

# Competency in Math Assessment

It is my belief that you cannot teach grade 5 students if you cannot do grade three math. For this I am directing you towards the Khanacademy website ([www.khanacademy.org](http://www.khanacademy.org)). The following pages will direct you to connecting with me on-line as well as setting my requirements for this assessment.

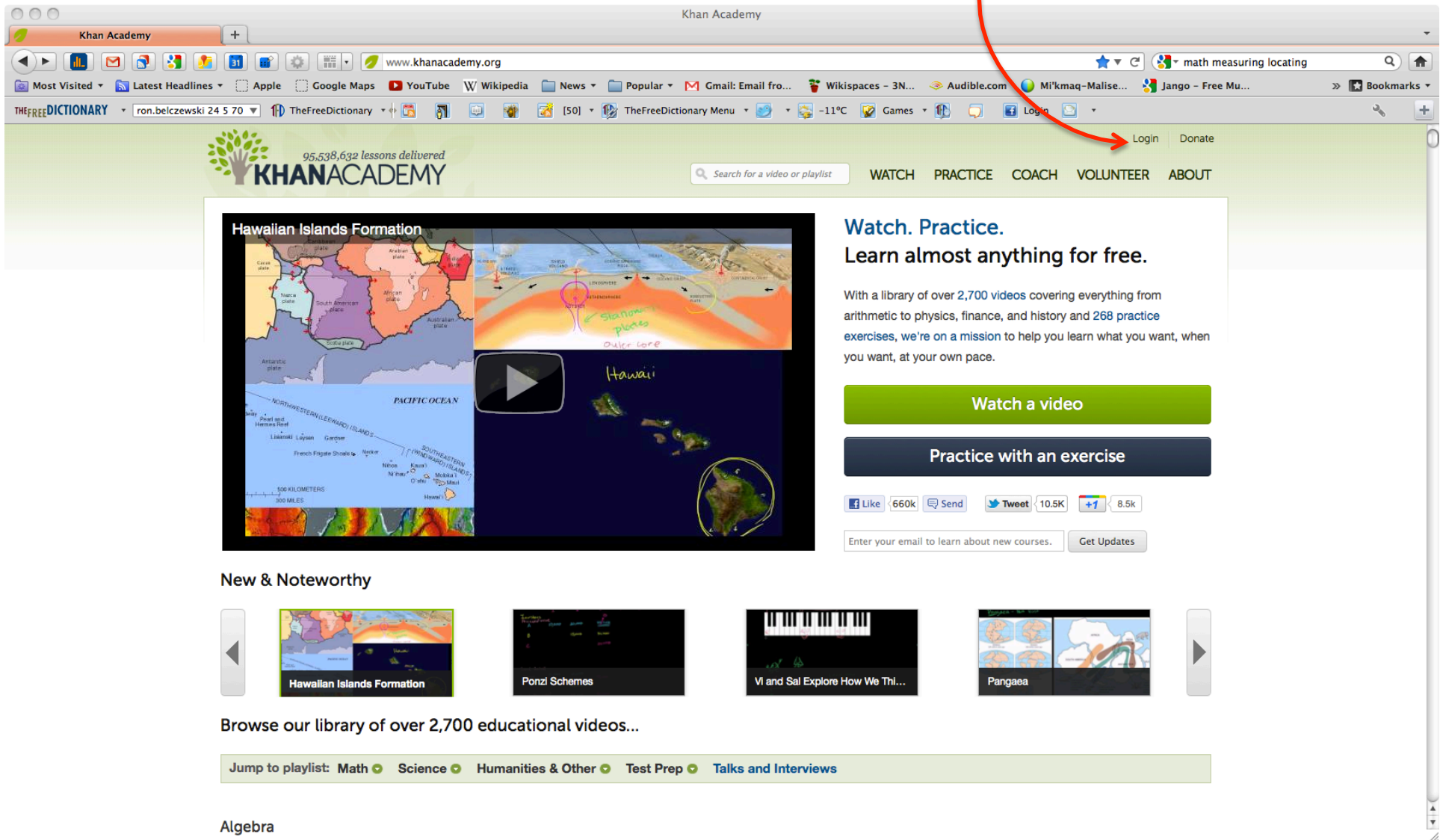
This program rewards you for accurate work by reducing the number of questions you need to answer. If in any one activity you answer the first six questions correctly you will complete that task. A wrong response will result in the program assessing that you need more practice and require extra responses from you so BE CAREFUL (the program cannot distinguish between lack of comprehension and typographical errors).

