Operations

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Information

Common core icons

This icon indicates a slide where the Standards for Mathematical Practice are being developed. Details of these are given in the Notes field.

Slides containing examples of mathematical modeling are marked with this stamp.

This icon indicates an opportunity for discussion or group work.

The **Standards for Mathematical Practice** outlined in the Common Core State Standards for Mathematics describe varieties of expertise that mathematics educators at all levels should seek to develop in their students.

These are:

1) Make sense of problems and persevere in solving them.

2) Reason abstractly and quantitatively.

3) Construct viable arguments and critique the reasoning of others.

4) Model with mathematics.

5) Use appropriate tools strategically.

6) Attend to precision.

7) Look for and make use of structure.

8) Look for and express regularity in repeated reasoning.

This icon indicates that the slide contains activities created in Flash. These activities are not editable.

This icon indicates teacher's notes in the Notes field.

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Introducing operations

A mathematical **operation** is a process that produces a new value from a set of original values.

5	+	2	=	7	addition
5	−	2	=	3	subtraction
5	×	2	=	10	multiplication
5	÷	2	=	2.5	division

Can you name these four common operations?

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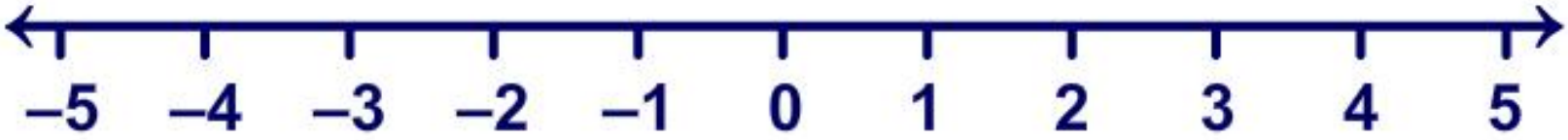
Properties of addition

A **number line** helps us to understand adding positive and negative numbers.



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Ordered addition square

Press the empty squares to reveal the number patterns produced when adding positive and negative integers in order.

	second number						
+	–3	–2	–1	0	1	2	3
–3							
–2							
–1							
0							
1							
2							
3							

first number

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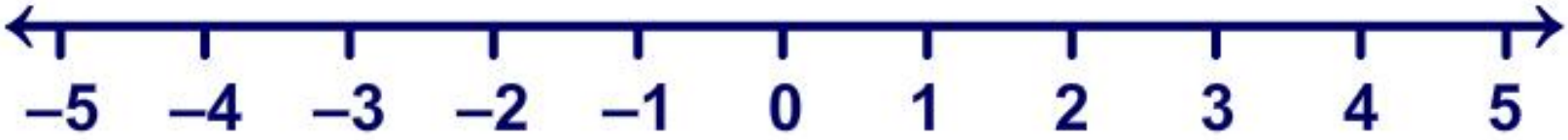
Properties of subtraction

A **number line** helps us to understand subtracting positive and negative numbers.



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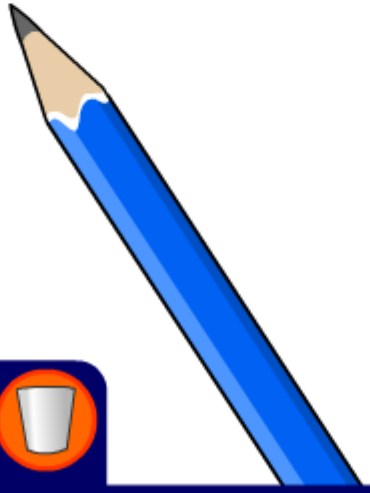
Ordered subtraction square

Press the empty squares to reveal the number patterns made when subtracting positive and negative integers in order.



first number \ second number	–3	–2	–1	0	1	2	3
3							
2							
1							
0							
–1							
–2							
–3							

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Magic square

In a magic square, each row, column and diagonal adds up to the same number. Press the boxes to reveal some of the numbers and figure out the ones that are missing.

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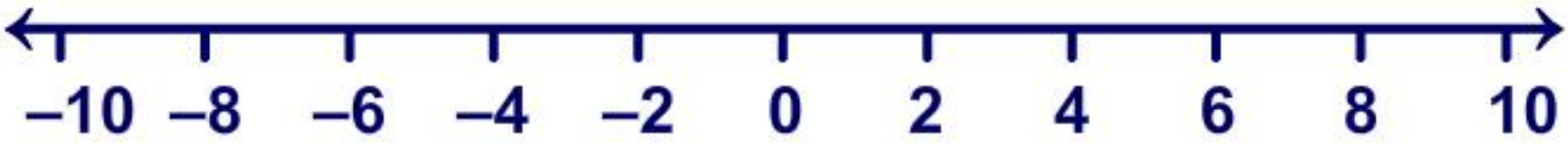
Properties of multiplication

A number line helps us to understand **multiplying** positive and negative numbers.



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Ordered multiplication square

Press the empty squares to reveal the number patterns produced when multiplying positive and negative numbers in order.

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Properties of division

Division follows similar rules to multiplication:

a **positive** number ÷ a **positive** number = a **positive** number

a **negative** number ÷ a **positive** number = a **negative** number

a **negative** number ÷ a **negative** number = a **positive** number

What is the correct answer to –600 ÷ 20 ?

