page.

Brain Maker Purpose

This transition plan is designed for students moving from second grade into third grade. The goal is not to rush ahead. The goal is to strengthen the skills that third-grade math depends on: fluency, place value, math language, real-world problem solving, and flexible thinking.

This plan protects the second-grade foundation while building the third-grade bridge through hands-on models, number sense, measurement, fractions, area, perimeter, and problem-solving language.

Summer Skill Priorities

- Strengthen addition and subtraction fluency so larger problems feel manageable.
- Strengthen place value to 1,000 and connect numbers to models, drawings, and explanations.
- Use skip counting, equal groups, and arrays as hands-on bridges into the next level of math thinking.
- Keep money, analog time, measurement, and data connected to real-world math practice.
- Practice math language, explaining thinking, and checking whether answers make sense.
- Preview third-grade ideas through concrete models, drawings, activity pages, and real-world examples.

How the Paired Days Work

Day A: Direct Teaching	Day B: Hands-On Reinforcement
Explicit instruction, vocabulary, guided examples, written practice, and short checks for understanding.	The same skill taught through tools, games, building, measuring, sorting, clocks, money, arrays, and real-world tasks.

Both days are teaching days. The hands-on day is not a light day; it is where the math becomes concrete and usable.

30-Day Tutoring Map with Grade-Level Readiness Skills

This map uses second-grade expectations as the review foundation and third-grade expectations as the readiness preview. Mathematical thinking habits are embedded throughout: make sense of problems, use tools, explain reasoning, attend to precision, and look for patterns and structure.

Pair 1: Baseline, Number Sense, and Math Language

Day A: Direct Teaching	Day B: Hands-On Reinforcement	Grade-Level Readiness Skills
Skill check: addition/subtraction facts, counting, place value, money, time, and word-problem stamina. Introduce explain-your-thinking sentence frames.	Build numbers, sort math words, quick fact games, number talks, and concrete “show what you know” tasks.	Second-grade foundation: fact fluency, place value, money/time readiness, and explaining thinking. Third-grade readiness: multi-step reasoning, place-value language, and choosing tools or models.

Brain Maker Focus: Find the gaps before filling the notebook. Watch for confidence, language, and number sense - not just correct answers.

Pair 2: Addition and Subtraction Fluency

Day A: Direct Teaching	Day B: Hands-On Reinforcement	Grade-Level Readiness Skills
Mental strategies within 20 and 100: make ten, doubles, near doubles, count on, count back, and use related facts.	Fact games, ten-frame races, card pulls, missing-addend puzzles, and “prove it two ways” boards.	Second-grade foundation: addition and subtraction fluency within 20 and strategy work within 100. Third-grade readiness: use fact fluency to support larger problem solving and mental math.

Brain Maker Focus: Third grade gets heavy fast. Addition and subtraction fluency protects working memory for multiplication, fractions, and word problems.

Pair 3: Place Value to 1,000

Day A: Direct Teaching	Day B: Hands-On Reinforcement	Grade-Level Readiness Skills
Read, write, build, compare, order, and expand three-digit numbers. Review hundreds, tens, ones, and skip counting by 5s, 10s, and 100s.	Base-ten blocks, place-value mats, expanded-form cards, compare-and-order number games, and number line jumps.	Second-grade foundation: read, write, compare, and model numbers to 1,000. Third-grade readiness: round, compare, and reason with larger whole numbers using place value.

Brain Maker Focus: Place value is the language of bigger math. If a child can explain digit value, they can reason through larger operations.

Pair 4: Add and Subtract Within 1,000

Day A: Direct Teaching	Day B: Hands-On Reinforcement	Grade-Level Readiness Skills
Use models, drawings, and written strategies to add and subtract three-digit numbers. Emphasize composing and decomposing tens and hundreds.	Build-and-trade with base-ten blocks, open number lines, error analysis, and “which strategy works best?” sorting.	Second-grade foundation: add and subtract three-digit numbers with models and written strategies. Third-grade readiness: strengthen accuracy, flexibility, and reasonableness in larger computations.

