



# STANDARDS ALIGNMENT GUIDE

## Oklahoma State Standards Mathematics Grade 3

### INTRODUCTION

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Minecraft: Education Edition is an open-world game that promotes creativity, collaboration, and problem-solving in an immersive environment where the only limit is your imagination. As a game-based learning platform, Minecraft offers educators a transformative way to engage students and ignite their passion for learning. Teachers from around the world are using Minecraft in their classroom to successfully:

- Increase Student Engagement,
- Facilitate Classroom Collaboration
- Provide opportunities for Creative Exploration
- Connect Learning to Tangible Outcomes

This alignment guide will provide you with links to activities you can use in your classroom. These activities take full advantage of Minecraft's capabilities to complement and enhance classroom teaching. In this guide, you will find a list of applicable standards along with links and descriptions of Minecraft activities that focus on each objective.



For more information on using Minecraft in your classroom or to find additional education resources and training materials, visit us online.

[education.minecraft.net](https://education.minecraft.net)

## Number & Operations

STANDARD	DESCRIPTION	ACTIVITY
<b>3.N.1 Compare and represent whole numbers up to 100,000 with an emphasis on place value and equality.</b>		
3.N.1.1	Read, write, discuss, and represent whole numbers up to 100,000. Representations may include numerals, expressions with operations, words, pictures, number lines, and manipulatives.	<p><a href="#">Minecraft Math Gladiators (MMG): Base Ten Puzzles</a> Students take part in a game show mini game. Inside they will learn how to solve problems using base-ten numerals.</p> <p><a href="#">Multi Digit Multiplication</a> Students will solve and build area models of multi digit multiplication problems.</p> <p><a href="#">Survival City Making Roads</a> Students will design a prototype of a home. Then they use their knowledge of area and perimeter to find out how much and what kind of materials they will need to build it in survival.</p>
3.N.1.2	Use place value to describe whole numbers between 1,000 and 100,000 in terms of ten thousands, thousands, hundreds, tens and ones, including expanded form.	<p><a href="#">Minecraft Math Gladiators (MMG): Base Ten Puzzles</a> Students take part in a game show mini game. Inside they will learn how to solve problems using base-ten numerals.</p>
3.N.1.3	Find 10,000 more or 10,000 less than a given five-digit number. Find 1,000 more or 1,000 less than a given four- or five-digit number. Find 100 more or 100 less than a given four- or five-digit number.	<p><a href="#">Angler Arithmetic – Cool math!</a> Gamify Math Class or use Game-Based Learning and Project-Based Learning with a healthy dose of competition to engage students of all ages with FISHING</p> <p><a href="#">Minecraft Math Gladiators (MMG): Regrouping Obstacle Course</a> Inside Minecraft Math Gladiators students will watch videos that will help them find strategies for regrouping.</p> <p><a href="#">Make a Regrouping Video</a> Students will use the blocks in the game to solve problems with regrouping and then make a video about it.</p> <p><a href="#">Subtraction + Regrouping CTF</a> Students will view and build math models of base 10 subtraction problems.</p>
3.N.1.4	Use place value to compare and order whole numbers up to 100,000, using comparative language, numbers, and symbols.	<p><a href="#">Minecraft Math Gladiators (MMG): Base Ten Puzzles</a> Students take part in a game show mini game. Inside they will learn how to solve problems using base-ten numerals.</p>
<b>3.N.2 Add and subtract multi-digit whole numbers; multiply with factors up to 10; represent multiplication and division in various ways; Solve real-world and mathematical problems through the representation of related operations.</b>		
3.N.2.1	Represent multiplication facts by using a variety of approaches, such as repeated addition, equal-sized groups, arrays, area models, equal jumps on a number line and skip counting.	<p><a href="#">Decimal/Fraction Garden</a> Students will demonstrate understanding a fractional and decimal relationships using a 10 x 10 garden.</p> <p><a href="#">Multi Digit Multiplication</a> Students will solve and build area models of multi digit multiplication problems.</p> <p><a href="#">Decimal Dungeon – Part 3</a></p>

