

Essential Elements Math Pacing Guide



February

Background

The Essential Elements Math Pacing Guide was inspired by realizing that there is a small amount of information found on the internet to help support educators who teach those who follow an alternate curriculum for our amazing 1% of the student population in education. I wanted to create something that could help serve as a guide, a support, an understanding of how to hold our students to high academic achievement, just like their regular education peers.

Regular education materials are abundant and come with pacing guides with how to implement the prescribed curriculum that the school decided to buy into. Within those curriculums, a good majority of publishers incorporated how to differentiate Instruction for struggling learners, for English Language Learners and/or English as a Second Language learners. However, there does not seem to be a supplementary curriculum that aligns to how to modify instruction and materials for those who follow the alternate curriculum so the 1% of students with disabilities aligned to the alternate curriculum could also learn a modified version of the same materials as their non-disabled peers in an inclusive setting.

Your partner in education,

Jeanette Nowak

Updated July 2022

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February Outline

Standards covered during February:

- [M.EE.6.G.1](#) - Solve real-world and mathematical problems about area using unit squares.
- [M.EE.6.NS.2](#) - Apply the concept of fair share and equal shares to divide.
- [M.EE.7.G.4](#) - Determine the perimeter of a rectangle by adding the measures of the sides.
- [M.EE.7.NS.2.b](#) - Solve division problems with divisors up to five and also with a divisor of 10 without remainders.
- [M.EE.8.G.5](#) - Compare any angle to a right angle, and describe the angle as greater than, less than, or congruent to a right angle.
- [M.EE.8.G.9](#) - Use the formulas for perimeter, area, and volume to solve real-world and mathematical problems (limited to perimeter and area of rectangles and volume of rectangular prisms).

According to the Dynamic Learning Maps (DLM) website, these are the commonly tested standards that are used for the DLM assessment.

How to Access Math Instruction and Materials from Unique

1. <https://www.n2y.com/unique-learning-system/>
2. Log in using the provided username and password you received
3. Click on Unique Learning System
4. Click on the three lines →
5. Select Monthly Lessons/Unit Lessons
6. Select Math
 - a. When selecting materials, select PDF icon to save and print



Understanding Differentiated Levels in Unique

- Level 3 Learners – can read text and can participate more independently in the lesson (Independent)
- Level 2 Learners- require pictorial support and require mild to moderate support to participate in the lesson (Supported)
- Level 1 Learners- require extensive supports to participate in the lesson (Participatory).

Measuring Success by the Essential Elements Standards

Students who take DLM assessments are instructed and assessed on *Essential Elements*. Essential Elements are grade-specific expectations about what students with the most significant cognitive disabilities should know and be able to do. The Essential Elements relate to college and career readiness standards for students in the general population.

February Math Pacing Guide 6th Grade

[M.EE.6.G.1](#) - Solve real-world and mathematical problems about area using unit squares.

Learning Goal:

- Level 2-3 – Use unit squares to find the area of a polygon in a real-world scenario (no support level 3, with support level 2).
- Level 1 – Count unit squares to find the area of a polygon using an active participation response (e.g., voice output device, eye gaze choice board).

Essential Questions:

- What is area?
- How can I organize the information to solve for area?

Vocabulary:

- **Unit** – A general term meaning 1.
- **Perimeter** – The distance around a two-dimensional shape.
- **Area** – The size of a surface.
- **Length** – Distance. How far from end to end or from one point to another.
- **Width** – The distance from side to side.



Mini-Map for M.EE.6.G.1

Subject: Mathematics

Geometry (G)

Grade: 6

Learning Outcome

DLM Essential Element	Grade-Level Standard
M.EE.6.G.1 Solve real-world and mathematical problems about area using unit squares.	M.6.G.1 Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.

Linkage Level Descriptions

Initial Precursor	Distal Precursor	Proximal Precursor	Target	Successor
Communicate understanding of "separateness" by recognizing objects that are not joined together. Communicate generic understanding of "some" as a certain amount or a number of people or things.	Communicate understanding that a unit square is a square with edge lengths of 1 unit and area of 1 square unit. Communicate understanding of area as the measure of space contained within the outline or boundary of a two-dimensional object or figure.	Calculate the area of a square or rectangle by filling a figure with unit squares or tiles and counting the total number of unit squares or tiles. Calculate the area of a square or rectangle by counting the number of square units drawn to cover the area.	Find the unknown quantity in the word problem by determining the area of a rectangle.	Communicate understanding that length and width measures of a rectangle can be used to find the number of unit tiles needed to fill the rectangle and that the number of tiles equals the product of the length and width. Calculate area of a rectangle using the area formula (area = length x width).

Initial Precursor and Distal Precursor Linkage Level Relationships to the Target

How is the Initial Precursor related to the Target?

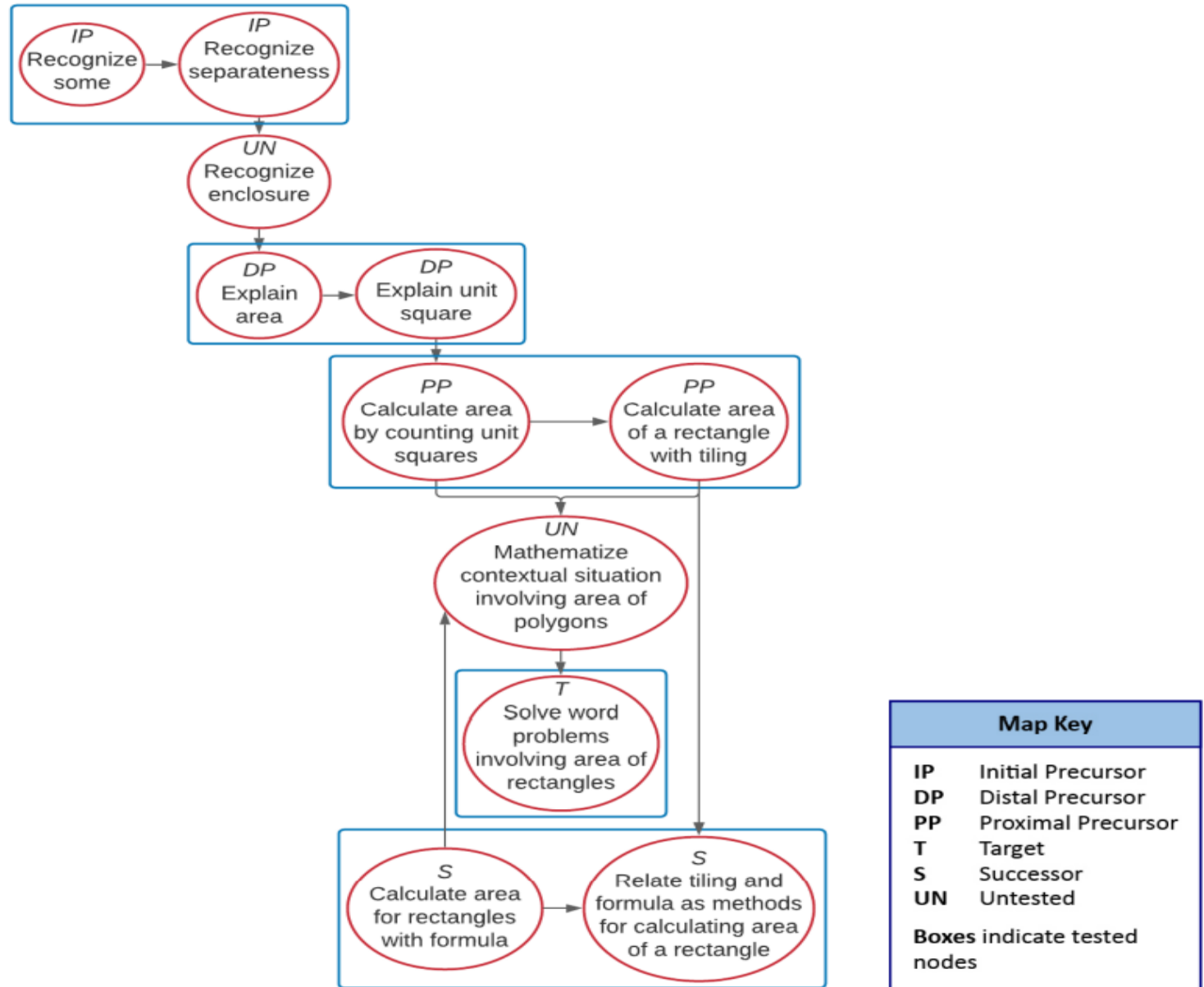
In order to solve problems using unit squares, students at this level start with learning to recognize that two or more sets or groups of items exist. Work on this skill using a variety of sets with 1-4 items. Help students recognize when items are grouped together into a set or separated out. The educator presents a set, labels it, and then counts the items (e.g., two balls, 1, 2) and encourages students to use numerals to label and count the separate sets. Begin working on the quantifier “some” as students are developing an understanding of the quantities 1-4, using the students' communication system to demonstrate the use of the word “some”.

How is the Distal Precursor related to the Target?

As students continue to develop their understandings of number and sets, they can also work on covering small rectangles with unit squares and counting each one as it is placed. Core vocabulary can be used to demonstrate the language associated with these concepts (e.g., all, all on, put on, it here, unit squares are to be placed on a rectangle side by side if one is on the diagonal the word turn can be used, finished).

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M.EE.6.G.1 Solve real-world and mathematical problems about area using unit squares.



Rubric of Student Success

[M.EE.6.G.1](#) - Solve real-world and mathematical problems about area using unit squares.

Level 3 Students will...	Level 2 Students will...	Level 1 Students will...
<p>Level 3</p> <ul style="list-style-type: none"> Use unit squares to find the area of a polygon in a real-world scenario. <p>Successor and Target Students will...</p> <p>Successor</p> <ul style="list-style-type: none"> Calculate area for rectangles with formula Relate tiling and formula as methods for calculating area of a rectangle <p>Target</p> <ul style="list-style-type: none"> Solve word problems involving area of rectangles 	<p>Level 2</p> <ul style="list-style-type: none"> Use unit squares to find the area of a polygon in a real-world scenario, with support. <p>Proximal Precursor and Distal Precursor Students will...</p> <p>Proximal Precursor</p> <ul style="list-style-type: none"> Calculate area by counting unit squares Calculate area of a rectangle with tiling <p>Distal Precursor</p> <ul style="list-style-type: none"> Explain area Explain unit square 	<p>Level 1</p> <ul style="list-style-type: none"> Count unit squares to find the area of a polygon using an active participation (e.g., voice output device, eye gaze choice board.) <p>Initial Precursor Students will...</p> <p>Initial Precursor</p> <ul style="list-style-type: none"> Recognize some Recognize separateness

Instructional Ideas

[M.EE.6.G.1](#) - Solve real-world and mathematical problems about area using unit squares.

Measurement involves a selected attribute of an object such as area.

The big idea is that the use of standard measurement units simplifies communication about the size of objects.

- Introduce by asking the essential questions.
- Determine the area of a polygon using unit squares in a real-world scenario by positioning rows and counting unit squares that do not overlap.
- Determine the area of a polygon (limited to rectangle, square, or triangle) using the formula for area in a real-world scenario.
- While modeling the scenarios, use tangible manipulatives for students to visualize concepts and practice with, such as stackable counting cubes or geoboards.
- Explain that the area is the measurement of the space inside a flat shape. Model how to find the area of the object on the page. Think aloud and model how to find the area of the object on the page. For example, say, “Area is how much space is inside a flat shape. I need to count the unit squares in this shape.” Count the unit squares aloud and state the total number of cubes as units squared.
- Explain that the area can be found by multiplying the length by the width of a rectangle or square. Model how to find the area of the object by completing the page and multiplying the length times the width. Think aloud and model how to find the area. For example, say, “Area is how much space is inside of a flat shape. I need to multiply the length times the width. The length is 6 units. The width is 4 units. So, $6 \times 4 = 24$. The area is 24 units squared.
- Model how a square or rectangle can be cut in half diagonally to form two triangles by putting the two triangles shapes over the square or rectangle and dividing by two. Model how to find the area of one triangle on the page using the equation: length x width divided by 2.
- Create a math word wall.
- Might have to make up your own worksheets but can use the ones provided as inspiration.
- Use manipulatives as needed.
- Students may use a calculator if needed.
- Provide students with their own anchor chart.
- Included worksheets are examples of what to look for when finding additional materials that best fits your student’s needs.

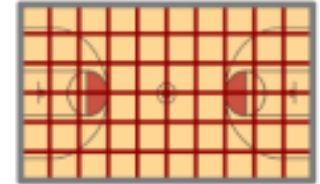
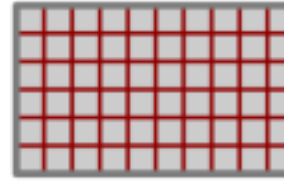
Additional Instructional Ideas

- Go to website for additional instructional resources, materials, and activities for lessons:

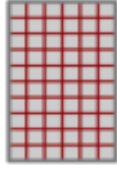
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area

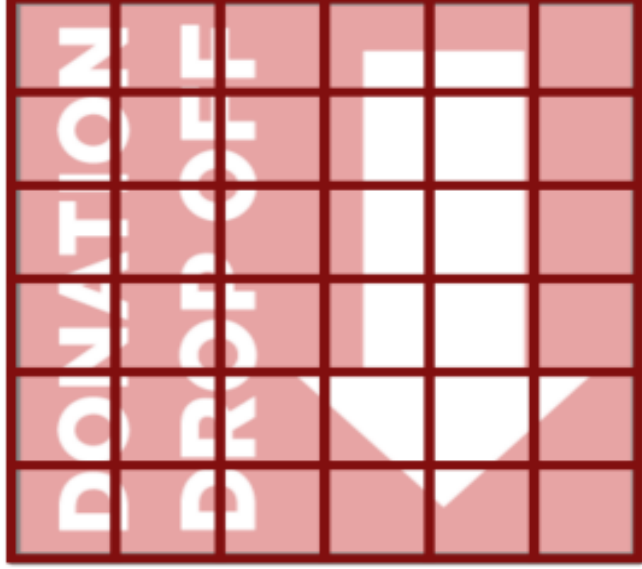
- the space inside of a 2-dimensional or flat shape
- measured in units squared
- count the unit squares inside shape



Area



Find the area. The area is the space inside a 2-dimensional or flat shape. Count the unit squares in the shape to find the area.

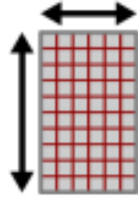


How many squares fill the donation sign? _____



Area of the donation sign = _____ units squared (units²).

Area



Find the area of the recycling bin.

The area is the space inside a 2-dimensional or flat shape.

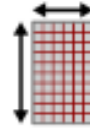
length = 6 units



width = 4 units

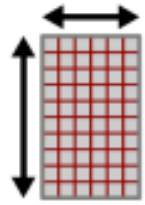
_____ units x _____ units = _____ units squared (units²).

length **width**



Area of the recycling bin = _____ units squared (units²).

Area



Find the area of the recycling bin.
The area is the space inside a 2-dimensional or flat shape.

length = 6 units



width = 4 units



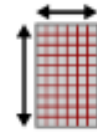
units x



units = **24** units squared (units²).

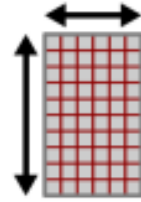
length

width



Area of the recycling bin = **24** units squared (units²).

Area



Find the area of a triangle.

