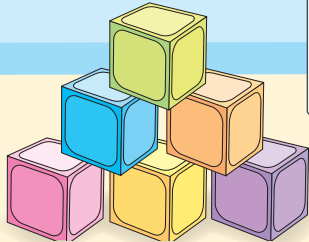
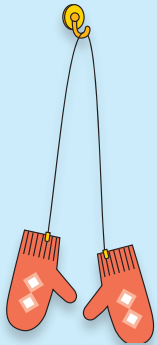
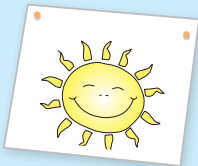
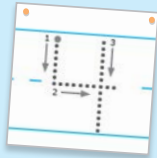
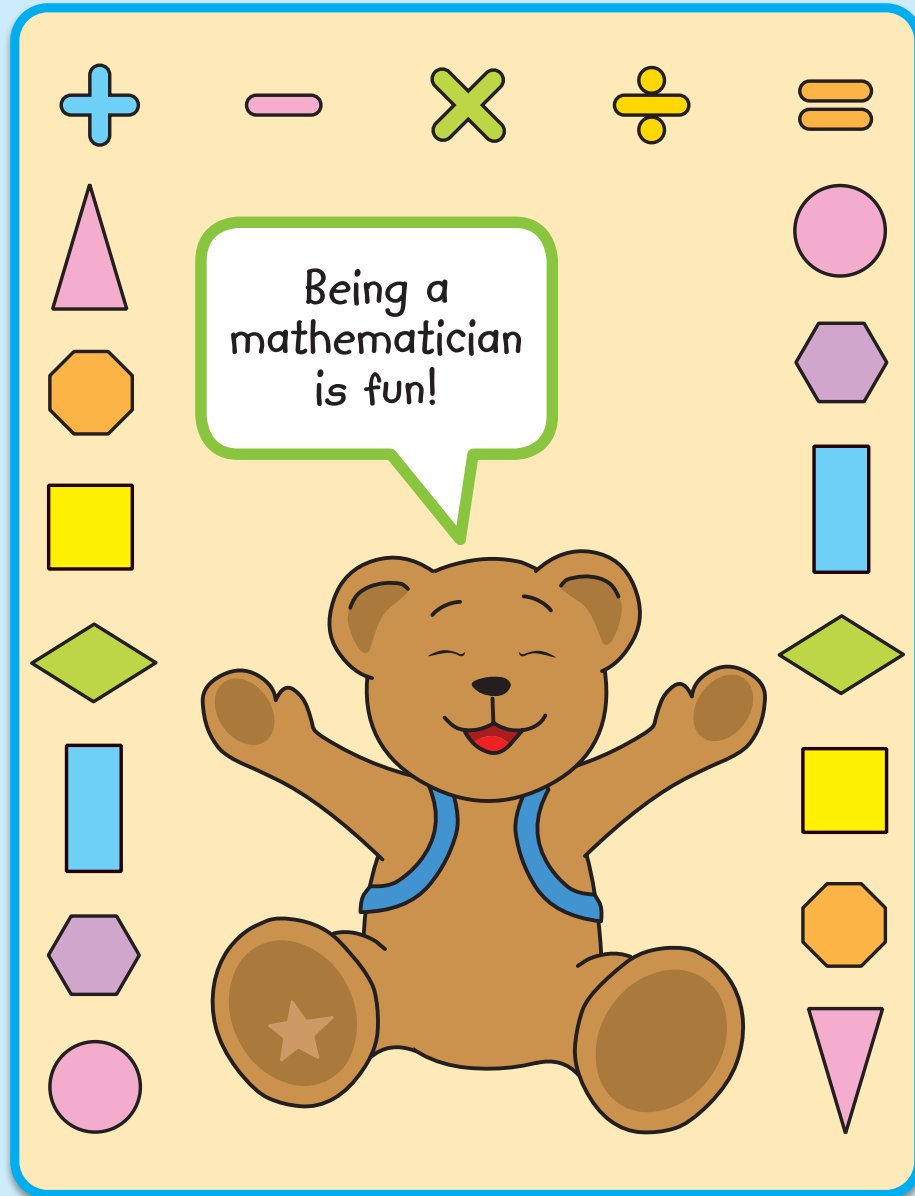


Backpack Bear's Math Book





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Note to educators:

Children will revisit this reference book throughout the year as they learn new mathematical concepts. It is not designed to be read all at once.

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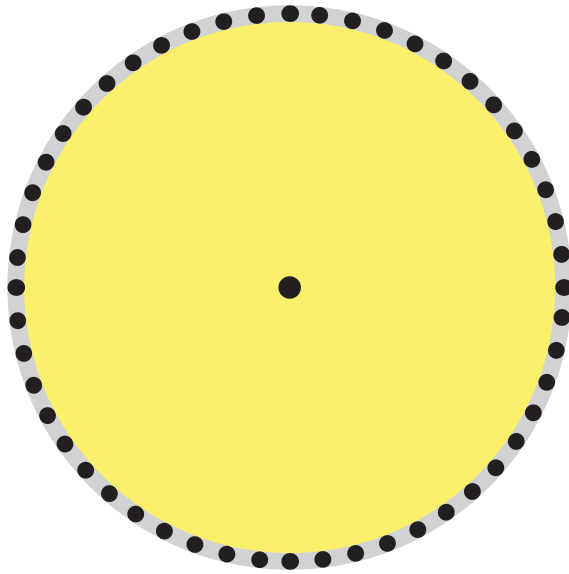
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Library of Congress Control Number: 2015959556 ISBN: 978-1-59577-220-6