Passing this competency assessment is a requirement for this course. It is not worth any marks towards your grade. The exercises that I have chosen take you to a grade three level of mathematical skills.

Without errors and reasonable response time you should be able to complete the tasks in about six hours. This must be done before I will submit your final grade.

You are welcome to work together and use scratch paper to do your calculating. On your honour I ask that you do not use computing devices of any kind nor have someone else do the task for you.

Go to [www.khanacademy.org](http://www.khanacademy.org) and you will see the page below. Click on the **Login** button. {see next page}



The screenshot shows the Khan Academy website in a web browser. A red arrow points from the text "Click on the Login button" to the "Login" link in the top right corner of the page. The page features a green header with the Khan Academy logo, a search bar, and navigation links: WATCH, PRACTICE, COACH, VOLUNTEER, and ABOUT. Below the header is a large video player showing a map of the Hawaiian Islands Formation. To the right of the video player is a section titled "Watch. Practice. Learn almost anything for free." with a green "Watch a video" button and a dark blue "Practice with an exercise" button. Below these buttons are social media sharing options (Like, Send, Tweet, +1) and an email sign-up form. At the bottom, there is a "New & Noteworthy" section with a carousel of video thumbnails, including "Hawaiian Islands Formation", "Ponzi Schemes", "Vi and Sal Explore How We Thi...", and "Pangaea". Below the carousel is a link to "Browse our library of over 2,700 educational videos..." and a "Jump to playlist:" section with links for Math, Science, Humanities & Other, Test Prep, and Talks and Interviews. The word "Algebra" is written at the bottom left of the page.

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Hawaiian Islands Formation

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Ponzi Schemes

Vi and Sal Explore How We Thi...

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Browse our library of over 2,700 educational videos...

Jump to playlist: Math Science Humanities & Other Test Prep Talks and Interviews

Algebra

To Login you need to first sign up. You need to do this through either your google account (you will have one if you have gmail) or through facebook. Click on either link to sin up and Login (follow instructions given). You do not need to Login to use the site however I need you to Login and “add a coach” to follow your progress. Click on link at the end of the arrow.

The screenshot shows the Khan Academy login page. At the top, the browser address bar shows the URL [www.khanacademy.org/login?continue=/postlogin%3Fcontinue%3Dhttp%253A%2F%2Fwww.khanacademy.org%2Fdirect=1](http://www.khanacademy.org/login?continue=/postlogin%3Fcontinue%3Dhttp%253A%2F%2Fwww.khanacademy.org%2Fdirect=1). The page header includes the Khan Academy logo, a search bar, and navigation links: WATCH, PRACTICE, COACH, VOLUNTEER, ABOUT. The main content area is titled "Login" and asks if the user already has an account. It provides login options for Google and Facebook. Below these, it says "Don't have an account yet?" and links to "Sign up for a Google account" and "Sign up for a Facebook account". A section titled "Why should you sign up?" explains that progress is saved and that students and coaches get access to cool tools. Three screenshots illustrate these tools: 1. A knowledge map for exercises. 2. A profile page showing vital statistics, achievements, and recent activity. 3. A class report for coaches showing class statistics and student profiles. A red arrow originates from the text "add a coach" in the first paragraph and points to the "Add a Coach" link in the footer. The footer also contains links for "Report a Problem", "Contact", "Jobs", "ToS", "Privacy Policy", "Downloads", and social media icons for YouTube, Twitter, and Facebook. The copyright notice at the bottom right is "©2011 Khan Academy™ CC BY-NC-SA".

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### Login

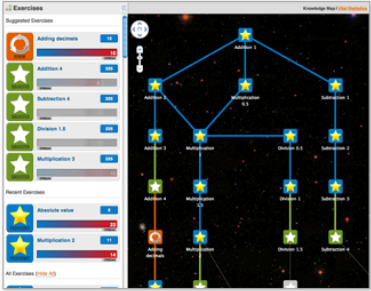
Already have an account with one of these sites? Click the logo to use your account to login here:

Login with:  

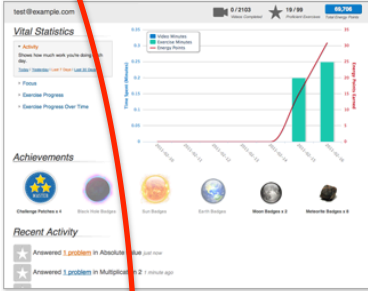
Don't have an account yet?  
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### Why should you sign up?

