

# Math Snacks: Gate

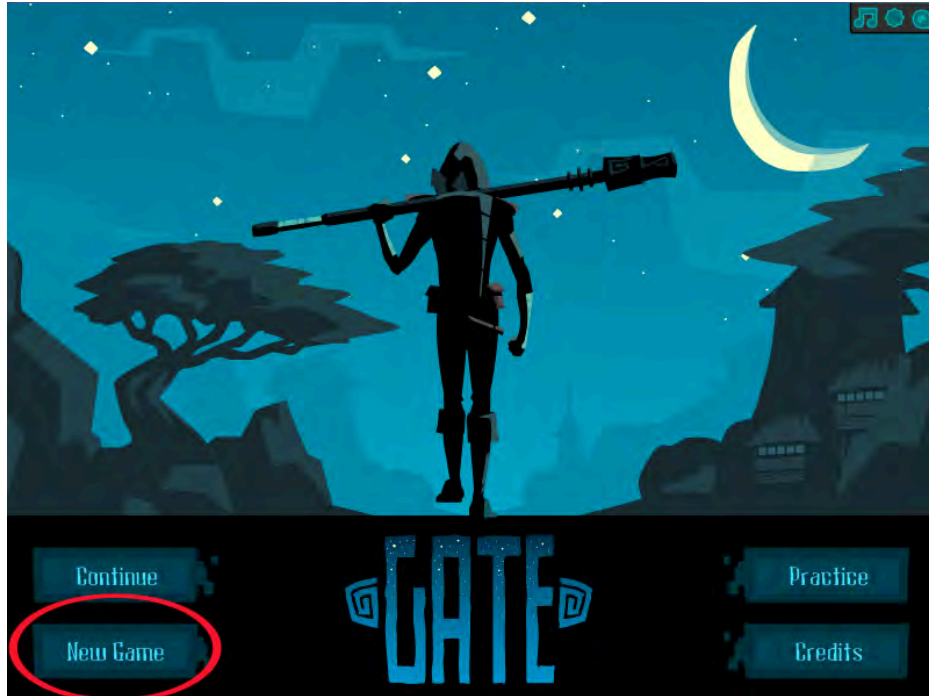


Shadows are corrupting the land. Restore the balance of nature by exploring place value in *Gate*. At the start of each level, the player builds numbers (using place value concepts) to open the gate, then defeat monsters by building more numbers. Gate helps students start to compose and decompose numbers with addition, subtraction, and multiplication, gradually doing so in more efficient ways.

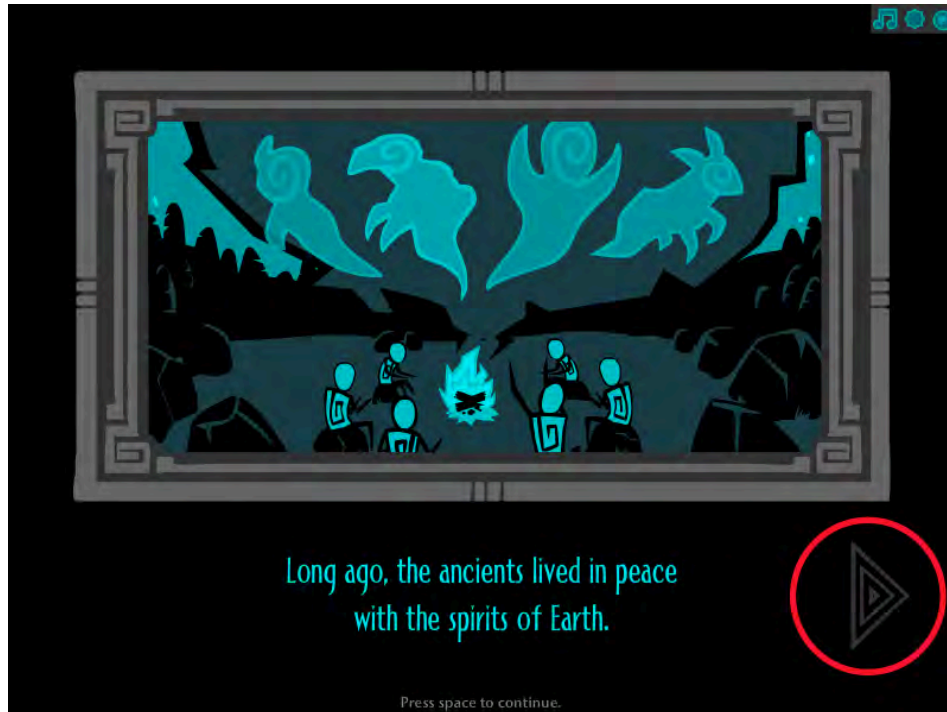
There are 16 levels to the game, and students will be asked to build numbers as large as 999 and as small as .01. Students try to build the numbers as efficiently as possible.

# How to Play

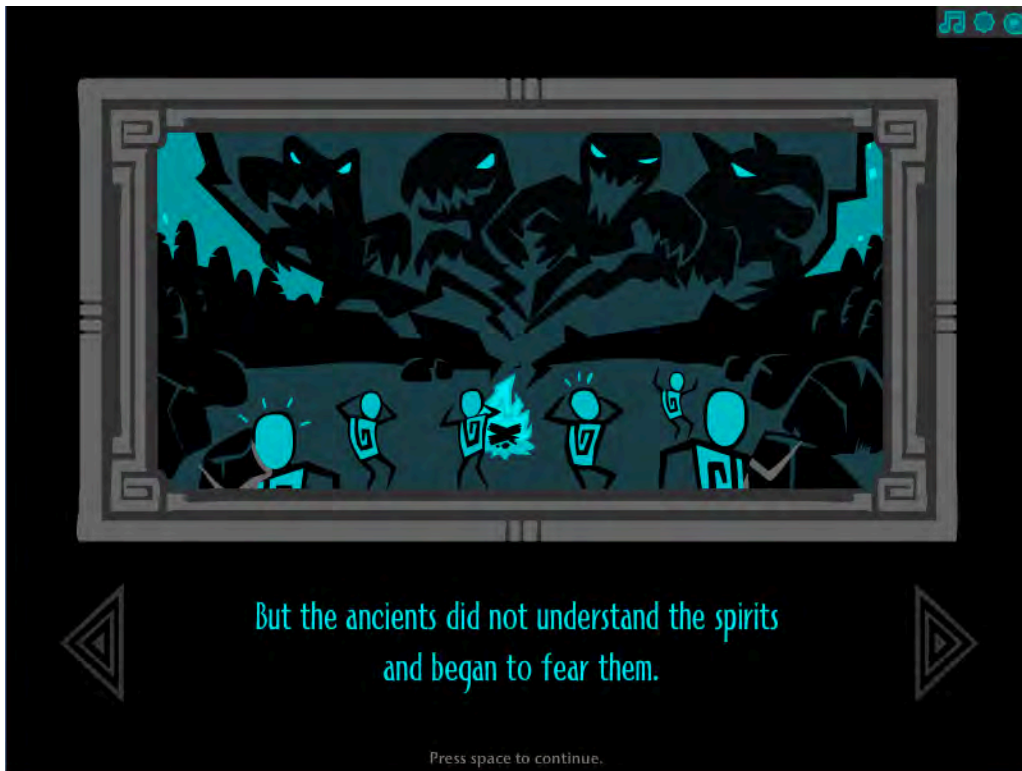
Start by clicking "New Game" from the Main Menu:



