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Operations & Algebraic Thinking

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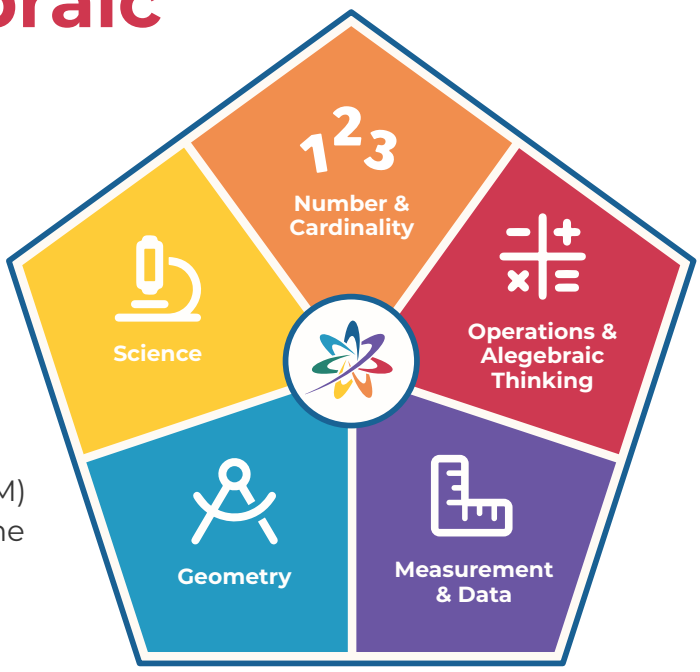
Operations & Algebraic Thinking teaches arimthmetic computations.

There is 100% correlation between Waterford Early Learning's math and science curriculum and the National Council of Teachers of Mathematics (NCTM) Standards. All NCTM Standards are addressed in one or more levels of the curriculum.



Operations & Algebraic Thinking Skills Taught | Overview

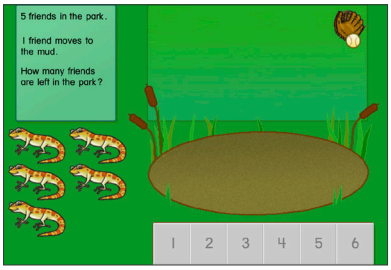
Beginning	Developing	Advanced
Use objects, drawing, etc., to represent addition and subtraction.	Understand the relationship between addition and subtraction.	Fluently add 2-digit numbers.
Add and subtract within 10, including solving word problems.	Solve addition and subtraction problems within 20.	Add and subtract with and without regrouping.
Know addition and subtraction facts within 5.	Know addition and subtraction facts within 10.	Explain addition and subtraction strategies.
Understand and manipulate addends and minuends.	Subtract 2-digit numbers with regrouping.	Use repeated addition to represent simple multiplication.
	Use composition of tens when necessary to add and subtract within 100.	Understand beginning division.

View example Operations & Algebraic Thinking activities here.

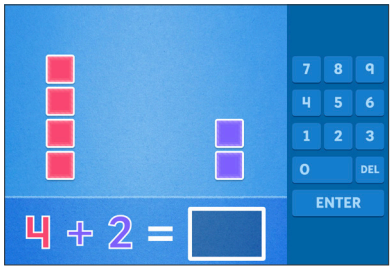
By learning early addition and subtraction, students boost problem-solving, critical thinking, and logical reasoning, paving the way for ongoing math success. Mastery of multiplication and division enables spotting patterns, forging number connections, and tackling intricate problems with confidence, offering essential tools for academics and real-life scenarios.

Addition

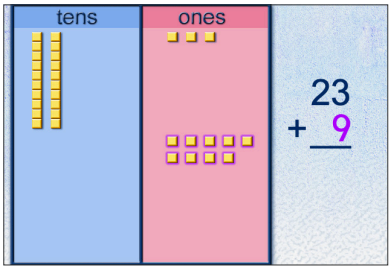
Learning addition is of the utmost importance for early learners, as it fosters essential skills such as number sense, critical thinking, and problem-solving. It empowers them to tackle everyday challenges, build a solid mathematical understanding, and pave the way for further learning in advanced math concepts.



