DMT INSTITUTE

Developing Mathematical Thinking Institute (DMTI)

Professional Development

Curricular Resources

Assessment

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About the DMTI Targeted Activities

These DMTI Targeted Activities modules are designed to be played or completed with a partner or in small groups. These supplement the Intermediate Math Assessment and DMTI curricular materials.

The activities are intended for teachers or caregivers to play with children to build necessary math skills and math language. Each activity can be played for 10 to 20 minutes. Each additional activity in the module advances in difficulty.

IMA – Grade 3 - 6

Geometric Measurement

Geometric Measurement

What's involved:

- Visualizing the number of square units in a rectangle
- Visualizing the number of cubic units in a rectangular prism
- Mentally iterating units with and without a grid to cover a space

Why it matters:

- Builds spatial reasoning which is one of the greatest predictors of later success in mathematics
- Composing and decomposing space helps support student with the same concepts with number such as multiplication of composite units

Geometric Measurement: Shape Area

Materials

- Journal or Paper
- Scissors
- Dice [DMTI Math Pack]
- Worksheets, Templates or Blacklines [Printout]

Geometric Measurement: Shape Area

Activity 1 – Introduction

We are going to do some measuring, which is assigning a number to some characteristic of an object in order to compare it with other objects.

What are some different things you can measure?

- With length

- With area

- With volume

- With temperature

Cut out the words on Template 1.1 and shuffle them.

Match each of the examples to the attribute.

Cut the following, shuffle and then match.

Length	Area	Volume
A Swimming Race	Desk Top	A Box
A Person's Height	A Floor	A Freezer
Distance of a River	Ceiling	A Cooler

Geometric Measurement: Shape Area

Activity 2

When measuring, it is important to first know what dimension we are working with.

A **dimension** is a property of the space around us.

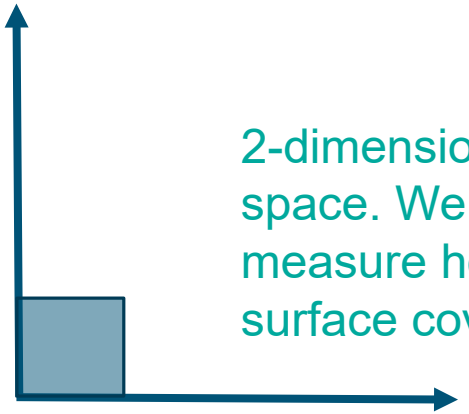
What do you think 0-dimensions means?

What do you think 1-dimension means?

What do you think 2-dimensions means?

0-dimensions is a point in space. We don't measure anything with a point.

1-dimension is a line in space. We use line segments to measure lengths of lines.



2-dimensions is two lines in space. We use square units to measure how much space a flat surface covers.

Geometric Measurement: Shape Area

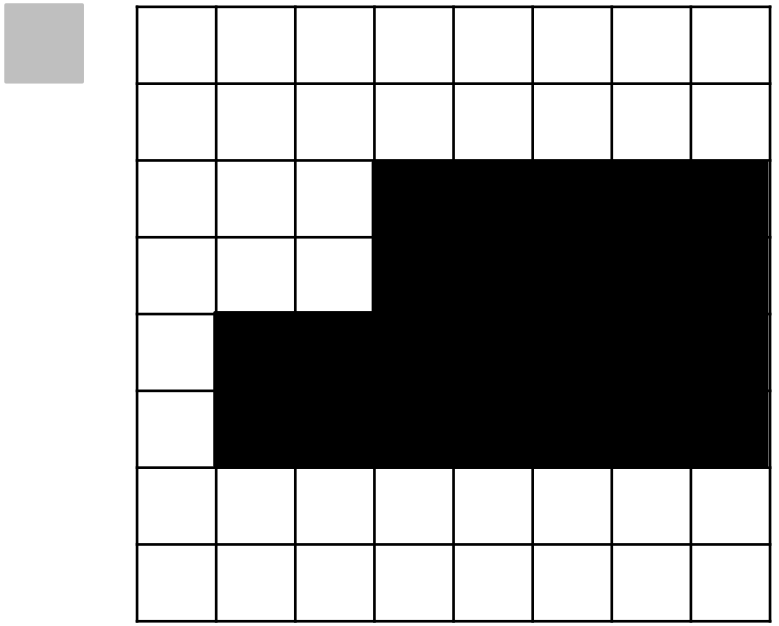
Activity 2

We are going to be measuring space in 2-dimensions. So, we will be determining how many square units a figure or flat surface has.

A. How many square units (grey square) does it take to cover the area of the black shape?

B. Write an addition and a multiplication equation to represent your answer.

Now complete Worksheet 2.1



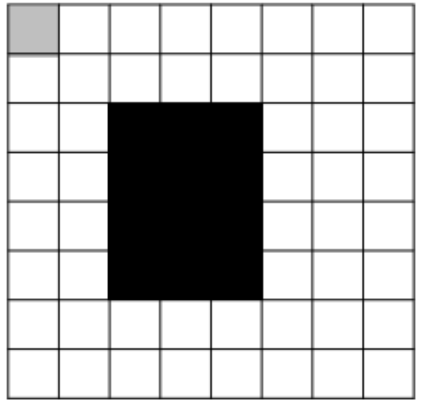
2+ 2 + 4 + 4 + 4 + 4 + 4 = 24
2 x 2 + 5 x 4 = 24

Worksheet 2.1

A. How many square units (grey square) does it take to cover the area of the black shape?

B. Write an addition and a multiplication equation to represent your answer.

1.