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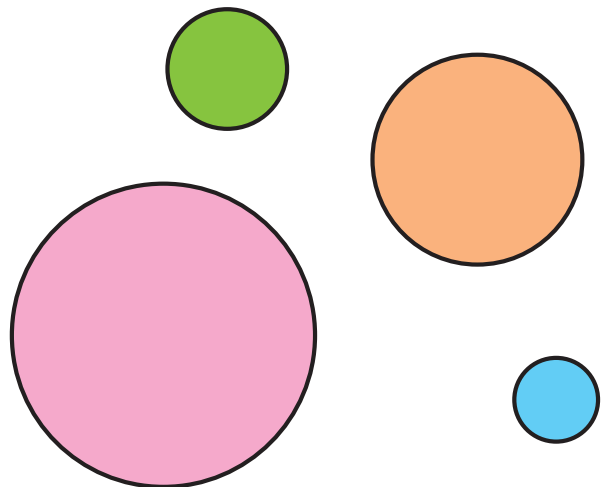
Circle



This is a circle.



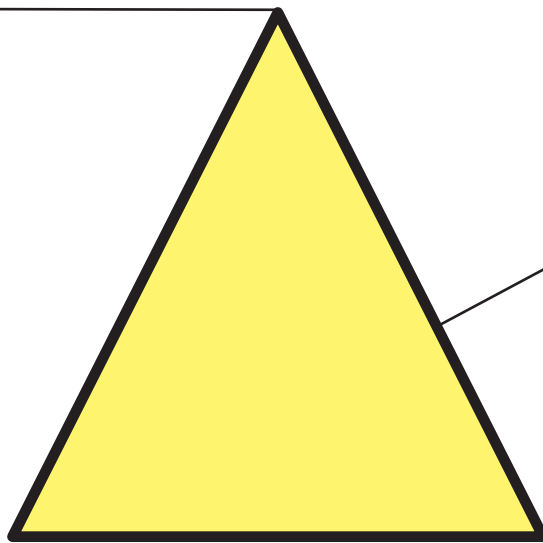
I know this is a circle because it is a flat shape made up of points that are all the same distance from the center point.



Triangle

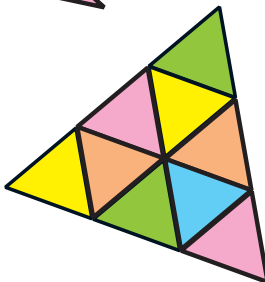
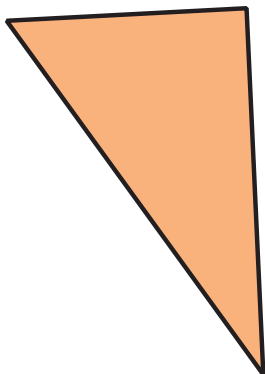
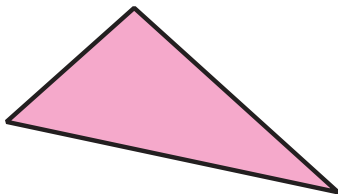
3 angles

3 straight sides



This is a triangle.

I know this is a triangle
because it is a flat shape
that has 3 straight
sides and 3 angles.



Rectangle

4 equal
angles

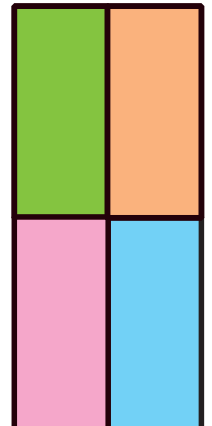


This is a rectangle.

4 straight
sides

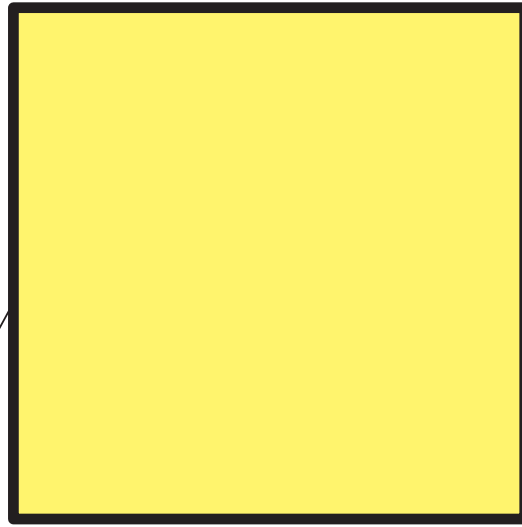


I know this is a rectangle
because it is a flat shape
that has 4 straight sides
and 4 equal angles.