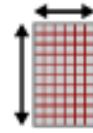
First, find the area of the recycling bin. Then, use the triangles to divide the recycling bin. The area of each triangle is the surface, or area, inside the recycling bin divided by 2.

length = 6 units



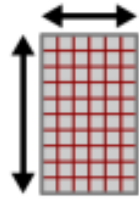
width =
4 units

$$\frac{\text{length}}{\text{length}} \text{ units} \times \frac{\text{width}}{\text{width}} \text{ units} + 2 = \text{_____ units squared (units}^2\text{)} .$$



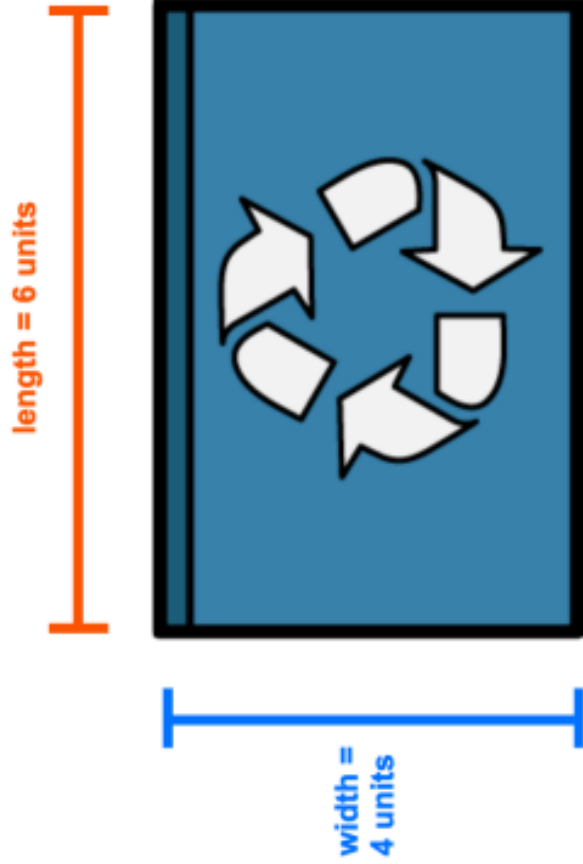
$$\text{Area of each triangle} = \text{_____ units squared (units}^2\text{)} .$$

Area

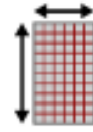


Find the area of a triangle.

First, find the area of the recycling bin. Then, use the triangles to divide the recycling bin. The area of each triangle is the surface, or area, inside the recycling bin divided by 2.

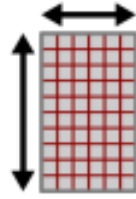


$\frac{\text{length}}{\text{length}}$ units x $\frac{\text{width}}{\text{width}}$ units + 2 = _____ units squared (units²).



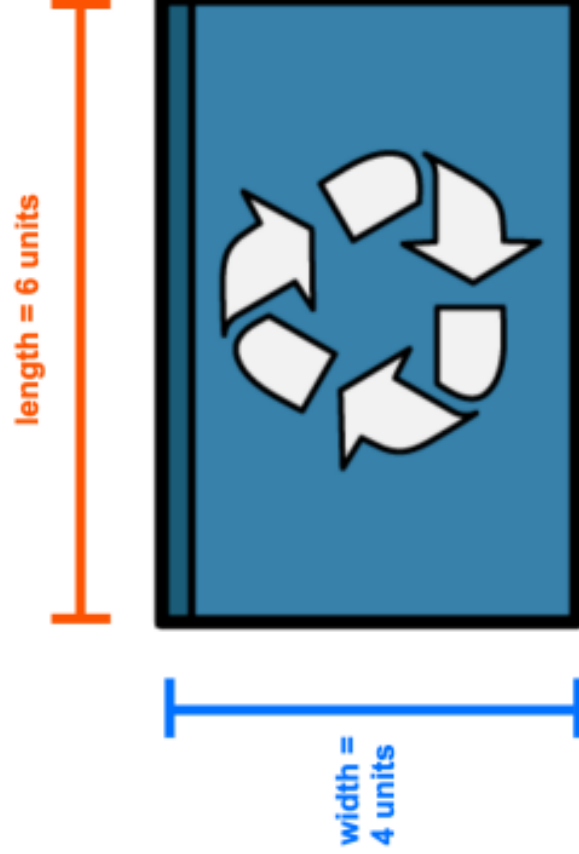
Area of each triangle = _____ units squared (units²).

Area



Find the area of a triangle.

First, find the area of the recycling bin. Then, use the triangles to divide the recycling bin. The area of each triangle is the surface, or area, inside the recycling bin divided by 2.



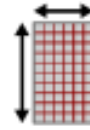
units x



length

width

units \div 2 = **12** units squared (units²).



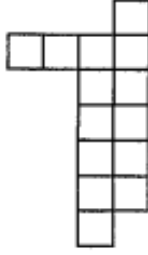
Area of each triangle = **12** units squared (units²).

Name: _____ Date: _____

Exploring Area

Area, Perimeter, and Volume

Area is the number of **square units** enclosed within a boundary.
 Area is measured in different units such as square feet or square centimeters. For example, there are 14 square units in this figure.



Find the area of each figure.

1. _____ square units
2. _____ square units
3. _____ square units
4. _____ square units
5. _____ square units
6. _____ square units
7. _____ square units
8. _____ square units
9. _____ square units
10. _____ square units

Name: _____

Date: _____

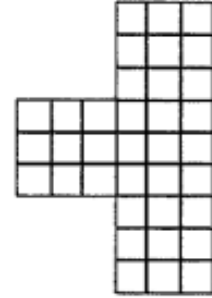
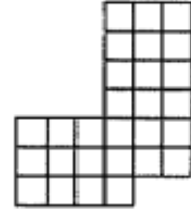
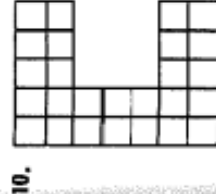
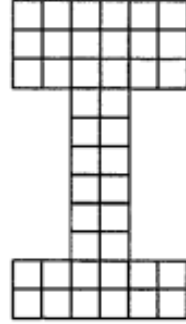
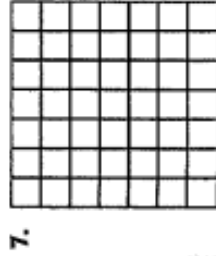
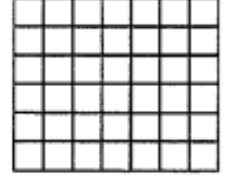
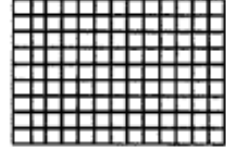
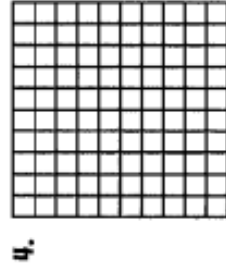
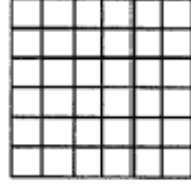
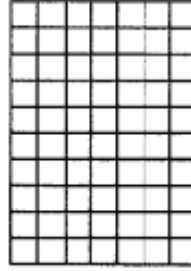
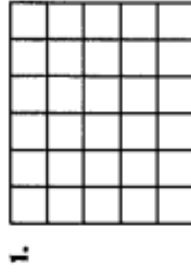
Counting Square Units

Area, Perimeter, and Volume

The area of a figure can be determined by counting its number of square units.

1	2	3
4	5	6
7	8	9

Count how many square units form each area.



Name: _____ Date: _____

Area of Squares and Rectangles

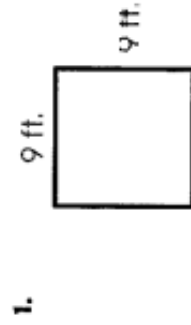
Area, Perimeter, and Volume

Calculating Area of a Square or Rectangle

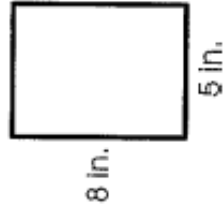
The **area** of a figure tells how many square units are needed to cover the figure. Area can be measured in different units, such as square feet, square meters, or square inches.

Square $A = s^2$ (or $s \cdot s$) **Rectangle** $A = lw$

Find the area of each figure in units squared (yd.², ft.², mm², etc.).



A = _____



A = _____



A = _____



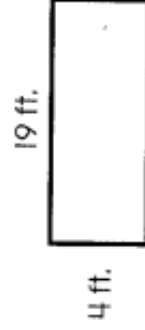
6 yd.

5.



6 yd.

6.

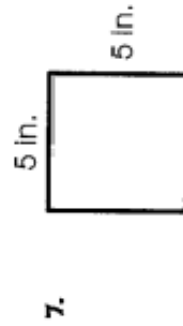


4 ft.

A = _____

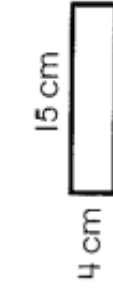
A = _____

A = _____



7.

8.



9.



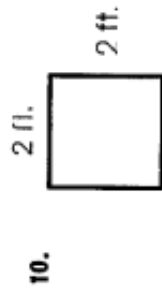
3 mm

3 mm

A = _____

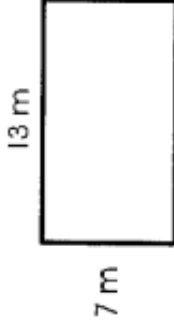
A = _____

A = _____



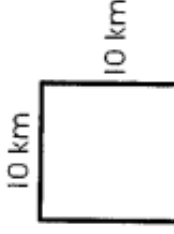
10.

11.



13 m

12.



10 km

10 km

A = _____

A = _____

A = _____

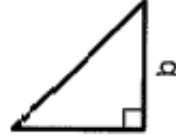
Name: _____

Date: _____

Area of Triangles

Calculating Area of a Triangle

Area = $\frac{1}{2}(bh)$, where b = base and h = height. (Height must form a right angle with a base.)



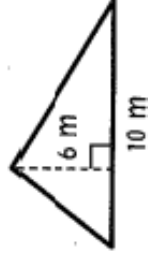
Area, Perimeter, and Volume

$$A = \frac{1}{2}(bh)$$

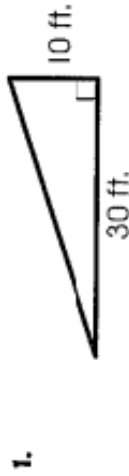
$$A = \frac{1}{2}(6 \text{ m} \cdot 10 \text{ m})$$

$$A = \frac{1}{2}(60 \text{ m}^2)$$

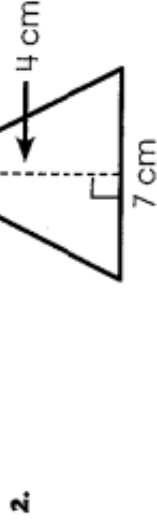
$$A = 30 \text{ m}^2$$



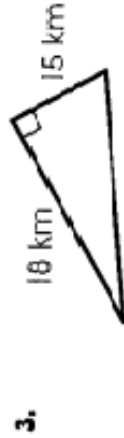
Find the area of each triangle in units squared (yd.², ft.², mm², etc.).



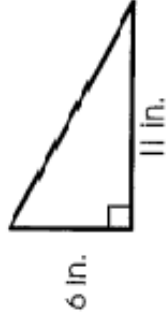
A = _____



A = _____



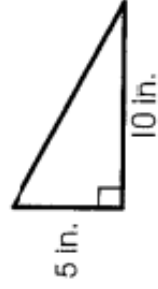
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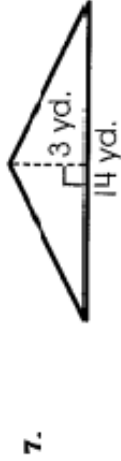
A = _____



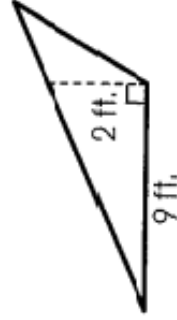
A = _____



A = _____




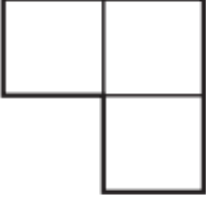
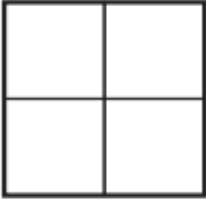


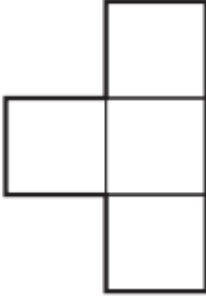
A = _____



A = _____

Counting Area

Find the areas below by counting the square units and write down the answers.
Then, draw square units to make the area. See the example.

 = <u>1 square unit</u>	 = <u>3 square units</u>
 = _____	 = _____
 = _____	 = _____

Now draw 7 square units of area and 8 square units of area.

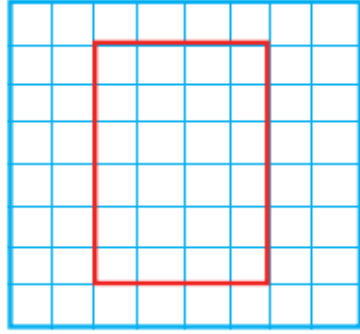
3 square units																				

Finding Area

Name: _____

Area is the number of square units in a closed shape. Area can be measured in miles, kilometers, feet, inches, or many other units.

Step 1: Count the number of squares in the red rectangle below. Write your answer here: _____



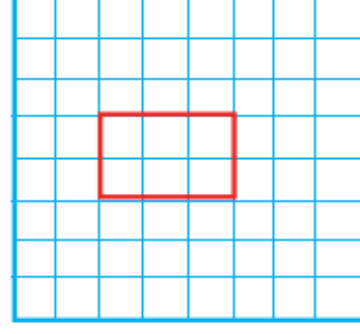
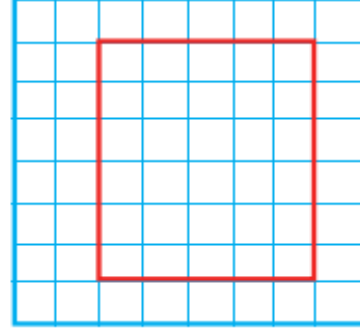
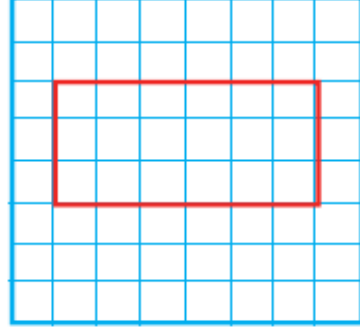
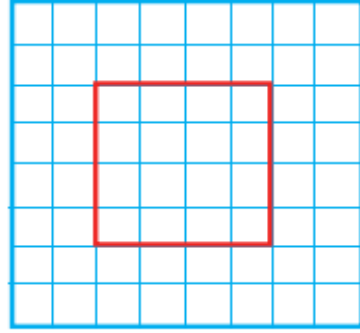
Step 2: Let's find an easier way to find the area of a shape. In the rectangle, count the squares across the top \longleftrightarrow . This is called length.

Then count the number of squares from top to bottom \updownarrow . This is called width. Write your numbers below.

Length: _____ Width: _____

What number do you get when you multiply the number of squares in the length by the number of squares in the width? Write that number sentence below and compare it to the number you got when you counted the squares.

The easy way to find the area of a rectangle is to **multiply** the number of squares in the **length** by the number of squares in the **width**. Write a number sentence for the area of each red rectangle below.

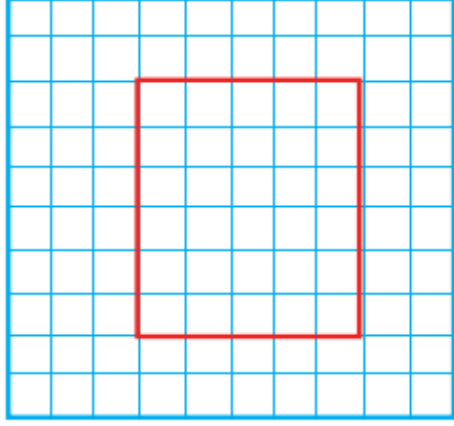


Name: _____

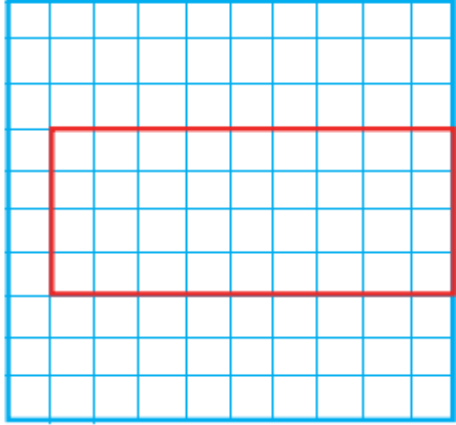
Working with Area

Answer the following word problems by writing a number sentence for each problem and drawing a rectangle with the correct area in the grid.