Brain Maker Focus: The target is efficient, flexible, accurate thinking - not one rigid procedure.

Pair 5: Money Counting and Money Word Problems

Day A: Direct Teaching	Day B: Hands-On Reinforcement	Grade-Level Readiness Skills
Coin and bill values, count mixed coins, use $ and cent symbols, add totals, and solve simple purchase/change situations.	Store math, menu math, buy-and-build totals, coin scoops, and make-the-same-amount challenges.	Second-grade foundation: identify coin/bill values, count money, and solve simple money problems. Third-grade readiness: use money as practical addition, subtraction, place-value, and word-problem practice.

Brain Maker Focus: Money builds skip counting, place value, addition, subtraction, decimal readiness, and real-world confidence.

Pair 6: Analog Time and Elapsed-Time Thinking

Day A: Direct Teaching	Day B: Hands-On Reinforcement	Grade-Level Readiness Skills
Tell and write time to the nearest five minutes. Review hour hand, minute hand, a.m., p.m., half past, quarter after, and quarter till.	Clock builds, schedule cards, match analog/digital times, and short elapsed-time number line problems.	Second-grade foundation: tell and write time to the nearest five minutes. Third-grade readiness: solve elapsed-time and schedule problems using clocks or number lines.

Brain Maker Focus: Time is measurement. It also exposes skip-counting strength and whether the student can track a sequence.

Pair 7: Skip Counting, Odd/Even, and Arrays

Day A: Direct Teaching	Day B: Hands-On Reinforcement	Grade-Level Readiness Skills
Skip count by 2s, 5s, 10s, and 100s. Use odd/even thinking and rectangular arrays as foundations for multiplication.	Array builds, equal-row pictures, pair-and-share odd/even tasks, and skip-counting movement games.	Second-grade foundation: skip count, identify odd/even numbers, and use arrays or equal rows. Third-grade readiness: connect equal groups, arrays, and repeated addition to new operation thinking.

Brain Maker Focus: This is where multiplication starts before the symbol feels scary.

Pair 8: Multiplication Meaning: Equal Groups and Arrays

Day A: Direct Teaching	Day B: Hands-On Reinforcement	Grade-Level Readiness Skills
Interpret multiplication as groups of equal size. Connect repeated addition, arrays, and simple equations.	Build equal groups with counters, draw arrays, create multiplication stories, and match facts to pictures.	Second-grade foundation: build arrays and equal groups with concrete models. Third-grade readiness: interpret equal groups, arrays, and equations as next-level operation models.

Brain Maker Focus: The child should know what 4 x 3 means before trying to memorize a table.

Pair 9: Division Meaning and Fact Families

Day A: Direct Teaching	Day B: Hands-On Reinforcement	Grade-Level Readiness Skills
Interpret division as sharing and grouping. Connect division to multiplication as an unknown-factor problem.	Share counters equally, make equal groups, sort remainder-free examples, and build multiplication/division fact families.	Second-grade foundation: use equal groups and simple sharing contexts. Third-grade readiness: connect sharing, grouping, and unknown-factor thinking.

Brain Maker Focus: Division should feel like “what do I know about multiplying?” instead of a new random step.

Pair 10: Two-Step Word Problems and Unknowns

Day A: Direct Teaching	Day B: Hands-On Reinforcement	Grade-Level Readiness Skills
Solve one- and two-step word problems. Use drawings, equations, symbols, and a letter or box for the unknown.	Story-problem cards, act-it-out tasks, equation matching, missing-number puzzles, and reasonableness checks.	Second-grade foundation: solve one-step addition and subtraction word problems with drawings or equations. Third-grade readiness: solve one- and two-step problems, use unknowns, and check reasonableness.

Brain Maker Focus: This is the bridge from “compute this” to “understand what the problem is asking.”

