

Math Snacks: Ratio Rumble

In Ratio Rumble, students mix beakers of potions in correct ratios to toss at their opponent and take him out of the battle.

Players are provided with a Ratio Recipe and are expected to create the Ratio Recipe or an equivalent recipe by selecting the correct proportions of colors on the game board.

Ratio Rumble teaches students to: identify ratios when used in a variety of contextual situations; provide visual representations of ratios; solve common problems and communicate using rate, particularly unit rates, and understand how ratios and rates relate to fractions and decimals.

Students pick an avatar and move from simple two-part ratios (1:2) to harder, more complex three-part ratios (1:2:4) and decimal ratios (1.5:3:2) as they concoct potions to pitch at, and destroy, their opponent in the rumble.

Depending on your internet connection speed, the game might take several minutes to load. As the game loads, the potion beaker fills with green fluid until it reaches 100% and the game is ready.



How to Play

Your goal is to create potions (which get lobbed at your opponent) by following the Ratio Recipe without falling prey to your opponent's potion bombs.

On the Title screen, click, "New Game."

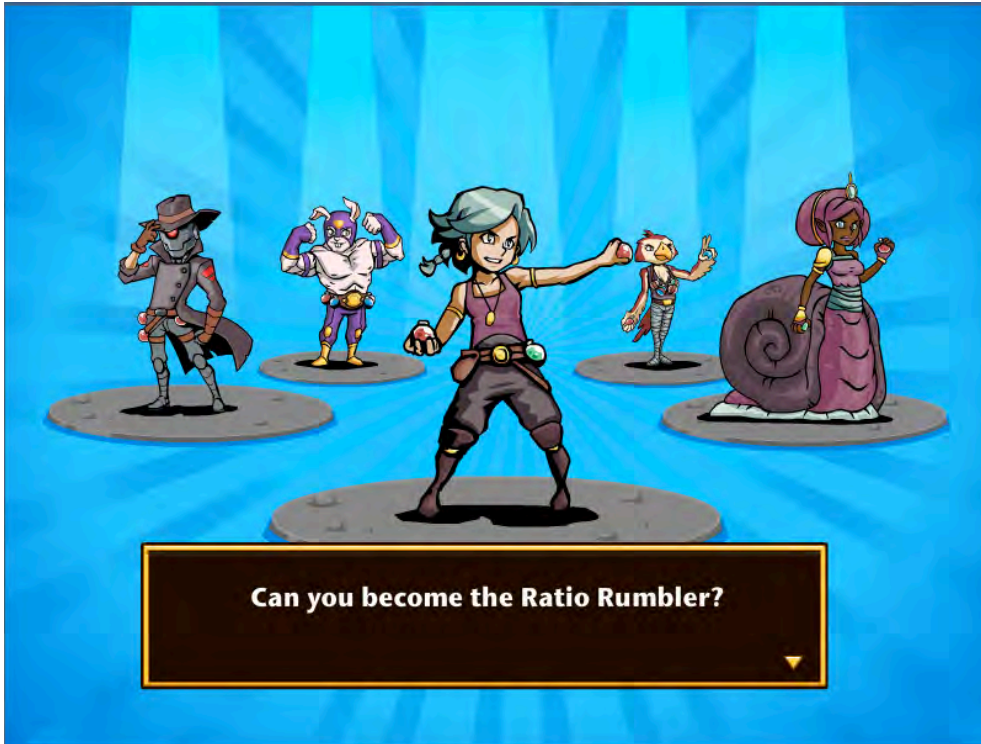


The game will walk you through the background story. Click on the text box to move the story forward.









Can you become the Ratio Rumbler?



Begin by selecting an avatar from the "Character Select" screen that appears immediately after the four background story screens.

Clicking on any of the faces in the grid shows that character and character name on the pedestal to the left.



If you like that character, click the green "OK" button to the right of the "Select" box. If not, chose another character, then click "OK."



A new grid with the game levels appears.

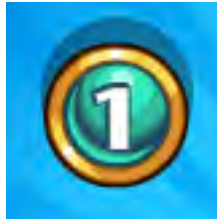


Level 1:

At the Level selection screen, only Level 1 is unlocked.



Click the Level 1 button to begin the game:



You are shown who your opponent is:



...then given a screen showing you how to "Follow the recipe!"



