

Name: \_\_\_\_\_ Class Period: \_\_\_\_\_ Date: \_\_\_\_\_

### Area with Dice Activity Sheet

Formula for the area of a triangle: \_\_\_\_\_

Formula for the area of a parallelogram: \_\_\_\_\_

Use your micro:bit to generate random numbers for the base and height of the following shapes, then calculate the total area of the shapes (don't forget to include units of your choosing):

1. A triangle of base \_\_\_\_\_ and height \_\_\_\_\_ has an area of \_\_\_\_\_  
Equation: \_\_\_\_\_
2. A parallelogram of base \_\_\_\_\_ and height \_\_\_\_\_ has an area of \_\_\_\_\_  
Equation: \_\_\_\_\_
3. A triangle of base \_\_\_\_\_ and height \_\_\_\_\_ has an area of \_\_\_\_\_  
Equation: \_\_\_\_\_
4. A parallelogram of base \_\_\_\_\_ and height \_\_\_\_\_ has an area of \_\_\_\_\_  
Equation: \_\_\_\_\_

Use your micro:bit to generate a random number for the base of the following shapes, then calculate the height that would be needed to result in the given area:

5. A parallelogram of base \_\_\_\_\_ and an area 20 square meters of has a height of \_\_\_\_\_  
Equation: \_\_\_\_\_
6. A triangle of base \_\_\_\_\_ and an area 15 square centimeters of has a height of \_\_\_\_\_  
Equation: \_\_\_\_\_



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7. A parallelogram of base \_\_\_\_\_ and an area 30 square feet of has a height of \_\_\_\_\_  
Equation: \_\_\_\_\_
8. A triangle of base \_\_\_\_\_ and an area 24 square inches of has a height of \_\_\_\_\_  
Equation: \_\_\_\_\_

Scenario:

You are a teacher, setting up a classroom that can fit 24 students. Your classroom is 30 feet long and 38 feet wide. Each student will need at least 4 square feet of work space. You head to the store room to choose your furniture, and are surprised to see that there are no rectangular desks or tables left! Your challenge is to create a functional classroom work space using the furniture that is available to you.

Use your micro:bit to generate base and height measurements for a variety of tables and desks. You may choose which of the tables and desks will be triangular and which will be parallelograms and may use as many as you need- but remember, none of your tables can be rectangular, and you must ensure that you have enough work space for all 24 students.

Record your table shapes and measures below. You may not need to use all of the spaces that are available to you.

#### Triangular

Base: _____ Height: _____ Area: _____	Base: _____ Height: _____ Area: _____
Base: _____ Height: _____ Area: _____	Base: _____ Height: _____ Area: _____
Base: _____ Height: _____ Area: _____	Base: _____ Height: _____ Area: _____
Base: _____ Height: _____ Area: _____	Base: _____ Height: _____ Area: _____
Base: _____ Height: _____ Area: _____	Base: _____ Height: _____ Area: _____

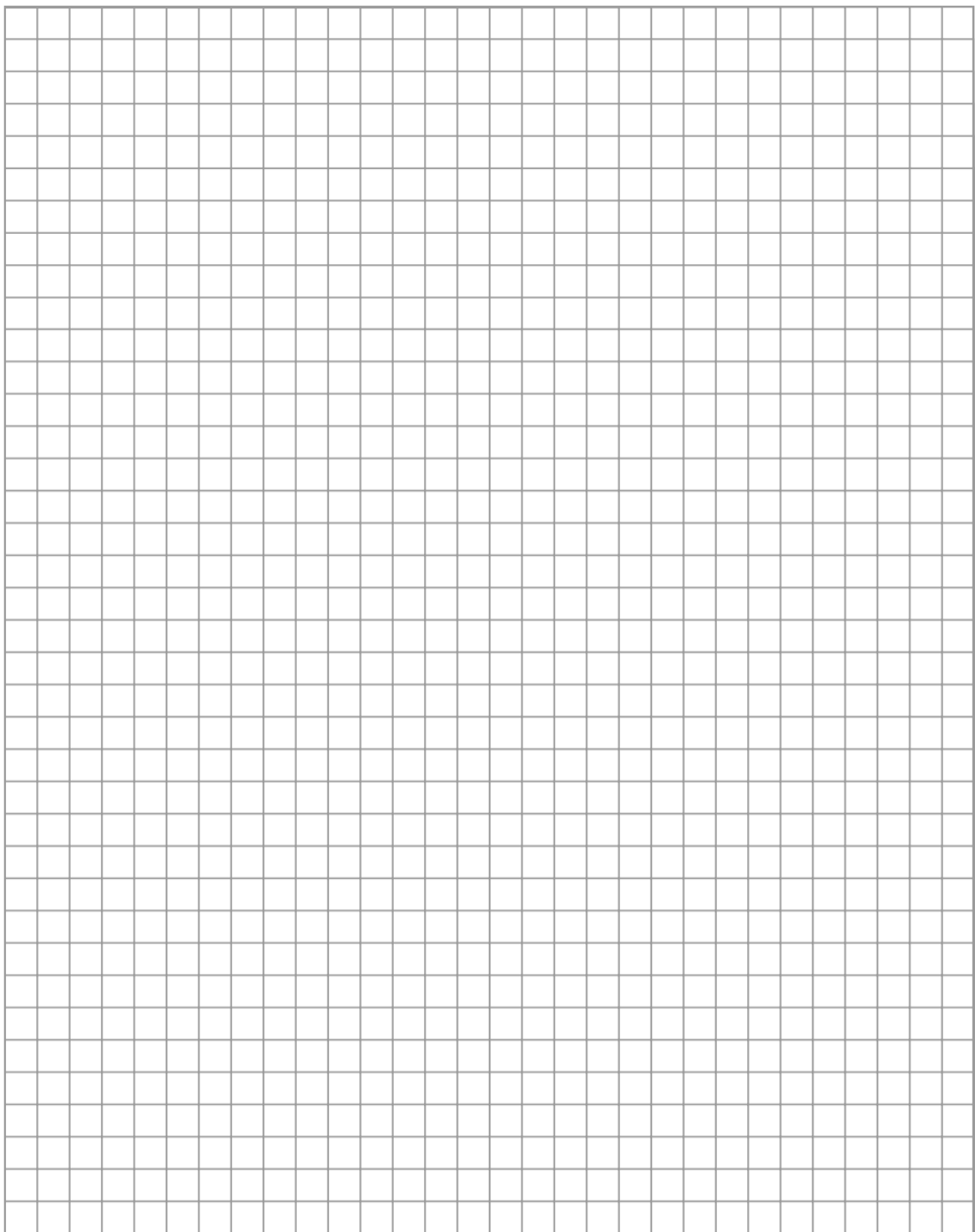
#### Parallelogram

Base: _____ Height: _____ Area: _____	Base: _____ Height: _____ Area: _____
Base: _____ Height: _____ Area: _____	Base: _____ Height: _____ Area: _____
Base: _____ Height: _____ Area: _____	Base: _____ Height: _____ Area: _____
Base: _____ Height: _____ Area: _____	Base: _____ Height: _____ Area: _____
Base: _____ Height: _____ Area: _____	Base: _____ Height: _____ Area: _____

Create your classroom design below. When you have finished, share your design with a classmate. What challenges did you encounter when designing your classroom?



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### EXIT TICKET

Scroll through the micro:bit tutorials and activities listed at <https://makecode.microbit.org/#>. List at least two micro:bit coding activities that you would like to complete. Why did you select these activities?

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