Pair 11: Measurement, Rulers, and Data

Day A: Direct Teaching	Day B: Hands-On Reinforcement	Grade-Level Readiness Skills
Measure and estimate length in inches, feet, centimeters, and meters. Compare lengths and represent simple data.	Measure objects, make line plots, create picture/bar graphs, and solve “how many more/less” data questions.	Second-grade foundation: measure length, compare lengths, and use data displays. Third-grade readiness: measure accurately, use line plots, and answer questions from measurement data.

Brain Maker Focus: Measurement makes number lines, units, comparison, and data visible.

Pair 12: Fractions as Equal Parts

Day A: Direct Teaching	Day B: Hands-On Reinforcement	Grade-Level Readiness Skills
Partition circles and rectangles into equal shares. Name halves, thirds, fourths, and connect equal parts to fraction language.	Fold paper, build fraction mats, sort equal/not equal parts, and create whole-shape fraction models.	Second-grade foundation: partition shapes into equal shares and use fraction language. Third-grade readiness: understand fractions as numbers and represent them with models and number lines.

Brain Maker Focus: Fractions are not pizza vocabulary. They are numbers made from equal parts of the same whole.

Pair 13: Area as Tiling and Arrays

Day A: Direct Teaching	Day B: Hands-On Reinforcement	Grade-Level Readiness Skills
Introduce area as the amount of space inside a shape. Count unit squares and connect rectangle area to rows and columns.	Tile rectangles, count square units, build arrays, and connect repeated addition to early multiplication.	Second-grade foundation: use arrays and equal groups with rows and columns. Third-grade readiness: understand area by tiling, square units, and rectangle arrays.

Brain Maker Focus: Area is one of the best bridges between second-grade arrays and third-grade multiplication.

Pair 14: Perimeter and Shape Attributes

Day A: Direct Teaching	Day B: Hands-On Reinforcement	Grade-Level Readiness Skills
Define perimeter as the distance around a shape. Review polygons, sides, angles, quadrilaterals, and shape categories.	Trace-the-outside activities, geoboards, shape sorting, perimeter walks, and same-area/different-perimeter explorations.	Second-grade foundation: describe and sort shapes by attributes. Third-grade readiness: understand perimeter as distance around and classify shapes by properties.

Brain Maker Focus: Perimeter and area must stay separate: perimeter is around; area is inside.

Pair 15: Mixed Third-Grade Readiness Review

Day A: Direct Teaching	Day B: Hands-On Reinforcement	Grade-Level Readiness Skills
Cumulative review: place value, addition/subtraction, money, time, measurement, arrays, multiplication/division meaning, fractions, area, and perimeter.	Applied problem-solving stations, task cards, build-and-explain challenges, final readiness check, and parent summary notes.	Second-grade foundation: review place value, computation, money, time, measurement, data, and shapes. Third-grade readiness: apply models, explain strategies, and connect skills across problem types.

Brain Maker Focus: The final goal is not perfection. It is stronger math stamina, better language, and more readiness for third-grade thinking.

Math Language Cheat Sheet

Use this as the quick-reference language page for tutoring, parent conversation, and student explanations.

Operation and Problem-Solving Words

Word	Kid-Friendly Meaning	Example / Use
Addend	A number being added.	8 + 5: 8 and 5 are addends.
Sum	The answer to an addition problem.	8 + 5 = 13; 13 is the sum.
Difference	The answer to a subtraction problem.	15 - 7 = 8; 8 is the difference.
Unknown	The missing number.	8 + ? = 13
Equation	A math sentence with an equal sign.	7 + 5 = 12
Strategy	The plan used to solve.	Make ten, draw a picture, use a number line.
Reasonable	An answer that makes sense.	If I add, my answer should get bigger.

Place Value and Number Words

Word	Kid-Friendly Meaning	Example / Use
Digit	One symbol in a number.	In 347, the digits are 3, 4, and 7.
Place	The position of a digit.	Hundreds, tens, ones.
Value	What the digit is worth.	In 347, the 4 means 40.
Standard form	The usual number form.	347
Word form	The number written in words.	Three hundred forty-seven.
Expanded form	The number broken apart by value.	300 + 40 + 7
Compare	Decide greater, less, or equal.	347 > 274
Round	Find a nearby easier number.	347 rounds to 350 or 300, depending on the place.