Act Out Addition



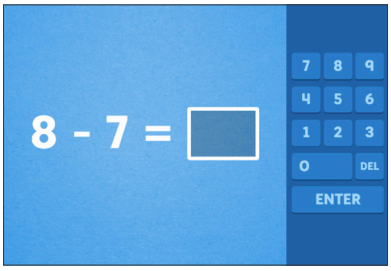
Addition



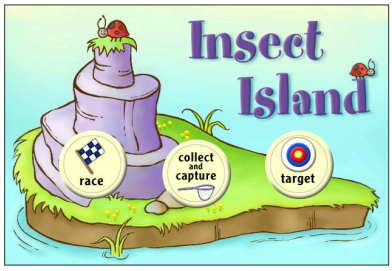
Add 2-Digit Numbers with Regrouping

Sequencing and Place Value

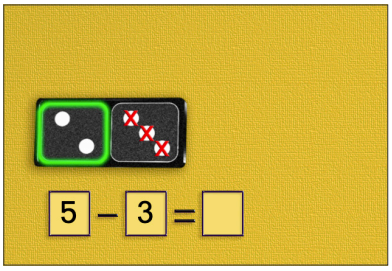
Subtraction enables students to develop foundational numeracy skills, comprehend the concept of taking away or comparing quantities, and establish a solid basis for future mathematical operations.



Subtraction



Insect Island

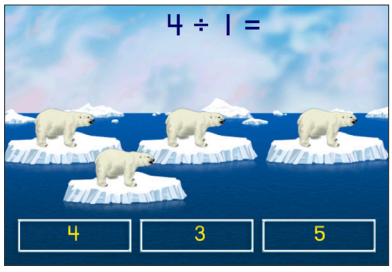


Subtraction Sentences

Multiplication and Division

Acquiring multiplication and division skills at an early age helps form a solid foundation for tackling intricate mathematical concepts and honing problem-solving abilities.

Multiply Using Repeated Addition



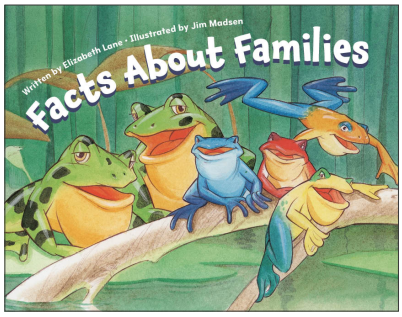
Divide Using Repeated Subtraction

Counting Castle

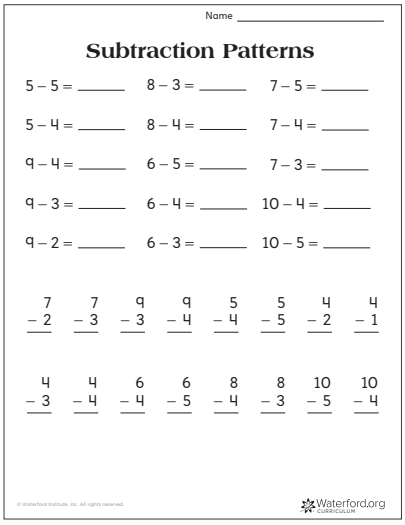
Offline Resources and Activities

Waterford's offline resources are beneficial for educators as they provide hands-on learning experiences, engage students' senses, and promote the development of fine motor skills. These materials, available in English and Spanish, can be used in various educational settings—including classrooms and environments with limited technology access—to ensure equal learning opportunities and encourage independent thinking and creativity in students.

Children's Books introduce young readers to the world of counting, numerical concepts, and understanding quantities. Through engaging stories and colorful illustrations, these books foster a foundational understanding of numbers and how they relate to everyday life.