The game will walk you through 10 screens of background story. Click on the right-facing triangle or press the space bar to move the story forward.



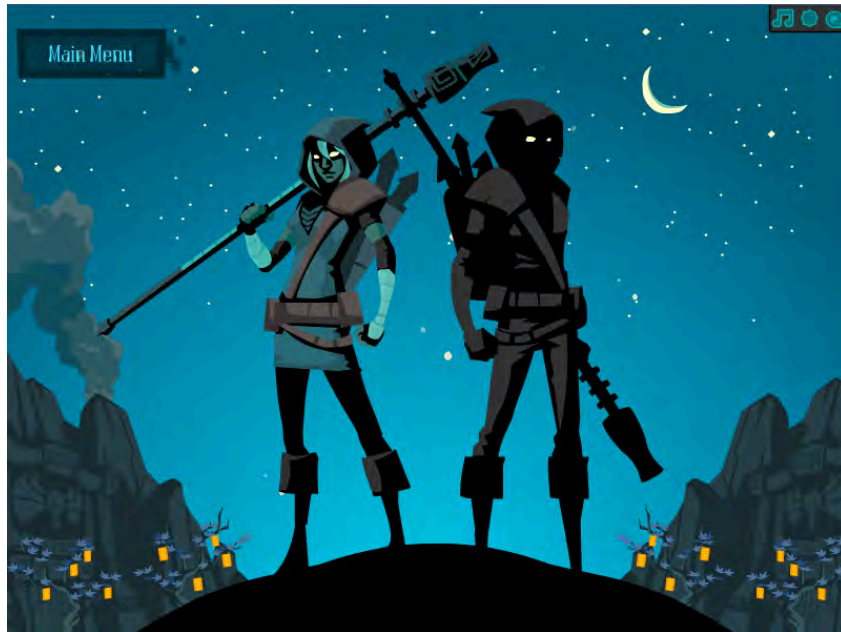
**Screen 1 of 10**



**Screen 2 of 10**

While the background story is a fun way to launch the game, understanding it in detail (i.e. who are the ancients and who are the spirits?) is not important to the game play.

After the background screens, you need to choose your avatar. Scroll over the right or left warrior to highlight, then click the one you want to choose:

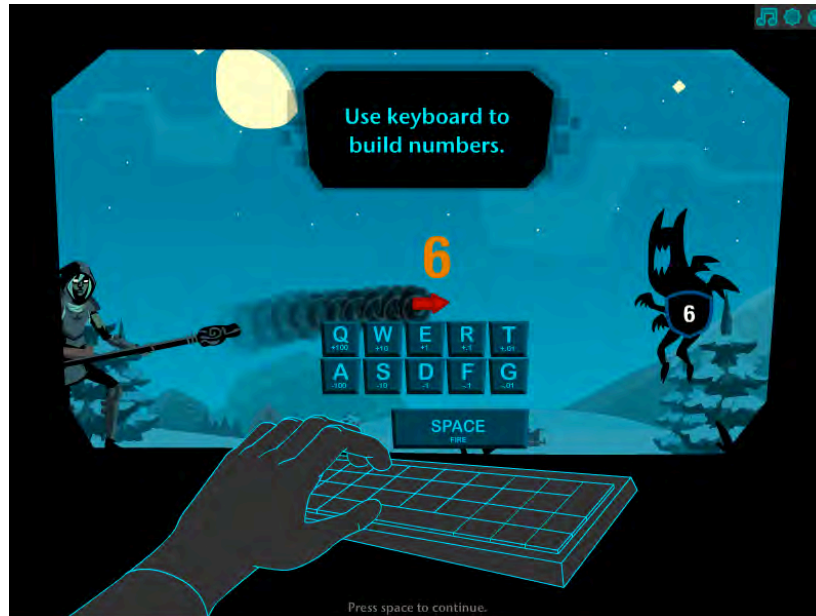


The next screen shows the Main Map of the land, with the first level (1) highlighted. Click the number 1 to begin:

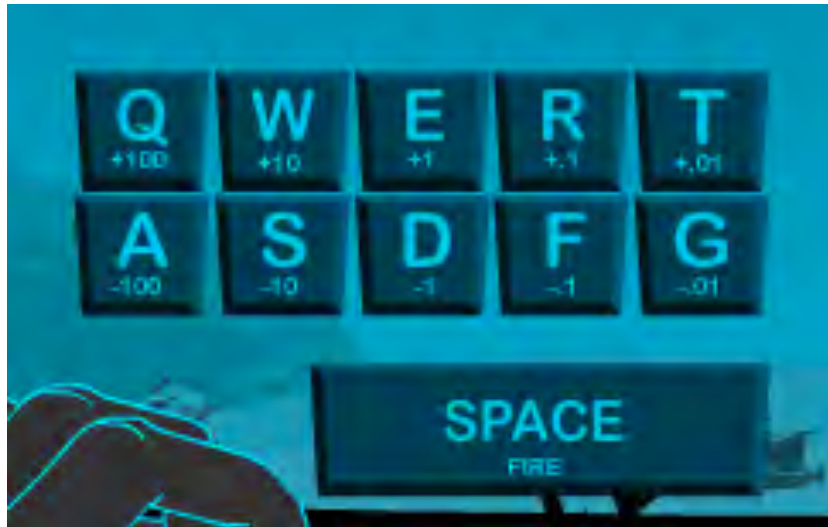


# Level 1:

Level 1 begins with a tutorial on how to use the keyboard to "build" numbers.