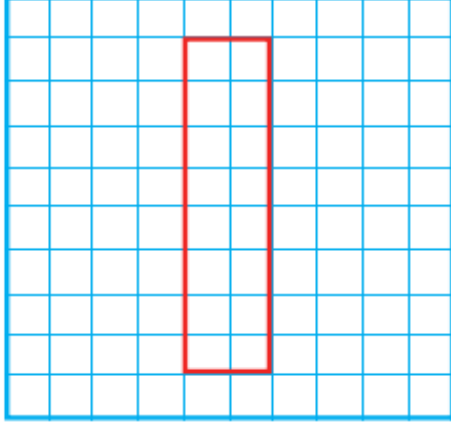
1. Casey wants to sew a pocket on a shirt. She needs a piece of cloth 6 inches long and 5 inches wide. How much cloth does Casey need?
- _____



2. David wants to cut a piece of paper for his paper airplane. He wants the paper to be 4 inches long and 9 inches wide. When he finished cutting, how much paper will he have?
- _____



3. Leslie's father needs a sheet of wood to repair the garage. He needs the sheet to be 8 feet long and 2 feet wide. How much wood does he need?
- _____



Name : _____

Score : _____

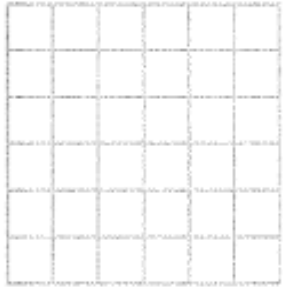
Drawing Shapes

Sheet 1

Draw any shape in each grid with the following area.

 = 1 square unit

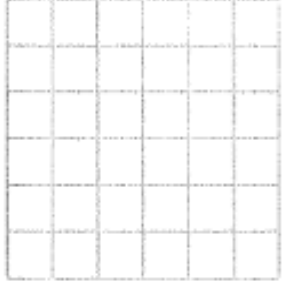
1) Area = 26 square units



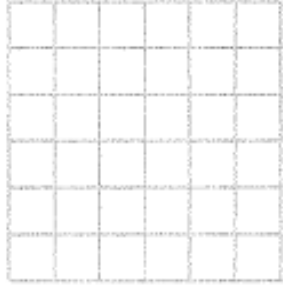
2) Area = 22 square units



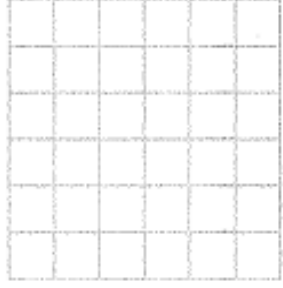
3) Area = 13 square units



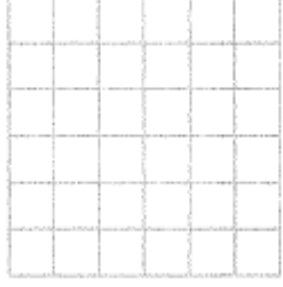
4) Area = 17 square units



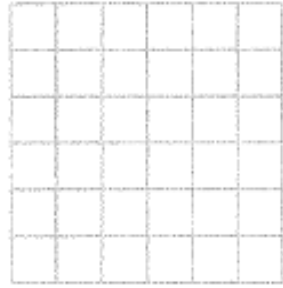
5) Area = 10 square units



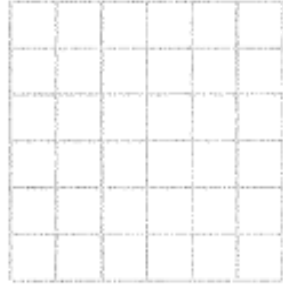
6) Area = 24 square units



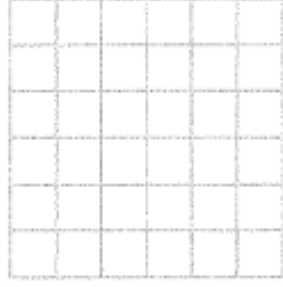
7) Area = 19 square units



8) Area = 15 square units

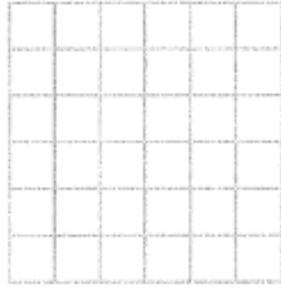


9) Area = 28 square units

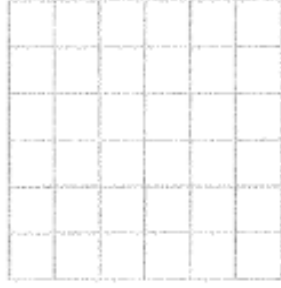


Draw 3 different shapes with the area 20 square units.

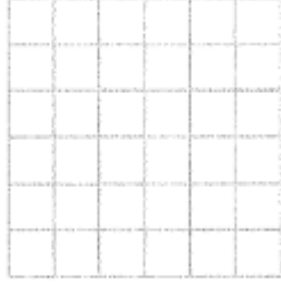
10) _____



11) _____



12) _____



Name : _____

Score : _____

Counting Squares

Sheet 4



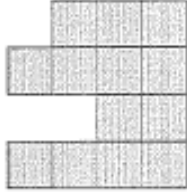
Calculate the area of each shape by counting the squares.

1)



Area = cm²

3)



Area = cm²

2)



Area = cm²

4)



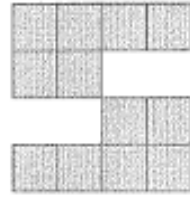
Area = cm²

6)



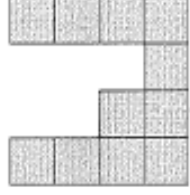
Area = cm²

7)



Area = cm²

9)



Area = cm²

8)



Area = cm²

10)



Area = cm²

12)



Area = cm²

11)



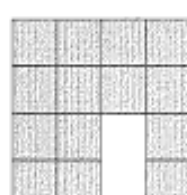
Area = cm²

13)



Area = cm²

15)



Area = cm²

14)



Area = cm²

Area = cm²

Area = cm²

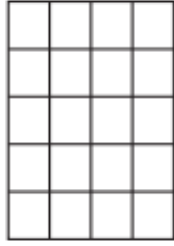
Area = cm²

Area = cm²

Everyday Area

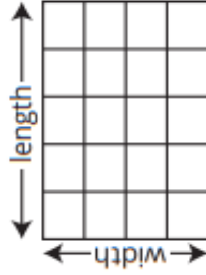
Name: _____ Date: _____

Area is the measurement of the square units inside a shape.
Counting square units is one way to find the area of a shape. This is why we label the units as
"square units" or units².



Count the number of square units inside this rectangle.

Area = _____ square units



What is the length? _____

What is the width? _____

Multiply the length x width.

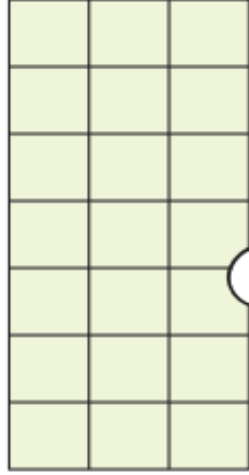
Area = _____ square units



Is there a faster way to find the area?

$$\text{Area} = \text{Length} \times \text{Width}$$

TRY IT! Janine is a lifeguard at the community pool. Every night she must cover the pool with a tarp that has the same area as the pool.



What is the length of the pool? _____

What is the width of the pool? _____

Multiply the length x width.

Area = _____ units²

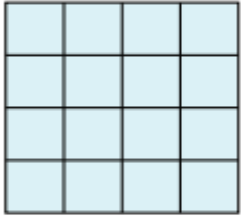


Everyday Area



Name: _____ Date: _____

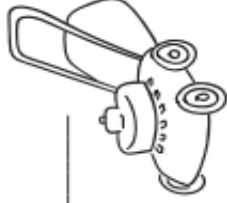
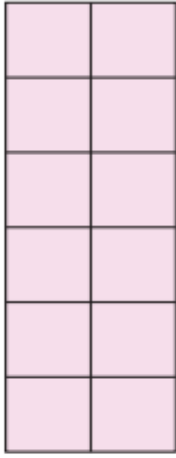
In the problems below, 1 square unit = 1 square foot
1. Malik built a new sandbox in his backyard. What is the area of the sandbox?



Area= _____

Challenge
If one bag of sand will fill an area of 8 square feet, how many bags will Malik need to fill his sandbox?

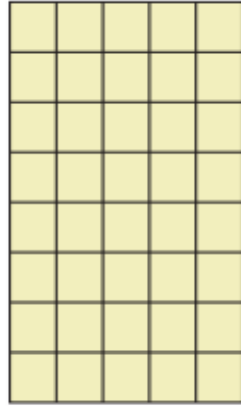
2. Leah wants to earn money by mowing lawns. She starts mowing her neighbor's lawn. What is the area of the lawn?



Area= _____

Challenge
If Leah charges \$2.00 per square foot, how much money would she earn mowing her neighbor's lawn?

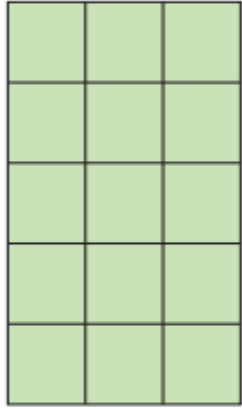
3. Oren is painting a wall a bright shade of yellow. What is the area of the wall?



Area= _____

Challenge
If one gallon of paint will cover 10 square feet, how many gallons of paint will Oren need?

4. Taylor is moving into a new bedroom and she is not sure her bed will fit. What is the area of her new bedroom?



Area= _____

Challenge
If Taylor's bed takes up an area of 9 square feet, how many square feet will be left in Taylor's room?



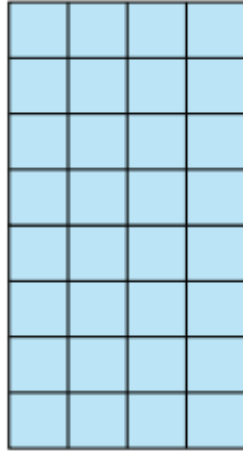
Everyday Area



Name: _____ Date: _____

More Practice

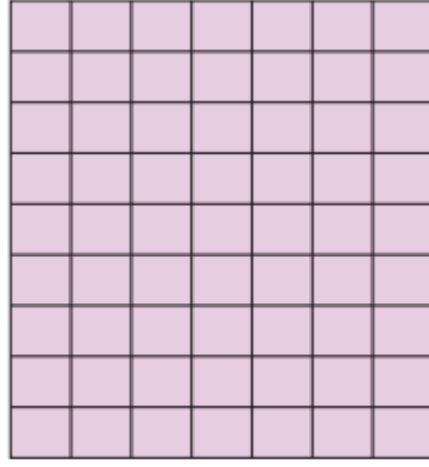
5. Pablo hit a baseball and broke a window. Now he has to replace the glass. What is the area of the new glass he will need to buy?



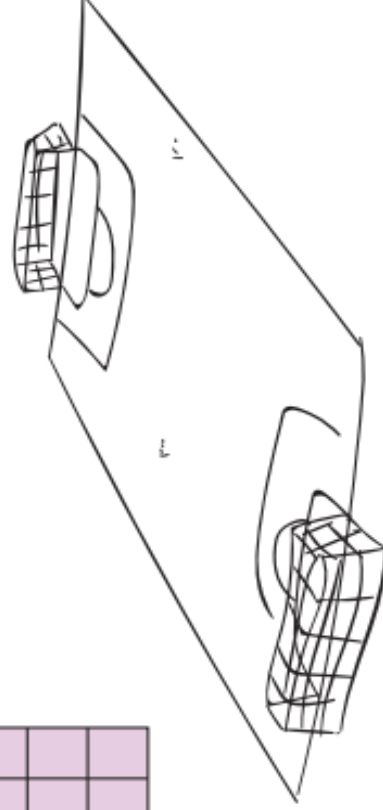
Area= _____



6. Hannah's soccer team is installing artificial turf on their new field, but they are not sure how much turf to buy. What is the area of the soccer field?



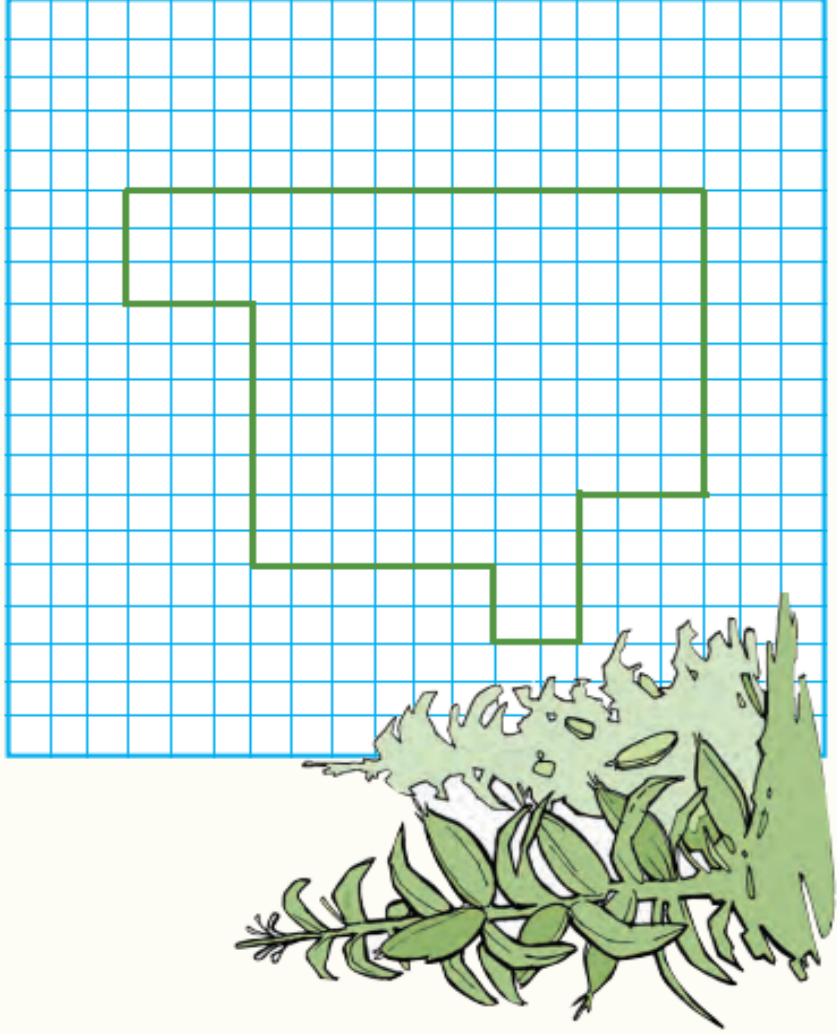
Area= _____



Name: _____

PLANTING SEEDS

Farmer Green is getting ready to plant his crops. In order to buy his seeds, he must know how much land area he has. On the graph below, the green lines mark his land in square acres. Help Farmer Green find the area of his land.



Draw lines to divide the polygon into rectangles. Then figure the area of each rectangle. Add the areas together to get the total area.

What is the area of Farmer Green's land? _____
Show how you reached your answer.

February Math Pacing Guide 6th Grade

[M.EE.6.NS.2](#) - Apply the concept of fair share and equal shares to divide.

Learning Goal:

- Level 2-3 – Students will represent real-world problems as equations.
- Level 1 – Students will combine and partition sets.

Essential Questions:

- How can I make equal groups from this one large group?
- How do I know this is a fair share?
- How can I solve this division problem using objects?
- How can I solve this division problem using a calculator?

Vocabulary:

- **Fair share** – Splitting into equal parts or groups.
- **Division** – To split into equal parts or groups.



Mini-Map for M.EE.6.NS.2

Subject: Mathematics
The Number System (NS)
Grade: 6

Learning Outcome

DLM Essential Element	Grade-Level Standard
M.EE.6.NS.2 Apply the concept of fair share and equal shares to divide.	M.6.NS.2 Fluently divide multi-digit numbers using the standard algorithm.

Linkage Level Descriptions

Initial Precursor	Distal Precursor	Proximal Precursor	Target	Successor
Communicate understanding of "separateness" by recognizing objects that are not joined together. Communicate understanding of set by recognizing a group of objects sharing an attribute. Communicate understanding of a subset by recognizing a subset as a set or group of objects within a larger set that share an attribute.	Divide a set containing 10 or fewer objects into equal subsets (e.g., divide a set consisting of 10 counters into two subsets with 5 counters each).	Communicate understanding that repeated subtraction is subtracting equal groups from a number (e.g., $15 - 5 - 5 - 5$). Represent repeated subtraction using equations (e.g., $15 - 5 - 5 - 5 = 0$), and model repeated subtraction using concrete manipulatives.	Demonstrate understanding of division by splitting a set into an equal number of subsets and communicating the quotient as the number of equal subsets (e.g., a set consisting of 15 objects has three subsets, each containing 5 objects).	Divide a number within 12 by a divisor from 1 to 5 to determine the quotient, using manipulatives as needed.

Initial Precursor and Distal Precursor Linkage Level Relationships to the Target

How is the Initial Precursor related to the Target?