The recipe given is 2 red triangles to 1 green circle. The animation will demonstrate how you should select those items from the tiles to the right.

You need to click on one of the tiles, then hold the mouse down as you drag across more tiles to finish your recipe. Release the mouse when you are finished selecting the appropriate tiles.

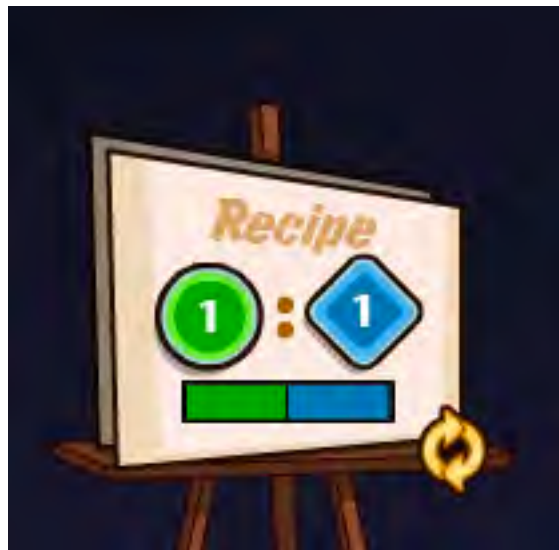
The selected items must share a border and be selected in an unbroken line, but the three items can be selected in any order. For example, you could choose red-red-green, or green-red-red, or red-green-red, as long as your ratio is correct when you release the mouse.

Once you have watched the demonstration animation and gotten a sense of how to select your potions, click the green "Next" button in the lower right corner to start the game play.

You'll be taken to the game board, where the battle takes place:



The starting Ratio Recipe is shown on an easel to the left:



Follow the recipe by selecting any contiguous set of one green and one blue. You can also select two greens and two blues to get extra "multiplier" points, as long as the original ratio stays the same.

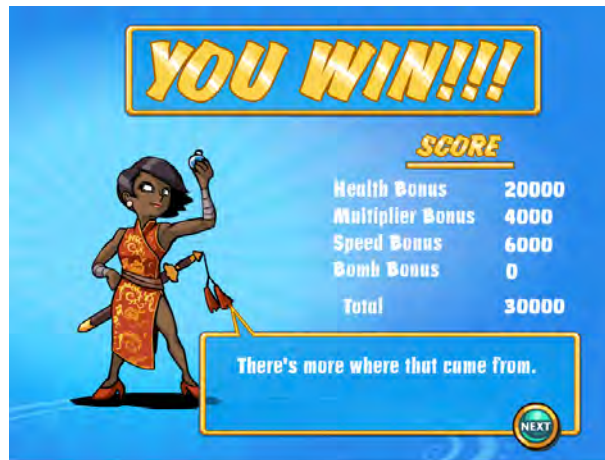


Selecting the correct potion proportions zaps your opponent and helps you earn points toward winning the battle.

The green horizontal bar along the top of the screen indicates your lifeline. The battle will end when either you or your opponent's lifeline is gone. Below, the lifeline of the character on the right is half gone.



At the end of the battle, you'll be given a review of whether you won or lost, and how well you did! Click next to go to the next level, or (if you lost) to replay the last level.



Level 2:



Click the "Level 2" button to begin Level 2.

You'll be given some new instructions to follow (to create the recipe by clicking the mouse and dragging through two greens, then a blue, and then another green before releasing the mouse), then click "Next":



Be careful! You have to watch out for your opponent's bombs in Level 2! They count down (3....2....1) before they explode, so include them in your potion selections (to use them up) before they go off!



Level 3

Level 3 introduces the concept of the Multiplier--earning extra points by identifying several contiguous sets of your potion.