In this game, the keyboard home keys (ASDFG) and the keys just above it (QWERT) are used to represent place values (hundreds, tens, units, tenths, hundredths). The upper row adds, and the lower row subtracts:

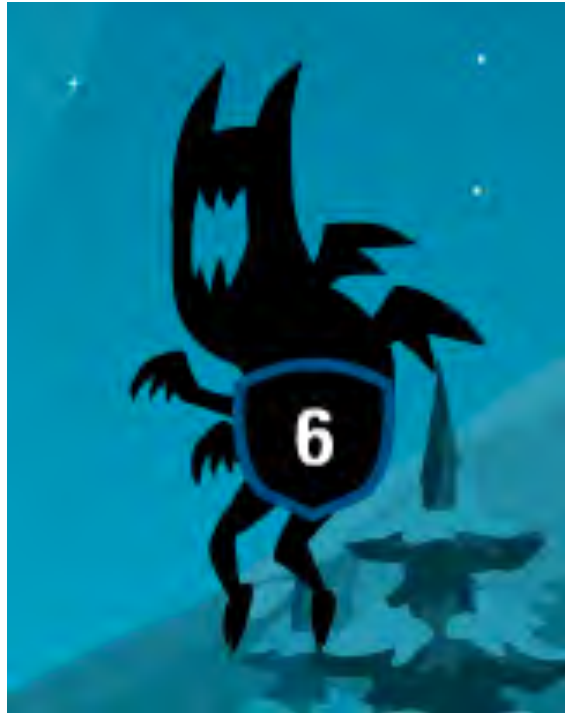


So to add 1 to the units place, click the letter "E." To add 10, click the letter "W." To add 100, click the letter "Q."

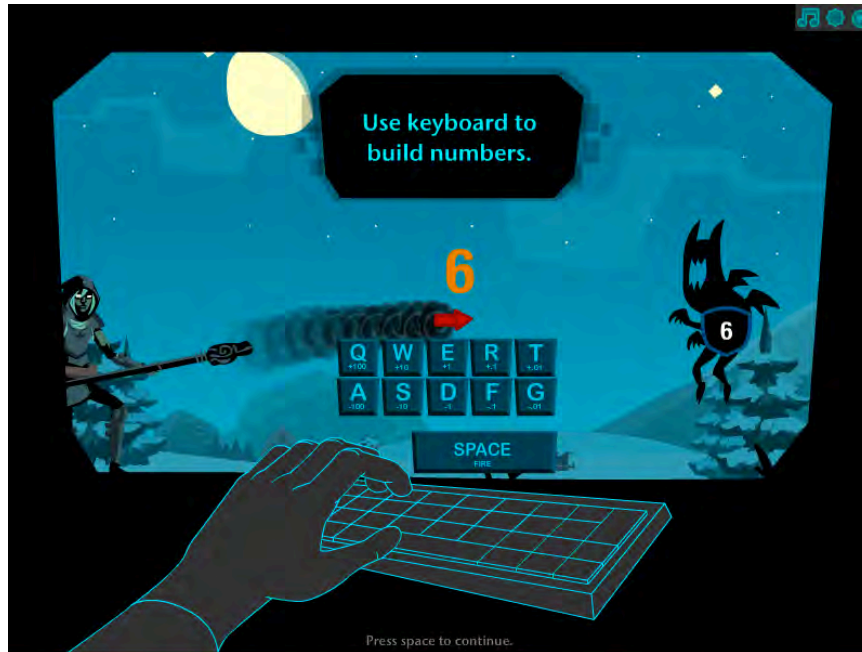
To subtract 1 from the units place, click the letter "D." To subtract 10, click the letter "S." To subtract 100, click the letter "A."



Monsters are attacking you! Each monster has a number (or sometimes two numbers) on it:

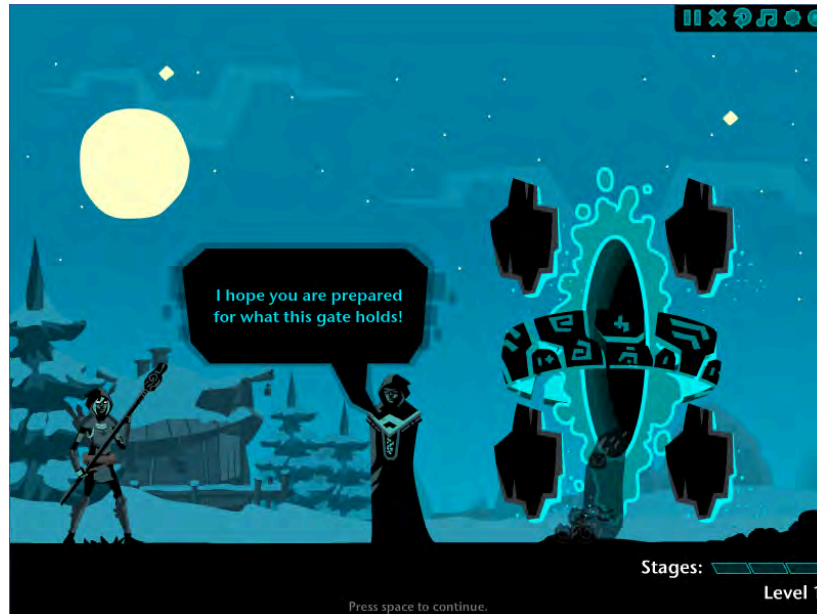


The animated tutorial will show you how to build that number using the keyboard (here, by clicking "E" six times to destroy the monster with a 6 on it). Once you have "built" the correct number with the keyboard, click the space bar to fire your weapon and destroy the monster.