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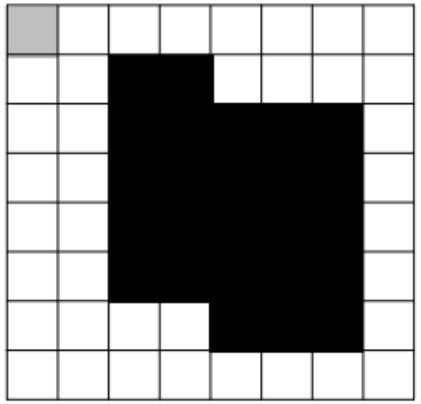

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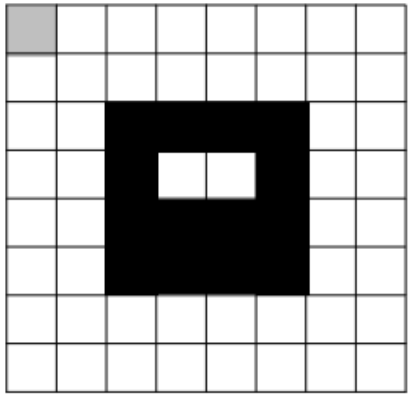

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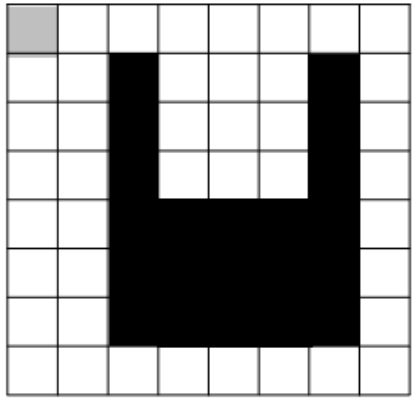

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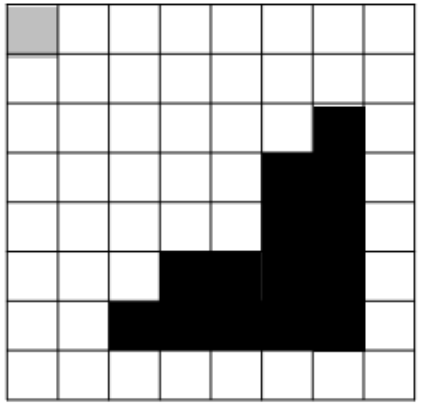

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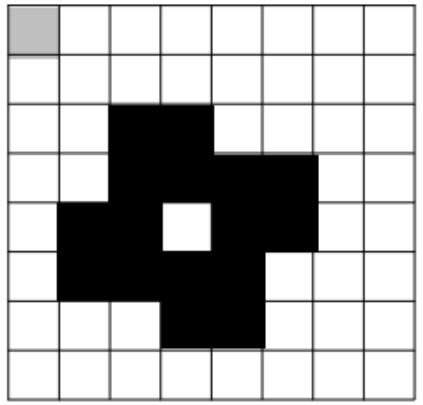


Geometric Measurement: Shape Area

Activity 3

We are going to be measuring space in 2-dimensions. So, we will be determining how many square units a figure or flat surface has.

A. How many square units (grey square) does it take to cover the area of the black shape?

B. Write an addition and a multiplication equation to represent your answer.

2+ 2 + 4 + 4 = 12
2 x 2 + 2 x 4 = 12

Now complete Worksheet 3.1

Worksheet 3.1

A. How many square units (grey square) does it take to cover the area of the black shape?

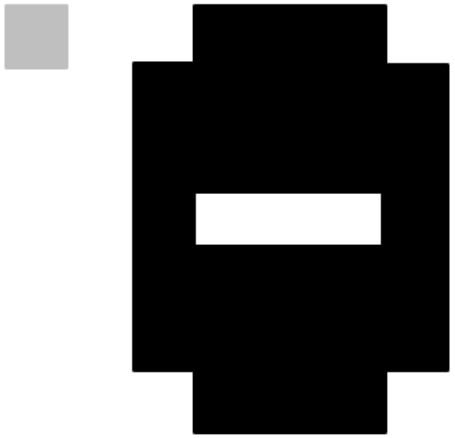
B. Write an addition and a multiplication equation to represent your answer.

1.

2.

3.

4



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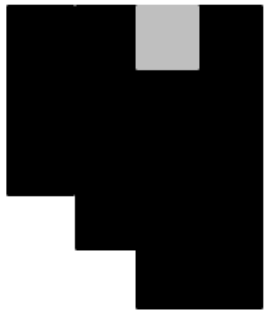

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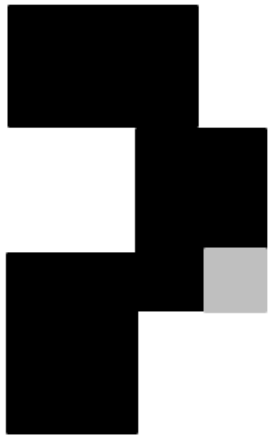

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"The Developing Mathematical Thinking Institute (DMTI) is dedicated to enhancing students' learning of mathematics by supporting educators in the implementation of research-based instructional strategies through high-quality professional development, curricular resources and assessments."

For more information contact
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