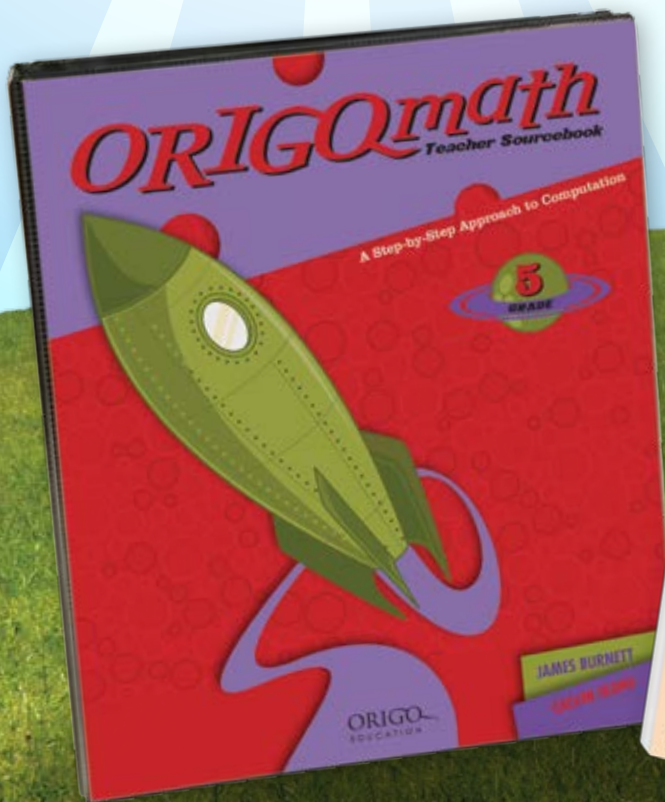


Get Summer Learning Gains

with this ready-to-go program!



ORIGOmath Grades 1–6 resources
fit a variety of summer school models.

Student engagement is key for building conceptual understanding in summer school.

➤ The Solution

ORIGOmath is targeted to provide a developmentally appropriate sequence to teach and assess computational fluency. This carefully sequenced program utilizes a wide range of visual models and appropriate practice to solidify foundational understanding and mastery in all aspects of computation.

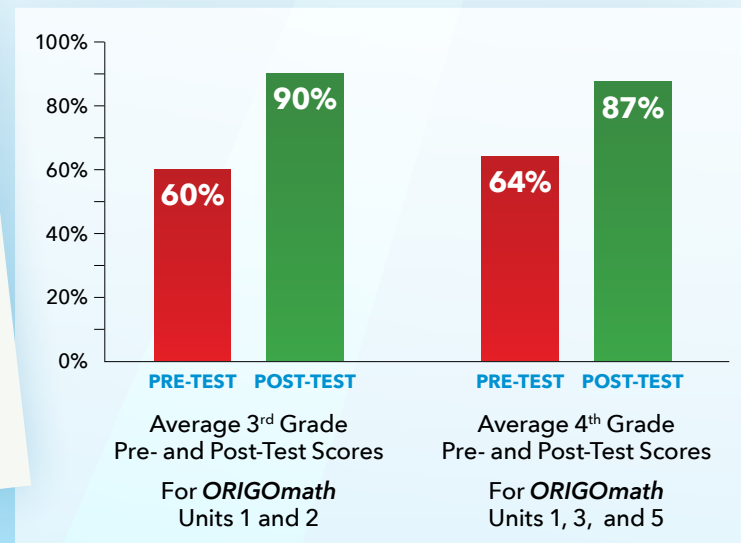
ORIGOmath is a real alternative for those seeking a more effective approach. The easy-to-implement resources include a range of visual models and concrete materials that are fun and engaging for children.

ORIGOmath gets results!