Multiplication and Division Readiness Words

Word	Kid-Friendly Meaning	Example / Use
Equal groups	Groups with the same number in each group.	4 groups of 3.
Array	Objects arranged in rows and columns.	3 rows of 4.
Row	A side-to-side line in an array.	Rows go across.
Column	An up-and-down line in an array.	Columns go down.
Factor	A number being multiplied.	3 x 4: 3 and 4 are factors.
Product	The answer to multiplication.	3 x 4 = 12; 12 is the product.
Divide	Share or group equally.	12 shared by 3.
Quotient	The answer to division.	12 / 3 = 4; 4 is the quotient.

Money and Time Words

Word	Kid-Friendly Meaning	Example / Use
Cent	Part of a dollar.	100 cents = 1 dollar.
Total	How much altogether.	25 cents + 10 cents = 35 cents.
Change	Money returned after paying.	Pay $1.00 for 75 cents; change is 25 cents.
Analog clock	A clock with hands.	The classroom clock.
Digital clock	A clock with numbers.	3:45
Hour hand	The shorter hand.	Tells the hour.
Minute hand	The longer hand.	Counts minutes by 5s.
Elapsed time	How much time has passed.	From 2:10 to 2:30 is 20 minutes.

Measurement, Fractions, and Geometry Words

Word	Kid-Friendly Meaning	Example / Use
Unit	The size used to measure.	Inches, feet, centimeters, meters.
Estimate	A close, reasonable guess.	About 10 inches.
Data	Information collected.	Lengths of pencils in the group.
Fraction	Part of a whole.	1/2, 1/3, 1/4
Equal parts	Parts that are the same size.	Four equal pieces.
Numerator	Top number; how many parts.	In 3/4, the 3 is the numerator.
Denominator	Bottom number; the size of the parts.	In 3/4, the 4 names fourths.
Area	Space inside a flat shape.	Count square units.
Perimeter	Distance around the outside.	Add the side lengths.
Polygon	A closed flat shape with straight sides.	Triangle, rectangle, pentagon.

Parent-Friendly Closing Language

This transition plan is designed to build a stronger second-grade foundation while helping the student become comfortable with the third-grade math ideas that are coming next. The summer work reviews addition, subtraction, place value, money, time, measurement, and word problems while gently introducing the next-level ideas through models, drawings, activity pages, and real-world practice.

The goal is for the student to enter third grade with stronger math language, better number sense, more confidence, and a working understanding of the skills third-grade math will build on.

Brain Maker Connection: When students can build it, explain it, draw it, and use it in a real situation, they are not just completing math problems. They are building flexible math brains.

Readiness Snapshot

- Can add and subtract within 20 with automatic or near-automatic recall.
- Can add and subtract within 100 using efficient strategies.
- Can read, write, compare, and build numbers to 1,000.
- Can count mixed coins and solve simple money problems.
- Can tell analog time to the nearest five minutes and begin elapsed-time thinking.
- Can represent equal groups and arrays as early multiplication.
- Can explain sharing/grouping as early division.
- Can partition shapes into equal parts and use early fraction language.
- Can count square units and begin to connect area with arrays.
- Can trace the outside of a shape and find perimeter with side lengths.

Standards Note

This guide is built around generalized grade-level math skills commonly addressed in second and third grade math standards across states. It is intended as a parent-facing transition guide, not a state-specific standards document.

- Generalized second-grade expectations: addition and subtraction fluency, place value to 1,000, money, time, measurement, data, and early equal-groups thinking.
- Generalized third-grade expectations: multi-step problem solving, equal groups and arrays, fractions as numbers, area, perimeter, measurement, and shape reasoning.
- Mathematical thinking habits - explaining reasoning, choosing tools, noticing structure, and checking reasonableness - should be built into the practice instead of treated as a separate lesson.