

Twelve a Dozen

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Short Game Description: *Twelve a Dozen* (*Twelve*) is a puzzle-platformer that takes you on a journey through a universe of numbers. Join the heroine Twelve as she sets off on an adventure to rescue her family during a cataclysmic event befalling the town of Dozenopolis. Follow along as she and her companion Dot explore the universe and solve puzzles along the way. Meet a quirky cast of characters and test your brain in a fun and engaging way. Designed to support middle school math curriculum, *Twelve* takes a refreshing approach to educational gaming. The story and game puzzles integrate mathematics at a core level, encouraging players to create and solve algebraic expressions in an engaging way. With the help of scattered “numbles” you’ll use addition, subtraction, division, and multiplication to unlock the powers to overcome the game’s tricky puzzles and dangerous environments. *Twelve* gradually covers more complex mathematical operations to challenge players over time.

Educational Goals for *Twelve a Dozen*

Twelve (Figure 1) aims to allow players to achieve the following goals:

- Understand the beginning thought processes of algebra.
- Understand order of operations.
- Explore algebraic equations beginning with simple expressions before moving into more complex ones.



Figure 1.

These *Twelve* (Figure 2) specific goals are in addition to what Amplify aims to achieve across all of its Math games:

- Positioning math as a tool and not an obstacle in games.
- Allow players to experiment and fail within the game without any punitive consequences.

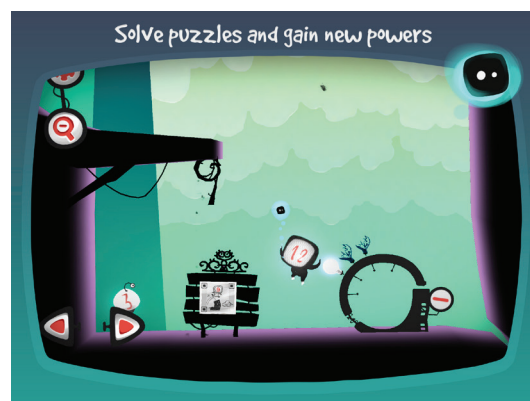


Figure 2.

With regard to the Math Common Core Standards, *Twelve* is mapped to the following math common core standards:

- *CCSS.MATH.CONTENT.5.OA.A.1*. Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.
- *CCSS.MATH.CONTENT.6.EE.A.1*. Write and evaluate numerical expressions involving whole-number exponents.
- *CCSS.MATH.CONTENT.6.EE.A.2.C*. Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including those involving whole-number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations).
- *CCSS.MATH.CONTENT.6.EE.B.6*. Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.
- *CCSS.MATH.CONTENT.6.EE.B.7*. Solve real-world and mathematical problems by writing and solving equations of the form $x + p = q$ and $px = q$ for cases in which p , q and x are all nonnegative rational numbers.
- *CCSS.MATH.CONTENT.6.NS.B.2*. Fluently divide multi-digit numbers using the standard algorithm.
- *CCSS.MATH.CONTENT.6.NS.B.3*. Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.

Amplify Learning Games Approach

In addition to Amplify's in-classroom curriculum, Amplify is trying to extend learning beyond the classroom and captivate students with rich and vivid educational games that will keep them motivated to learn long after the school day ends. Our STEM and ELA games encourage players to adapt a growth mindset, a concept based on research from Carol Dweck. Amplify Games also provides mechanics to allow students to experiment, such as the rewind mechanic in *Twelve*, which allows players to undo any action they have taken, ranging from mathematical operators to actions within the game.

Amplify partners with some of the world's top game designers to create educational games that are as enthralling as commercial games. Game designers focus on creating immersive experiences, while Amplify ensures that the content is accurate and meaningful. Unlike assigned schoolwork or homework, students choose to play Amplify Games for enjoyment, and in doing so, extend their time focused on academic concepts covered in class.

Additional Materials

- Official Trailer: <https://www.youtube.com/watch?v=TYWmf0-4wcc>
- Gameplay video: <https://www.youtube.com/watch?v=PIDivXvaejc>

Acknowledgments

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