“The **ORIGOm**ath product was the perfect resource for our rising first through fifth grade summer school program. The program made it very easy for our teachers to implement a variety of computational strategies that allowed students to make sense of what they were doing and why. The computational strategies encompassed in this product gave our students a boost in their confidence about their math skills. **Teachers saw a 30% increase in their student’s computational fluency skills in just 3 weeks!**”

Kathleen P. Stoebe
Title I Professional Development Mathematics Specialist
Prince William County Public Schools

2016 Belmont Summer School Mathematics Performance
Prince William County, Virginia
3-Week Program using the ORIGOmath Program



➤ You are in Good Hands

ORIGOmath has been developed by a team of educators with a proven track record of translating current research into effective classroom practice.



Calvin Irons PhD
Vice-President, ORIGO Education
SENIOR AUTHOR

Dr. Calvin Irons has been involved in mathematics education for 40 years. As a teacher, lecturer, researcher, presenter, curriculum adviser, and the author of over 500 books and articles, he is dedicated to improving the quality of mathematics education. Calvin shares his knowledge of developing computational fluency in the elementary grades with an international audience, speaking regularly at professional conferences in North America, Australia, Europe, Malaysia, and Singapore.



James Burnett MEd
President, ORIGO Education
SENIOR AUTHOR

Through ORIGO, James strives to lift the profile of mathematics with dynamic professional development and the creation of quality, research-based classroom materials. James frequently presents workshops and speaks at conferences throughout the United States and Australia and has written and co-written more than 150 mathematics books.



Sandy Atkins PhD
Mathematics Education Consultant
SERIES CONSULTANT

Dr. Sandy Atkins seeks to improve the teaching and learning of mathematics through dynamic professional development that translates research into daily classroom practice. With extensive experience across Grades K-6, Sandy focuses on vertical progression of key concepts in computational fluency. She speaks regularly at state, national, and international conferences, and conducts workshops on these ideas throughout the United States.



Rosemary Irons MSc
Mathematics Education Consultant, ORIGO Education
EARLY YEARS CONSULTANT

An early childhood expert, Rosemary Irons has written a wide range of innovative practical classroom resources for Pre-K, K, and Grade 1. Rosemary conducts professional development seminars for teachers around the world including the United States, Australia, and Singapore, and served as an adviser for the Pre-K Mathematics Standards for the state of Missouri.

➤ From Research to Classroom Practice

The **ORIGOm**ath program was created to help teachers develop students' mathematical understanding and computation skills. The authors have translated key research into easy, step-by-step classroom practice.

The research states that:

- students learn through active involvement, and that substantive communication between teachers and students, as well as between students and students, helps students internalize and acquire new skills
- students build their mathematical understanding by interacting with the world around them through a range of engaging learning experiences
- mathematics is a series of connected ideas and students make connections by building on understandings already developed
- learning should be as much "minds on" as it is "hands on"
- skills such as computation are essential and should be practiced after they have developed from deep conceptual understandings

Therefore **ORIGOm**ath:

- encourages students to justify, generalize, communicate, and share their thinking with the entire class or with other members of the class
- provides real-world contexts (such as shipping costs, telephone charges, and purchasing food items) to explore mathematical ideas
- provides a carefully developed, step-by-step sequence of learning experiences. Ideas are built upon related concepts and revisited throughout the program
- emphasizes students' critical thinking and reasoning through discussion and the appropriate use of concrete and pictorial models
- provides opportunities for students to regularly and meaningfully practice computation skills

➤ The research bibliography can be found in the Introduction of each teacher sourcebook.



➤ Summer School is as Easy as 1-2-3

Each grade of the **ORIGOm**ath program comprises a teacher sourcebook and a student journal. The teacher sourcebooks include a prerequisite checklist or pre-test, 12 units of 5 sessions, and assessment and recording options. The student journals consist of in-class and homework pages with related work printed back-to-back on one perforated page.



