



STANDARDS ALIGNMENT GUIDE

Nebraska State Standards Mathematics Grade 3

INTRODUCTION

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

NUMBER

STANDARD	DESCRIPTION	ACTIVITY
MA.3.1.1 Numeric Relationships: Students will demonstrate, represent, and show relationships among whole numbers and simple fractions within the base-ten number system.		
MA.3.1.1.a	Read, write and demonstrate multiple equivalent representations for numbers up to 100,000 using objects, visual representations, including standard form, word form, expanded form, and expanded notation.	Minecraft Math Gladiators (MMG): Base Ten Puzzles Students take part in a game show mini game. Inside they will learn how to solve problems using base-ten numerals.
MA.3.1.1.b	Compare whole numbers through the hundred thousands and represent the comparisons using the symbols $>$, $<$ or $=$.	Minecraft Math Gladiators (MMG): Base Ten Puzzles Students take part in a game show mini game. Inside they will learn how to solve problems using base-ten numerals.
MA.3.1.1.c	Round a whole number to the tens or hundreds place, using place value understanding or a visual representation.	Minecraft Math Gladiators (MMG): Elytra Flight Rounding Solve Base 10 rounding math problems by playing the Minecraft Math Gladiators: Elytra Flight and Rounding mini-game. Round Number Video Students demonstrate rounding by breaking and placing blocks in Minecraft. They then set up their own problem, creating a video to explain their rounding.
MA.3.1.1.d	Represent and understand a fraction as a number on a number line.	Fractions Steeplechase 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. Javelin Line Plots Students will throw 10 tridents and track their distance on a line plot graph.
MA.3.1.1.e	Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers.	N/A
MA.3.1.1.f	Show and identify equivalent fractions using visual representations including pictures, manipulatives, and number lines.	American Flag Three-Act Math Welcome to the world of Three-Act Mathematics in Minecraft! Ask Questions, Work Collaboratively, and Build Understanding. Decimal/Fraction Garden Students will demonstrate understanding a fractional and decimal relationships using a 10 x 10 garden. Fraction Stories Have students discover fractions in real life settings and have them communicate their findings through fraction stories. Fraction World Based on a lesson plan submitted by another user, wold download available. Capture the Flag!

		<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>Fractions in Minecraft</p> <p>Students will build math models that correspond to fraction operations and solve four to six problems per standard.</p> <p>Fractions Steeplechase</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>Measuring Landforms</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>Shapes From Shapes</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>
MA.3.1.1.g	Find parts of a whole and parts of a set using visual representations.	<p>American Flag Three-Act Math</p> <p>Welcome to the world of Three-Act Mathematics in Minecraft! Ask Questions, Work Collaboratively, and Build Understanding.</p> <p>Decimal/Fraction Garden</p> <p>Students will demonstrate understanding a fractional and decimal relationships using a 10 x 10 garden.</p> <p>Fraction Stories</p> <p>Have students discover fractions in real life settings and have them communicate their findings through fraction stories.</p> <p>Fraction World</p> <p>Based on a lesson plan submitted by another user, wold download available.</p> <p>Shapes From Shapes</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> <p>Symmetry in Pixel Art</p> <p>Study and use lines of symmetry in pixel art. Design your own pixel art with a partner.</p>
MA.3.1.1.h	Explain and demonstrate how fractions $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$ and a whole relate to time, measurement, and money, and demonstrate using visual representation.	<p>American Flag Three-Act Math</p> <p>Welcome to the world of Three-Act Mathematics in Minecraft! Ask Questions, Work Collaboratively, and Build Understanding.</p>

		<p>Decimal/Fraction Garden Students will demonstrate understanding a fractional and decimal relationships using a 10 x 10 garden.</p> <p>Fraction Stories Have students discover fractions in real life settings and have them communicate their findings through fraction stories.</p> <p>Fraction World Based on a lesson plan submitted by another user, wold download available.</p> <p>Shapes From Shapes 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> <p>Symmetry in Pixel Art Study and use lines of symmetry in pixel art. Design your own pixel art with a partner.</p>
MA.3.1.1.i	Compare and order fractions having the same numerators or denominators using visual representations, comparison symbols, and verbal reasoning.	<p>Fraction Stories Have students discover fractions in real life settings and have them communicate their findings through fraction stories.</p> <p>Capture the Flag! 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>Fractions in Minecraft Students will build math models that correspond to fraction operations and solve four to six problems per standard.</p> <p>Fraction Pixel Art 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>Fractions Steeplechase 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>Javelin Line Plots Students will throw 10 tridents and track their distance on a line plot graph.</p>