		<p>Explore the Decimal Dungeon in a five-part unit on Numbers &amp; Operations in Base Ten where students observe and build math models to solve problems.  <a href="#">Survival City Making Roads</a></p> <p>Students will design a prototype of a home. Then they use their knowledge of area and perimeter to find out how much and what kind of materials they will need to build it in survival.  <a href="#">Survival City Part 2</a>  <a href="#">Survival City Part 3</a></p> <p>Students will design a prototype of a home. Then they use their knowledge of area and perimeter to find out how much and what kind of materials they will need to build it in survival.</p>
3.N.2.2	Demonstrate fluency of multiplication facts with factors up to 10.	N/A
3.N.2.3	Use strategies and algorithms based on knowledge of place value and equality to fluently add and subtract multi-digit numbers.	<p><a href="#">Angler Arithmetic – Cool math!</a></p> <p>Gamify Math Class or use Game-Based Learning and Project-Based Learning with a healthy dose of competition to engage students of all ages with FISHING  <a href="#">Make a Regrouping Video</a></p> <p>Students will use the blocks in the game to solve problems with regrouping and then make a video about it.  <a href="#">Minecraft Math Gladiators (MMG): Regrouping Obstacle Course</a></p> <p>Inside Minecraft Math Gladiators students will watch videos that will help them find strategies for regrouping.  <a href="#">Subtraction + Regrouping CTF</a></p> <p>Students will view and build math models of base 10 subtraction problems.</p>
3.N.2.4	Recognize when to round numbers and apply understanding to round numbers to the nearest ten thousand, thousand, hundred, and ten and use compatible numbers to estimate sums and differences.	<p><a href="#">Make a Regrouping Video</a></p> <p>Students will use the blocks in the game to solve problems with regrouping and then make a video about it.  <a href="#">Minecraft Math Gladiators (MMG): Elytra Flight Rounding</a></p> <p>Solve Base 10 rounding math problems by playing the Minecraft Math Gladiators: Elytra Flight and Rounding mini-game.</p>
3.N.2.5	Use addition and subtraction to solve real-world and mathematical problems involving whole numbers. Use various strategies, including the relationship between addition and subtraction, the use of technology, and the context of the problem to assess the reasonableness of results.	<p><a href="#">Build a Two-Step Word Problem</a></p> <p>Design and solve a two-step word problem by building it as scene in Minecraft.</p>
3.N.2.6	Represent division facts by using a variety of approaches, such as repeated subtraction, equal sharing and forming equal groups.	<p><a href="#">Breaking Numbers</a></p> <p>Break down arrays and rebuild them in groups of equal numbers to understand how number families are the key to the multiplication and division.  <a href="#">Finding the Unknown</a></p>

