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# Math Mammoth Integers

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# Introduction

*Math Mammoth Integers* worktext covers all important integer topics for middle school (grades 5-8), with instructions written directly to the student. Thus, it requires very little teacher or parent involvement.

The first topic in the book is integers themselves, presented on a number line and tied in with temperature. Next we move on to modeling additions and subtractions as movements on a number line. Another model used in the book for addition is that of counters or chips. One lesson explains the shortcut for subtracting a negative integer using three different viewpoints (difference, counters, and number line movements). There is also a roundup lesson for addition and subtraction of integers.

Multiplication and division of integers is explained using counters, first of all, and then relying on the properties of multiplication and division. We use multiplication and division in the context of enlarging or shrinking geometric figures in the coordinate grid.

These lessons also include a few simple equations, problems with several operations, and fun riddles.

The last section of lessons in this book deals with the coordinate grid. Students move geometric figures up, down, to the right, and left. They reflect figures in the  $x$ -axis and in the  $y$ -axis. Lastly, students graph simple linear functions, first using a range of integer values only, and then without such limitation.

The book ends with two review lessons.

Wishing you success in all your math teaching endeavors,  
Maria Miller, the author

## Helpful Resources on the Internet

*Use these free online resources to supplement the “bookwork” as you see fit.*

### Ordering integers

#### Number Balls Game

Click on the rotating number balls in the ascending order.

<http://www.mathplayground.com/numberballs.html>

#### Negative Numbers Hat Game

Put the hats with numbers on the people's heads in the right order.

<http://www.primaryresources.co.uk/online/negnumorder.swf>

#### Order Negative Numbers

Drag the numbers in the right order onto the ladder.

<http://www.bbc.co.uk/skillswise/numbers/wholenumbers/whatarenumbers/negativenumbers/game.sl>

## **Addition and subtraction**

*The section for “all operations” has even more games*

### **Adding and Subtracting Integers Gizmos from Explorelearning.com**

Interactive simulations that illustrate adding and subtracting integers on a number line or with chips. Includes an exploration guide and assessment questions. You can get a 5-minute access for free, or a free 30-day trial account.

<http://www.explorelearning.com/index.cfm?method=cResource.dspResourcesForCourse&CourseID=211>

### **Color Chips Addition**

The user drags positive/negative chips to the working area, then combines them in pairs to see the sum.

[http://matti.usu.edu/nlvm/nav/frames\\_asid\\_161\\_g\\_2\\_t\\_1.html](http://matti.usu.edu/nlvm/nav/frames_asid_161_g_2_t_1.html)

### **Color Chips Subtraction**

Drag positive/negative chips and zero pairs into working area as instructed, then subtract.

[http://nlvm.usu.edu/en/nav/frames\\_asid\\_162\\_g\\_3\\_t\\_1.html](http://nlvm.usu.edu/en/nav/frames_asid_162_g_3_t_1.html)

### **Integer Football**

The football player advances either towards the positive or the negative yard lines.

[http://www.mathgoodies.com/games/integer\\_game/football.html](http://www.mathgoodies.com/games/integer_game/football.html)

### **Line Jumper**

FUNBRAIN shows you a number line and an addition or subtraction problem, you click the right answer on the number line.

<http://www.funbrain.com/linejump>

### **Space Coupe to the Rescue**

By choosing a positive or negative number, the player controls the vertical position of a spaceship. If the spaceship reaches the same vertical position as a virus pod, the pod is destroyed.

<http://pbskids.org/cyberchase/games/negativenumbers>

### **Spider Match**

Add two integers from the spiderweb to get the middle number as sum. The player with the most combinations done within a minute wins. Up to four players can play at the same time.

<http://www.arcademicskillbuilders.com/games/spider-match/spider-match.html>

### **Red and Black TripleMatch Game for Adding Integers**

This is a fun card game with 2-5 people to practice adding integers.

<http://mathmamawrites.blogspot.com/2010/07/black-and-red-triplematch-card-game-for.html>

## **Multiplication and division**

*The section for “all operations” has even more games*

### **Integer Warp (race)**

A one-minute race with up to four spaceships (players). Answer integer multiplication problems correctly to speed up your spaceship.