Square

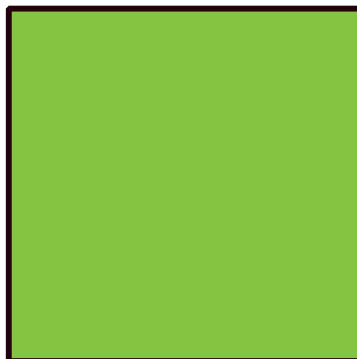
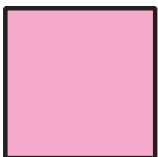
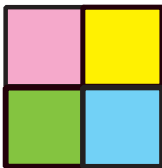
4 equal
angles



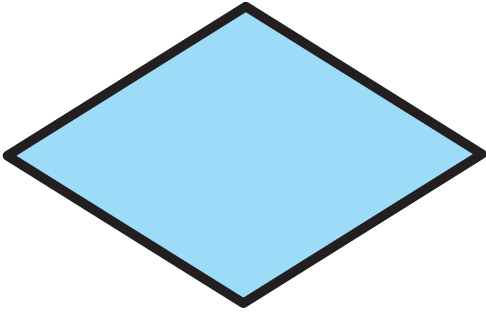
4 equal
straight sides

This is a square.

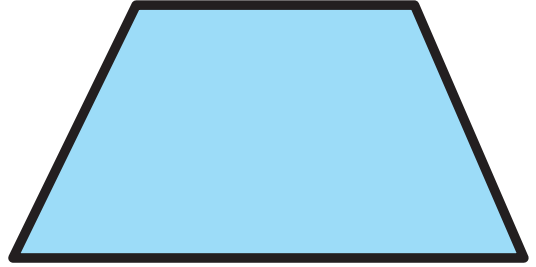
I know this is a square
because it is a special
kind of rectangle that
has 4 equal sides and
4 equal angles.



More Shapes

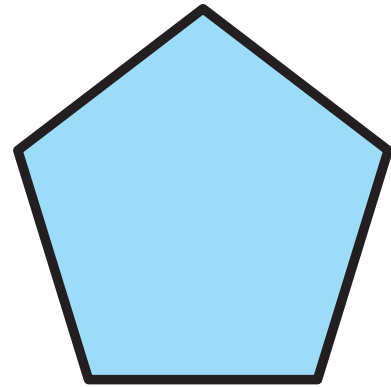


This is a rhombus.

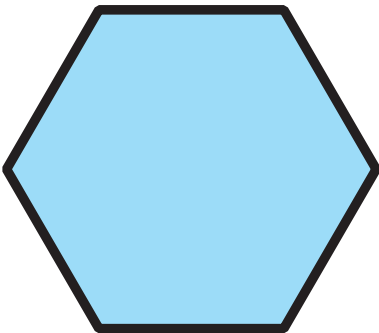


This is a trapezoid.

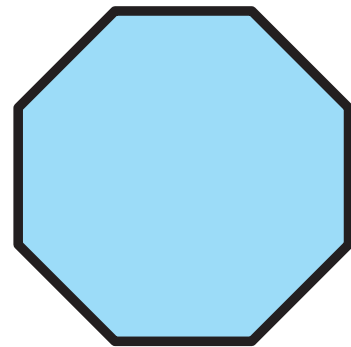
Wow! Look at
these other shapes.
Can you count the
number of sides
on each shape?



This is a pentagon.



This is a hexagon.



This is an octagon.

Three-Dimensional Shapes

Three-dimensional shapes are here
and they're there.

Three-dimensional shapes
are everywhere.



A ball is a sphere
that can roll all around.



A post is a cylinder
stuck in the ground.



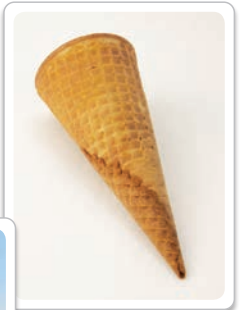
Cubes are blocks
or boxes square.



Rectangular prisms
reach to the air.



When you eat ice cream
you hold a cone.



The pyramids were built
of mud and stone.



Cube

Face
(flat surface)

6 square faces

Vertex
(corner)

8



Edge
(where 2 faces meet)

12

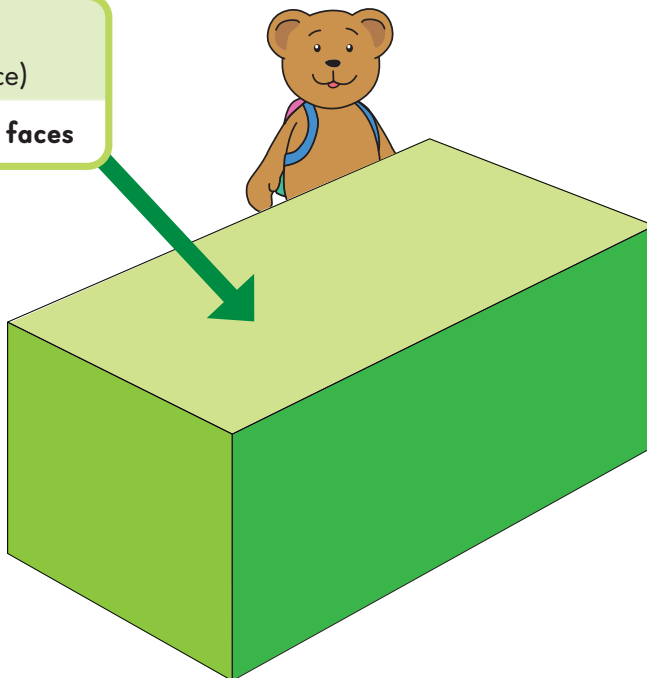
Rectangular Prism

Face
(flat surface)