In order to understand division, students must learn to organize items into groups/sets based on a common characteristic such as size, color, shape, or texture. Students working at the Initial Precursor linkage level learn how to sort items by separating a group of items into two groups (e.g., music I like/music I don't like; red fidgets/black fidgets). As students gain comfort sorting items into sets, they are encouraged to communicate their thought process by identifying and naming the characteristic that determines the set (e.g., color, length). Activities that require students to engage actively with the items will foster understanding of set, subsets, and separateness.

How is the Distal Precursor related to the Target?

As students' understanding of labeling and counting sets develops, they will begin working on adding and taking away items from a set. Educators provide opportunities for students to work on developing an understanding of partitioning by actively participating in one-to-one distribution of objects to person, objects to objects, and objects to available space (e.g., giving each person in the group two pencils; given four counters they can line up, then four more counters in front of or on top of the first set; given three chairs at a table, the student would place a cup on the table for each available chair) and taking equal shares away (subtracting) from each person, object, or space. Educators will provide opportunities for students to connect their understanding of subtraction (starting with the whole and taking away a part) to repeated subtraction. For example, if the educator has 12 balls, and each team gets 4 balls, how many teams will there be? By subtracting 4 from the whole repeatedly, we made 3 equal sets so there are 3 teams.

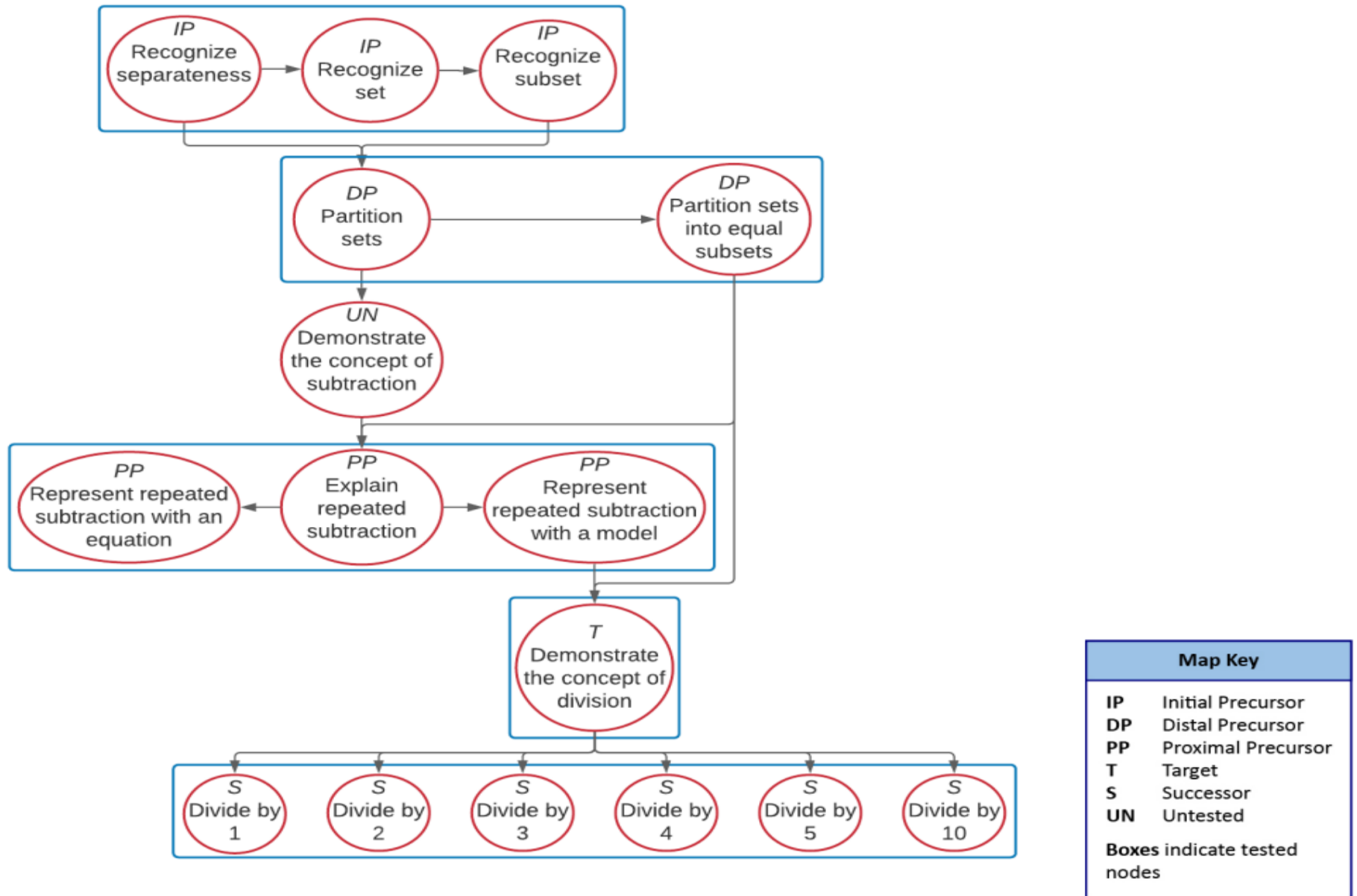


$$12 - 4 = 8$$

$$8 - 4 = 4$$

$$4 - 4 = 0$$

M.EE.6.NS.2 Apply the concept of fair share and equal shares to divide.



Rubric of Student Success

[M.EE.6.NS.2](#) - Apply the concept of fair share and equal shares to divide.

Level 3 Students will...	Level 2 Students will...	Level 1 Students will...
<p>Level 3</p> <ul style="list-style-type: none"> • <p>Successor and Target Students will...</p> <p>Successor</p> <ul style="list-style-type: none"> • Divide by: 1, 2, 3, 4, 5, 10 <p>Target</p> <ul style="list-style-type: none"> • Demonstrate the concept of division 	<p>Level 2</p> <ul style="list-style-type: none"> • <p>Proximal Precursor and Distal Precursor Students will...</p> <p>Proximal Precursor</p> <ul style="list-style-type: none"> • Represent repeated subtraction with an equation • Explain repeated subtraction • Represent repeated subtraction with a model <p>Distal Precursor</p> <ul style="list-style-type: none"> • Partition sets • Partition sets into equal subsets 	<p>Level 1</p> <ul style="list-style-type: none"> • <p>Initial Precursor Students will...</p> <p>Initial Precursor</p> <ul style="list-style-type: none"> • Recognize separateness • Recognize set • Recognize subset

Instructional Ideas

[M.EE.6.NS.2](#) - Apply the concept of fair share and equal shares to divide.

Problems can be solved using various operations.

The big idea is that some problems involving separating equal groups can be solved using division.

- Introduce by asking the essential questions.
- Use the values in a division equation to find the number of groups that can be made or the number of items in each group using the strategy of fair or equal shares.
- Use concrete objects to prove the answer.
- Use a calculator to prove the answer.
- Use manipulatives as needed.
- Students may use a calculator if needed.
- Included worksheets are examples of what to look for when finding additional materials that best fits your student's needs.

Additional Instructional Ideas

- Go to website for additional instructional resources, materials, and activities for lessons:



Keisha is putting an equal number of milk cartons into recycling bins. There are 15 milk cartons altogether. There are 5 recycling bins. How many milk cartons go into each recycling bin?



The squares represent the recycling bins.
Make Xs to represent the number of milk cartons.

--	--	--

--	--

15

Number of milk cartons altogether

÷

Number of recycling bins

5

=

Number of milk cartons in each recycling bin?

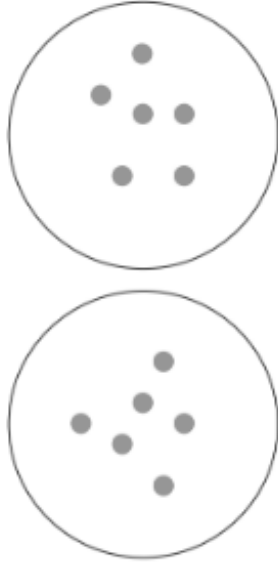


Division by Sharing (Word Problems 2)

Name: _____

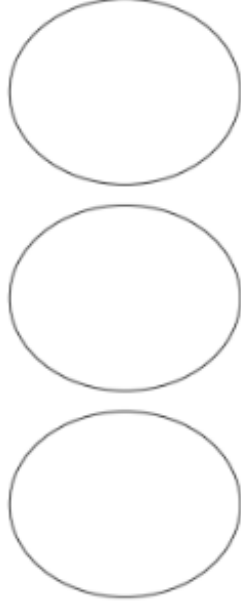
Date: _____

At the supermarket, dad shares 12 tins equally into two bags. How many tins does he put in each bag?



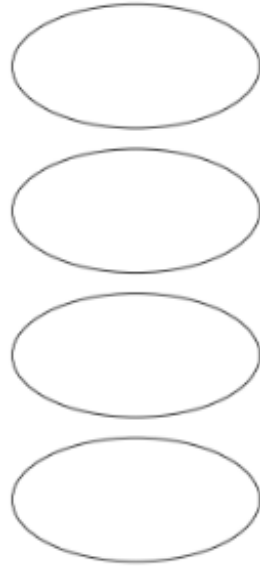
$$12 \div 2 = 6$$

Matthew, Emily and Harry share out 15 marbles. How many marbles do they get each?



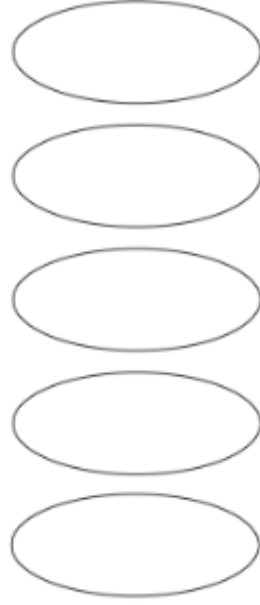
$$15 \div 3 =$$

Mandy has 28cm of sticky tape to wrap four small parcels. How much tape should she use on each one?



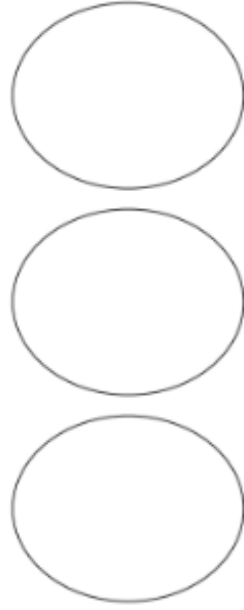
$$28 \div 4 =$$

15 scouts need to share five tents at their summer camp. How many scouts should stay in each tent?

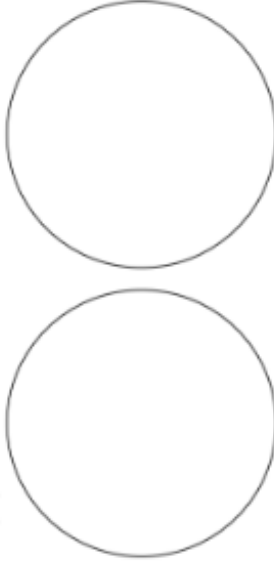


$$15 \div 5 =$$

George spent 12 days in Italy visiting three cities. How many days did he stay in each one if he shared his time equally?



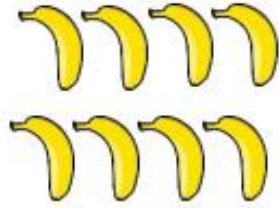
Class 2G has an equal number of boys and girls. If there are 18 children altogether, how many girls are there?



Dividing into equal groups

Grade 3 Division Worksheet

Divide the food between the kids & write the division equation.



$$\underline{\quad} \div \underline{\quad} = \underline{\quad}$$



$$\underline{\quad} \div \underline{\quad} = \underline{\quad}$$

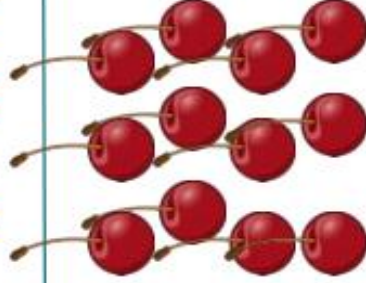
How many bananas does each kid get? $\underline{\quad}$



$$\underline{\quad} \div \underline{\quad} = \underline{\quad}$$

How many pretzels does each kid get? $\underline{\quad}$

How many muffins does each kid get? $\underline{\quad}$



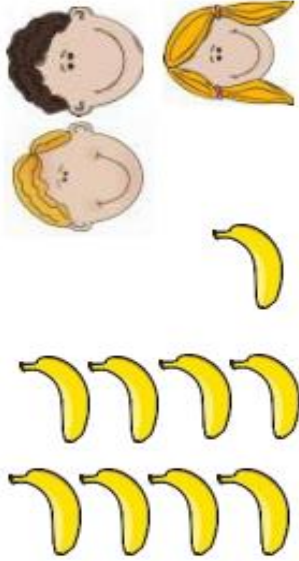
$$\underline{\quad} \div \underline{\quad} = \underline{\quad}$$

How many cherries does each kid get? $\underline{\quad}$

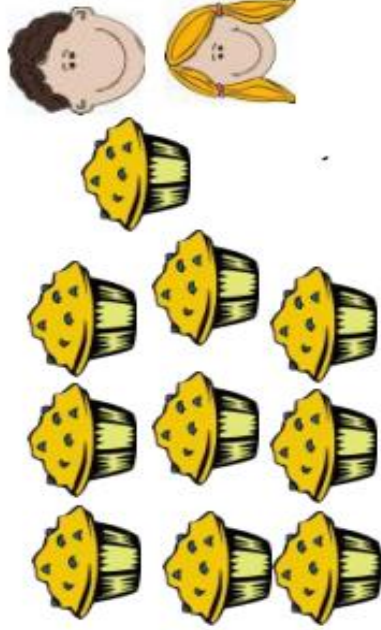
Dividing into equal groups

Grade 3 Division Worksheet

Divide the food between the kids & write the division equation.

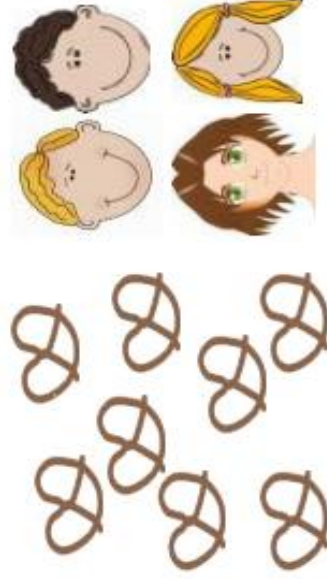


$$\underline{\quad} \div \underline{\quad} = \underline{\quad}$$



$$\underline{\quad} \div \underline{\quad} = \underline{\quad}$$

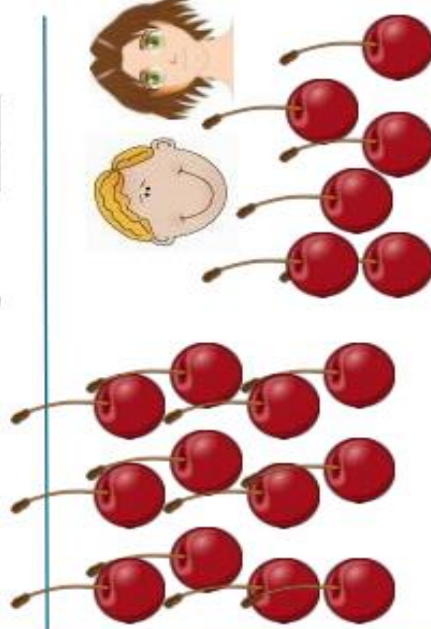
How many bananas does each kid get? $\underline{\quad}$



$$\underline{\quad} \div \underline{\quad} = \underline{\quad}$$

How many pretzels does each kid get? $\underline{\quad}$

How many muffins does each kid get? $\underline{\quad}$



$$\underline{\quad} \div \underline{\quad} = \underline{\quad}$$

How many cherries does each kid get? $\underline{\quad}$

Dividing into equal groups

Grade 3 Division Worksheet

Divide the food between the kids & write the division equation.