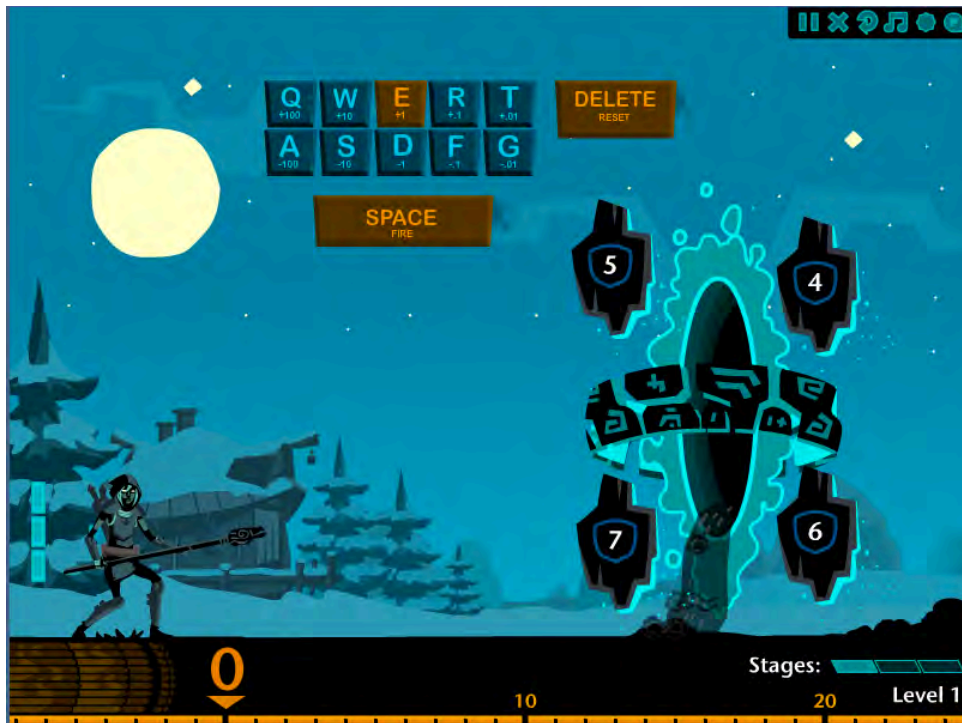


Using the keyboard in this way takes just a bit of practice. It will take students a few levels to become proficient with the game mechanics for building numbers. Remind students that proper hand placement on the keyboard helps.

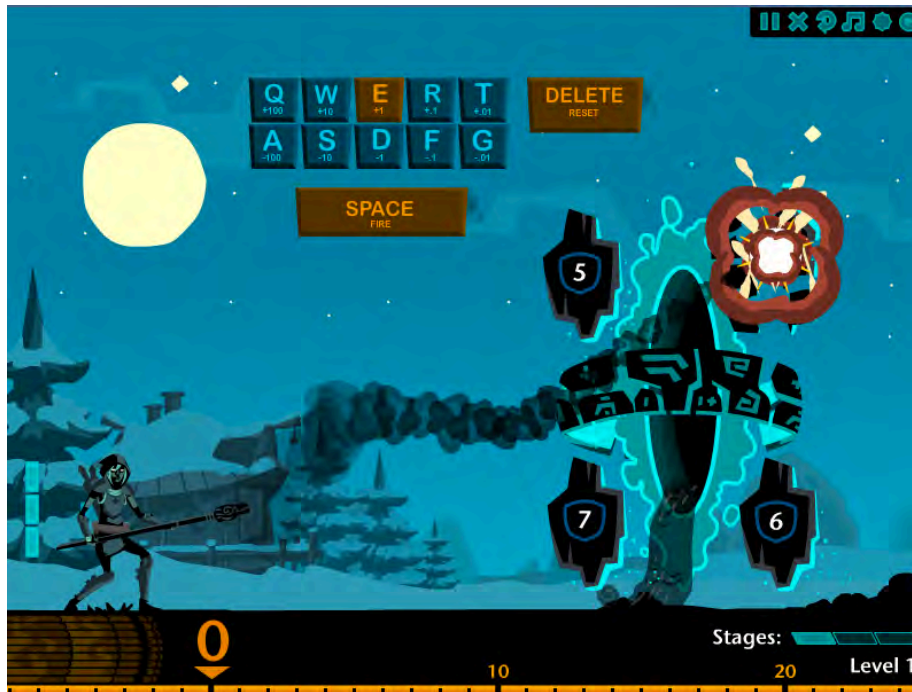
Press the space bar to continue. You'll need to press the space bar repeatedly to progress through a few story screens where your avatar asks the gatekeeper to move!



Now you are ready to play. At first, you are given four floating targets (5, 4, 7, and 6 in the example below) to shoot down:



The keyboard numbers are shown toward the top of the screen to help you remember what key represents what place value. The orange number line at the bottom of the screen will change as you click the appropriate letters to build your number. For this level, all you need to click is the letter "E" four times to build "4," then click the space bar to fire!

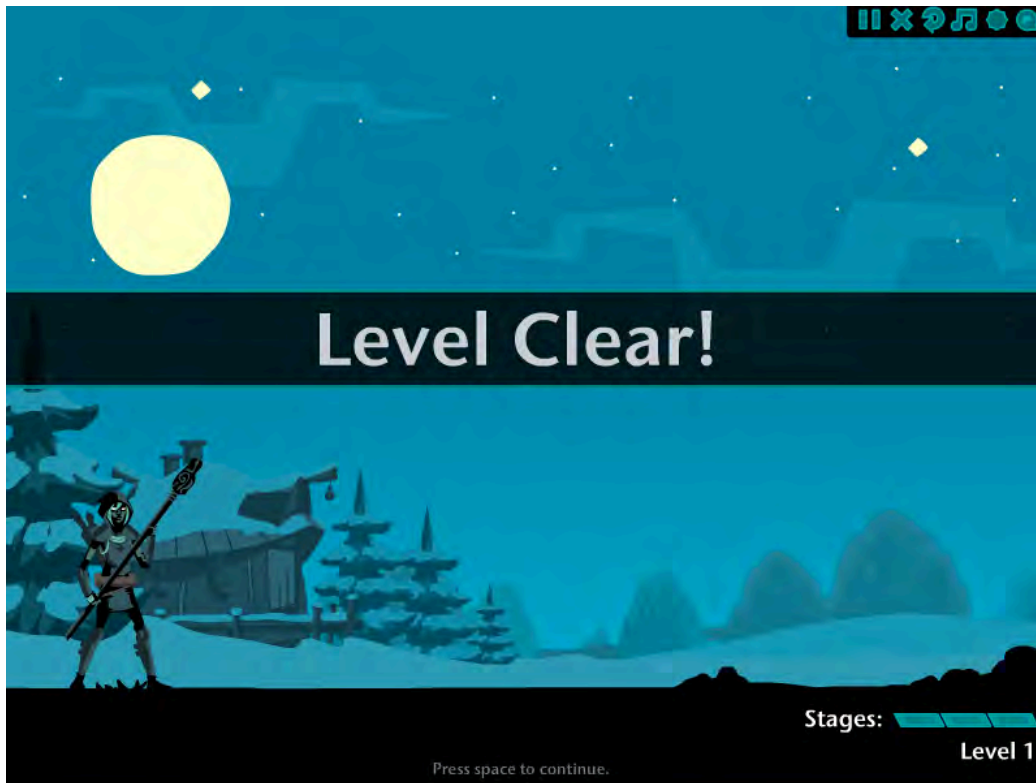


Build the number and fire at each of the other floating targets (5, 6, and 7) to open the gate. There is no time limit for this part of the game.