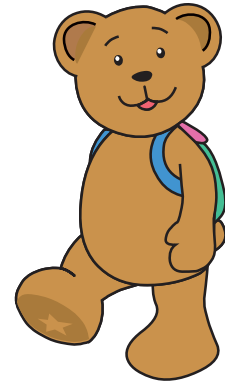
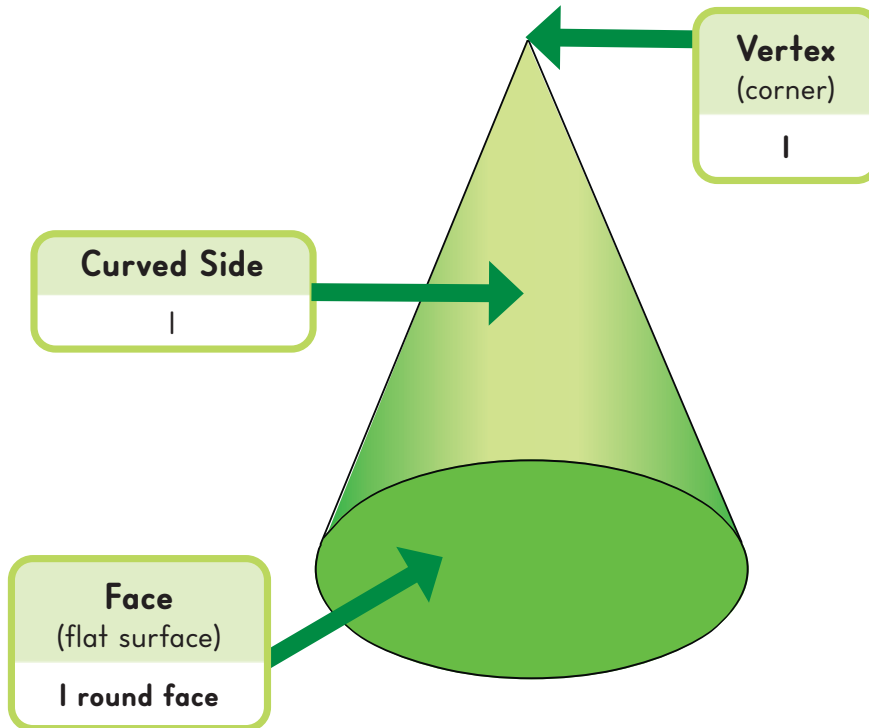
6 rectangular faces

Vertex
(corner)

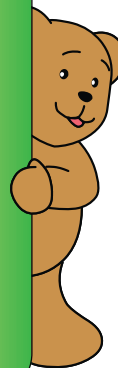
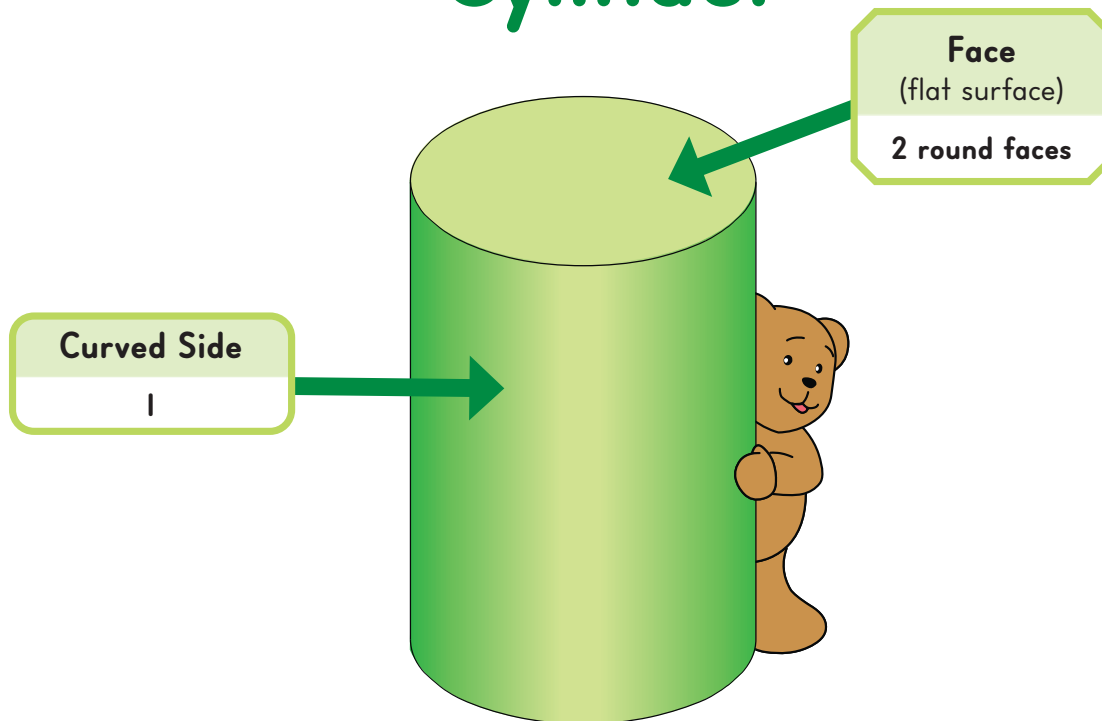
8