_____ ÷ _____ = _____

How many bananas does each kid get? _____

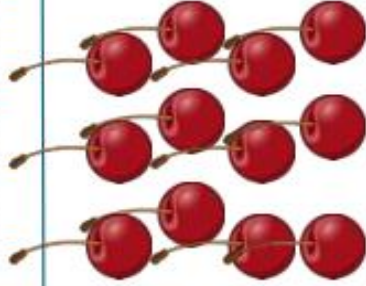


_____ ÷ _____ = _____

How many pretzels does each kid get? _____

_____ ÷ _____ = _____

How many muffins does each kid get? _____



_____ ÷ _____ = _____

How many cherries does each kid get? _____

Division with Repeated Subtraction

Repeated subtraction is a strategy for solving division problems.

Example: $12 \div 4 = \underline{3}$

$$12 - 4 = 8$$

$$8 - 4 = 4$$

$$4 - 4 = 0$$

4 was subtracted 3 times. So $12 \div 4 = 3$

Directions: Use repeated subtraction as seen in the example above to solve the following division problems.



1

$18 \div 2 = \underline{\quad}$

2

$12 \div 3 = \underline{\quad}$

3

$16 \div 4 = \underline{\quad}$

4

$24 \div 6 = \underline{\quad}$

5

$10 \div 2 = \underline{\quad}$

6

$21 \div 7 = \underline{\quad}$

7

$8 \div 4 = \underline{\quad}$

8

$15 \div 5 = \underline{\quad}$

9

$9 \div 3 = \underline{\quad}$

10

$32 \div 8 = \underline{\quad}$



DIVISION

By repeated subtraction

Division can also be taken as a way of **repeated subtraction** i.e. subtracting a same number several times, since division and subtraction are interrelated concepts.

In a division equation;

$$15 \div 3 = 5$$

Diagram illustrating the components of the division equation $15 \div 3 = 5$ with yellow arrows pointing from the equation to the labels:

- Dividend** (15)
- Divisor** (3)
- Quotient** (5)

For example; **15÷3** can also be solved by 'repeated subtraction'.

METHOD:

We keep on subtraction 3 from the dividend until we get 0. The number of times 3 is subtracted from the dividend to reach 0 is the quotient i.e. the answer!

$$\text{So, } 15 - 3 = 12 \quad 12 - 3 = 9 \quad 9 - 3 = 6$$

$$6 - 3 = 3 \quad 3 - 3 = 0$$

$$\rightarrow 15 \div 3 = 5$$

The repeated subtraction equation for $15 \div 3 = 5$ is $15 - 3 - 3 - 3 - 3 = 0$

Similarly, the division equation for $15 - 3 - 3 - 3 - 3 = 0$ is $15 \div 3 = 5$



WORKSHEET#1

Solve the following division problems by using the method of repeated subtraction.

1. $12 \div 3 = 4$

$12 - 3 = 9$

$9 - 3 = 6$

$6 - 3 = 3$

$3 - 3 = 0$

So, $12 \div 3 = 4$

Since 3 is subtracted 4 times to reach 0.

2. $20 \div 10 =$

3. $35 \div 5 =$

4. $24 \div 8 =$

5. $63 \div 9 =$

6. $45 \div 15 =$

7. $16 \div 2 =$

8. $16 \div 4 =$

9. $35 \div 7 =$

Sharing vs. Repeated Subtraction

Grade 3

Activity #328

Relevant Chapter in the *Digi-Block Comprehensive Teacher's Guide*:

Book III, Unit4-1: Developing Two Meanings for Division, pages 103 - 106

Lesson Overview

This activity compares two models of division - "sharing" division and "repeated subtraction" division. Students discover and explain why both models of division yield the same answer. Students decide which model of division a problem reflects, then model and solve the problem with blocks.

Objectives

Thinking Skills: Students explore two meanings for division by modeling different situations with blocks. They first examine a problem and decide which model or meaning of division is most appropriate and then use that model to solve the problem.

Mastery Skills: Students learn to model, solve, and write number sentences to represent division story problems.

Materials

Each pair of students needs:

- 9 small paper plates
- 50 single blocks, packed or unpacked

- Activity Sheets #1 and #2

Class Introduction

(25 minutes)

Provide small paper plates to pairs of students. Suggest that students use them to help organize blocks as they are solving problems.

Problem 1:

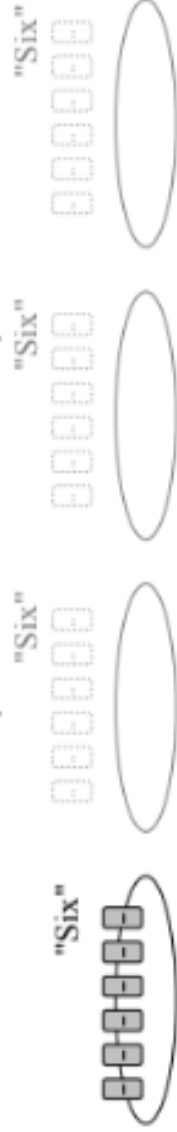
Display a repeated subtraction problem, such as:

Emma has 24 stickers for her sticker book.

She puts 6 stickers on a page. How many pages does she fill?

Have students work together to model the problem with blocks. Students will likely do the following:

- Put six blocks on a plate at a time until they run out of blocks.

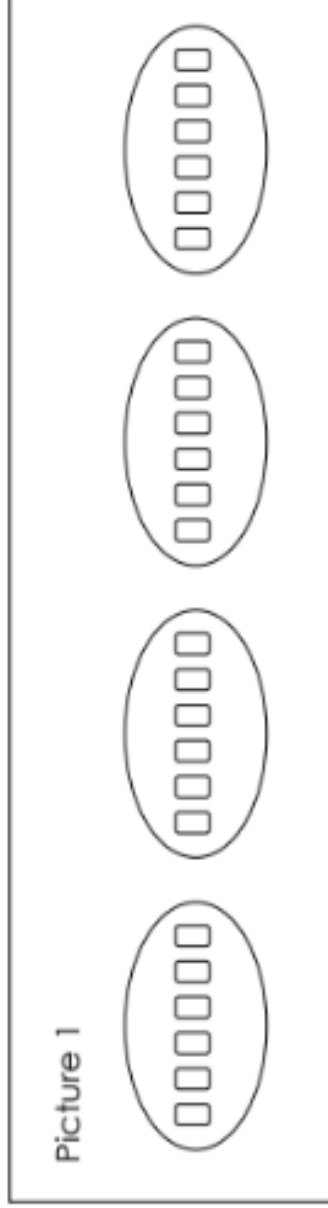


- Count the number of plates they used. The answer is: 4 plates/4 pages of stickers.

While students are modeling the problem, ask questions such as:

- What do your blocks represent?
- What did you do first? Then what?
- Why did you put 6 blocks together?
- How many groups of 6 can you make, or how many "pages" can you fill?

Have students record how they organized the blocks by drawing a picture.



Ask, **How can we show what we did with numbers?**

- Students may suggest using subtraction to show removing 6 at a time:

$$24 - 6 - 6 - 6 - 6 = 0$$

- Help students understand that what they have really done is *separate* the stamps and that this process can be expressed with the division sign.
- Introduce/review the meaning of the numbers and symbols in the division equation:

$$24 \div 6 = 4$$

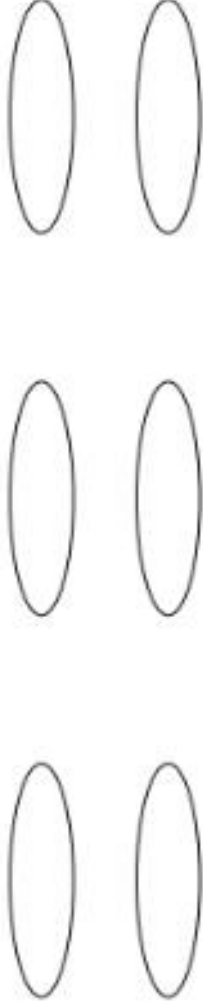
Problem 2:

Next, display a sharing problem, such as:

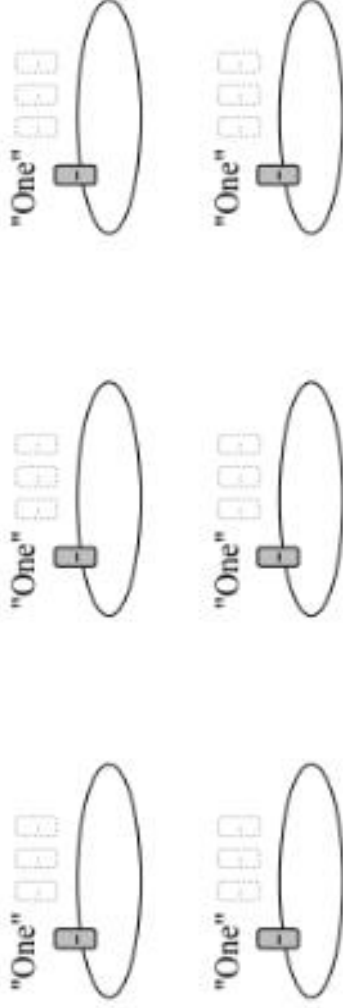
Eddie has a box of 24 mints. He wants to distribute them evenly to 6 of his friends. How many should each of the 6 friends get?

Again, have students model the problem with blocks. This time, however, they will likely be “dealing out” mints, one to four blocks at a time to each of six piles or paper plates.

- Set up 6 plates (one plate for each friend).

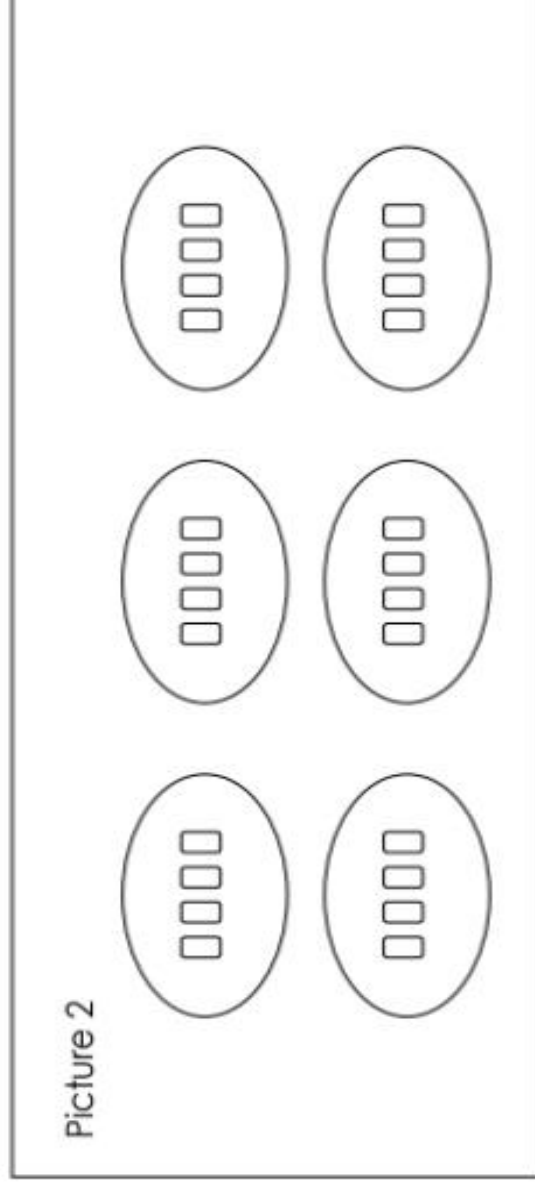


- Deal out one to four blocks/mints at a time to each plate until there are no more blocks.



- Count the number of blocks/mints on each plate. The answer is: 4 mints for each friend.

Have students explain what they did and draw a picture to show how they arranged their blocks.



Again, help children express what they did with numbers. They will notice that, once again, the problem can be written as:

$$24 \div 6 = 4$$

Comparing Problem 1 and Problem 2:

Have students compare the pictures they drew for the 2 problems. Ask, **How can it be that we solved two different problems and our pictures look very different, yet the number sentences and answers are the same?**

- Some students may be completely baffled; others may be convinced that it is coincidental.
- Challenge students to explain the similarities and differences between the problems.

Help students articulate the following:

- The first problem specifies the group size (6) whereas the second specifies the number of groups (6 again).

- To solve the first problem, students need to figure out *how many groups they can make*, but in the second, they need to know *how many in each group*.
- It may be helpful to relate each drawing to a multiplication sentence (4 x 6 and 6 x 4) and remind students that although 4 groups of 6 and 6 groups of 4 “look” different, they both have the same product. (See Pack-It #316: “Let’s Explore 6 x 4.”)

Explain to students that they will continue to explore the meaning of division by modeling and solving additional problems.

Activity **(25 minutes)**

Copy and distribute Activity Sheets #1 and #2, “Sharing Vs. Repeated Subtraction” to pairs of students sitting side by side. Explain the following:

- The student on the left reads and models the problem on the left side of the page, and the student on the right does the same for the problem on the right. Each student records his/her block arrangement.
- Students take turns explaining how they solved their problem to their partners.
- Both students agree on one division number sentence that represents both problems and write it in the space.
- They continue on the back.

As students are working, help them clarify whether they are finding the *number of groups* or the *number in each group* as they model their problems with blocks.

Challenge early finishers with a pair of problems using larger numbers.

Closure **(10 - 15 minutes)**

After students have completed their work, collect papers and select several to share and discuss.

- Have the “authors” of each paper describe how they solved each problem and invite classmates to respond.

- Again, help students distinguish between the two models of division. Ask, **What did you know and what did you need to find out?** for each problem.
- Discuss the number sentence for both problems. Ask, **What does the 9 in problem A mean? What does the 9 in problem B mean?**

While students are discussing their solutions, ask questions such as:

- **Is one model easier/harder for you to understand?**
- **Which model is easier/harder to show with blocks? Why?**
- **Which model do you use more in your everyday lives? Give examples.**
- **Is it a coincidence that both problems have the same answer? Explain why or why not.**

Assessment

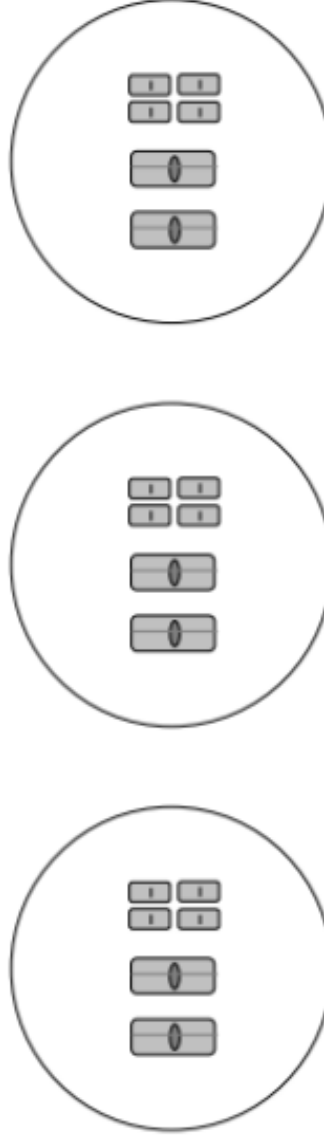
As students are working, observe and note:

Do they -

- Model the story problem situation with blocks?
- Answer the question correctly?
- Know how to write the division number sentence that relates to the problem?
- Describe the meaning of the numbers and symbols in a division number sentence?

Extensions

- Have students model $72 \div 3$ both ways! Make sure they start with packed blocks. Students will find that even though they get the same answer with both models, making 24 groups of 3 can be cumbersome, whereas 3 groups of 24 is much easier to count.



Subtract to Divide

Divide the numbers by subtracting the same number till you reach zero.
(Show your work.)

$9 \div 3 =$

$8 \div 2 =$

$12 \div 6 =$

$16 \div 4 =$

$15 \div 3 =$

$24 \div 4 =$

February Math Pacing Guide 7th Grade

[M.EE.7.G.4](#) - Determine the perimeter of a rectangle by adding the measures of the sides.

Learning Goal:

- Level 2-3 – Find the perimeter of a polygon in a real-world scenario (without support level 3, with support level 2).
- Level 1 – Count units to find the perimeter of a polygon using an active response (e.g., voice output device, eye gaze board).

Essential Questions:

- How do I calculate perimeter?
- How is perimeter measured?

Vocabulary:

- **Perimeter** – The distance around a two-dimensional shape.
- **Unit** – The general term meaning 1.



Mini-Map for M.EE.7.G.4

Subject: Mathematics

Geometry (G)

Grade: 7

Learning Outcome

DLM Essential Element	Grade-Level Standard
M.EE.7.G.4 Determine the perimeter of a rectangle by adding the measures of the sides.	M.7.G.4 Know the formulas for the area and circumference of a circle, and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle.

