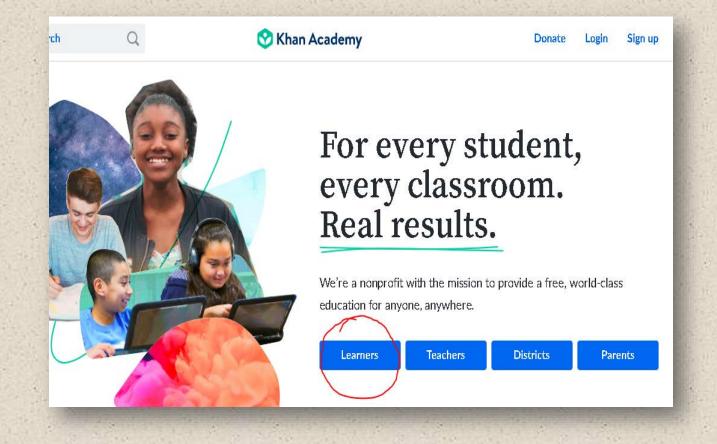


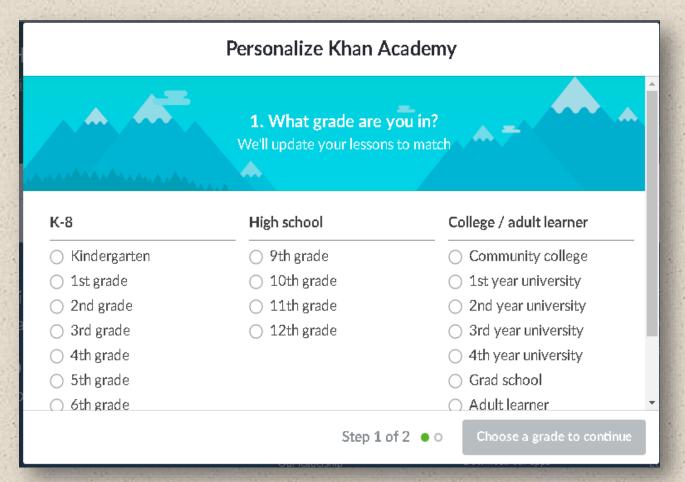
## **Secondary Summer Math Activities**

The importance of having the right tool for the job cannot be overstated. With the right preparation, even seemingly difficult tasks become much easier. The goal of the Secondary Summer Math Activities list is to equip all our students with the right tools and preparation to be at their best this fall when classes resume. The steps below will guide you on how to take full advantage of the activities listed.

 Start by creating a Learner account at <u>khanacademy.org</u>. This will be the primary resource used this summer. If you already have an account, there is no need to create another. Children under 13 will need permission from a parent to create an account, so parents please assist as needed.



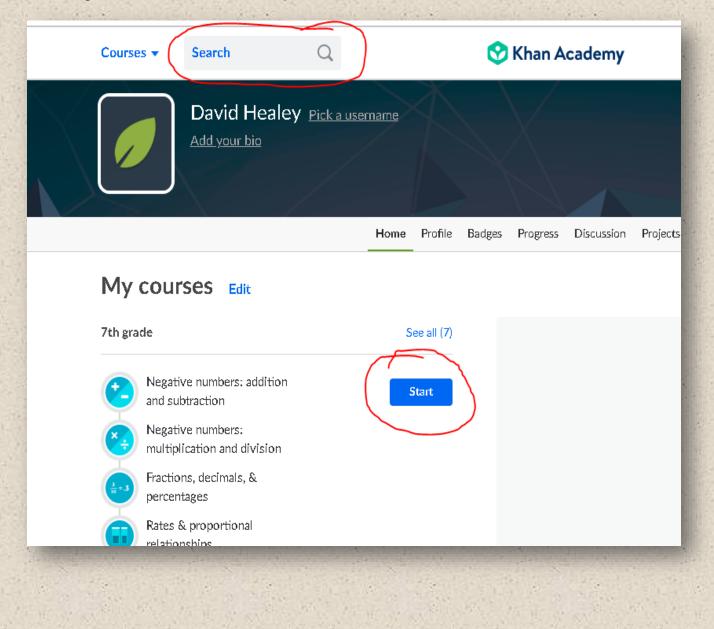
2. Select the grade level or course that the student will be entering this fall. This will help to guide students through mastery of concepts that will be covered all year long! In addition to your math course, feel free to select as many courses as you would like!