MA 3.1.2 Operations: Students will demonstrate the meaning of multiplication and division with whole numbers and compute accurately.		
MA.3.1.2.a	Add and subtract within 1,000 with or without regrouping.	Angler Arithmetic – Cool math! 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. Minecraft Math Gladiators (MMG): Regrouping Obstacle Course Inside Minecraft Math Gladiators students will watch videos that will help them find strategies for regrouping. Minecraft Math Gladiators (MMG): Wither Battle Regrouping Students take part in a gameshow mini game. Inside they will regroup numbers in Minecraft and work together to fight the Wither Boss. Subtraction + Regrouping CTF Students will view and build math models of base 10 subtraction problems.
MA.3.1.2.b	Select and apply the appropriate methods of computation when solving one- and two- step addition and subtraction problems with four-digit whole numbers through the thousands (e.g., visual representations, mental computation, paper-pencil).	Angler Arithmetic – Cool math! 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. Minecraft Math Gladiators (MMG): Regrouping Obstacle Course Inside Minecraft Math Gladiators students will watch videos that will help them find strategies for regrouping. Subtraction + Regrouping CTF Students will view and build math models of base 10 subtraction problems.
MA.3.1.2.c	Use drawings, words, arrays, symbols, repeated addition, equal groups, and number lines to explain the meaning of multiplication.	Fractions and Multiplication Video 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. Multi Digit Multiplication Students will solve and build area models of multi digit multiplication problems. Survival City Making Roads 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.
MA.3.1.2.d	Use words and symbols to explain the meaning of the Zero Property and Identity Property of multiplication	N/A
MA.3.1.2.e	Multiply one-digit whole numbers by multiples of 10 in the range of 10 to 90.	Math Bed Wars 2! 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.

MA.3.1.2.f	Use objects, drawings, arrays, words and symbols to explain the relationship between multiplication and division (e.g., if $3 \times 4 = 12$ then $12 \div 3 = 4$).	Build a Word Problem Students will use blocks in the game to solve multiplication or division word problems and then create a video to show understanding. Finding the Unknown Students construct math models in Minecraft to determine missing variables.
MA.3.1.2.g	Fluently (i.e. automatic recall based on understanding) multiply and divide within 100.	N/A
MA.3.1.2.h	Determine the reasonableness of whole number sums and differences in real-world problems using estimation, compatible numbers, mental computations, or other strategies.	Build a Two-Step Word Problem Design and solve a two-step word problem by building it as scene in Minecraft.

ALGEBRA

STANDARD	DESCRIPTION	ACTIVITY
MA 3.2.1 Algebraic Relationships: Students will demonstrate, represent, and show relationships with expressions and equations.		
MA.3.2.1.a	Identify arithmetic patterns (including patterns in the addition or multiplication tables) using properties of operations.	American Flag Three-Act Math Welcome to the world of Three-Act Mathematics in Minecraft! Ask Questions, Work Collaboratively, and Build Understanding. Patterns and Motifs Students will understand patterns in history to identify information about how people lived, their beliefs, their surroundings and culture. Number Pattern Architecture Students explore math models to learn about arithmetic patterns and create towers in architectural designs.
MA.3.2.1.b	Interpret a multiplication equation as equal groups (e.g., interpret 4×6 as the total number of objects in four groups of six objects each). Represent verbal statements of equal groups as multiplication equations.	Fractions and Multiplication Video 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.
MA 3.2.2 Algebraic Processes: Student will apply the operational properties when multiplying and dividing.		
MA.3.2.2.a	Apply the commutative, associative, and distributive properties as strategies to multiply and divide.	Two Step Word Problems Design and solve a two-step word problem by building it as scene in Minecraft. Commutative Property Bed Wars Build Minecraft math models that represent the commutative property of multiplication and use them in a mini-game. Math Bed Wars 2! Students build and explain Minecraft math models that show the inverse relationship between multiplication and