Teacher Resources support instruction and enhance learning in the classroom. Lesson plans, activities, and practice pages can be printed and used by educators to provide additional practice and enrichment opportunities.



Name _____

Subtraction Patterns

5 – 5 = _____	8 – 3 = _____	7 – 5 = _____
5 – 4 = _____	8 – 4 = _____	7 – 4 = _____
9 – 4 = _____	6 – 5 = _____	7 – 3 = _____
9 – 3 = _____	6 – 4 = _____	10 – 4 = _____
9 – 2 = _____	6 – 3 = _____	10 – 5 = _____

7 – 2	7 – 3	9 – 3	9 – 4	5 – 4	5 – 5	4 – 2	4 – 1
4 – 3	4 – 4	6 – 4	6 – 5	8 – 4	8 – 3	10 – 5	10 – 4

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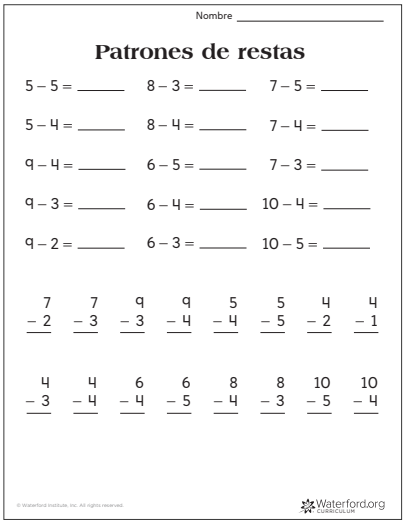

Nombre _____

Patrones de restas

5 – 5 = _____	8 – 3 = _____	7 – 5 = _____
5 – 4 = _____	8 – 4 = _____	7 – 4 = _____
9 – 4 = _____	6 – 5 = _____	7 – 3 = _____
9 – 3 = _____	6 – 4 = _____	10 – 4 = _____
9 – 2 = _____	6 – 3 = _____	10 – 5 = _____

7 – 2	7 – 3	9 – 3	9 – 4	5 – 4	5 – 5	4 – 2	4 – 1
4 – 3	4 – 4	6 – 4	6 – 5	8 – 4	8 – 3	10 – 5	10 – 4

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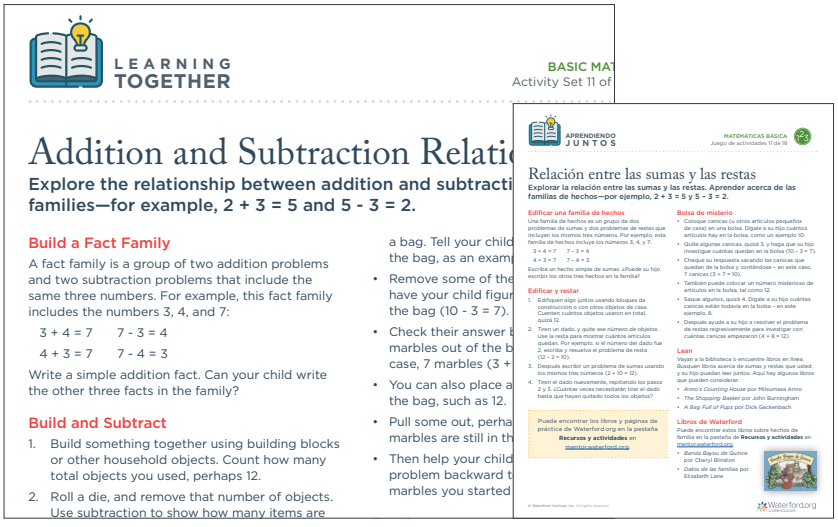
Learning Together Activity Sheets provide learning activities and resources for families. Each activity sheet includes simple and engaging ideas connected to the highlighted skills, as well as a variety of additional skills.



LEARNING TOGETHER

BASIC MAT
Activity Set 11 of

Addition and Subtraction Relati

Explore the relationship between addition and subtracti families—for example, 2 + 3 = 5 and 5 - 3 = 2.