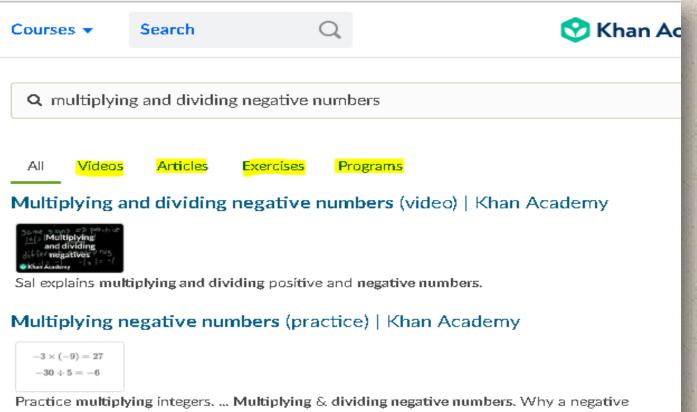
3. From your Learner Dashboard you can explore all of the content you have selected, edit your profile, and monitor your progress, as well as add new content and explore new materials as you wish! This is also where you can search for the exercises listed under the "Khan Academy Exercises" section in the table below.

| Courses •                          | Search Q                                       |         |             | 0      | Khan A   | cademy          |          |         | Donate   | David Healey |   |
|------------------------------------|--|---------|-------------|--------|----------|-----------------|----------|---------|----------|--------------|---|
|                                    | David Healey Pickau<br>Add your bio            | sername |             |        | X        |                 |          |         | 0 0 00 0 | Edit Profile | X |
|                                    |  | Home    | Profile     | Badges | Progress | Discussion      | Projects | Coaches |          |              |   |
| Му со                              | DUI'SES Edit                                   |         |             |        |          |                 |          |         |          |              |   |
| 7th grade                          |  | 5       | See all (7) |        |          |                 |          |         |          |              |   |
|                                    | egative numbers: addition<br>Id subtraction    |         | Start       |        |          |                 |          |         |          |              |   |
|                                    | egative numbers:<br>ultiplication and division |         |             |        |          |                 |          |         |          |              |   |
| Fractions, decimals, & percentages |  |         |             |        |          | Add another cou |          |         | urse     |              |   |
|                                    | ates & proportional<br>lationships             |         |             |        |          |                 |          |         |          |              |   |

4. The "Start" button will allow you to jump right in to the content and begin learning. This is a great opportunity to explore concepts that students will encounter in the next school year and have some fun practicing and challenging themselves to see what they can do! The search bar at the top is where students can type in the names of the exercises listed in the table when being more intentional with their practice.



5. After typing in the name of an activity from the table you will see several options of the exercises related to the topic. You can watch a video tutorial, practice online, or view any available articles relating to that topic to help deepen your understanding and mastery of the ideas presented. The exercises in the table were specifically chosen as they are key foundational skills and pre-requisite skills that students will need in the beginning of the school year to avoid confusion and be able to focus on learning new content rather than struggling with skills they may have fallen behind on.



times a negative makes sense  $\cdot$  Why a negative times a negative is a ... –

## Dividing positive and negative numbers (video) | Khan Academy



Discover the basics of dividing with negative numbers. ... Multiplying positive & negative numbers ... if u divide or multiply negative numbers 2 times like this :

6. As you begin completing exercises, you can track your hard work by navigating to the "Progress" tab in your Learner Dashboard. From here, you can find a list of the skills you've practiced. By adjusting the date range and Mission, you can print off all of the skills you have worked on to submit this fall to participate in your school's summer practice incentive programs. Keep in mind that you may need to change mission to view some of the concepts you may have practiced.

