

Math in Minecraft Course. Module 1

Learning goals are to learn basic concepts of math, acquire practical skills in mathematical calculations using gaming tasks.

Course Syllabus:

Day one

Multi-digit whole number

- Introduction to Minecraft Math Gladiators' world
- Learn numbers and digits in game "10 base numbers"
- Learn to understand and write multi digit integer numbers
- Number comparison. "Zombie battle" game
- Rounding numbers to 10, 100 and 1000

Learning outcome: learned place value, learned how to write and compare numbers, acquired skills of both studying and cooperative game in Minecraft Math Gladiators.

Practical task: gaming tasks on writing numbers, their comparison and rounding.

Day two

Addition. Quick calculations using the regrouping

- Studying addition using regrouping method
- Practicing addition and regrouping using game blocks
- Practice on creating new addition examples
- Learn to reason and explain the solutions

Learning outcome: learned to regroup digits for quick calculations, add numbers within 1000 easily.

Practical task: gaming tasks on solving examples on addition within 1000, create your own examples on addition.

Day three

Subtraction. Quick calculations using the regrouping

- Practicing subtraction playing with glass blocks
- Practice knowledge on regrouping
- Solving examples on subtraction on your own
- Practice on creating new subtraction examples
- Cooperative discussion and correction of calculation results

Learning outcome: practiced skills on addition and subtraction using regrouping method, subtract numbers within 1000 easily.

Practical task: gaming tasks on solving examples on addition and subtraction within 1000, creation of own examples on addition and subtraction.

Day four

Area and Perimeter of plane figures

- Introduction to the concepts of area and perimeter
- Learn to calculate area and perimeter of objects in Minecart game
- Gaming tasks on calculating area and perimeter of you Minecraft buildings

Learning outcome: learned the concept of area and perimeter, learned to calculate area and perimeter of rectangles, collected portfolio of solved gaming tasks.

Practical task: gaming tasks solving examples on area and perimeter calculation and creating buildings of given areas.



Math in Minecraft Course. Module 2

Learning goals are to learn basic concepts of math, acquire practical skills in mathematical calculations using gaming tasks.

Course Syllabus:

Day one

Multiplication as repeated addition

- Multiplication as a repeated addition
- Gaming task – build arrays from blocks
- Gaming task – build arrays with equal number of blocks
- Gaming task – build Parkour of blocks using knowledge of multiplication

Learning outcome: learned how to perform simple multiplication, practiced multiplication by solving gaming tasks.

Practical task: gaming tasks on multiplication, creation of your own examples on multiplication in the gaming world.

Day two

Division. Relationship between multiplication and division

- Division as separating numbers into equal groups
- Division array of blocks on several equal groups
- Connection between multiplication and division
- Gaming task – build Parkour of blocks using knowledge of division
- Practice in creating new division examples

Learning outcome: learned to perform division operations.

Practical task: gaming tasks on solving examples on division.

Day three

Area and volume

- Area formula. Solving gaming tasks on calculating area of block objects
- Volume formula. Solving gaming tasks on calculating volume of block objects
- Game "Fill the well"
- Creation personal examples on calculating area and volume of the objects of our own gaming world

Learning outcome: studied formula of area and volume, learned how to calculate area and volume of block objects.

Practical task: gaming tasks on finding area and volume, creating own examples for other students, discussion of calculated results.

Day four

Arrays. Distributive property of multiplication. Project presentation

- Multiplication within 100. Practicing examples
- Game "10 tasks", solving examples as practicing skills
- Distributive Property of Multiplication
- First course project presentation

Learning outcome: practiced knowledge of multiplication, replenished gaming portfolio with results of solved examples, presenter Array project.

Practical task: gaming tasks on multiplication in Minecraft world.



Math in Minecraft Course. Module 3

Learning goals are to learn basic concepts of math, acquire practical skills in mathematical calculations using gaming tasks.

Course Syllabus:

Day one

Area of compound shapes

- Learn how to calculate the area of complex shapes
- Create new world in creative mode for building house project
- Discussing project, creating project plan
- Practice to design a house, calculation rooms areas, consolidate skills in solving practical examples by calculating area

Learning outcome: practiced the concept of area and methods to calculate area of compound shapes.

Practical task: team work on designing and starting to build house project, solving examples on calculating area.

Day two

Units of measurement. Units of length

- Discussion task on measuring length
- Metric and customary system of length measures
- Invent your own units of measurement
- Practice measuring length of objects in Minecraft world
- Analysis and solving practical examples on measuring landforms

Learning outcome: got introduced to unit measurements, learned how to measure and indicate length of the objects.

Practical task: measuring length of objects in Minecraft world, landforms and terrain measurements, continue work on house project, according your timeline.

Day three

Volume measurement. Units of liquid measurement

- Introduction to the concept of volume
- Volume formula, liquid volume unit measurements
- Fill command in Minecraft, gaming tasks "Fill a cup", "Build an aquarium"
- Design and add an aquarium near you house in house project
- Starting to prepare the presentation draft for the next lesson

Learning outcome: learned how to calculate volume and express volume of liquids in unit measurements.

Practical task: task on filling volumes with water in the gaming world.

Day four

Fractions. Decimal garden. Final project presentation

- Introduction to fractions concept, visualization of fractions in real world
- Writing ratios in fractional and decimal form
- Gaming task Decimal garden, planting flowers near you house in house project
- Practice in solving examples on course topics
- Final project presentation

Learning outcome: learned the concept of fraction, repeated course material, presented final course project.

Practical task: plant flowers in Decimal garden, pass final test, present your Minecraft house project.