		Students construct math models in Minecraft to determine missing variables.
3.N.2.7	Recognize the relationship between multiplication and division to represent and solve real-world problems.	<p><a href="#">Build a Two-Step Word Problem</a> Design and solve a two-step word problem by building it as scene in Minecraft.</p> <p><a href="#">Two Step Word Problems</a> Design and solve a two-step word problem by building it as scene in Minecraft.</p> <p><a href="#">Build a Word Problem</a> Students will use blocks in the game to solve multiplication or division world problems and then create a video to show understanding.</p> <p><a href="#">Building Word Problems</a> Build a scene in Minecraft that tells a story involving multiplication or division.</p> <p><a href="#">Finding the Unknown</a> Students construct math models in Minecraft to determine missing variables.</p>
3.N.2.8	Use strategies and algorithms based on knowledge of place value, equality and properties of addition and multiplication to multiply a two-digit number by a one-digit number.	<p><a href="#">Math Bed Wars 2!</a> Students build and explain Minecraft math models that show the inverse relationship between multiplication and division and add design purpose to their models by using them strategically in a mini-game.</p>
<b>3.N.3 Understand meanings and uses of fractions in real-world and mathematical situations.</b>		
3.N.3.1	Read and write fractions with words and symbols.	<p><a href="#">American Flag Three-Act Math</a> Welcome to the world of Three-Act Mathematics in Minecraft! Ask Questions, Work Collaboratively, and Build Understanding.</p> <p><a href="#">Decimal/Fraction Garden</a> Students will demonstrate understanding a fractional and decimal relationships using a 10 x 10 garden.</p> <p><a href="#">Fraction Stories</a> Have students discover fractions in real life settings and have them communicate their findings through fraction stories.</p> <p><a href="#">Fraction World</a> Based on a lesson plan submitted by another user, wold download available.</p> <p><a href="#">Capture the Flag!</a> Students will be able to build and explain Minecraft math models that show the relationship between equivalent fractions. Then add design purpose to their models by using them strategically in a mini-game.</p> <p><a href="#">Crafting Fractions</a> Students will observe crafting recipes, write them as fractions, and then use that knowledge to make an escape!</p> <p><a href="#">Fractions in Minecraft</a></p>

		<p>Students will build math models that correspond to fraction operations and solve four to six problems per standard.</p> <p><a href="#">Fractions and Multiplication Video</a></p> <p>Observe and build math models that show patterns when multiplying numbers greater than, less than, or equal to 1. Create a video to show knowledge.</p> <p><a href="#">Fraction Pixel Art</a></p> <p>Using a pixel art editor (or graph paper) students design an artwork, then break down the colors into fractions, discuss number patterns and unit fractions, then build their designs in Minecraft.</p> <p><a href="#">Fractions Steeplechase</a></p> <p>Students will build and explain Minecraft math models that show fractions, improper fractions, and mixed numbers on number lines, then use number lines to create jumps for a horse race.</p> <p><a href="#">Measuring Landforms</a></p> <p>Students will choose and name their own length of measurement. Then they will get into a world and measure different kinds land features.</p> <p><a href="#">Shapes From Shapes</a></p> <p>Enter the Math Model Exhibition World, examine math models, and find the fraction for each piece. Next they will be asked to make a shape made out of smaller equal size pieces. Last they will recreate their partners work using different size pieces.</p>
3.N.3.2	Construct fractions using length, set, and area models.	<p><a href="#">American Flag Three-Act Math</a></p> <p>Welcome to the world of Three-Act Mathematics in Minecraft! Ask Questions, Work Collaboratively, and Build Understanding.</p> <p><a href="#">Decimal/Fraction Garden</a></p> <p>Students will demonstrate understanding a fractional and decimal relationships using a 10 x 10 garden.</p> <p><a href="#">Fraction Stories</a></p> <p>Have students discover fractions in real life settings and have them communicate their findings through fraction stories.</p> <p><a href="#">Fraction World</a></p> <p>Based on a lesson plan submitted by another user, wold download available.</p> <p><a href="#">Capture the Flag!</a></p> <p>Students will be able to build and explain Minecraft math models that show the relationship between equivalent fractions. Then add design purpose to their models by using them strategically in a mini-game.</p> <p><a href="#">Crafting Fractions</a></p> <p>Students will observe crafting recipes, write them as fractions, and then use that knowledge to make an escape!</p>

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3.N.3.3	Recognize unit fractions and use them to compose and decompose fractions related to the same whole. Use the numerator to describe the number of parts and the denominator to describe the number of partitions.	N/A
3.N.3.4	Use models and number lines to order and compare fractions that are related to the same whole.	<p><a href="#">Fractions Steeplechase</a> Students will build and explain Minecraft math models that show fractions, improper fractions, and mixed numbers on number lines, then use number lines to create jumps for a horse race.</p> <p><a href="#">Javelin Line Plots</a> Students will throw 10 tridents and track their distance on a line plot graph.</p> <p><a href="#">Shapes From Shapes</a> Enter the Math Model Exhibition World, examine math models, and find the fraction for each piece. Next they will be asked to make a shape made out of smaller equal size pieces. Last they will recreate their partners work using different size pieces.</p>