<http://www.arcademicskillbuilders.com/games/integer-warp/integer-warp.html>

### **Integers Multiplication Blocks**

Click on numbers whose product is equal to the given target number. Score as high as you can in the given time limit.

<http://www.xpmath.com/forums/arcade.php?do=play&gameid=58>

### **Integers Multiplication -144 to 144**

Solve as many integer multiplication problems as you can within one minute with these online flashcards.

<http://www.xpmath.com/forums/arcade.php?do=play&gameid=17>

### **Integers Division -81 to 81**

Solve as many integer division problems as you can within one minute with these online flashcards.

<http://www.xpmath.com/forums/arcade.php?do=play&gameid=16>

### **All operations**

#### **MathCar Racing**

Outdrive Funbrain's math car by getting the highest score and practice integer operations.

<http://www.funbrain.com/osa/index.html>

#### **Arithmetic Four (Connect the Four game)**

Practice any or all of the four operations with integers. First you answer a math problem, then you can do your move in a connect-the-four game.

<http://www.shodor.org/interactivate/activities/ArithmeticFour>

#### **Integers Jeopardy**

Teams choose either integer addition, subtraction, multiplication, or division questions.

<http://www.math-play.com/Integers-Jeopardy/Integers-Jeopardy.html>

#### **Choose Operation Game**

Choose the range to include negative numbers in this fun game to get practice in how to add/subtract/multiply/divide integers.

<http://www.homeschoolmath.net/operation-game.php>

#### **Mystery Picture Game**

Integer problems with many operations. Click on the button with the problem, then click on the answer, which reveals a picture piece by piece.

<http://www.dositey.com/2008/addsub/Mystery11.htm>

#### **Integers: Operations with Signed Numbers**

Clear and cute presentations of the rules for integer operations, including The Party in the Mathland for determining the sign of multiplication/division result. Has a link to practice exercises with instant feedback.

<http://amby.com/educate/math/integer.html>

#### **Flashcards with Negative Numbers**

Interactive flashcards at AplusMath.com for integer addition, subtraction, multiplication, and division.

<http://www.aplusmath.com/Flashcards/sub-nflash.html>

### **Create Integers Worksheets**

Use the basic operations worksheet generator for integer worksheets by choosing the range of numbers to be from negative to positive.

<http://www.homeschoolmath.net/worksheets/basic-operations-worksheets.php>

### **How to Teach Integers**

An article for the teacher about how to teach integer operations.

<http://www.homeschoolmath.net/teaching/integers.php>

### **Coordinate Grid Quiz from ThatQuiz.org**

This quiz has 10 questions and asks to either plot a point or give the coordinates of a given point. You can also modify the quiz parameters to your liking.

<http://www.thatquiz.org/tq-7/?-j8-l5-m2kc0-na-p0>

### **Free Downloadable Integer Fact Sheets**

[http://www.homeschoolmath.net/download/Add\\_Subtract\\_Integers\\_Fact\\_Sheet.pdf](http://www.homeschoolmath.net/download/Add_Subtract_Integers_Fact_Sheet.pdf)

[http://www.homeschoolmath.net/download/Multiply\\_Divide\\_Integers\\_Fact\\_Sheet.pdf](http://www.homeschoolmath.net/download/Multiply_Divide_Integers_Fact_Sheet.pdf)

### **The History of Negative Numbers**

While they seem natural to us now, in the past negative numbers have spurred controversy and been called “fictitious” and other names.

[http://nrich.maths.org/public/viewer.php?obj\\_id=5961](http://nrich.maths.org/public/viewer.php?obj_id=5961)

### **Superkids Math Worksheet Creator - order of operations**

You can choose to include negative numbers and thus get worksheets to practice many operations with integers.

<http://www.superkids.com/aweb/tools/math/order/parens.shtml>

### **Order of Operations Quiz**

A 10-question online quiz that includes two different operations, and possibly parenthesis and negative numbers in each question. You can also modify the quiz parameters yourself.

<http://www.thatquiz.org/tq-1/?-jh8f-lc-p0>

[http://www.classzone.com/books/algebra\\_1/page\\_build.cfm?content=links\\_app3\\_ch2&ch=2](http://www.classzone.com/books/algebra_1/page_build.cfm?content=links_app3_ch2&ch=2)