		<p>division and add design purpose to their models by using them strategically in a mini-game.</p> <p>Survival City Making homes Part 2 Survival City Making homes Part 3</p> <p>Design a prototype of a home and find the area and perimeter.</p> <p>Survival City Part 2 Survival City Part 3</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>
MA.3.2.2.b	Solve one-step whole number equations involving addition, subtraction, multiplication, or division, including the use of a letter to represent the unknown quantity.	<p>Finding the Unknown</p> <p>Students construct math models in Minecraft to determine missing variables.</p>
MA 3.2.3 Applications: Students will solve real-world problems involving equations with whole numbers.		
MA.3.2.3.a	Solve real-world problems involving two-step equations (involving two operations) involving whole numbers using addition and subtraction.	N/A
MA.3.2.3.b	Write an equation (e.g., one operation, one variable) to represent real-world problems involving whole numbers.	N/A

GEOMETRY

STANDARD	DESCRIPTION	ACTIVITY
MA 3.3.1 Characteristics: Students will identify and describe geometric characteristics and create two- and three-dimensional shapes.		
MA 3.3.1.a	Identify the number of sides, angles, and vertices of two-dimensional shapes.	<p>Area Functions</p> <p>In this lesson, you will be challenged to write code to make quadrilaterals that you have made by hand in Minecraft.</p>
MA 3.3.1.b	Sort quadrilaterals into categories (e.g., rhombuses, squares, and rectangles).	<p>Capture the Flag (Quadrilateral Capture the Flag)</p> <p>Compare, contrast and define different quadrilaterals. Build them on the map to play the capture the flag mini-game.</p> <p>Classifying Quadrilaterals</p> <p>Define, build, and classify quadrilaterals then will peer review classmates' structures by labeling shapes with signs and documentation.</p> <p>Lines, Angles, and Architecture</p> <p>Students study lines and angles and use them to design a facade of a building.</p>
MA 3.3.1.c	Draw lines to separate two-dimensional figures into equal areas, and express the area of each part as a unit fraction of the whole.	<p>American Flag Three-Act Math</p> <p>Welcome to the world of Three-Act Mathematics in Minecraft! Ask Questions, Work Collaboratively, and Build Understanding.</p> <p>Decimal/Fraction Garden</p>

		<p>Students will demonstrate understanding a fractional and decimal relationships using a 10 x 10 garden.</p> <p>Fraction Stories</p> <p>Have students discover fractions in real life settings and have them communicate their findings through fraction stories.</p> <p>Fraction World</p> <p>Based on a lesson plan submitted by another user, wold download available.</p> <p>Shapes From Shapes</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>
MA 3.3.2 Coordinate Geometry: Students will determine location, orientation, and relationships on the coordinate plane.		
No additional indicator(s) at this level. Mastery is expected at previous grade levels.		
MA 3.3.3 Measurement: Students will perform and compare measurements and apply formulas.		
MA 3.3.3.a	Find the perimeter of polygons given the side lengths, and find an unknown side length.	<p>Area and Perimeter Tasks</p> <p>Students will demonstrate their knowledge of area and perimeter in these performance tasks.</p> <p>Area and Volume</p> <p>This project aims to enhance understanding in the concepts of area and volume in Grade 5 students.</p> <p>Area Functions</p> <p>In this lesson, you will be challenged to write code to make quadrilaterals that you have made by hand in Minecraft.</p> <p>Class Village</p> <p>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>Survival City Part 2</p> <p>Survival City Part 3</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>
MA 3.3.3.b	Tell and write time to the minute using both analog and digital clocks.	<p>Build a Clock!</p> <p>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.</p>
MA 3.3.3.c	Solve real-world problems involving addition and subtraction of time intervals and find elapsed time.	<p>Build a Clock!</p> <p>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.</p>