		<a href="#">American Flag Three-Act Math</a> Welcome to the world of Three-Act Mathematics in Minecraft! Ask Questions, Work Collaboratively, and Build Understanding. <a href="#">Decimal/Fraction Garden</a> Students will demonstrate understanding a fractional and decimal relationships using a 10 x 10 garden. <a href="#">Fraction Stories</a> Have students discover fractions in real life settings and have them communicate their findings through fraction stories. <a href="#">Fraction World</a> Based on a lesson plan submitted by another user, wold download available.
<b>3.N.4 Determine the value of a set of coins or bills.</b>		
3.N.4.1	Use addition to determine the value of a collection of coins up to one dollar using the cent symbol and a collection of bills up to twenty dollars.	<a href="#">Steve's New Home</a> Steve has just arrived in a new land and has no-where to live. All he has with him is £300 to buy resources and build a new home.
3.N.4.2	Select the fewest number of coins for a given amount of money up to one dollar.	<a href="#">Steve's New Home</a> Steve has just arrived in a new land and has no-where to live. All he has with him is £300 to buy resources and build a new home.

## Algebraic Reasoning & Algebra

STANDARD	DESCRIPTION	ACTIVITY
<b>3.A.1 Describe and create representations of numerical and geometric patterns.</b>		
3.A.1.1	Create, describe, and extend patterns involving addition, subtraction, or multiplication to solve problems in a variety of contexts.	<a href="#">American Flag Three-Act Math</a> Welcome to the world of Three-Act Mathematics in Minecraft! Ask Questions, Work Collaboratively, and Build Understanding. <a href="#">Patterns and Motifs</a> Students will understand patterns in history to identify information about how people lived, their beliefs, their surroundings and culture. <a href="#">Number Pattern Architecture</a> Students explore math models to learn about arithmetic patterns and create towers in architectural designs. <a href="#">Number Patterns Algebra Architecture</a> Students complete and document problems in Minecraft to find growth patterns and missing numbers then use a number pattern to build an architectural structure.
3.A.1.2	Describe the rule (single operation) for a pattern from an input/output table or function machine involving addition, subtraction, or multiplication.	<a href="#">American Flag Three-Act Math</a> Welcome to the world of Three-Act Mathematics in Minecraft! Ask Questions, Work Collaboratively, and Build Understanding. <a href="#">Patterns and Motifs</a>

		<p>Students will understand patterns in history to identify information about how people lived, their beliefs, their surroundings and culture.</p> <p><a href="#">Number Pattern Architecture</a></p> <p>Students explore math models to learn about arithmetic patterns and create towers in architectural designs.</p> <p><a href="#">Number Patterns Algebra Architecture</a></p> <p>Students complete and document problems in Minecraft to find growth patterns and missing numbers then use a number pattern to build an architectural structure.</p>
3.A.1.3	Explore and develop visual representations of growing geometric patterns and construct the next steps.	<p><a href="#">American Flag Three-Act Math</a></p> <p>Welcome to the world of Three-Act Mathematics in Minecraft! Ask Questions, Work Collaboratively, and Build Understanding.</p> <p><a href="#">Patterns and Motifs</a></p> <p>Students will understand patterns in history to identify information about how people lived, their beliefs, their surroundings and culture.</p> <p><a href="#">Number Pattern Architecture</a></p> <p>Students explore math models to learn about arithmetic patterns and create towers in architectural designs.</p>
<b>3.A.2 Use number sentences involving multiplication and unknowns to represent and solve real-world and mathematical problems.</b>		
3.A.2.1	Find unknowns represented by symbols in arithmetic problems by solving one-step open-sentences (equations) and other problems involving addition, subtraction, and multiplication. Generate real-world situations to represent number sentences.	<p><a href="#">Finding the Unknown</a></p> <p>Students construct math models in Minecraft to determine missing variables.</p>
3.A.2.2	Recognize, represent and apply the number properties (commutative, identity, and associative properties of addition and multiplication) using models and manipulatives to solve problems.	<p><a href="#">Two Step Word Problems</a></p> <p>Design and solve a two-step word problem by building it as scene in Minecraft.</p> <p><a href="#">Commutative Property Bed Wars</a></p> <p>Build Minecraft math models that represent the commutative property of multiplication and use them in a mini-game.</p>