Cone

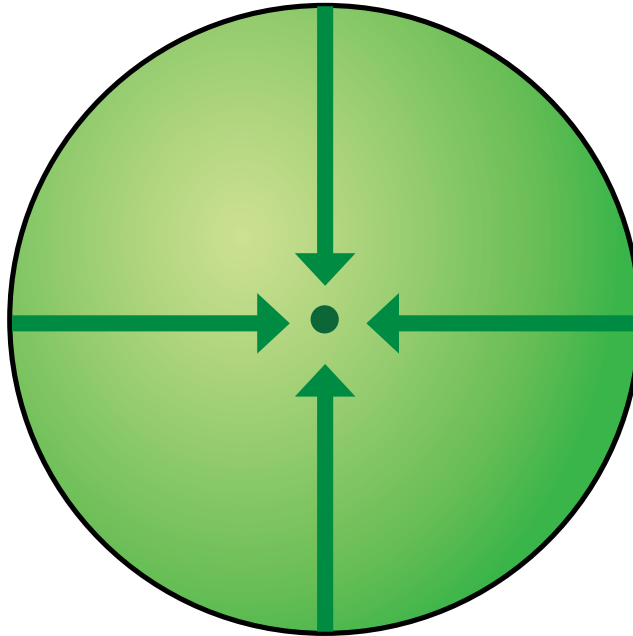


Cylinder



Sphere

No vertices!
No edges!



All points are the
same distance
from the center.

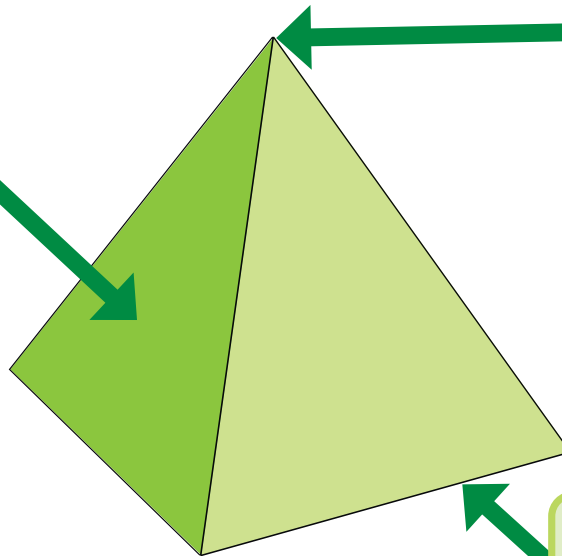
Pyramid

Face
(flat surface)

4 triangles
1 square

Vertex
(corner)

5



Edge
(where 2 faces meet)

8



1¢

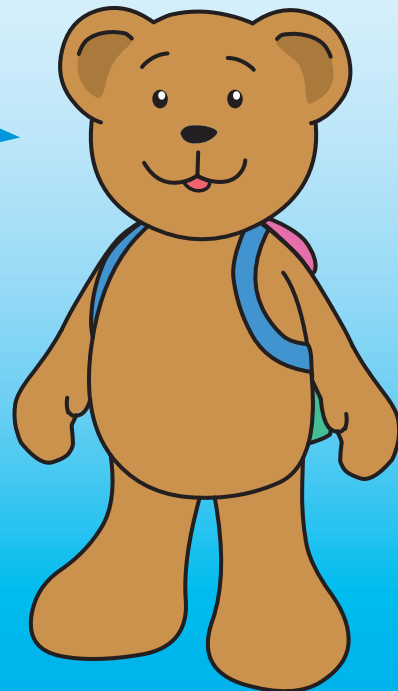


Penny, penny,
easily spent.
Copper brown,
and worth one cent!



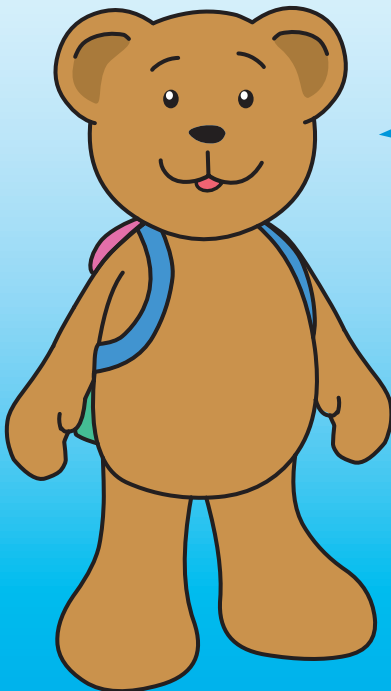
5¢

Nickel, nickel,
thick and fat.
You're worth five cents,
I know that!