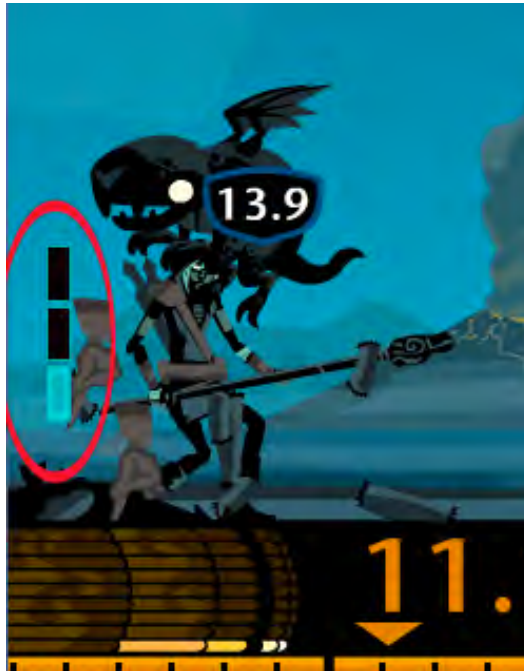
But wait! As soon as the gate opens, the monsters arrive, and now you have to destroy the monsters before they get you! Build the correct numbers and fire them at the monsters to make them disappear:



Keep attacking the monsters until you've cleared the level:



But if the monsters get to you three times in one level, you are defeated and must try the level again. Your three lives are shown to the left of your avatar. Below, two lives have been lost already in this battle from Level 10!



Once you've cleared a level, press the space bar to return to the Main Map.

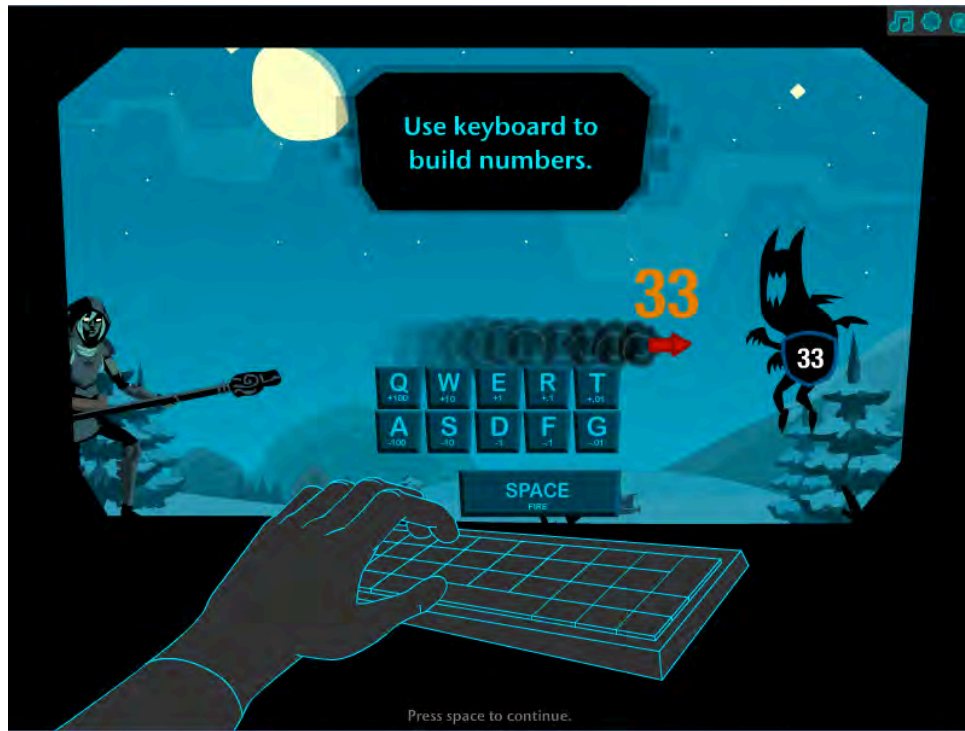


## Level 2:

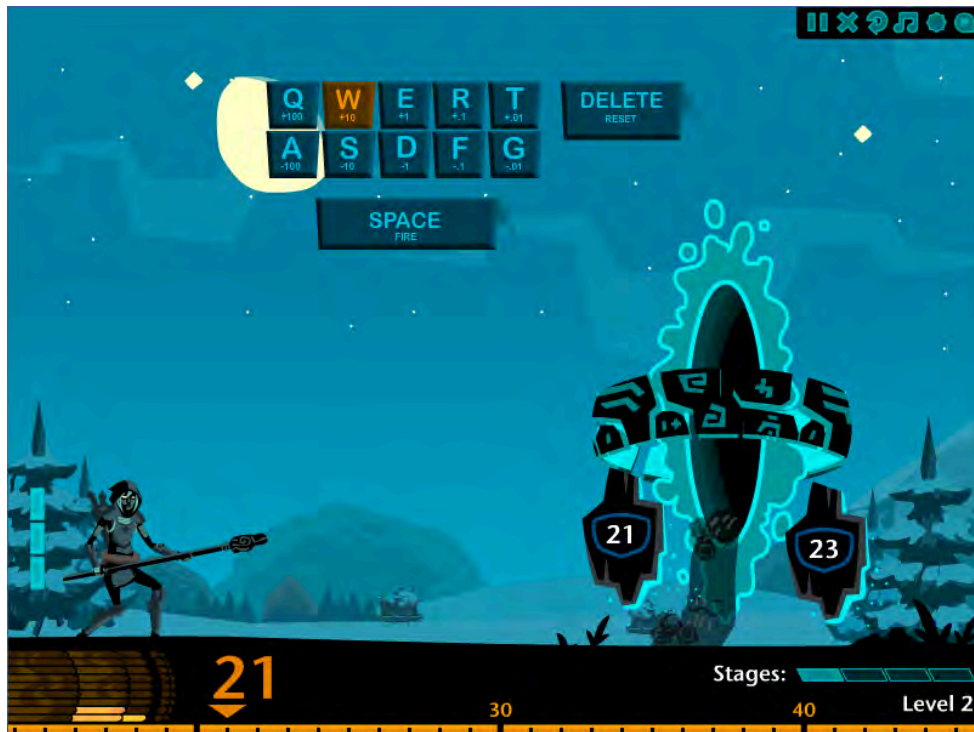
Click on the "2" to go to Level 2.