What is the correct answer to 150 ÷ –2 ?

What is the correct answer to –30 ÷ –10 ?

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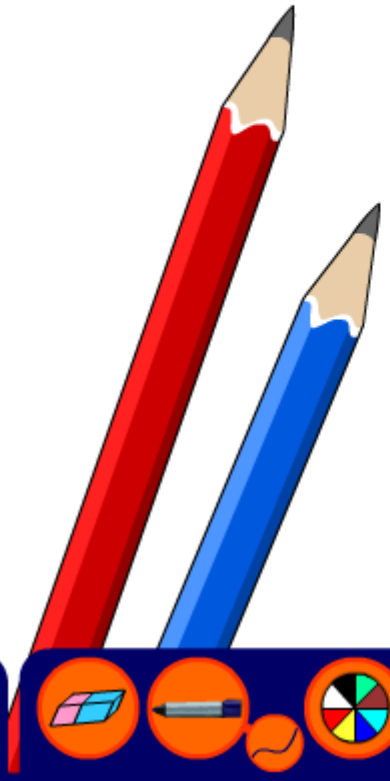
Mixed division square

Figure out the missing values by dividing.



second number

first number

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Joe’s farm

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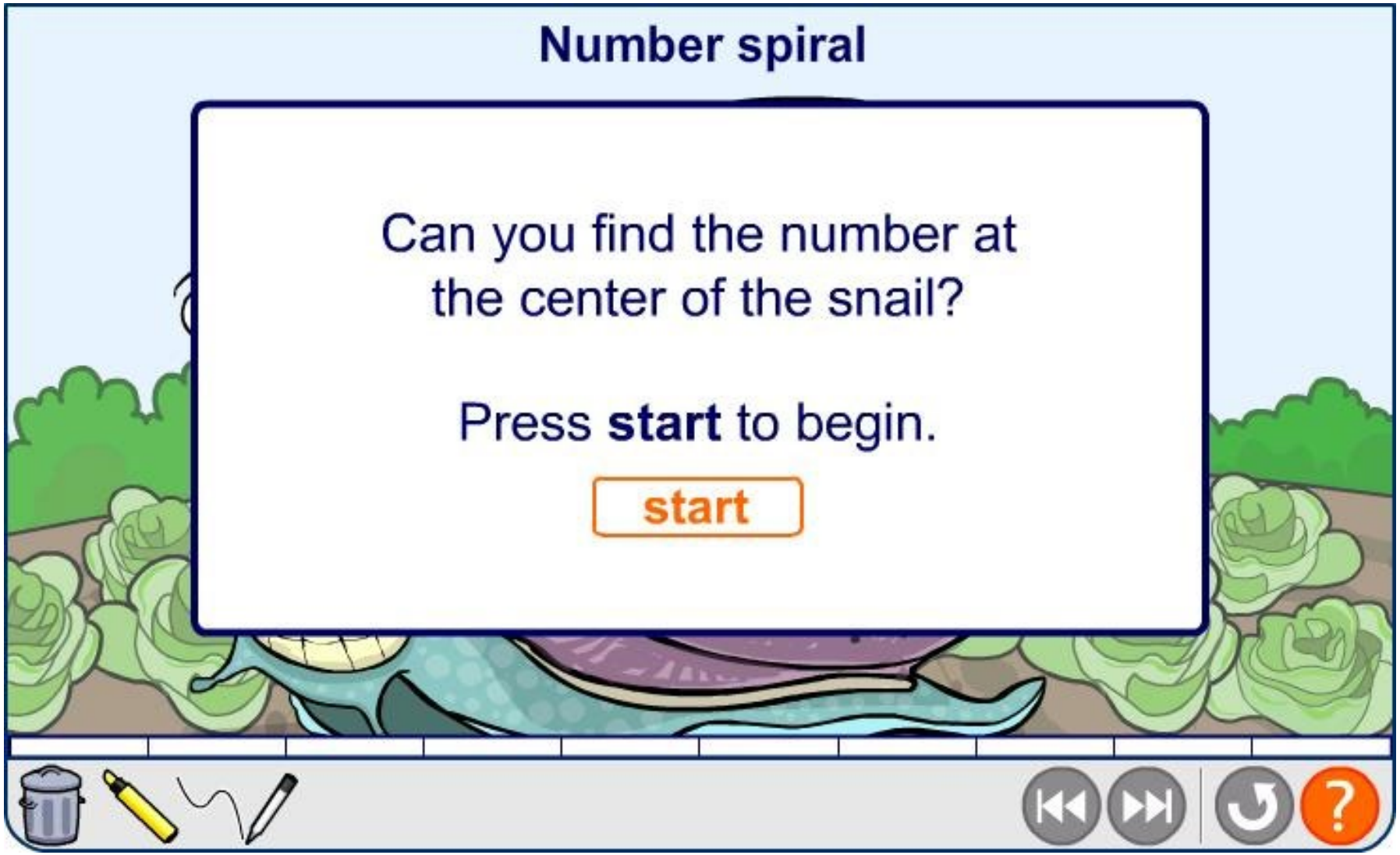
Number spiral



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