Linkage Level Descriptions

Initial Precursor	Distal Precursor	Proximal Precursor	Target	Successor
Recognize attributes or characteristics of an object, such as color, orientation, length, width, and weight.	Recognize and explain measurable (e.g., height, depth, diameter, weight) and non-measurable (e.g., color or orientation) attribute values.	Communicate understanding that length is the measure along a side of a shape or object and perimeter is the measure around a shape or object, beginning and ending at the same point, and without any overlap.	Calculate the perimeter of a shape by adding the measures of all the sides. Calculate the perimeter of a rectangle drawn on a grid paper by counting the unit squares contained within the boundary of the shape.	Determine the perimeter of a square or rectangle drawn on a graph paper using the x- and y-coordinates of the vertices.

Initial Precursor and Distal Precursor Linkage Level Relationships to the Target

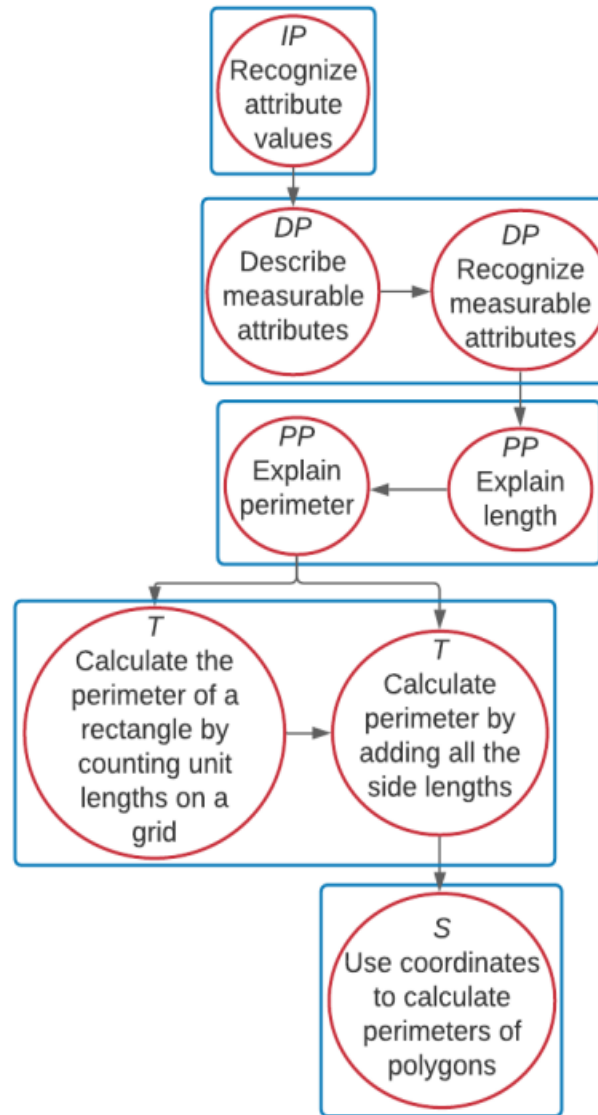
How is the Initial Precursor related to the Target?

In order to calculate perimeter, students begin by learning to notice what is new. The educator draws the students' attention to new objects or stimuli, labels them (e.g., "these are two long cubes and short cubes," or "you have two fidgets; one is big and one is small but they are both fidgets"), and the student observes, feels, or otherwise interacts with it. Educators encourage students to begin placing like objects together, drawing attention to the characteristics that make an item the same or different.

How is the Distal Precursor related to the Target?

As students develop their attention to objects and notice the difference between objects, they will begin working on recognizing and describing measurable attributes. Students need lots of experience making direct comparisons between objects. Educators should use the comparison words (e.g., big/small, tall/short, longer/shorter). While students do not need to say them, they do need to learn their meaning.

M.EE.7.G.4 Determine the perimeter of a rectangle by adding the measures of the sides.



Map Key	
IP	Initial Precursor
DP	Distal Precursor
PP	Proximal Precursor
T	Target
S	Successor
UN	Untested
Boxes indicate tested nodes	

Rubric of Student Success

[M.EE.7.G.4](#) - Determine the perimeter of a rectangle by adding the measures of the sides.

Level 3 Students will...	Level 2 Students will...	Level 1 Students will...
<p>Level 3</p> <ul style="list-style-type: none"> Find the perimeter of a polygon in a real-world scenario 	<p>Level 2</p> <ul style="list-style-type: none"> Find the perimeter of a polygon in a real-world scenario, with support 	<p>Level 1</p> <ul style="list-style-type: none"> Count units to find the perimeter of a polygon using an active response (e.g., vice output device, eye gaze board)
<p>Successor and Target Students will...</p> <p>Successor</p> <ul style="list-style-type: none"> Use coordinates to calculate perimeters of polygons <p>Target</p> <ul style="list-style-type: none"> Calculate the perimeter of a rectangle by counting unit lengths on a grid Calculate perimeter by adding all the side lengths 	<p>Proximal Precursor and Distal Precursor Students will...</p> <p>Proximal Precursor</p> <ul style="list-style-type: none"> Explain perimeter Explain length <p>Distal Precursor</p> <ul style="list-style-type: none"> Describe measurable attributes Recognize measurable attributes 	<p>Initial Precursor Students will...</p> <p>Initial Precursor</p> <ul style="list-style-type: none"> Recognize attribute values

Instructional Ideas

[M.EE.7.G.4](#) - Determine the perimeter of a rectangle by adding the measures of the sides.

Units of measure can be used to solve real world problems.

The big idea is that formulas are used to calculate perimeter.

- Introduce by asking the essential questions.
- Calculate the perimeter of a rectangle.
- Use a place like the school or a garden that has a fence around it, ask, “What goes all around the outside of the school to make a border of the school or fence? Discuss responses.
- Tell students that the distance around the outside of the school is called the perimeter of the school.
- While modeling, it maybe helpful to have tangible manipulatives for students to visualize concepts and practice with, such as stackable counting cubes.
- Explain that the perimeter is the distance around an object or shape.
- Model how to find the perimeter of the object.
- Comment aloud as you model. For example, say, “Perimeter is the distance around the outside edge of a shape. I need to add the lengths of each side to find the perimeter. $6 + 6 + 6 + 6 = 24$. The perimeter of this shape is 24 units.
- Use manipulatives as needed.
- Students may use a calculator if needed.
- Included worksheets are examples of what to look for when finding additional materials that best fits your student’s needs.

Additional Instructional Ideas

- Go to website for additional instructional resources, materials, and activities for lessons:

perimeter

- the distance around the outside of a shape
- add all side lengths



Perimeter



Find the perimeter of the donation sign.
The perimeter is the distance around the donation sign.

side #1 = 6 units



side #4 =
6 units

side #2 =
6 units

side #3 = 6 units

$$\frac{\text{side \#1}}{\text{side \#1}} \text{ units} + \frac{\text{side \#2}}{\text{side \#2}} \text{ units} + \frac{\text{side \#3}}{\text{side \#3}} \text{ units} + \frac{\text{side \#4}}{\text{side \#4}} \text{ units} = \text{ ______ } \text{ units}$$



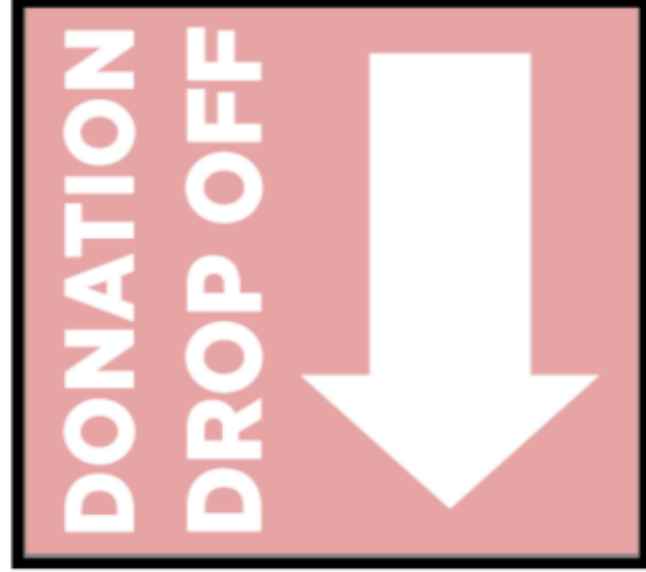
Perimeter of the donation sign = units around.

Perimeter



Find the perimeter of the donation sign.
 The perimeter is the distance around the donation sign.

side #1 = 6 units



side #4 = 6 units

side #2 = 6 units

side #3 = 6 units

$$\underline{\text{side \#1}} \text{ units} + \underline{\text{side \#2}} \text{ units} + \underline{\text{side \#3}} \text{ units} + \underline{\text{side \#4}} \text{ units} = \underline{\hspace{2cm}} \text{ units}$$



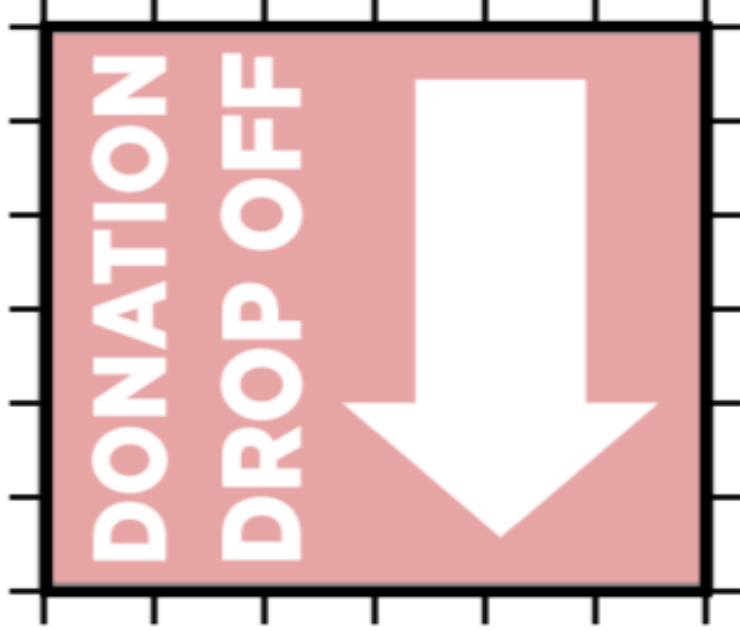
Perimeter of the donation sign = units around.

Perimeter



Find the perimeter of the donation sign.
The perimeter is the distance around the donation sign.

side #1 = 6 units



side #4 =
6 units

side #2 =
6 units

side #3 = 6 units



Perimeter of the donation sign = units around.



20cm

18cm

20cm

16cm

22cm

26cm

24cm

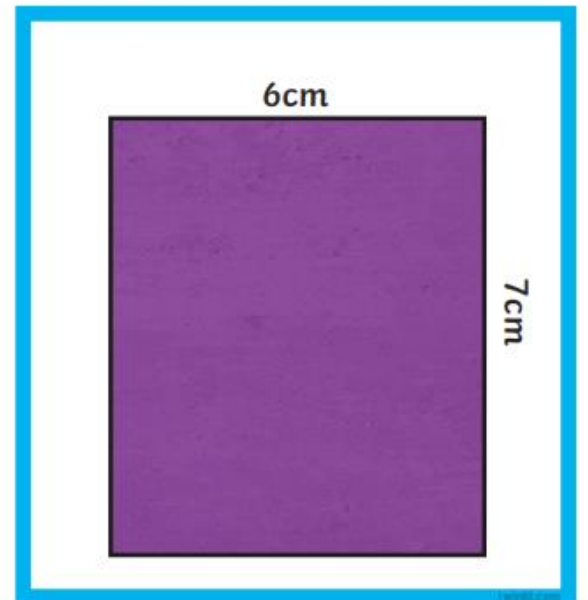
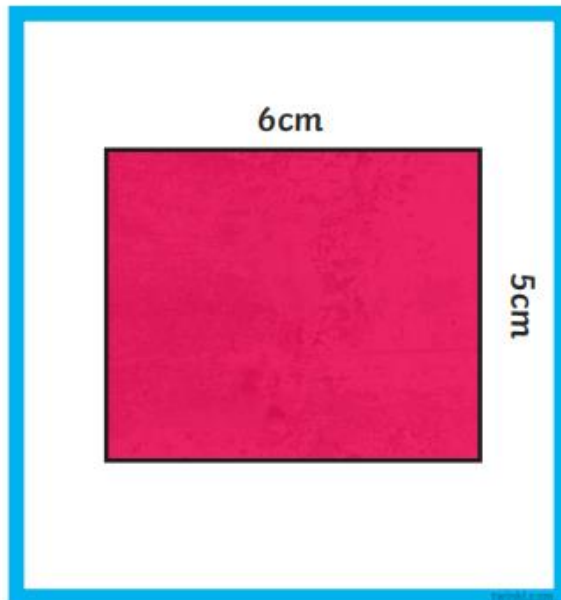
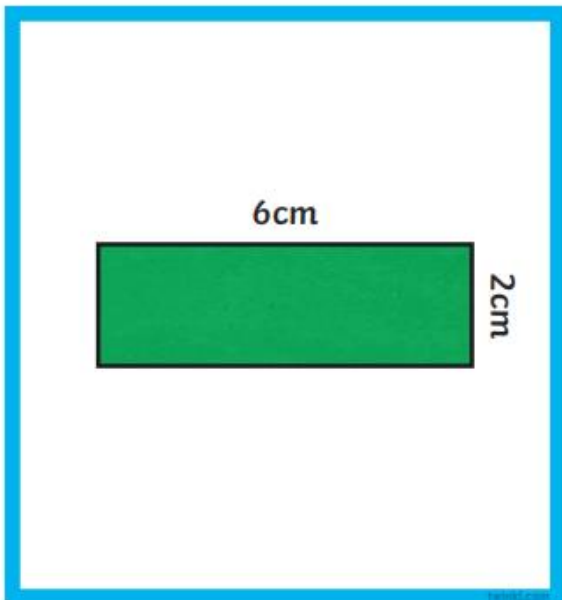
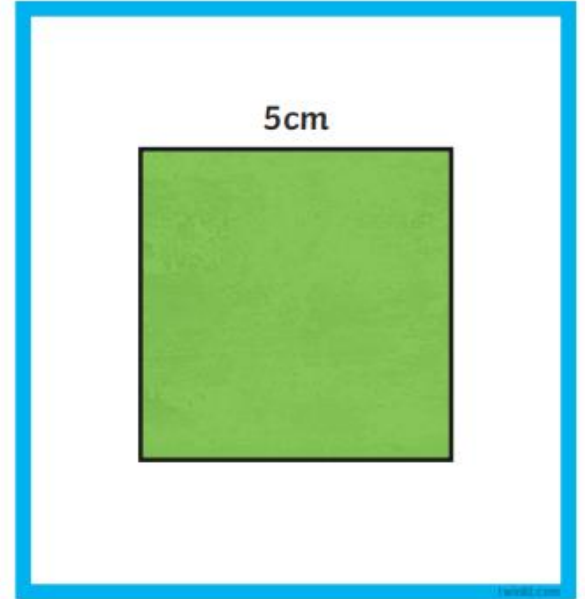
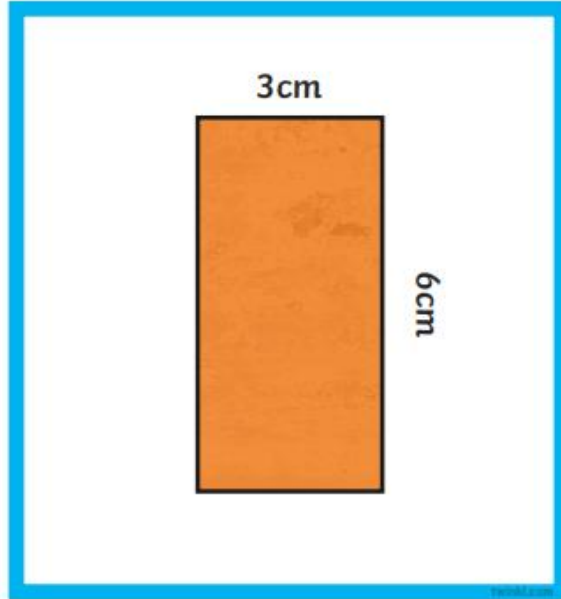
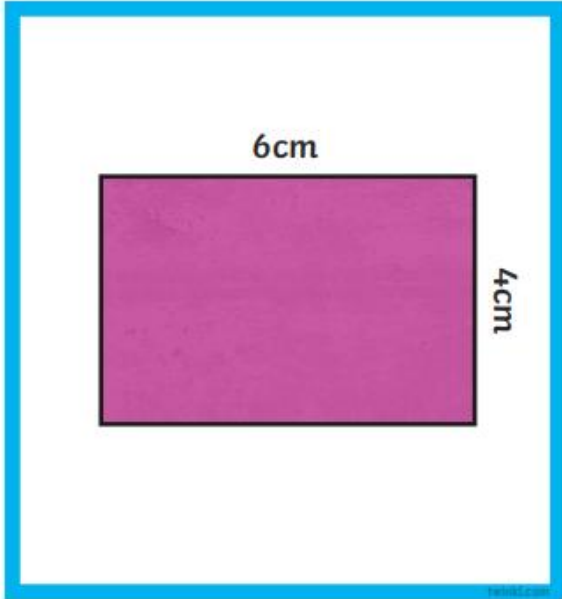
12cm