10¢

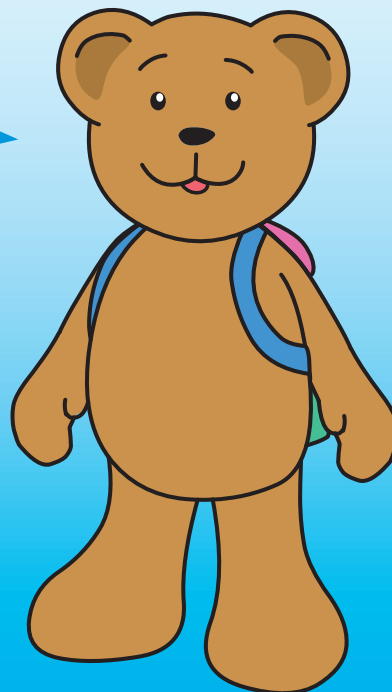


Dime, dime,
thin and small.
I know you're
worth ten in all!

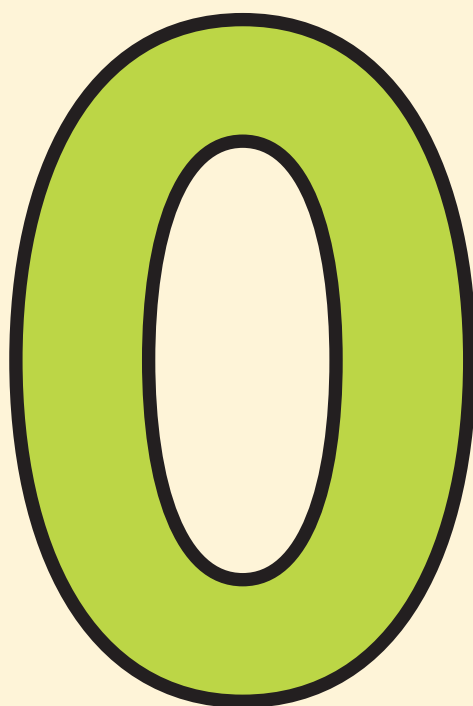
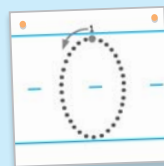


25¢

Quarter, quarter,
big and bold.
You're worth 25 cents
I am told!