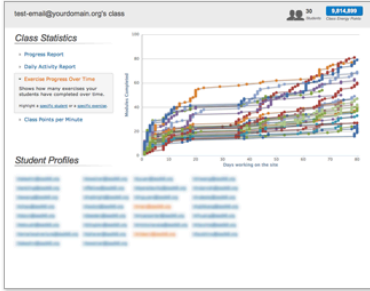
When you login, we save all of your progress. Also, [students and coaches get access to some cool tools](#):






Students: navigate your knowledge map as you work through exercises.




Students: track your video and exercise progress in your profile.



Coaches: Track all of your students with the class report.

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To put me on as your coach follow the steps outlined in the box to the right. Please note my **coach ID**.

Once you do this I will be able to follow your progress and see what tasks you have completed.

### Each of your students needs to sign in and follow these steps:

First, they should click on the **Add a Coach** link at the bottom of the page.

Downloads **Add a Coach**

Then, they should enter your Coach ID in the form that looks like this:

**ron.belczewski@gmail.**

**Register Coach**

Your Coach ID **ron.belczewski@gmail.com.**

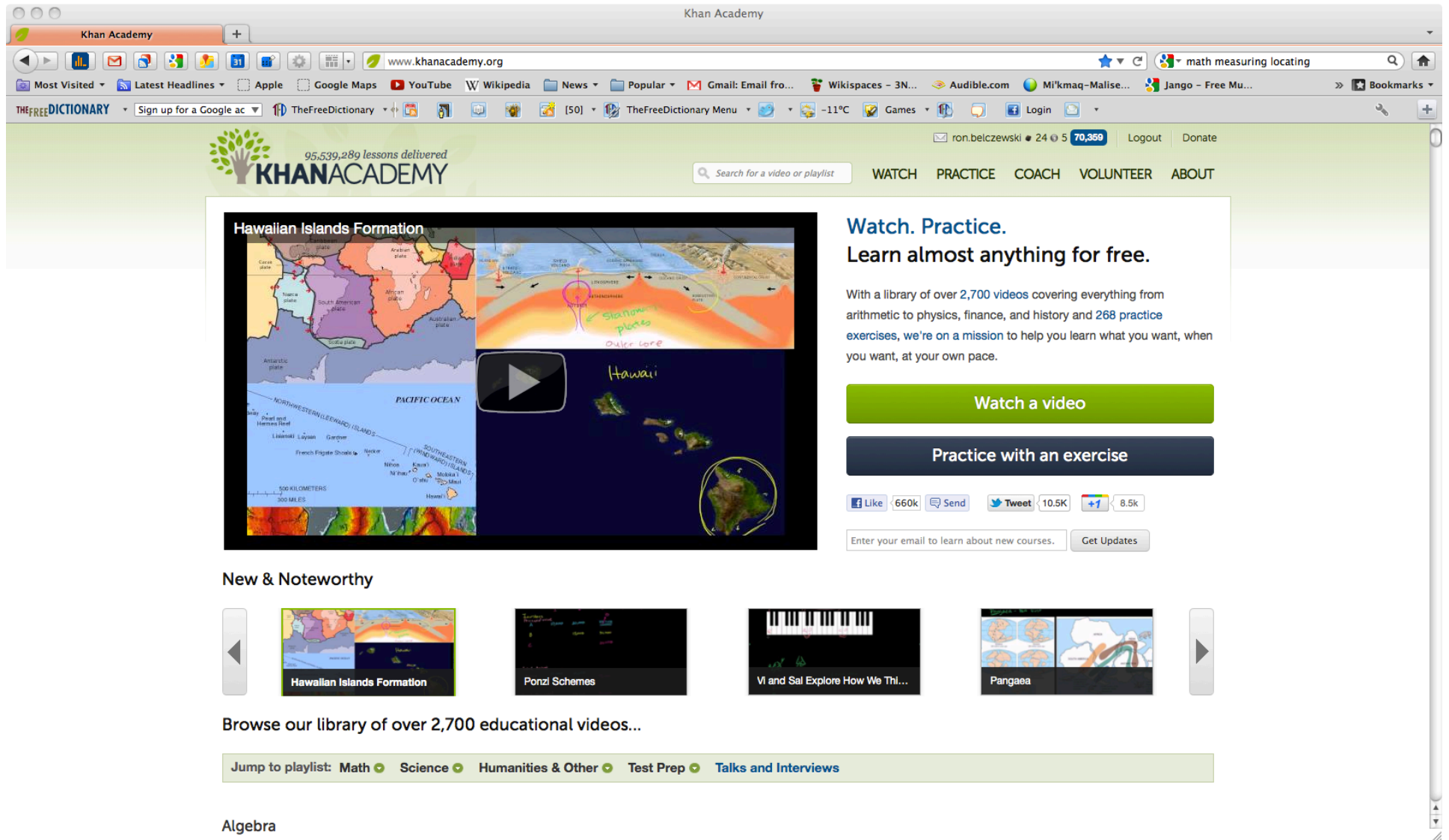
Finally, they need to click the *Register Coach* button. It looks like this:

**ron.belczewski@gmail.**

**Register Coach**

Once students make you their coach, you'll have access to all types of interesting data about their progress and achievements.

Once Logged in you can view many on-line video tutorials.



## More videos

Khan Academy

www.khanacademy.org

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### Browse our library of over 2,700 educational videos...

Jump to playlist: Math Science Humanities & Other Test Prep Talks and Interviews

### Algebra

Topics covered from very basic algebra all the way through algebra II. This is the best algebra playlist to start at if you've never seen algebra before. Once you get your feet wet, you may want to try some of the videos in the "Algebra I Worked Examples" playlist.

Simple Equations	Calculating I Raised to Arbitrary Exponents	Partial Fraction Expansion 1
Equations 2	i as the Principal Root of -1 (a little technical)	Partial Fraction Expansion 2
Equations 3	Complex Numbers (part 1)	Partial Fraction Expansion 3
Algebra: Linear Equations 4	Complex Numbers (part 2)	Parabola Focus and Directrix 1
Algebra: Solving Inequalities	Introduction to the quadratic equation	Focus and Directrix of a Parabola 2
Algebra: graphing lines 1	Quadratic Equation part 2	Two Passing Bicycles Word Problem
Algebra: Slope and Y-intercept intuition	Completing the square	Passed Bike Word Problem
Algebra: Slope	Quadratic Formula (proof)	Passing Trains
Algebra: Slope 2	Quadratic Inequalities	Overtaking Word Problem
Algebra: Slope 3	Quadratic Inequalities (Visual Explanation)	Early Train Word Problem
Algebra: Equation of a line	Introduction to functions	Officer on Horseback
Slope and Y-intercept Intuition	Functions Part 2	Rational Inequalities
Averages	Functions (Part III)	Rational Inequalities 2
Integer sums	Functions (part 4)	Interesting Polynomial Coefficient Problem
Taking percentages	Domain of a function	Geometric series sum to figure out mortgage payments
Growing by a percentage	Proof: $\log a + \log b = \log ab$	Introduction to Function Inverses
Another Percent Word Problem	Proof: $A(\log B) = \log(B^A A)$ , $\log A - \log B = \log(A/B)$	Function Inverse Example 1
More percent problems	Proof: $\log_a(B) = (\log_x(B))/(\log_x(A))$	Function Inverses Example 2
systems of equations	Algebraic Long Division	Function Inverses Example 3
Introduction to Ratios (new HD version)	Introduction to Conic Sections	Direct and Inverse Variation
Ratio problem with basic algebra (new HD)	Conic Sections: Intro to Circles	Recognizing Direct and Inverse Variation
More advanced ratio problem with Algebra II (new HD)	Conic Sections: Intro to Ellipses	Recognizing Direct and Inverse Variation



You can also click on the **practice** button to start working on your assignment.

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Algebra

Once in the practice mode you can navigate through the exercises in the window. It works on the same principles as Google Earth. The icons change color as you progress through and become proficient with the various levels of activities.