The tutorial will demonstrate how to work with numbers in the tens place by using the "W" key (in addition to using the "E" key to add units):

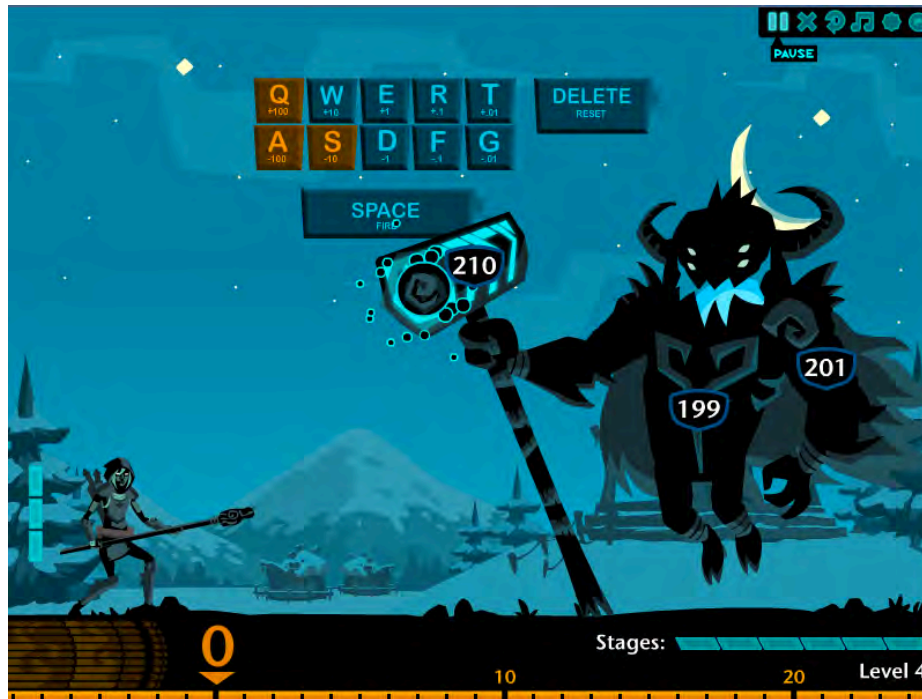


Clear the numbers surrounding the gate, then play as you did in the last level:

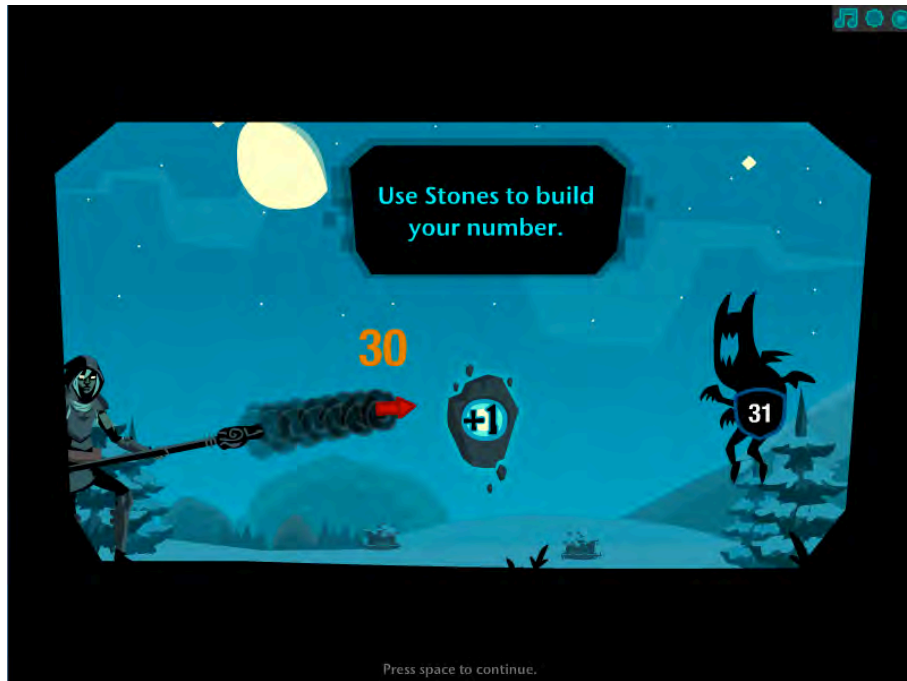


## Additional Levels:

In Level 3, you'll need to start building your numbers faster if you want to destroy the monsters before they get you. The hundreds place is introduced in Level 4.