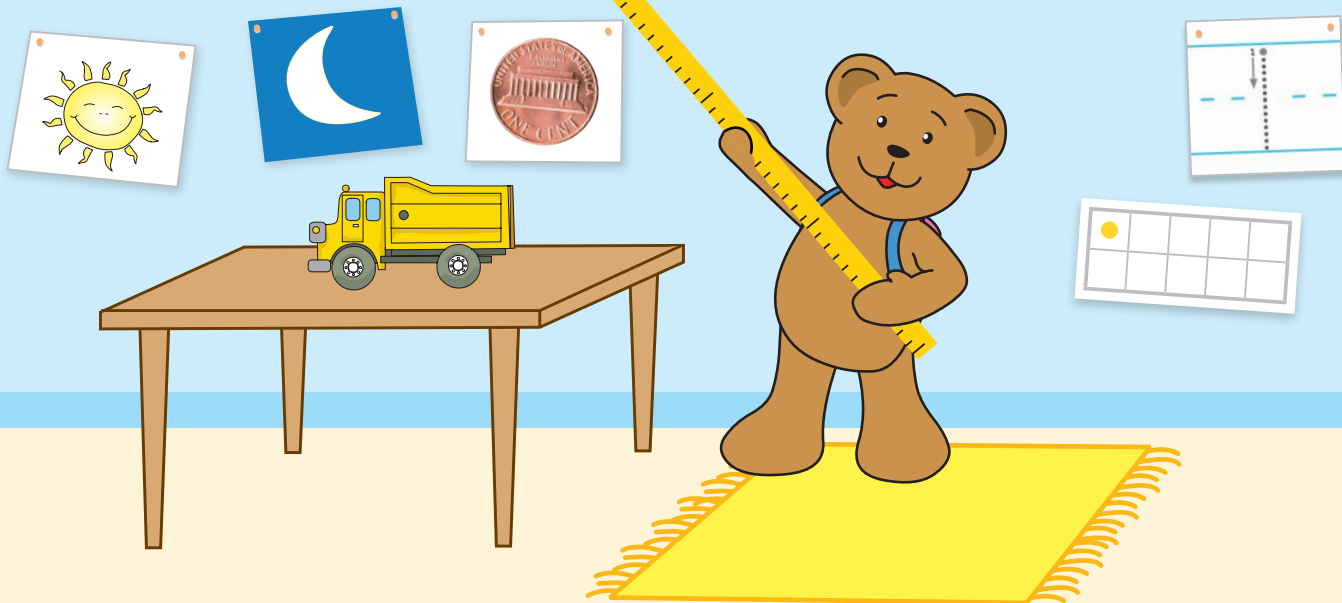


Zero



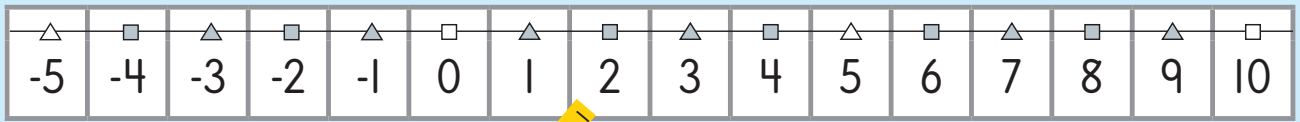
1

One



II

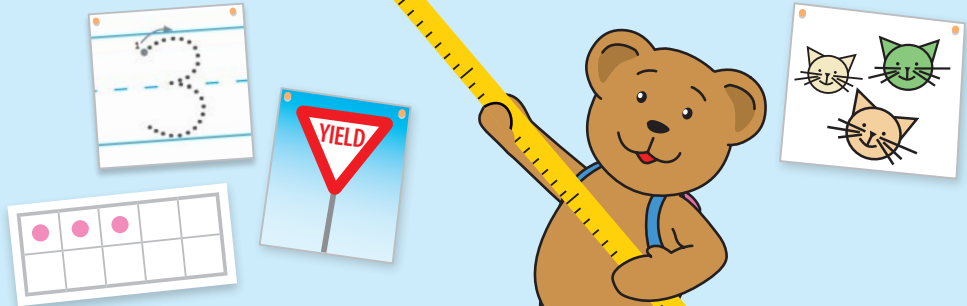
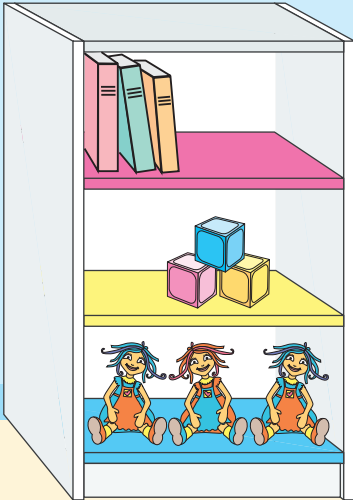
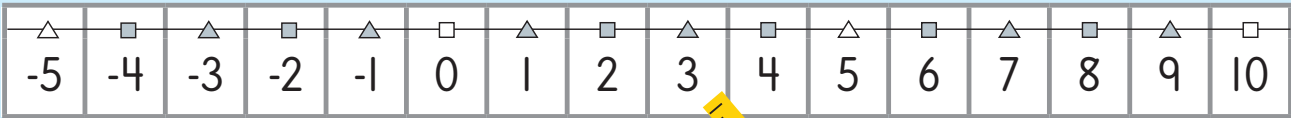
Two



2

III

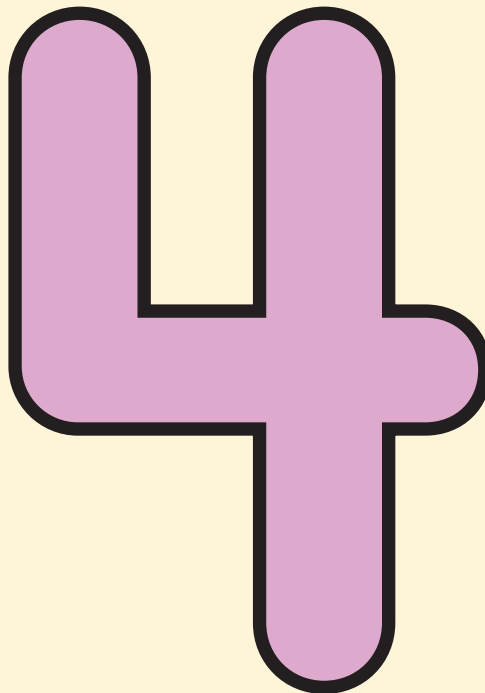
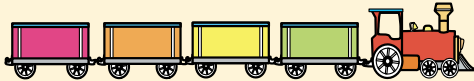
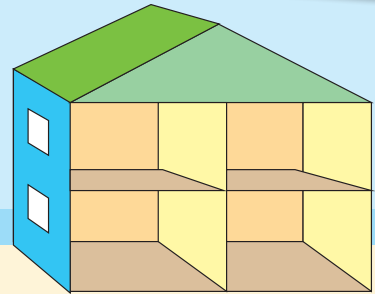
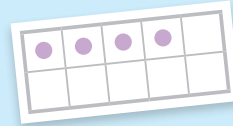
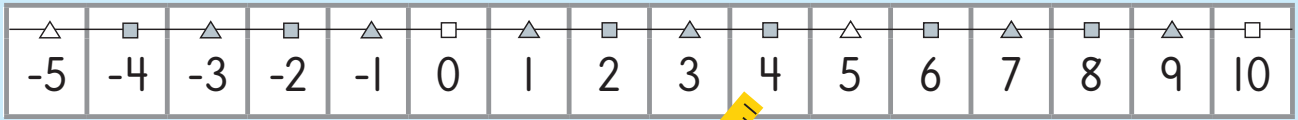
Three