Step 1 The Prerequisite Checklist and Pre-Tests

In Grade 1, **ORIGOm**ath provides a prerequisite checklist to help assess students' abilities and understanding. In later grades this takes the form of a pre-test booklet. Each question relates to a unit from the previous grade.

Grade 1, Prerequisite Checklist

Grade 2, Pre-Test, Page 3

Grade 2, Pre-Test, Page 4

➤ Test answers are provided.

Step 2 The Sessions

An easy-to-follow double-page spread describes everything the teacher needs.

The focus describes the key learning for the session.

Each session begins with a five-minute discussion which develops flexible thinking. These discussions are sequenced throughout the 12 units.

New strategies and thinking are introduced through class, group, or individual activities, and are described with clear diagrams, key questions, and their expected responses.

The in-class student journal page provides appropriate and meaningful written practice for the activity.

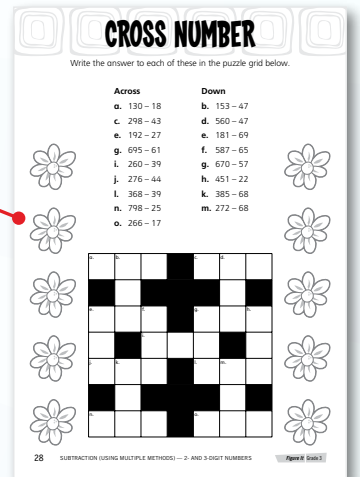
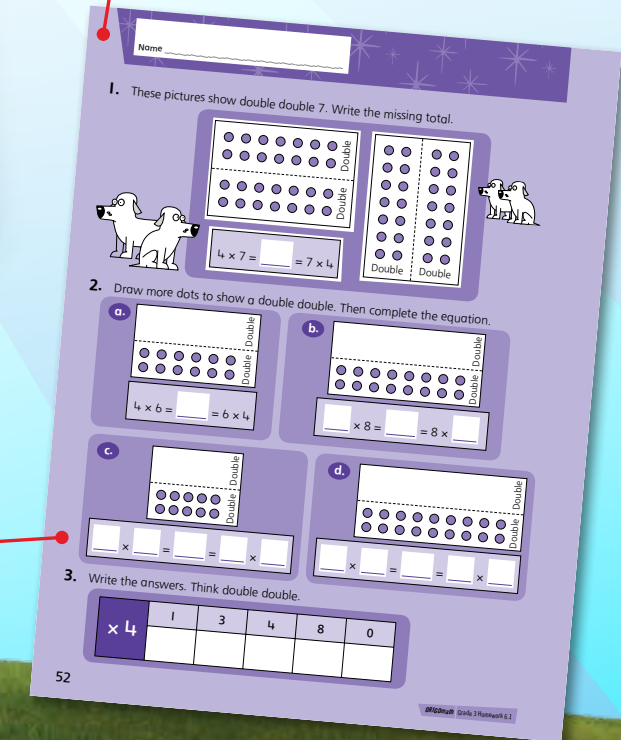
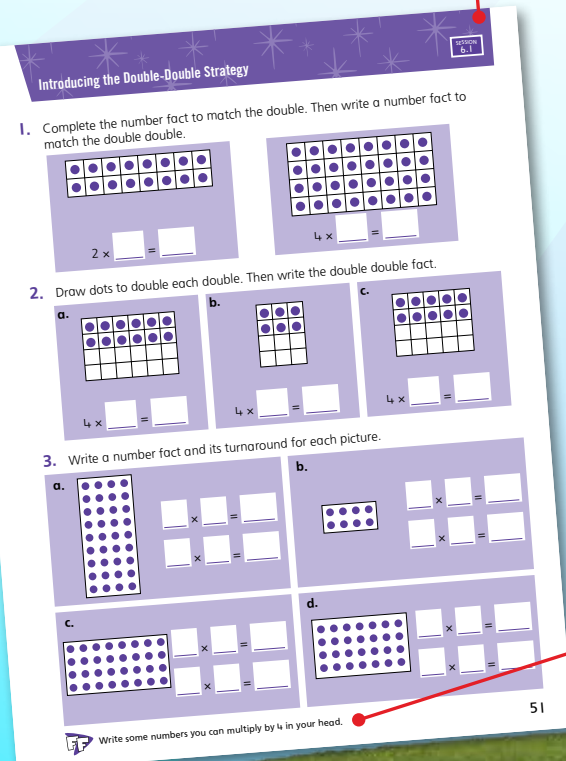
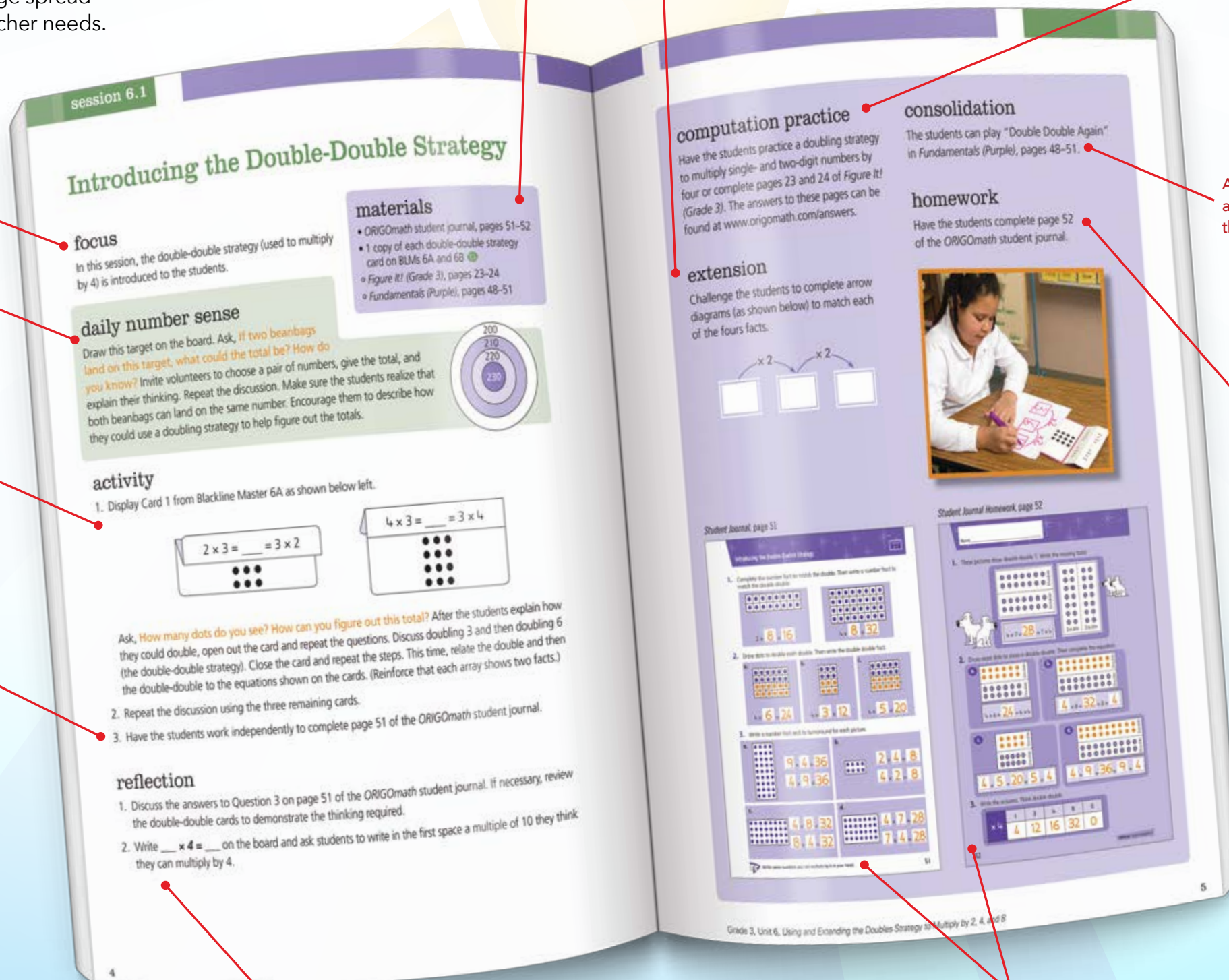
The materials and resources required throughout the session are listed.