		<p>How Fast Can you Go? Students will understand how challenging it was to walk for thousands of miles.</p>
MA 3.3.3.d	Identify and use the appropriate tools and units of measurement, both customary and metric, to solve real-world problems involving length, weight, mass, liquid volume, and capacity (within the same system and unit).	<p>Exploring Systems of Measurement 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>Measurement Mini Game Students will play, examine, and create plans for a mini game that is 120 meters long and document their work.</p>
MA 3.3.3.e	Estimate and measure length to the nearest half inch, quarter inch, and centimeter.	<p>How Fast Can you Go? Students will understand how challenging it was to walk for thousands of miles.</p> <p>Measuring Landforms Students will choose and name their own length of measurement. Then they will get into a world and measure different kinds land features.</p>
MA 3.3.3.f	Use concrete and pictorial models to measure areas in square units by counting square units.	<p>Area and Perimeter Tasks Students will demonstrate their knowledge of area and perimeter in these performance tasks.</p> <p>Area and Volume This project aims to enhance understanding in the concepts of area and volume in Grade 5 students.</p> <p>Area Functions In this lesson, you will be challenged to write code to make quadrilaterals that you have made by hand in Minecraft.</p> <p>Class Village 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>Exploring Systems of Measurement 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>Liquid Measurements Students will use the fill command to fill up a liter measuring cup. Then they will design an aquarium that is 1000 blocks or 1,000,000 liters. They will build the aquarium with the fill command and make a coral reef.</p> <p>Survival City Making homes Part 1 Survival City Making homes Part 2 Survival City Making homes Part 3 Design a prototype of a home and find the area and perimeter.</p> <p>Survival City Making Roads Students will design a prototype of a home. Then they use their knowledge of area and perimeter to find out</p>

		<p>how much and what kind of materials they will need to build it in survival.</p> <p>Survival City Part 2 Survival City Part 3</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>
MA 3.3.3.g	Find the area of a rectangle with whole-number side lengths by modeling with unit squares, and show that the area is the same as would be found by multiplying the side lengths.	<p>Area and Perimeter Tasks</p> <p>Students will demonstrate their knowledge of area and perimeter in these performance tasks.</p> <p>Area and Volume</p> <p>This project aims to enhance understanding in the concepts of area and volume in Grade 5 students.</p> <p>Area Functions</p> <p>In this lesson, you will be challenged to write code to make quadrilaterals that you have made by hand in Minecraft.</p> <p>Class Village</p> <p>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>Exploring Systems of Measurement</p> <p>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>Survival City Making homes Part 1 Survival City Making homes Part 2 Survival City Making homes Part 3</p> <p>Design a prototype of a home and find the area and perimeter.</p> <p>Survival City Part 2 Survival City Part 3</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>
MA 3.3.3.h	Identify and draw rectangles with the same perimeter and different areas or with the same area and different perimeters.	<p>Area and Perimeter Tasks</p> <p>Students will demonstrate their knowledge of area and perimeter in these performance tasks.</p> <p>Area Functions</p> <p>In this lesson, you will be challenged to write code to make quadrilaterals that you have made by hand in Minecraft.</p> <p>Class Village</p> <p>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>Liquid Measurements</p> <p>Students will use the fill command to fill up a liter measuring cup. Then they will design an aquarium that is 1000 blocks or 1,000,000 liters. They will build the aquarium with the fill command and make a coral reef.</p> <p>Survival City Making homes Part 1</p> <p>Survival City Making homes Part 2</p> <p>Survival City Making homes Part 3</p> <p>Design a prototype of a home and find the area and perimeter.</p> <p>Survival City Part 2</p> <p>Survival City Part 3</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>
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DATA

STANDARD	DESCRIPTION	ACTIVITY
MA 3.4.1 Representations: Students will create displays that represent data.		
MA.3.4.1.a	Create scaled pictographs and scaled bar graphs to represent a data set—including data collected through observations, surveys, and experiments—with several categories.	<p>Survival Olympics</p> <p>Students will fish, mine ores, and fight monsters. Then they will make and compare their activities to create bar graphs.</p>
MA.3.4.1.b	Represent data using line plots where the horizontal scale is marked off in appropriate units—whole numbers, halves, or quarters.	<p>Javelin Line Plots</p> <p>Students will throw 10 tridents and track their distance on a line plot graph.</p> <p>Javelin Line Plots-3</p> <p>Students engage in a javelin throwing competition in Minecraft, plotting the distances and scores on line plot graphs in the game.</p>
MA 3.4.2 Analysis & Applications: Students will analyze data to address the situation		
MA.3.4.2.a	Solve problems and make simple statements about quantity differences (e.g., how many more and how many less) using information represented in pictographs and bar graphs.	<p>Survival Olympics</p> <p>Students will fish, mine ores, and fight monsters. Then they will make and compare their activities to create bar graphs.</p>
MA 3.4.3 Probability: Students will interpret and apply concepts of probability.		
No additional indicator(s) at this level.		