## Geometry & Measurement

STANDARD	DESCRIPTION	ACTIVITY
<b>3.GM.1 Use geometric attributes to describe and create shapes in various contexts.</b>		
3.GM.1.1	Sort three-dimensional shapes based on attributes.	<p><a href="#">Cubic Units</a></p> <p>In this lesson, students will create shapes using code and then determine the number of cubic units that combined shapes would make.</p> <p><a href="#">Patterns and Motifs</a></p>



		Students will understand patterns in history to identify information about how people lived, their beliefs, their surroundings and culture.
3.GM.1.2	Build a three-dimensional figure using unit cubes when picture/shape is shown. 3.GM.1.3 Classify angles as acute, right, obtuse, and straight	<a href="#">Cubic Units</a> In this lesson, students will create shapes using code and then determine the number of cubic units that combined shapes would make.
3.GM.1.3	Sort three-dimensional shapes based on attributes.	N/A
<b>3.GM.2 Understand measurable attributes of real-world and mathematical objects using various tools.</b>		
3.GM.2.1	Find perimeter of polygon, given whole number lengths of the sides, in real-world and mathematical situations.	<a href="#">Area and Perimeter Tasks</a> Students will demonstrate their knowledge of area and perimeter in these performance tasks. <a href="#">Area and Volume</a> This project aims to enhance understanding in the concepts of area and volume in Grade 5 students. <a href="#">Area Functions</a> In this lesson, you will be challenged to write code to make quadrilaterals that you have made by hand in Minecraft. <a href="#">Class Village</a> Students will need to explore and find their way through the maze. Collecting resources that they can use when it's time to build their village. <a href="#">Survival City Part 2</a> <a href="#">Survival City Part 3</a> Students will design a prototype of a home. Then they use their knowledge of area and perimeter to find out how much and what kind of materials they will need to build it in survival.
3.GM.2.2	Develop and use formulas to determine the area of rectangles. Justify why length and width are multiplied to find the area of a rectangle by breaking the rectangle into one unit by one unit squares and viewing these as grouped into rows and columns.	<a href="#">Area and Perimeter Tasks</a> Students will demonstrate their knowledge of area and perimeter in these performance tasks. <a href="#">Area and Volume</a> This project aims to enhance understanding in the concepts of area and volume in Grade 5 students. <a href="#">Area Functions</a> In this lesson, you will be challenged to write code to make quadrilaterals that you have made by hand in Minecraft. <a href="#">Class Village</a> Students will need to explore and find their way through the maze. Collecting resources that they can use when it's time to build their village. <a href="#">Survival City Making homes Part 1</a> <a href="#">Survival City Making homes Part 2</a> <a href="#">Survival City Making homes Part 3</a> Design a prototype of a home and find the area and perimeter.