Most sessions provide an activity to extend students' skills.

The popular Figure It! series provides additional computation practice.

All sessions include an activity to consolidate the in-class learning.

The related work on the back of the student journal page provides further practice suitable for homework.



The Fast Finisher activity provides an additional challenge to students who complete the page quickly.

Each session concludes with a reflection to review what was learned.

Answers are provided for the student journal pages.

The related student work is printed back-to-back on one easily removable perforated page.

Step 3

Assessment and Recording

Unit Assessment

ORIGOmath provides a range of assessment options for each of the 12 units in every grade.

Each unit provides clear expectations of the content to be learned.

The teacher has the option of using a short-answer and/or a multiple-choice test to assess the students' achievement of the expectations.

6 Assessment

expectations
On completion of this unit, the students should be able to

- A** use a doubling strategy to figure out a fours or eights fact and its turnaround
- B** use the double-double strategy to multiply two-digit numbers by four
- C** double three-digit numbers that have a product less than 1000, e.g. 312×2

techniques
The following tools can be used to assess the expectations.

1. Written Task A B C
Make copies of the task on page 14 of this unit. Read each question with the class. Allow time for the students to write their responses. Consider administering the task one or two weeks after completion of the unit.

Written Task 6

A Prepare out there as quickly as you can. Write the answers.

5×24	7×12	3×28	6×36
4×20	8×32	9×8	2×16
3×24	5×56	4×40	7×16
6×48	2×64	8×32	9×72

B Complete each picture.

C Multiply each number by 4.

44	60	92	128	164	180	216
------	------	------	-------	-------	-------	-------

D Double the numbers. Write your answers around the circles.

E Double the numbers. Write your answers around the circles.

Grade 3, Unit 6

Post-Tests

In each grade, a two-part post-test booklet provides short-answer and multiple-choice questions. The 12 questions in each part reflect the content of the 12 units. Test answers are provided.

Part A

1. Figure out the total. Write the answer then use the space or number line to show your thinking.

$267 + 118 = \underline{\hspace{2cm}}$

2. Complete the equation to show the total weight.

$\underline{\hspace{1cm}} \times 2 = \underline{\hspace{1cm}}$

3. Write an equation to match the story problem.

Marie saved \$268. She bought a bike for \$145. How much money did she have left?

$\underline{\hspace{1cm}} - \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$

4. Color the fraction to help you complete the sentence and the fact.

One-half of 24 is $\underline{\hspace{1cm}}$. $24 \div 2 = \underline{\hspace{1cm}}$

One-quarter of 24 is $\underline{\hspace{1cm}}$. $24 \div 4 = \underline{\hspace{1cm}}$

Grade 3, Post-Test, Part A

Part B

17. Kyle has \$68. How much more does he need to buy the guitar?

a. $\$123$
b. $\$177$
c. $\$176$

18. What number belongs in the circle?

a. 24
b. 48
c. 46

19. Which of these does **not** match this answer?

a. $212 + 166$
b. $246 + 232$
c. $153 + 325$

20. Each pack holds six bottles. How many bottles are in seven packs?

a. 45
b. 24
c. 42

Grade 3, Post-Test, Part B

Recording

Several blackline masters offer a variety of ways to record student achievement of the expectations.