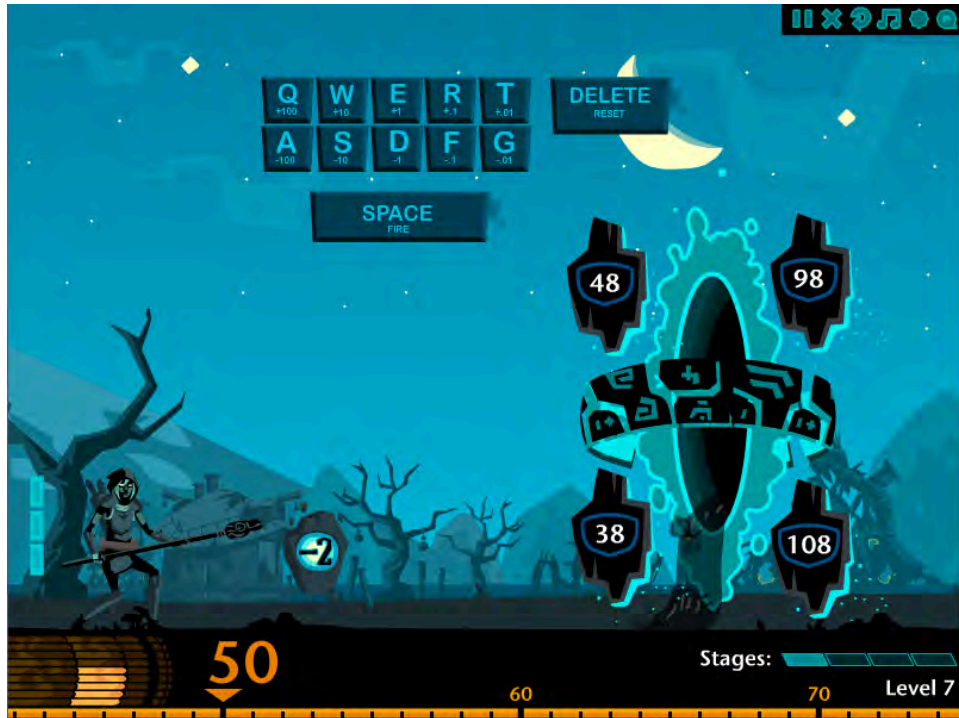


In Level 5, you have the option to use floating "stones" to build your numbers. If the monster's number is 31, for example, you build the number 30, then fire! The rock projectile goes through the stone (the one below is a "+1" stone), which changes your 30 into 31 to destroy the monster:

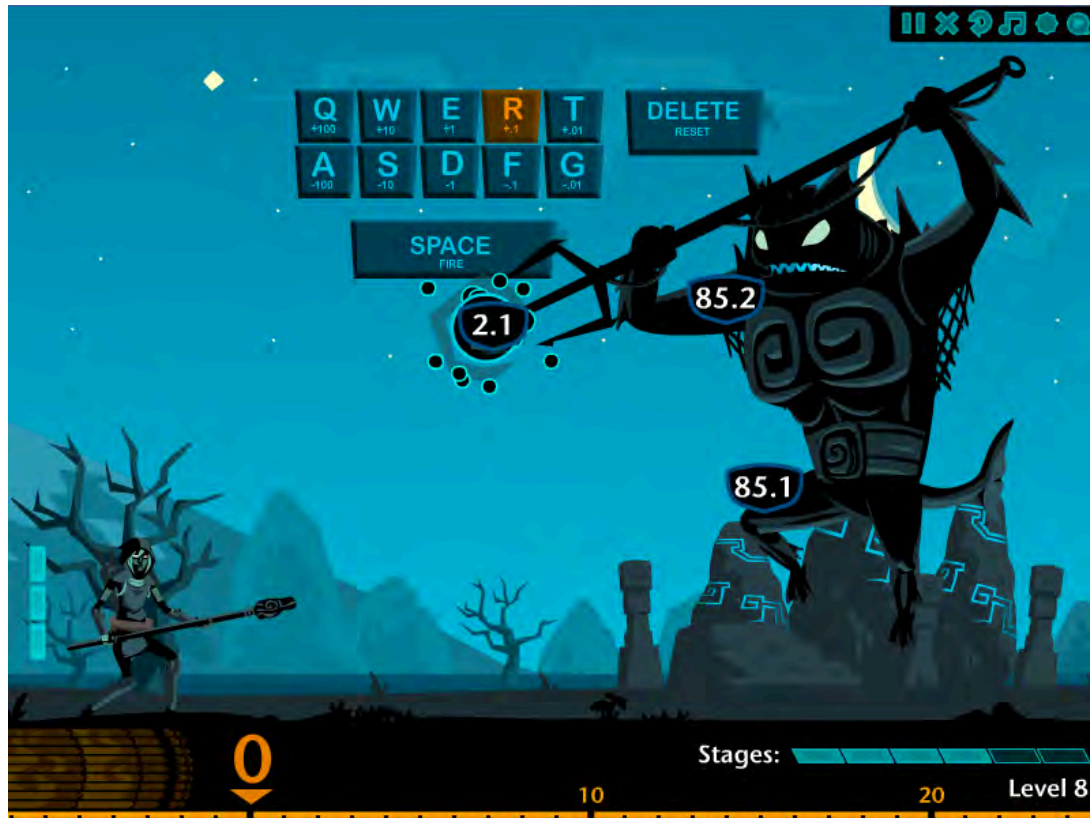


Note that you do not have to use the stone; you can build the actual number and the monster will still be destroyed, but most of the time the stone helps you arrive at the target number more quickly.

Here is a "-2" stone from Level 7:

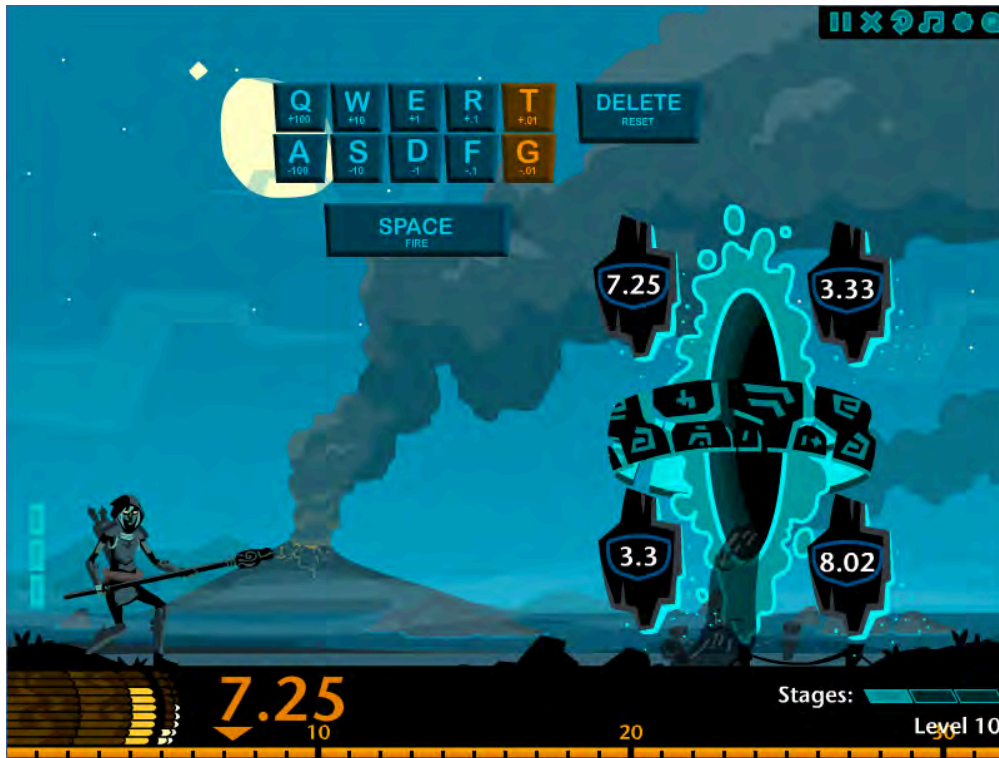


Decimals (tenths) are introduced in Level 8:



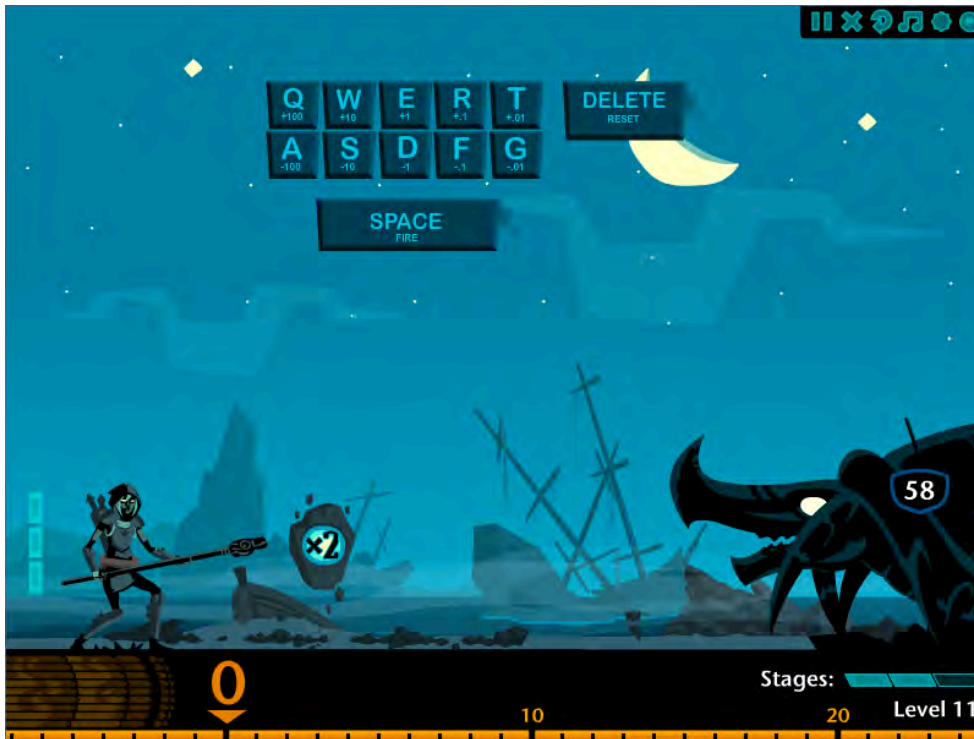


Hundredths are introduced in Level 10:





Multiplication stones are introduced in Level 11:



By Level 14, you get multiplication with decimals:



## Tips and Tricks:

There are seven tips and tricks that the game will give you when you click on the "Tips" button from the main map screen:



# Tips and Tricks

**“Take advantage of the opening gate to refine your strategy, building numbers with as few taps as possible.”**

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# Tips and Tricks

**“To make the numbers 6, 7, 8, or 9, consider subtracting instead of adding.”**

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# Tips and Tricks

“Use the pause button if you need time to think.”

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# Tips and Tricks

“Remember that you can hit more than one key at a time, which is handy with numbers like 333.”

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Next Tip



# Tips and Tricks

“Place your hand in the home position for rapid number creation.”

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# Tips and Tricks

**“In later levels, the floating stones make the task of hitting targets a lot easier. Use them!”**

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# Tips and Tricks

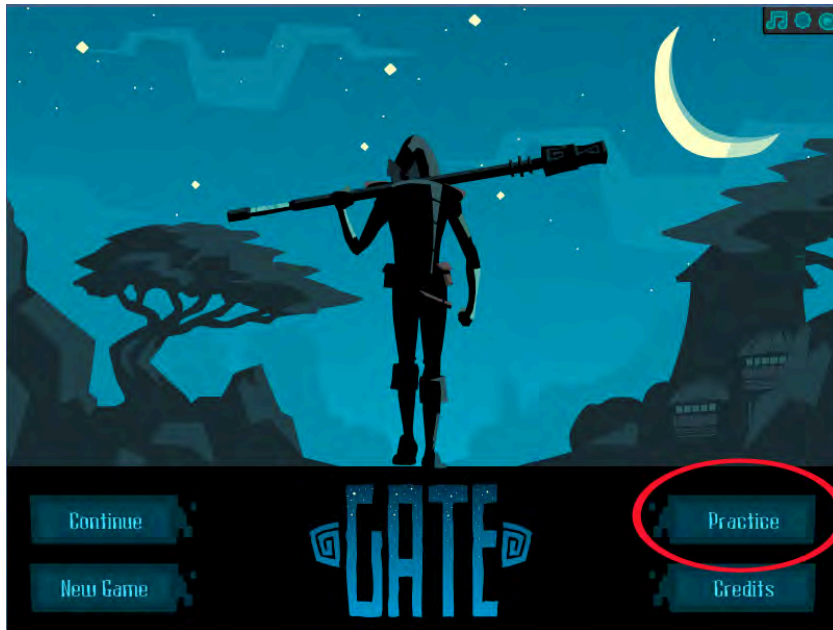
“Getting stuck? Use the  
PRACTICE level off of the  
main menu.”



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Next Tip

Note that the practice level off the main menu (mentioned in the tip above) is located here:



# **More information to help you teach with Gate:**

## **Teaching with Gate (PDF):**

[http://mathsnacks.com/media/print/Gate\\_teachingwith.pdf](http://mathsnacks.com/media/print/Gate_teachingwith.pdf)

## **Gate and the Common Core Standards:**

<http://mathsnacks.com/gate-en.html#adcommoncore>

## **General Guidelines for Teaching with Math Snacks Games:**

[http://mathsnacks.com/teaching\\_edappr.html#games](http://mathsnacks.com/teaching_edappr.html#games)