3.GM.2.3	Choose an appropriate measurement instrument and measure the length of objects to the nearest whole centimeter or meter.	N/A
3.GM.2.4	Choose an appropriate measurement instrument and measure the length of objects to the nearest whole yard, whole foot, or half inch.	<p><a href="#">How Fast Can you Go?</a> Students will understand how challenging it was to walk for thousands of miles.</p> <p><a href="#">Measuring Landforms</a> Students will choose and name their own length of measurement. Then they will get into a world and measure different kinds land features.</p>
3.GM.2.5	Using common benchmarks, estimate the lengths (customary and metric) of a variety of objects.	N/A
3.GM.2.6	Use an analog thermometer to determine temperature to the nearest degree in Fahrenheit and Celsius.	N/A
3.GM.2.7	Count cubes systematically to identify number of cubes needed to pack the whole or half of a three-dimensional structure.	<p><a href="#">Area and Volume</a> This project aims to enhance understanding in the concepts of area and volume in Grade 5 students.</p> <p><a href="#">Class Village</a> Students will need to explore and find their way through the maze. Collecting resources that they can use when it's time to build their village.</p> <p><a href="#">Cubic Units</a> In this lesson, students will create shapes using code and then determine the number of cubic units that combined shapes would make.</p> <p><a href="#">Exploring Systems of Measurement</a> Students will use Minecraft to reimagine system of measurement in ancient China. Can you use the materials available in Minecraft to create a system of measurement similar to those used by people living in ancient China.</p> <p><a href="#">Volume World</a> Students will learn about volume by filling sandboxes, creating equations, and finding the total amount of block in rectangular prisms.</p>
3.GM.2.8	Find the area of two-dimensional figures by counting total number of same size unit squares that fill the shape without gaps or overlaps.	<p><a href="#">Area and Perimeter Tasks</a> Students will demonstrate their knowledge of area and perimeter in these performance tasks.</p> <p><a href="#">Area and Volume</a> This project aims to enhance understanding in the concepts of area and volume in Grade 5 students.</p> <p><a href="#">Area Functions</a> In this lesson, you will be challenged to write code to make quadrilaterals that you have made by hand in Minecraft.</p> <p><a href="#">Class Village</a> Students will need to explore and find their way through the maze. Collecting resources that they can use when it's time to build their village.</p>

		<a href="#">Exploring Systems of Measurement</a> Students will use Minecraft to reimagine system of measurement in ancient China. Can you use the materials available in Minecraft to create a system of measurement similar to those used by people living in ancient China. <a href="#">Survival City Part 2</a> <a href="#">Survival City Part 3</a> Students will design a prototype of a home. Then they use their knowledge of area and perimeter to find out how much and what kind of materials they will need to build it in survival.
<b>3.GM.3 Solve problems by telling time to the nearest 5 minutes.</b>		
3.GM.3.1	Read and write time to the nearest 5-minute (analog and digital).	N/A
3.GM.3.2	Determine the solutions to problems involving addition and subtraction of time in intervals of 5 minutes, up to one hour, using pictorial models, number line diagrams, or other tools.	<a href="#">Build a Clock!</a> Student will learn about how to read time by building a clock in Minecraft. They will do this by using command blocks with the testforblock and setblock commands. Then they will build a minecart ticker to start the clock and keep time.

## Data & Probability

STANDARD	DESCRIPTION	ACTIVITY
<b>3.D.1 Summarize, construct, and analyze data</b>		
3.D.1.1	Summarize and construct a data set with multiple categories using a frequency table, line plot, pictograph, and/or bar graph with scaled intervals	<a href="#">Javelin Line Plots</a> Students will throw 10 tridents and track their distance on a line plot graph. <a href="#">Javelin Line Plots-3</a> Students engage in a javelin throwing competition in Minecraft, plotting the distances and scores on line plot graphs in the game. <a href="#">Survival Olympics</a> Students will fish, mine ores, and fight monsters. Then they will make and compare their activities to create bar graphs.
3.D.1.2	Solve one- and two-step problems using categorical data represented with a frequency table, pictograph, or bar graph with scaled intervals.	<a href="#">Survival Olympics</a> Students will fish, mine ores, and fight monsters. Then they will make and compare their activities to create bar graphs.