|  |   |         |        | X        |            |          |         | -                  | 330 0 0        | • • • • • •                   |
|--|---|---------|--------|----------|------------|----------|---------|--------------------|----------------|-------------------------------|
|  | Home  | Profile | Badges | Progress | Discussion | Projects | Coaches |                    |                |                               |
| Stills Videos Activity<br>Mission: 8th grade V<br>Total 8th grade progress | Focus          0 skills mastered         0 skills level two         1 skill level one |         |        |          |            |          |         | Activity fr        | om: Last 7 day | /5 •                          |
| D 70<br>progress   | 0 skills practiced<br>124 skills not sta  |         |        |          |            |          |         |                    |                |                               |
| Activity from:Last 7 days  |   |         |        |          |            |          |         | 🗹 Only sh          | iow attempted. | skills                        |
| - MISSION FOUNDAT  | IONS  |         |        |          |            |          |         |                    |                |                               |
| Skill<br>Multiplying negative nu   | imbers  |         |        |          |            |          |         | Level<br>Level One | Questions<br>4 | <ul><li>☑</li><li>1</li></ul> |

7. Have fun practicing throughout the summer and enjoy the new perspective you gain by deepening your understanding of math and how it works in the world around us!

| Grade level             |                            |  |   |  |  |
|-------------------------|----------------------------|--|---|--|--|
| for                     | First Concept              |  | Khan Academy exercises  |  |  |
| 2019-2020               | Covered                    | Pre-requisite Skills   |   |  |  |
|                         |                            |  |   |  |  |
| school year<br>Geometry | Tools of<br>Geometry       | <ul> <li>Squaring numbers</li> <li>Simplifying expressions</li> <li>Evaluating expressions</li> <li>Finding absolute value</li> <li>Solving equations</li> </ul>   | <ul> <li>Exponents</li> <li>Combining like terms with distribution</li> <li>Combining like terms with negative coefficients</li> <li>Combining like terms with negative coefficients &amp; distribution</li> <li>Evaluating expressions with one variable</li> <li>Evaluating expressions with multiple variables</li> <li>Finding absolute value</li> <li>Absolute value to find distance</li> <li>One-step multiplication &amp; division equations</li> <li>Two-step equations</li> </ul> |  |  |
| Algebra<br>8th Grade    | Foundations for<br>Algebra | <ul> <li>Factors of numbers</li> <li>Least common multiple</li> <li>Using estimation</li> <li>Simplifying fractions</li> <li>Fractions and decimals</li> <li>Adding and subtracting fractions</li> </ul> | <ul> <li>Equations with<br/>parenthesis</li> <li>Solve square-root<br/>equations (basic)</li> <li>Identify factors and<br/>multiples</li> <li>Least common multiple</li> <li>Greatest common factor</li> <li>Simplifying fractions</li> <li>Equivalent fractions</li> <li>Common fractions and<br/>decimals</li> <li>Converting fractions to<br/>decimals</li> <li>Add fractions with unlike<br/>denominators</li> <li>Subtracting fractions with<br/>unlike denominators</li> </ul>        |  |  |
| 8 <sup>th</sup> Grade   | Real Numbers               | <ul> <li>Convert a rational<br/>number to a decimal</li> <li>Add and subtract<br/>rational numbers</li> </ul>  | <ul> <li>Converting fractions to decimals</li> <li>Adding &amp; subtracting rational numbers</li> <li>Multiplying fractions</li> </ul>  |  |  |