Build a Fact Family

A fact family is a group of two addition problems and two subtraction problems that include the same three numbers. For example, this fact family includes the numbers 3, 4, and 7:

3 + 4 = 7 7 - 3 = 4
4 + 3 = 7 7 - 4 = 3

Write a simple addition fact. Can your child write the other three facts in the family?

Build and Subtract

1. Build something together using building blocks or other household objects. Count how many total objects you used, perhaps 12.
2. Roll a die, and remove that number of objects. Use subtraction to show how many items are

a bag. Tell your child
the bag, as an exam

- Remove some of the
have your child figur
the bag (10 - 3 = 7).
- Check their answer b
marbles out of the b
case, 7 marbles (3 +
- You can also place a
the bag, such as 12.
- Pull some out, perha
marbles are still in th
- Then help your child
problem backward t
marbles you started

APRENDIENDO JUNTOS
MATEMÁTICAS BÁSICA
Juego de actividades 11 de 13

Relación entre las sumas y las restas

Explorar la relación entre las sumas y las restas. Aprender acerca de las familias de hechos—por ejemplo, 2 + 3 = 5 y 5 - 3 = 2.

Edificar una familia de hechos

Una familia de hechos es un grupo de dos problemas de sumas y dos problemas de restas que incluyen los mismos tres números. Por ejemplo, esta familia de hechos incluye los números 3, 4, y 7:

3 + 4 = 7 7 - 3 = 4
4 + 3 = 7 7 - 4 = 3

Escriba un hecho simple de sumas. ¿Puede su hijo escribir los otros tres hechos en la familia?

Edificar y restar

1. Edifiquen algo juntos usando bloques de construcción o con otros objetos de casa. Cuenten cuántos objetos usaron en total, quizá 12.
2. Tiren un dado, y quite ese número de objetos. Use la resta para mostrar cuántos artículos quedan. Por ejemplo, si el número del dado fue 2, escriba y resuelva el problema de resta (12 – 2 = 10).
3. Después escribir un problema de sumas usando los mismos tres números (2 + 10 = 12).
4. Tiren el dado nuevamente, repitiendo los pasos 2 y 3. ¿Cuántas veces necesitarán tirar el dado hasta que hayan quitado todos los objetos?

Puede encontrar los libros y páginas de práctica de Waterford.org en la pestaña **Recursos y actividades** en mentor.waterford.org

Bolsa de misterio

- Coloque canicas (u otros artículos pequeños de casa) en una bolsa. Dígale a su hijo cuántos artículos hay en la bolsa, como un ejemplo 10.
- Quite algunas canicas, quizá 3, y haga que su hijo investigue cuántas quedan en la bolsa (10 – 3 = 7).
- Chequé su respuesta sacando las canicas que quedan de la bolsa y contándose – en este caso, 7 canicas (3 + 7 = 10).
- También puede colocar un número misterioso de artículos en la bolsa, tal como 12.
- Saque algunos, quizá 4. Dígale a su hijo cuántas canicas están todavía en la bolsa – en este ejemplo, 8.
- Después ayude a su hijo a resolver el problema de restas regresivamente para investigar con cuántas canicas empezaron (4 + 8 = 12).

Lean

Vayan a la biblioteca o encuentre libros en línea. Busquen libros acerca de sumas y restas que usted y su hijo puedan leer juntos. Aquí hay algunos libros que pueden considerar:

- *Anno's Counting House* por Mitsumasa Anno
- *The Shopping Basket* por John Burningham
- *A Bag Full of Pups* por Dick Gackenbach

Libros de Waterford

Puede encontrar estos libros sobre hechos de familia en la pestaña de **Recursos y actividades** en mentor.waterford.org

- *Banda Bajou de Quince* por Cheryl Blinton
- *Datos de las familias* por Elizabeth Lane

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Visit Resources & Activities to find these resources and more!

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