The screenshot displays the Khan Academy Exercise Dashboard. The browser window shows the URL [www.khanacademy.org/exercisedashboard](http://www.khanacademy.org/exercisedashboard). The page header includes the Khan Academy logo, the text "95,539,624 lessons delivered", and a search bar. Navigation links for WATCH, PRACTICE, COACH, VOLUNTEER, and ABOUT are present. The main content area is divided into two sections: "Exercises" on the left and a "Knowledge Map" on the right. The "Exercises" section features a "FORTIFY YOUR KNOWLEDGE" banner and a list of suggested exercises, each with a circular icon and a progress bar. The "Knowledge Map" is a complex network of nodes representing mathematical concepts, with a legend indicating proficiency levels: Proficient (blue star), Suggested (green star), Review (orange star), and Not Started (grey star). The map shows a hierarchical structure of concepts, with "Addition 1" at the top and various other topics like "Multiplication", "Division", and "Subtraction" branching out. The bottom of the page includes a footer with links for "Report a Problem", "Contact", "Jobs", "ToS", "Privacy Policy", "Downloads", "Add a Coach", and social media icons, along with the copyright notice "©2011 Khan Academy™" and a Creative Commons license.

Exercise Dashboard | Khan Academy

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www.khanacademy.org/exercisedashboard

math measuring locating

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Exercises

FORTIFY YOUR KNOWLEDGE

Go go go! »

Start typing the name of an exercise to find it

Suggested Exercises

Properties of numbers 1

Number line 3

Arithmetic word problems 1

Properties of numbers 2

Decimals on the number line 2

Adding decimals 0.5

Knowledge Map | Vital Statistics

Proficient Suggested Review Not Started

Addition 1

Number line Addition 2 Multiplication Subtraction 1

Number line Addition 3 Multiplication Division 0.5 Subtraction 2

Properties of numbers 1 Decimals on the number line 1 Number line 3 Addition 4 Multiplication 1.5 Arithmetic word problems 1 Division 1 Subtraction 3

Properties of numbers 2 Decimals on the number line 2 Adding decimals 0.5 Adding decimals Multiplication 2 Arithmetic word problems 2 Division 1.5 Subtraction 4

Telling time 0.5 Counting 1 Distributive property Place value Understanding decimals place value Adding negative numbers Multiplication 3 Subtracting decimals 0.5 Division 2

Telling time Counting 2 Significant figures 1 Rounding whole numbers Absolute value Adding and subtracting negative numbers Multiplication 4 Subtracting decimals Division 3 Prime numbers

Recognizing fractions 0.5 Rounding numbers Comparing absolute values Negative number word problems Multiplying and dividing negative numbers Adding and subtracting decimals word problems Division 4 Prime factorization

Fraction word Recognizing Equivalent Estimation Multiplying Order of Exponents 1 Image Credit: NASA/JPL/Caltech, NASA/ESA/STScI

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This is an example of what you will see when you click on the icon “addition 3”. Simply answer the question and place the answer in the **space provided**. When finished click on **Check Answer**.

The screenshot shows the Khan Academy interface for the 'Addition 3' exercise. The page title is 'Addition 3 | Khan Academy'. The URL is 'www.khanacademy.org/exercise/addition\_3'. The page features a search bar, navigation links (WATCH, PRACTICE, COACH, VOLUNTEER, ABOUT), and a user profile (ron.belczewski, 24, 70,384). The main content area displays the exercise 'Addition 3' with a star icon and related videos. A scratchpad area shows the math problem  $178 + 823$ . To the right, there is an 'Answer' input field containing '1001', a 'Check Answer' button, and a 'Need help? Get a hint' section. A 'Stuck? Watch a video' section is also visible. Red and green arrows highlight the answer input and the 'Check Answer' button respectively.

If you are struggling with a concept you may wish to watch a **video tutorial** explaining the concept and procedure to answering the questions

Related videos: [Addition 3](#), [Addition 4](#)

You're proficient in this topic. [Choose a new exercise](#) to earn more points, or you can do more problems to increase your streak.

[Hide scratchpad](#) | [Show next 10 problems](#)

Hand-drawn addition problem:

$$\begin{array}{r} 178 \\ + 823 \\ \hline 1001 \end{array}$$

## 1001

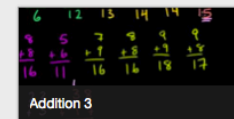
**Correct! Next Question...**



- an integer, like 6

This **does not** set back your progress.

This **does not** set back your progress.

[Report a Problem](#)

ToS

## Privacy Policy

Downloads



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On the next page is an illustration of the practice page from the Khanacademy website. I have highlighted the exercises that are required for your math competency assessment. Work on each exercise until the program tells you that you are completed. The program will track your activity and I will use this tracking as your assessment.

Complete the exercises with  
the red circle around them  
(75 in total)