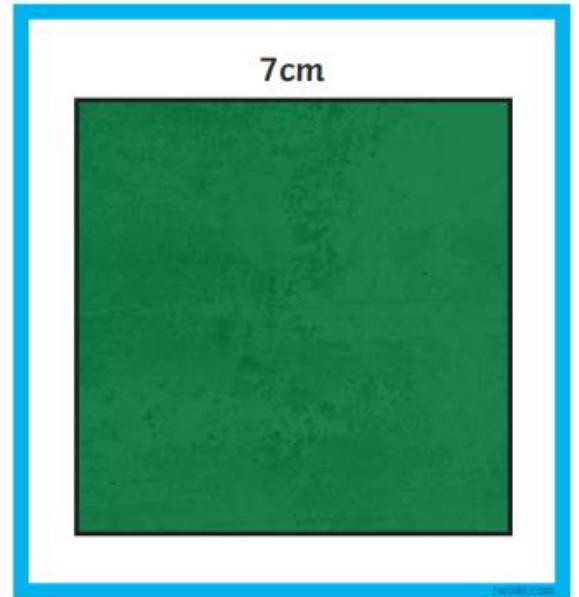
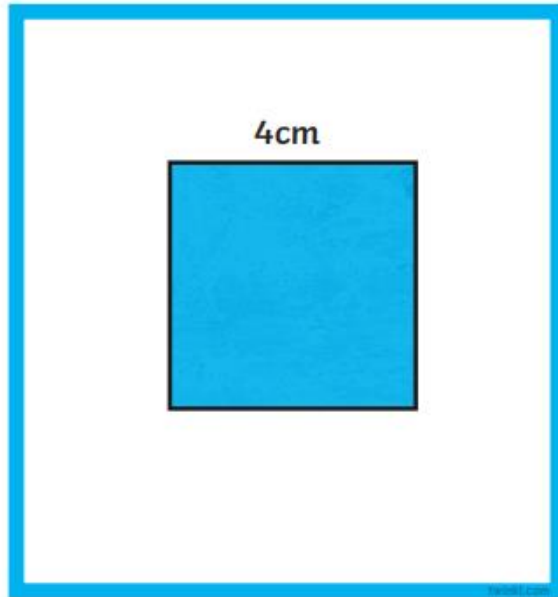
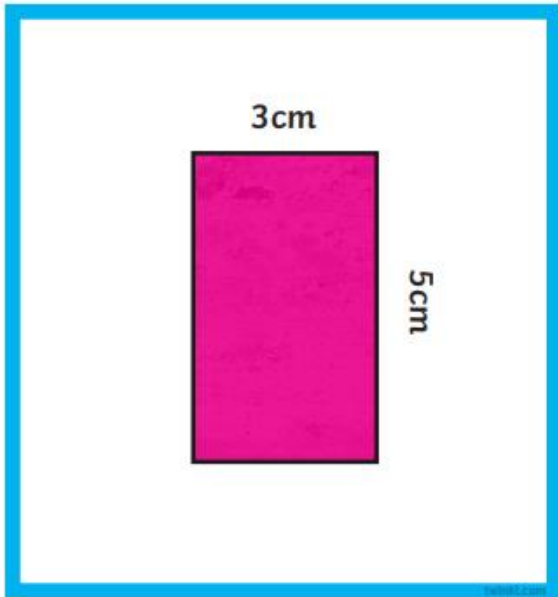
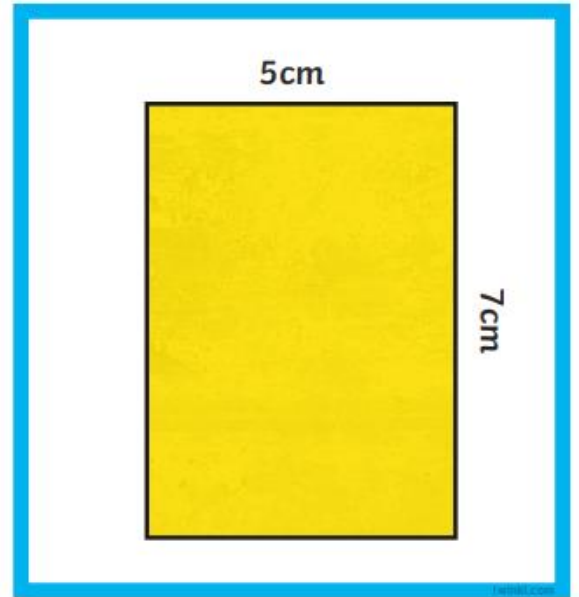
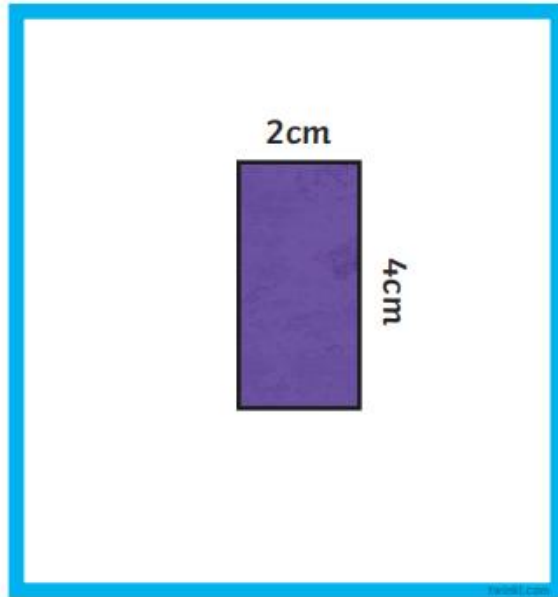
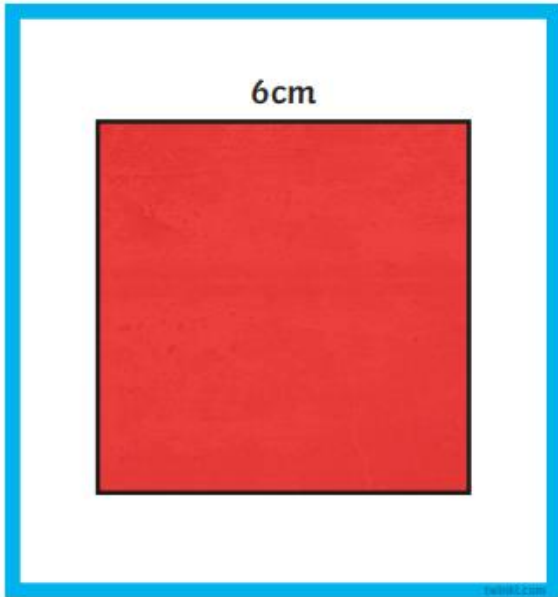
24cm

16cm

16cm

28cm





Area and Perimeter

Mixed Challenge Cards



Area and Perimeter Mixed Challenge Cards

1.a) Allen planted a garden that is 5 feet wide and 4 feet long. What is the area of the garden?

twinkl.com

Area and Perimeter Mixed Challenge Cards

1.b) Allen planted a garden that is 5 feet wide and 4 feet long. What is the perimeter of the garden?

twinkl.com

Area and Perimeter Mixed Challenge Cards

2.a) Ismary ran around a rectangular trail. One side of the trail measured 5 miles. Another side of the trail measured 2 miles. What is the area of the trail?

twinkl.com

2.b) Ismary ran around a rectangular trail. One side of the trail measured 5 miles. The other side of the trail measured 2 miles. What is the perimeter of the trail?

3.a) Penelope glued a ribbon around a clipboard. The clipboard is 9 inches wide and 11 inches tall. What is the area of the clipboard?

3.b) Penelope glued a ribbon around a clipboard. The clipboard was 9 inches wide and 11 inches tall. What is the length of the ribbon she used?

4.a) The Wyatt family measured their new TV. It was 3 feet tall and 5 feet wide. What is the area of the TV?

4.b) The Wyatt family measured their new TV. It was 3 feet tall and 5 feet wide. What is the perimeter of the TV?

5.a) A DVD case measures 6 inches wide and 7 inches tall. What is the area of the DVD case?

5.b) A DVD case measures 6 inches wide and 7 inches tall. What is the perimeter of the DVD case?

6.a) A window measures 4 feet long and 2 feet wide. What is the area of the window?

6.b) A window measures 4 feet long and 2 feet wide. What is the perimeter of the window?

7.a) A new classroom rug measures 5 feet long and 6 feet wide. What is the area of the rug?

7.b) A new classroom rug measures 5 feet long and 6 feet wide. What is the perimeter of the rug?

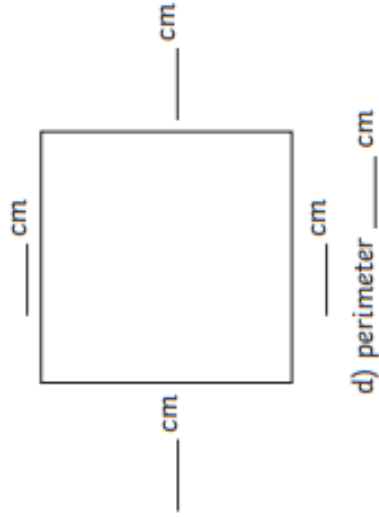
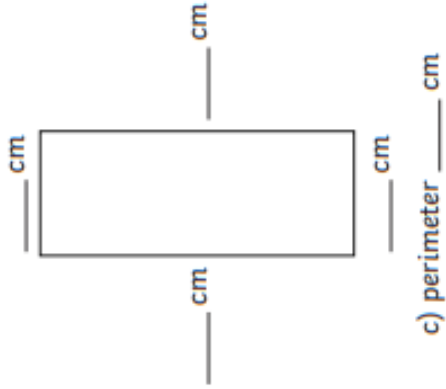
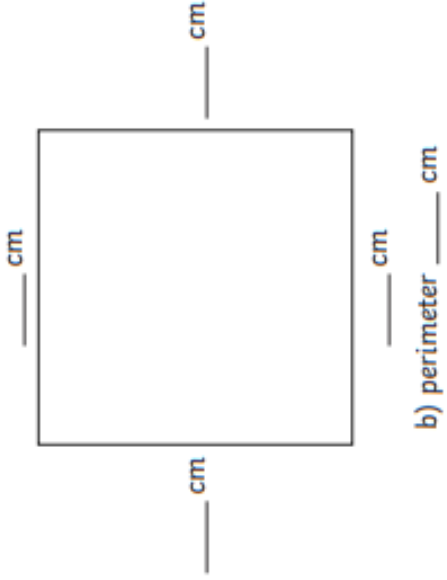
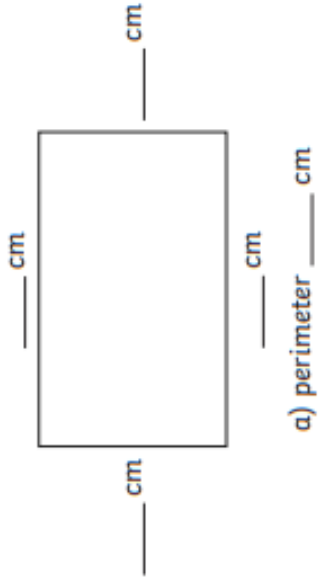
8.a) Grandma sewed a quilt. The quilt measured 4 feet wide and 12 feet long. What is the area of the quilt?



Measuring Perimeter

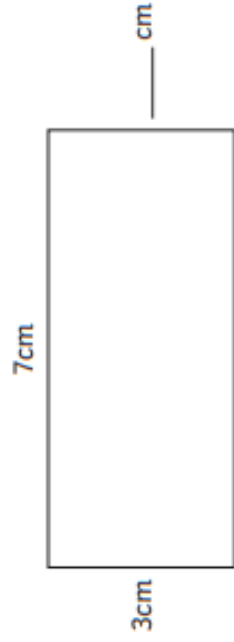
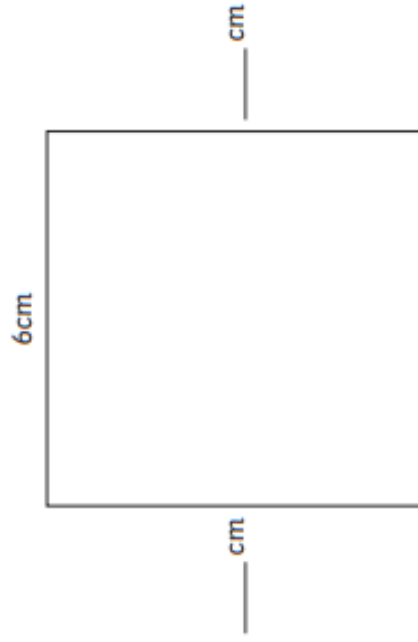
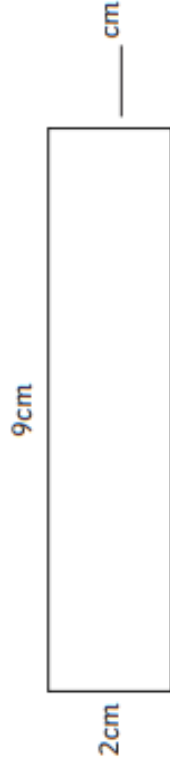
I can calculate the perimeter of a shape in centimetres.

- 1) Measure and label the sides and calculate the perimeter of these shapes:



2)

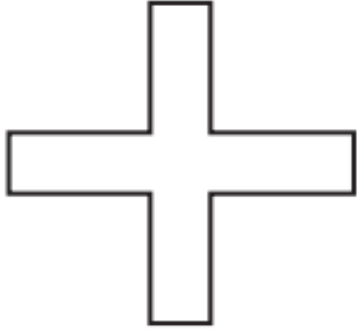
Work out the length of all sides and the perimeter. Write the measurement for missing sides.

 ___ cm a) perimeter ___ cm  ___ cm b) perimeter ___ cm  ___ cm c) perimeter ___ cm 

VOCABULARY CARDS

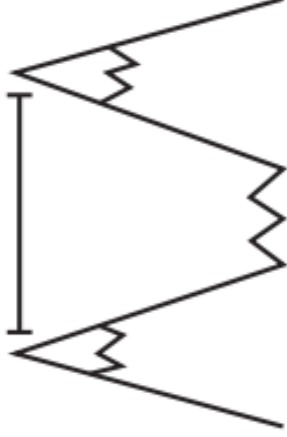
EL SUPPORT LESSON PLAN: REAL LIFE PERIMETER

addition



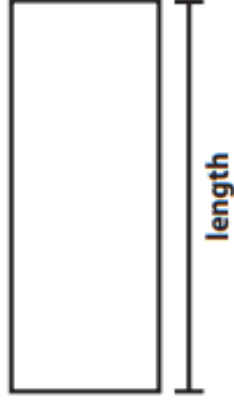
the process of finding the total of two or more numbers

distance



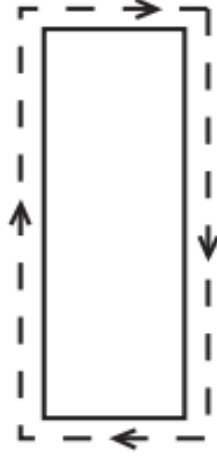
the amount of space between two things

length



a measurement of how long something is

perimeter



the distance around the outside of a shape



February Math Pacing Guide 7th Grade

[M.EE.7.NS.2.b](#) - Solve division problems with divisors up to five and also with a divisor of 10 without remainders.

Learning Goal:

- Level 2-3 – Solve linear equations in one variable.
- Level 1 – Combine and partition sets.

Essential Questions:

- What are the parts of division problem?
- What model can I use to help me solve this division problem?

