

Grade: 4th

Subject: Math, Science

Name

Computer Number

Extreme Fraction Makeover in Minecraft Edu

Background: You are an independent site-development contractor. An eccentric customer wants a makeover for her backyard, and your company hopes to win the bid. This customer wants you to design a patio using exactly 100 blocks in an attractive way.

Design Challenge: Working with your crew, design and build a patio in your customer's backyard. The shape and pattern are up to you, but the customer has some definite ideas about the use of blocks, as listed under Criteria, below. She has also requested a full report from each company on the use of her blocks when you are finished (see report form). The contractor with the most attractive design—and the correct answer on number 14 in the report form—will win the bid.

Criteria:

- You must use exactly 100 tiles.
- You must only use 4 different types of blocks for the patio part of your design. Decide on the types and assign them a letter in the beginning.
- You must only use cube shaped blocks.
- Patio must be one block deep (no digging or stacking).
- You must complete and turn in your customer fraction report to your boss (teacher) and have it approved before adding any extra to your project.
- Once your patio project is approved, add things around the outside of the patio to help sell your design.

Process

Group Members:

Computer Info:

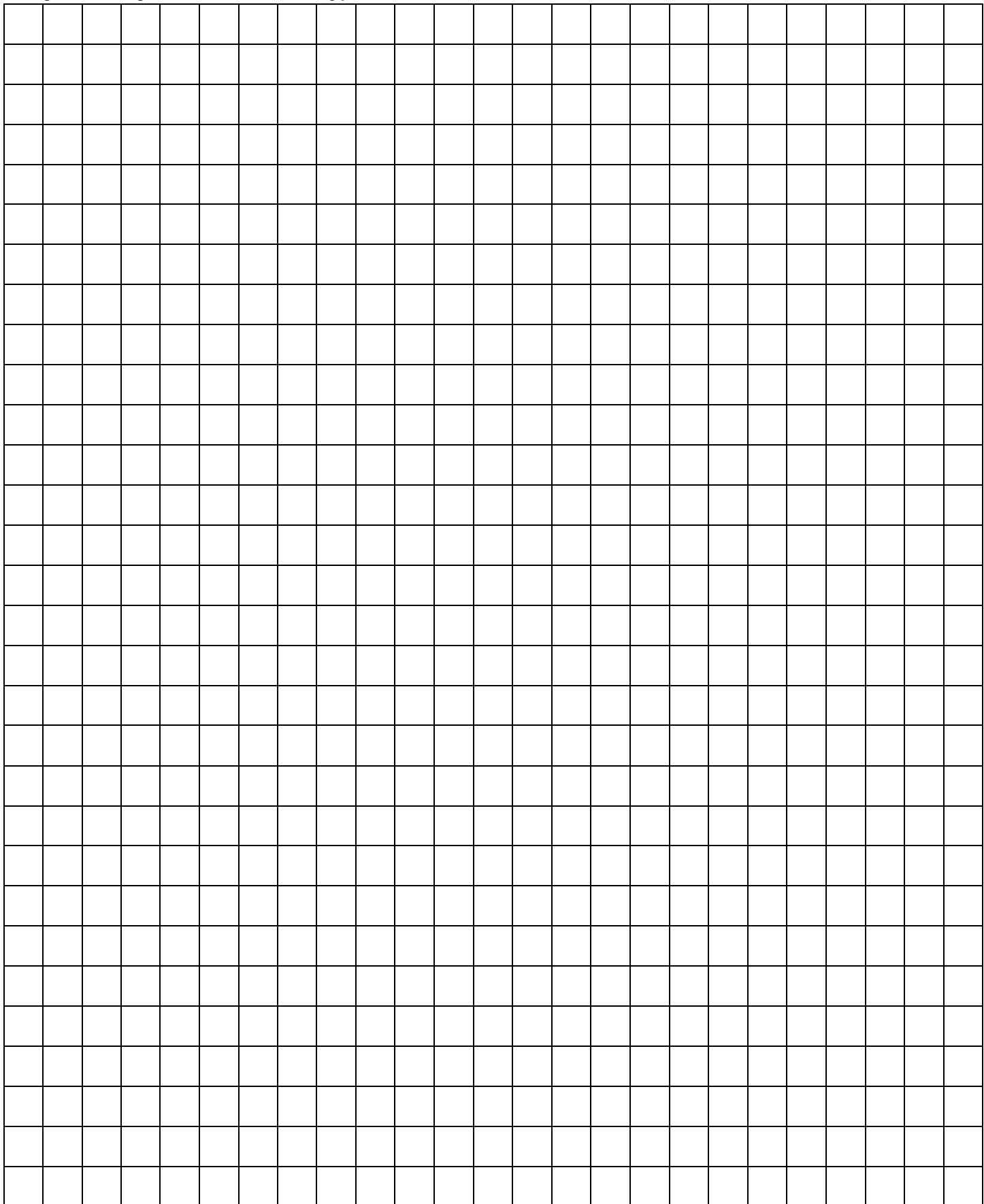
Problem to solve:

State the problem in your own words.

Block Brainstorming

	Minecraft Block Used	Total Number Used
Type A		
Type B		
Type C		
Type D		
Total		100

Design Drawing and Plan for Prototype



Extreme Fraction Makeover Report to Customer

Think through the math before starting. Put all answers in simplified form.

	Minecraft Block Used	Total Number Used (Tally)	Total Number Used (Numeric)
Type A			
Type B			
Type C			
Type D			
Total		100	100

What fraction of the 100 tiles are Block Type A? _____

What fraction of the 100 tiles are Block Type B? _____

What fraction of the 100 tiles are Block Type C? _____

What fraction of the 100 tiles are Block Type D? _____

What fraction of the 100 tiles are Block Type A and Block Type D? _____

What fraction of the 100 tiles are Block Type A, Block Type C, and Block Type D?

What fraction of the 100 tiles are NOT Block Type B? _____

Rubric:

Criteria Assessed	No Evidence 0	Attempts to meet criteria shows limited understanding 1	Meets some criteria with room for improvement 2	Meets most criteria with room for improvement 3	Meets all criteria 4
Guided Portfolio The problem is restated. A clear plan for building is evident. The report to the customer is completed.					
Project The student tested the design to make sure: <ul style="list-style-type: none">• The design uses exactly 100 tiles.• The design only uses 4 types of blocks.• A swimming pool that uses Type A blocks is included in the design.• One third of the blocks are Type B.• Only one color of block is used for the border.					
Oral Presentation/Group Work The student uses grammatically correct language. The student uses clear and specific vocabulary to communicate ideas. The student speaks clearly. The student uses appropriate volume and pitch. The student speaks at an understandable rate. The student worked cooperatively with his or her group and was an effective group member.					

Customer Report Grade _____