| _ |                       |                                     |   |  |
|---|-----------------------|-------------------------------------|---|--|
|   |                       |                                     | <ul> <li>Multiply fractions<br/>(include distributive<br/>property)</li> <li>Multiply and divide<br/>rational numbers</li> <li>Solve real world<br/>problems involving<br/>rational numbers</li> <li>Find area and volume<br/>of two- and three-<br/>dimensional figures</li> </ul>   | <ul> <li>Multiplying positive and<br/>negative fractions</li> <li>Dividing positive and<br/>negative fractions</li> <li>Multiply &amp; divide rational<br/>expressions</li> <li>Rational number word<br/>problems</li> <li>Area of composite shapes</li> <li>Area of shapes on grids</li> <li>Find missing side length<br/>when given area</li> <li>Volume by multiplying<br/>area of base times height</li> </ul>   |
|   | 7 <sup>th</sup> Grade | Rational<br>Number<br>Operations    | <ul> <li>Place numbers and<br/>their opposites on a<br/>number line</li> <li>Interpret statements of<br/>inequality as being<br/>statements about their<br/>position on the number<br/>line</li> <li>Understand positive<br/>and negative numbers<br/>are used to describe<br/>quantities having<br/>opposite directions<br/>(above/below sea<br/>level, etc.)</li> <li>Add, subtract, multiply,<br/>and divide multi-digit<br/>decimals</li> <li>Divide fractions</li> <li>Solve equations and<br/>expressions for one<br/>variable</li> <li>Understand the</li> </ul> | <ul> <li>Number opposites</li> <li>Number opposites<br/>challenge</li> <li>Negative symbol as<br/>opposite</li> <li>Plotting inequalities</li> <li>Writing numerical<br/>inequalities</li> <li>Interpreting negative<br/>numbers</li> <li>Interpreting negative<br/>number statements</li> <li>Word problems involving<br/>negative numbers</li> <li>Adding &amp; subtracting<br/>decimals word problems</li> <li>Divide fractions by whole<br/>numbers</li> <li>Equations with variables<br/>on both sides</li> <li>Unit rates</li> </ul> |
|   | 6 <sup>th</sup> Grade | Use Positive<br>Rational<br>Numbers | <ul> <li>concept of a unit rate</li> <li>Understand place value</li> <li>Read, write, and compare decimals to the thousandths</li> <li>Use place value to round decimals to any place</li> </ul>  | <ul> <li>Intro to place value</li> <li>Compare decimal place value</li> <li>Round decimals</li> <li>Multi-digit multiplication</li> <li>Subtract decimals visually</li> <li>Add decimals visually</li> <li>Multi-digit division</li> </ul>   |

| _   |                       |  |       |                          |         |                           |
|-----|-----------------------|--|-------|--------------------------|---------|---------------------------|
|     |                       |  | •     | Multiply multi-digit     | •       | Multiply and divide by    |
| 1-1 | 1. 1. 1.              |  | 1     | whole numbers            | E 1     | powers of 10              |
|     | No at an a            |  |       | Add, subtract, multiply, | •       | Powers of 10              |
| -   | Section 1             | 10 10 10 10 10                               |       | and divide decimals to   | •       | Add and subtract          |
|     |                       | AND THE REAL PROPERTY.                       |       | the hundredths           | 14      | fractions challenge       |
|     | 1                     |  | •     | Find quotients of up to  | •       | Multiply fractions and    |
|     |                       |  |       | four-digit dividends and |         | whole numbers             |
|     | A. 注入书 ()             |  |       | two-digit divisors       | •1      | Divide fractions by whole |
|     | 11 10 10              | 1. S. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. | •     | Understand pattern       |         | numbers                   |
|     |                       |  | 2     | when multiplying by      | 1       |                           |
|     |                       | South March 1                                |       | powers of 10             | 1.100   |                           |
| 2   | 1224                  | 17   | •     | Add and subtract         | 14      |                           |
|     |                       | Strate Contract                              |       | fractions                | 14 3    | my and the state of my    |
| 12  | and the second        | Source and                                   |       | Multiply fractions by    | S. Bala |                           |
|     |                       |  |       | whole numbers            | 1.200   |                           |
| 1   | 4. 1. 1. 1. 1.        |  | •     | Divide fractions by      | 1       |                           |
|     |                       |  | and a | whole numbers            |         |                           |
| -   | and the second second |  | 10000 |                          | 1.000   |                           |