Vocabulary:

- **Variable** – A symbol for a value we don't know yet. It is usually a letter x or y.



Mini-Map for M.EE.7.NS.2.b

Subject: Mathematics
The Number System (NS)
Grade: 7

Learning Outcome

DLM Essential Element	Grade-Level Standard
M.EE.7.NS.2.b Solve division problems with divisors up to five and also with a divisor of 10 without remainders.	M.7.NS.2.b Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If p and q are integers, then $-(p/q) = (-p)/q = p/(-q)$. Interpret quotients of rational numbers by describing real-world contexts.

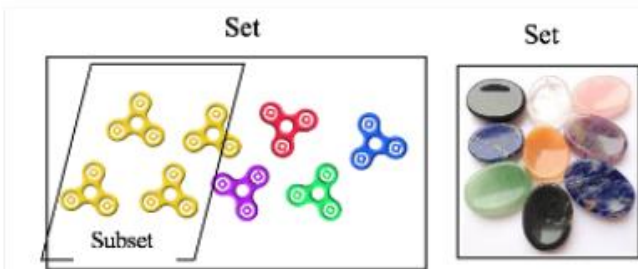
Linkage Level Descriptions

Initial Precursor	Distal Precursor	Proximal Precursor	Target	Successor
Communicate understanding of "separateness" by recognizing objects that are not joined together. Communicate understanding of set by recognizing a group of objects sharing an attribute. Communicate understanding of a subset by recognizing a subset as a set or group of objects within a larger set that share an attribute.	Communicate understanding that repeated subtraction is a subtraction of equal groups from a number (e.g., $15 - 5 - 5 - 5$). Represent repeated subtraction using equations (e.g., $15 - 5 - 5 - 5 = 0$). Solve repeated subtraction problems by identifying the number of times a number is subtracted repeatedly from another number to reach zero.	Show understanding of division by arranging the total number of objects into two or more equal groups and communicate that the total number of objects (i.e., dividend) divided by the number of groups (i.e., divisor) is equal to the number of objects in each group (i.e., quotient).	Divide numbers within 100 by 1, 2, 3, 4, 5, and 10 and determine the quotient, using manipulatives.	Recognize the inverse relationship between multiplication and division, and communicate understanding that the number of groups multiplied by the number of objects in each group equals the total number of objects and that the total number of objects divided by the number of groups equals the number of objects in each group.

Initial Precursor and Distal Precursor Linkage Level Relationships to the Target

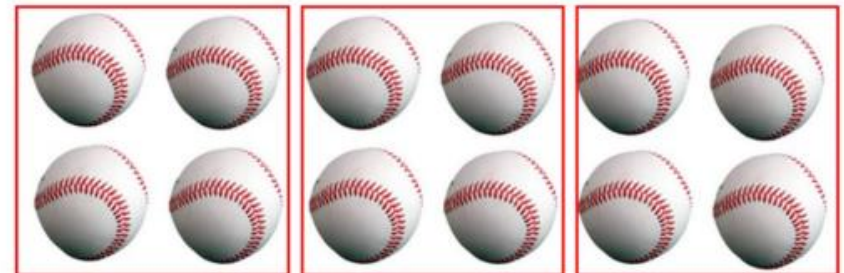
How is the Initial Precursor related to the Target?

In order to understand division, students must learn to organize items into groups/sets based on a common characteristic such as size, color, shape, or texture. Students learn how to sort items by separating a group of items into two groups (e.g., music I like/music I don't like; red fidgets/black fidgets). As students gain comfort sorting items into sets, they are encouraged to use their language to convey their thought process by identifying and naming the characteristic that determines the set (e.g., color, length). Activities that require students to engage actively with the items will foster understanding of set, subsets, and separateness.



How is the Distal Precursor related to the Target?

As students' understanding of labeling and counting sets develops, they will begin working on adding and taking away items from a set. Educators provide opportunities for students to work on developing an understanding of equal shares by actively participating in one-to-one distribution of objects to person, objects to objects, and objects to available space (e.g., giving each person in the group two pencils; given four counters they would line up, then four more counters in front of or on top of the first set; given three chairs at a table, the student would place a cup on the table for each available chair) and taking equal shares away (subtracting) from each person, object, or space. Educators will provide opportunities for students to connect their understanding of subtraction (starting with the whole and taking away a part) to repeated subtraction. For example, if the educator has 12 balls, and each team gets 4 balls, how many teams will there be? By subtracting 4 from the whole, we made 3 equal sets so there are 3 teams.

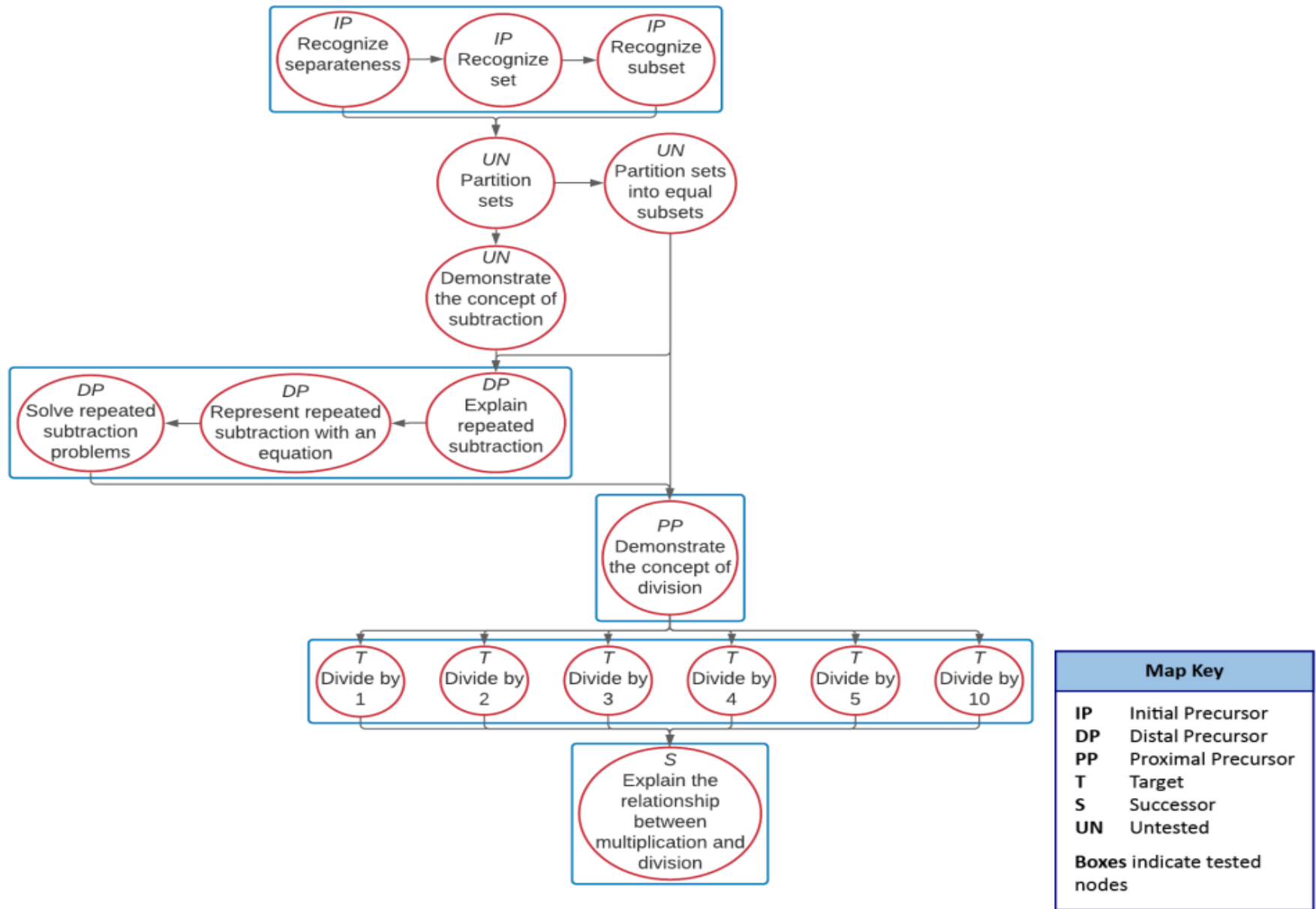


$$12 - 4 = 8$$

$$8 - 4 = 4$$

$$4 - 4 = 0$$

M.EE.7.NS.2.b Solve division problems with divisors up to five and also with a divisor of 10 without remainders.



Rubric of Student Success

[M.EE.7.NS.2.b](#) - Solve division problems with divisors up to five and also with a divisor of 10 without remainders.

Level 3 Students will...	Level 2 Students will...	Level 1 Students will...
<p>Level 3</p> <ul style="list-style-type: none"> Find the perimeter of a polygon in a real-world scenario 	<p>Level 2</p> <ul style="list-style-type: none"> Find the perimeter of a polygon in a real-world scenario, with support 	<p>Level 1</p> <ul style="list-style-type: none"> Count units to find the perimeter of a polygon using an active response (e.g., vice output device, eye gaze board)
<p>Successor and Target Students will...</p> <p>Successor</p> <ul style="list-style-type: none"> Use coordinates to calculate perimeters of polygons <p>Target</p> <ul style="list-style-type: none"> Calculate the perimeter of a rectangle by counting unit lengths on a grid Calculate perimeter by adding all the side lengths 	<p>Proximal Precursor and Distal Precursor Students will...</p> <p>Proximal Precursor</p> <ul style="list-style-type: none"> Explain perimeter Explain length <p>Distal Precursor</p> <ul style="list-style-type: none"> Describe measurable attributes Recognize measurable attributes 	<p>Initial Precursor Students will...</p> <p>Initial Precursor</p> <ul style="list-style-type: none"> Recognize attribute values

Instructional Ideas

[M.EE.7.NS.2.b](#) - Solve division problems with divisors up to five and also with a divisor of 10 without remainders.

Numbers can be represented, displayed, converted, and compared.

The big idea is that concepts and properties of division are the same whether using whole numbers, fractions, or decimals.

- Introduce by asking the essential questions.
- Introduce repeated subtraction and model.
- Allow students to have their own anchor charts.
- Use manipulatives as needed.
- Students may use a calculator if needed.
- Included worksheets are examples of what to look for when finding additional materials that best fits your student's needs.

Additional Instructional Ideas

- Go to website for additional instructional resources, materials, and activities for lessons:

Dividing by 2 or 3

Grade 3 Division Worksheet

Find the quotient.

1. $21 \div 3 =$ _____ 2. $15 \div 3 =$ _____ 3. $6 \div 3 =$ _____

4. $14 \div 2 =$ _____ 5. $6 \div 2 =$ _____ 6. $12 \div 2 =$ _____

7. $2 \div 2 =$ _____ 8. $18 \div 2 =$ _____ 9. $18 \div 3 =$ _____

10. $4 \div 2 =$ _____ 11. $27 \div 3 =$ _____ 12. $20 \div 2 =$ _____

13. $8 \div 2 =$ _____ 14. $10 \div 2 =$ _____ 15. $24 \div 3 =$ _____

16. $3 \div 3 =$ _____ 17. $16 \div 2 =$ _____ 18. $12 \div 3 =$ _____

19. $30 \div 3 =$ _____ 20. $9 \div 3 =$ _____ 21. $21 \div 3 =$ _____

22. $12 \div 2 =$ _____ 23. $24 \div 3 =$ _____ 24. $16 \div 2 =$ _____

25. $2 \div 2 =$ _____ 26. $10 \div 2 =$ _____ 27. $18 \div 2 =$ _____

Division Facts: Dividing by 4 or 5

Grade 3 Division Worksheet

Find the quotient.

1. $45 \div 5 =$ _____ 2. $5 \div 5 =$ _____ 3. $10 \div 5 =$ _____

4. $50 \div 5 =$ _____ 5. $40 \div 4 =$ _____ 6. $15 \div 5 =$ _____

7. $12 \div 4 =$ _____ 8. $24 \div 4 =$ _____ 9. $8 \div 4 =$ _____

10. $20 \div 5 =$ _____ 11. $25 \div 5 =$ _____ 12. $20 \div 4 =$ _____

13. $32 \div 4 =$ _____ 14. $40 \div 5 =$ _____ 15. $28 \div 4 =$ _____

16. $4 \div 4 =$ _____ 17. $30 \div 5 =$ _____ 18. $35 \div 5 =$ _____

19. $16 \div 4 =$ _____ 20. $36 \div 4 =$ _____ 21. $25 \div 5 =$ _____

22. $40 \div 5 =$ _____ 23. $20 \div 4 =$ _____ 24. $30 \div 5 =$ _____

25. $5 \div 5 =$ _____ 26. $25 \div 5 =$ _____ 27. $35 \div 5 =$ _____



Dividing by 10

Grade 3 Division Worksheet

Find the quotient.

1. $630 \div 10 =$ _____ 2. $570 \div 10 =$ _____

3. $240 \div 10 =$ _____ 4. $70 \div 10 =$ _____

5. $390 \div 10 =$ _____ 6. $50 \div 10 =$ _____

7. $320 \div 10 =$ _____ 8. $50 \div 10 =$ _____

9. $50 \div 10 =$ _____ 10. $700 \div 10 =$ _____

11. $60 \div 10 =$ _____ 12. $40 \div 10 =$ _____

13. $800 \div 10 =$ _____ 14. $110 \div 10 =$ _____

15. $100 \div 10 =$ _____ 16. $380 \div 10 =$ _____

17. $70 \div 10 =$ _____ 18. $720 \div 10 =$ _____

19. $60 \div 10 =$ _____ 20. $40 \div 10 =$ _____

1 Division Facts

1	÷	1	=	1
2	÷	1	=	2
3	÷	1	=	3
4	÷	1	=	4
5	÷	1	=	5
6	÷	1	=	6
7	÷	1	=	7
8	÷	1	=	8
9	÷	1	=	9
10	÷	1	=	10
11	÷	1	=	11
12	÷	1	=	12

2 Division Facts

2	÷	2	=	1
4	÷	2	=	2
6	÷	2	=	3
8	÷	2	=	4
10	÷	2	=	5
12	÷	2	=	6
14	÷	2	=	7
16	÷	2	=	8
18	÷	2	=	9
20	÷	2	=	10
22	÷	2	=	11
24	÷	2	=	12

3 Division Facts

3	÷	3	=	1
6	÷	3	=	2
9	÷	3	=	3
12	÷	3	=	4
15	÷	3	=	5
18	÷	3	=	6
21	÷	3	=	7
24	÷	3	=	8
27	÷	3	=	9
30	÷	3	=	10
33	÷	3	=	11
36	÷	3	=	12

4 Division Facts

4	÷	4	=	1
8	÷	4	=	2
12	÷	4	=	3
16	÷	4	=	4
20	÷	4	=	5
24	÷	4	=	6
28	÷	4	=	7
32	÷	4	=	8
36	÷	4	=	9
40	÷	4	=	10
44	÷	4	=	11
48	÷	4	=	12

5 Division Facts

5	÷	5	=	1
10	÷	5	=	2
15	÷	5	=	3
20	÷	5	=	4
25	÷	5	=	5
30	÷	5	=	6
35	÷	5	=	7
40	÷	5	=	8
45	÷	5	=	9
50	÷	5	=	10
55	÷	5	=	11
60	÷	5	=	12

10 Division Facts

10	÷	10	=	1
20	÷	10	=	2
30	÷	10	=	3
40	÷	10	=	4
50	÷	10	=	5
60	÷	10	=	6
70	÷	10	=	7
80	÷	10	=	8
90	÷	10	=	9
100	÷	10	=	10
110	÷	10	=	11
120	÷	10	=	12

Credits

Websites Used for Worksheets and Lesson Ideas:

- <https://www.education.com>
- <https://www.twinkl.com>
- <https://www.superteacherworksheets.com>
- <https://www.easyteacherworksheets.com>
- <https://www.mathworksheets4kids.com>
- <https://www.math-salamanders.com>
- <https://www.math-drills.com>
- <https://www.mathsisfun.com/definitions/index.html>

Resources Used to Help Create the Pacing Guide:

DLM Essential Elements Unpacking

- <https://www.dlmpd.com/dlm-essential-elements-unpacking>

Instructional Resources for YE Model States

- <https://dynamiclearningmaps.org/instructional-resources-ye/mathematics>

Dynamic Learning Maps

- <https://dynamiclearningmaps.org>

Unique Learning System

- <https://www.n2y.com/unique-learning-system>

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