Level 4

Level 4 has you double the recipe:



Later Levels

Later levels have you making equivalent ratios, including three-part ratios by Level 7. You'll need to make more difficult equivalent ratios in Level 9 (such as the one below, where 0.5:1 is equivalent to the 1:2 given in the Ratio Recipe):



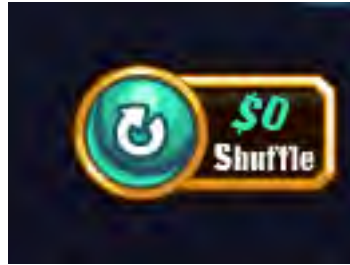
By Level 12, you'll be dealing with both full and half-full beakers (.5) and triple Ratio Recipes:



If you get stuck with a game board for which the Ratio Recipe seems impossible:



You have the option to shuffle the game board and break the impasse:



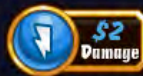
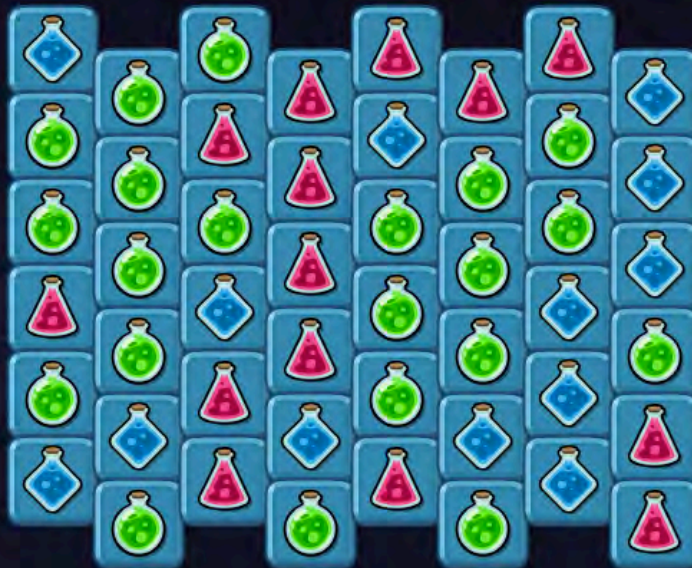
You can also use the Reset button to reset the bombs (from a 1 or 2 back to a 3, to buy yourself more time before they explode):



By level 14, you've got to use multipliers, as the Ratio Recipes give you half portions to find, but all the beakers are full, so you must multiply to make your recipe work:



Level 14



By Level 18, you'd better be working fast and have mastered your ratios--and the Reset button!

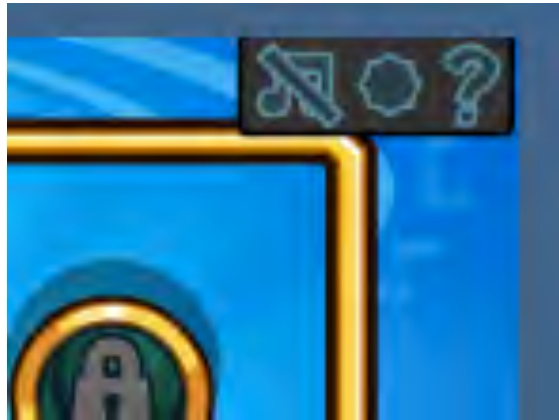


When you finish Level 18, you become the Ratio Rumbler!



Extras: The Battle Trainer

Notice that in the upper right corner of the game level screen, there is a small set of three icons, for music on/off, for sound effects on/off, and a question mark icon that launches the Battle Trainer when clicked.

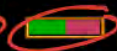
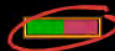


The Battle Trainer gives you six hints on how to play the game.

⚡ Battle Trainer ⚡



A Ratio is a relationship
between two numbers.



The numbers can change as long as
the relationship stays the same.



1/6



⚡ Battle Trainer ⚡



Follow the recipe!



2/6

⚡ Battle Trainer ⚡



Include lightning potions
in your ratio to damage the enemy.



3/6



⚡ Battle Trainer ⚡



Use bombs before they explode.



4/6



⚡ Battle Trainer ⚡



**Include health potions in
your ratio to heal yourself.**



5/6



Double or triple the recipe for extra points--but you must keep the ratios the same! In the screen below, the player has selected four blue diamonds and two red triangles, for a 4:2 ratio, which meets (and doubles) the 2:1 recipe requirements:



That earns the player a x2 multiplier for points!



More information to help you teach with Ratio Rumble:

Ratio Rumble Teacher Guide (PDF):

http://mathsnacks.com/media/print/ratiorumble_teachingwith.pdf

Ratio Rumble and the Common Core Standards:

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

General Guidelines for Teaching with Math Snacks Games:

http://mathsnacks.com/teaching_edappr.html#games