Individual Record of Expectations: Units 1-6

Unit	Expectation	Not yet	Some	Mostly	Completely	Observations
1	Use a mental strategy to add two-digit numbers with totals less than 100, e.g. $47 + 36$					
2	Use a mental strategy to multiply one-digit numbers by five, e.g. 36×5					
3	Mentally calculate the difference between two and three-digit numbers without bridging, e.g. $298 - 25$ or $358 - 125$					
4	Use a mental strategy to calculate the difference between two-digit numbers, e.g. $74 - 28$					
5	Use a mental strategy to calculate the difference between two-digit numbers, e.g. 143 and 122 , or 230 and 78					
6	Use a doubling strategy to figure out a fours or eights fact and its turnaround					

Class Record of Expectations: Units 1-3

Student Name*	Unit 1	Unit 2	Unit 3
	A B C	A B C	A B C

Class Record of Post-Test

Student Name*	Units											
	1	2	3	4	5	6	7	8	9	10	11	12
A												
B												

A short interview is provided for one-on-one assessment.

Other ORIGO resources are referenced as intervention for students who need extra assistance.

➤ Customize and enhance your summer school experience with other ORIGO programs and resources

ORIGO offers the following range of innovative resources for students who need extra assistance.

Figure It! Computation Practice

The *Figure It!* series is referenced in the **ORIGOmath** teacher sourcebooks. It offers appropriate practice that goes beyond drill.

- One additional page of computation practice has been provided for every session.
- All pages have been sequenced so students revisit strategies for each operation throughout the program.
- Most activities begin with an interesting puzzle or riddle. Computation is used to reveal the solution. This feature makes those pages self-correcting.



A six-book series for Grades 1-6

The Book of Facts

This series includes engaging reproducible blackline masters for students and provides a comprehensive bank of activities to introduce, reinforce, and practice fact strategies.



The Box of Facts

- Addition and Subtraction
- Multiplication and Division

The *Box of Facts* kits provide all the necessary visual aids and models to introduce and develop the foundational fact strategies for the four operations.



Fundamentals

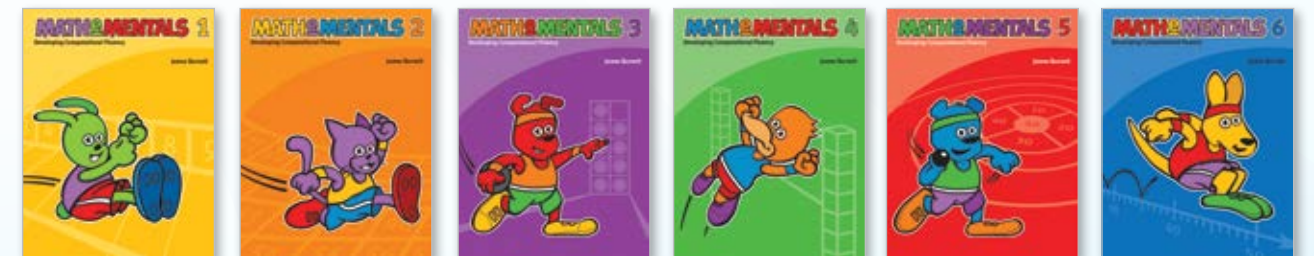
These games for developing mental computation strategies provide fun, motivating experiences that actively engage students as they consolidate and practice their computation strategies.



A six-book series for Grades 1-6

Mathementals

The *Mathementals* series develops your students' range of mental strategies with activities that offer a balance of guided instruction and essential written practice.



A six-book series for Grades 1-6

Algebra for All

Activities in the *Algebra for All* series are aimed at developing the "big ideas" of early Algebra while providing support for thinking, reasoning, and working mathematically.



A six-book series for Grades 1-6



We make learning
meaningful,
enjoyable,
and
accessible
for all students.

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ORIGO
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Phone 1-888-674-4601

Fax 1-888-674-4604

Email info@origomath.com

Web origoeducation.com