

# Minecraft & Lego Arithmetic Adventures!

## Materials Needed:

- Paper or whiteboard
- Pencil or markers
- Optional: Lego bricks
- Optional: Access to Minecraft game (for inspiration or visual aids)
- Calculator (for checking answers only)

## Lesson Plan:

### Introduction (5 minutes)

Today, we're going on an adventure that combines two awesome things: Minecraft/Legos and Math! Just like you need resources to build amazing things in Minecraft or with Legos, we use math, especially addition and subtraction, to keep track of those resources. We'll practice adding and subtracting bigger numbers today using fun challenges based on your favorite games.

### Warm-up: Quick Calculation Blocks (5 minutes)

Let's warm up our math brains! Answer these quick questions:

- You have 25 oak logs and find 10 more. Total logs? (35)
- You need 50 Lego bricks for a wall, but you only have 30. How many more do you need? (20)
- A Creeper explosion destroyed 15 blocks of your house, which originally had 100 blocks. How many are left? (85)
- You traded 3 diamonds for 27 emeralds. If you find 13 more emeralds, how many emeralds do you have now? (40)

### Instruction: Building with Numbers (10 minutes)

Remember how we add and subtract bigger numbers? We line them up by place value (ones, tens, hundreds). Let's think about it like stacking blocks:

**Addition:** Combining stacks. If you have a stack of 124 Lego bricks and another stack of 53 bricks, you combine the ones ( $4+3=7$ ), the tens ( $2+5=7$ ), and the hundreds ( $1+0=1$ ). Total: 177 bricks.

Example:  $124 + 53 = ?$

124

+ 53

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177

Sometimes we need to 'carry over' or 'regroup', like when you have more than 9 blocks of one type - you trade 10 ones for a ten-block, or 10 tens for a hundred-block!

**Subtraction:** Taking blocks away. If you have 245 cobblestone blocks and use 112 for building, you subtract the ones ( $5-2=3$ ), the tens ( $4-1=3$ ), and the hundreds ( $2-1=1$ ). Left: 133 blocks.

Example:  $245 - 112 = ?$

$$\begin{array}{r} 245 \\ - 112 \\ \hline 133 \end{array}$$

Sometimes we need to 'borrow' or 'regroup', like trading a ten-block for 10 ones if you don't have enough ones to subtract.

(Review regrouping/borrowing with a specific example if needed, e.g.,  $345 + 178$  or  $523 - 246$ . You can use Lego bricks to visualize the regrouping.)

### Activity 1: Minecraft Mining Expedition (Addition Practice - 10 minutes)

Solve these word problems. Show your work! You can use Lego bricks to help visualize.

- Steve went mining. He found 152 coal blocks on Monday and 239 coal blocks on Tuesday. How many coal blocks did he find in total? ( $152 + 239 = ?$ )
- Alex collected 375 cobblestone blocks and 48 iron ore blocks. How many blocks did she collect altogether? ( $375 + 48 = ?$ )
- In a large chest, you store 280 dirt blocks from leveling ground and 155 sand blocks from a desert visit. What is the total number of blocks in the chest? ( $280 + 155 = ?$ )

### Activity 2: Lego Castle Defense (Subtraction Practice - 10 minutes)

Solve these word problems. Show your work! Use Lego bricks if it helps.

- You started building a Lego castle tower with 450 bricks. You used 235 bricks for the base. How many bricks are left for the rest of the tower? ( $450 - 235 = ?$ )
- Your Lego army had 672 soldiers. During a pretend battle, 158 soldiers were knocked over and removed. How many soldiers are still standing? ( $672 - 158 = ?$ )
- You had a big tub with 800 Lego pieces. You used 345 pieces to build a spaceship. How many pieces are left in the tub? ( $800 - 345 = ?$ )

### Activity 3: Design Your Dream Build (Creative Application - 15 minutes)

Imagine you have a budget of **1000** Minecraft emeralds (or Lego studs) to spend on materials for a cool build (like a small house, a statue, or part of a castle).

Here's your price list:

- Dirt Block / Basic 2x2 Brick: 1 emerald/stud
- Cobblestone Block / Basic 2x4 Brick: 3 emeralds/studs
- Wood Plank Block / Flat Tile Brick: 5 emeralds/studs
- Glass Block / Transparent Brick: 10 emeralds/studs
- Iron Block / Grey Sloped Brick: 50 emeralds/studs

- Gold Block / Yellow Brick: 100 emeralds/studs
- Diamond Block / Blue Transparent Brick: 200 emeralds/studs

### **Your Task:**

1. Decide what you want to build (keep it simple!).
2. Choose the types and quantities of blocks/bricks you want to use.
3. Calculate the total cost using addition. Make sure your total cost is **less than or equal to 1000**.
4. Calculate how much budget you have remaining using subtraction ( $1000 - \text{Total Cost} = ?$ ).
5. Optional: Draw your design or build a small version with Legos!

Write down your chosen materials, quantities, calculations for total cost, and remaining budget.

### **Closure and Review (5 minutes)**

Great job today being a Math Explorer and Builder!

- What did we practice today? (Adding and subtracting large numbers)
- How is addition like collecting resources in Minecraft or Legos? (Combining amounts)
- How is subtraction like using resources? (Taking away amounts)
- Why is it important to be accurate when adding and subtracting, especially when planning a build or managing resources? (To know if you have enough, how much you used, how much is left).

Keep practicing your math skills – they are super useful in games and building projects!