3

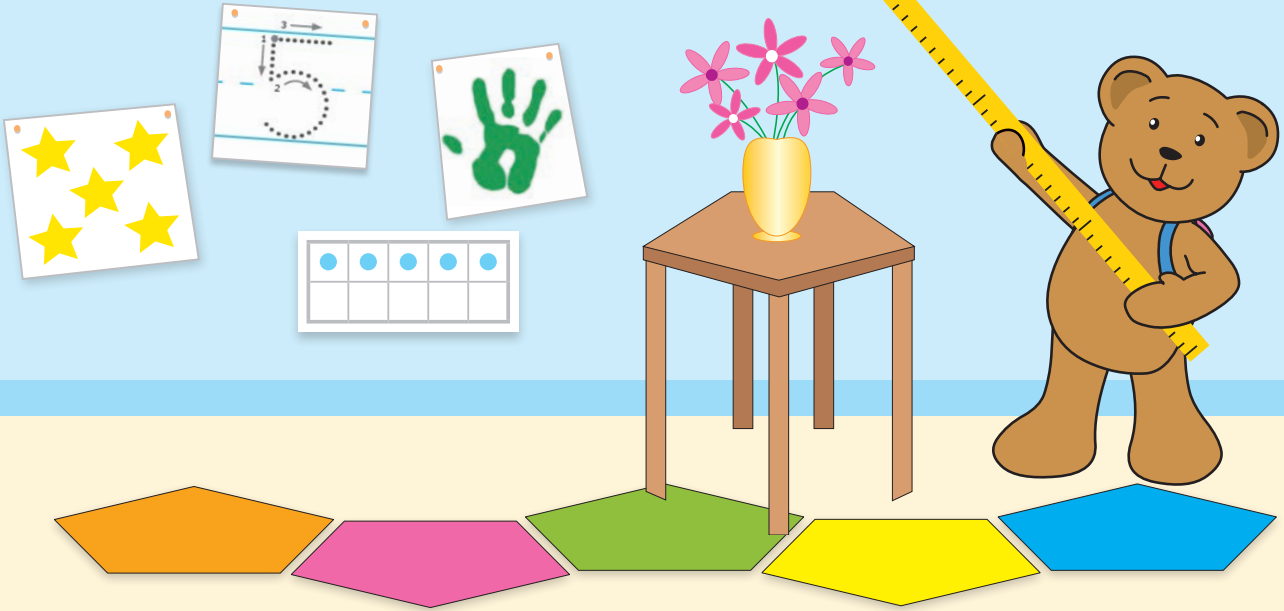
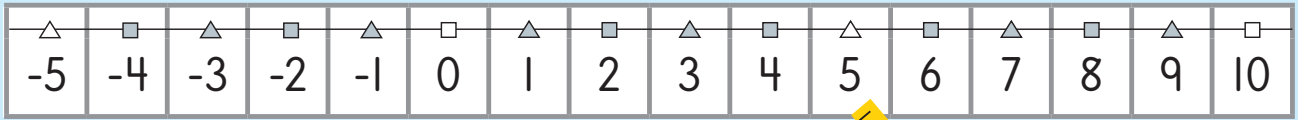
IIII

Four



|||||

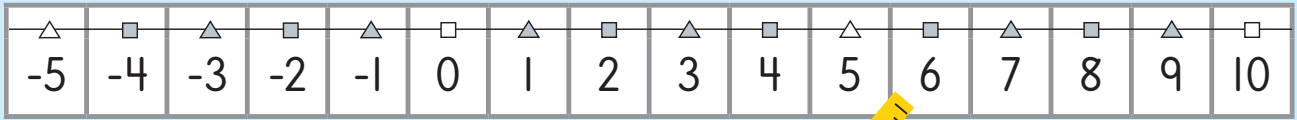
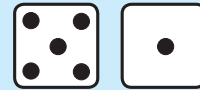
Five



5

||||| 1

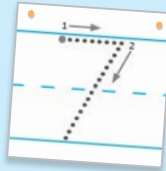
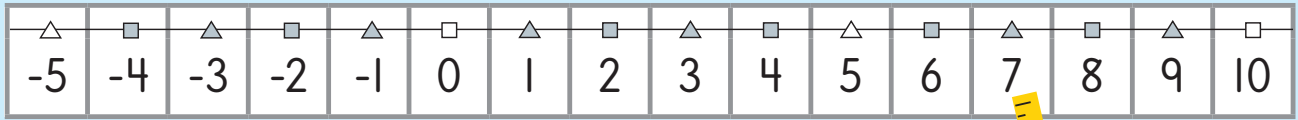
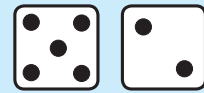
Six



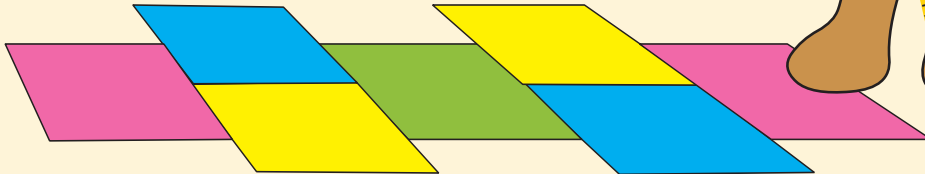
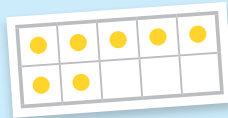
6

IIII II

Seven



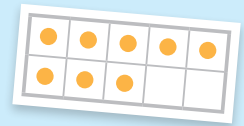
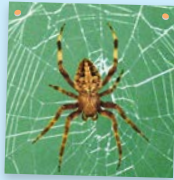
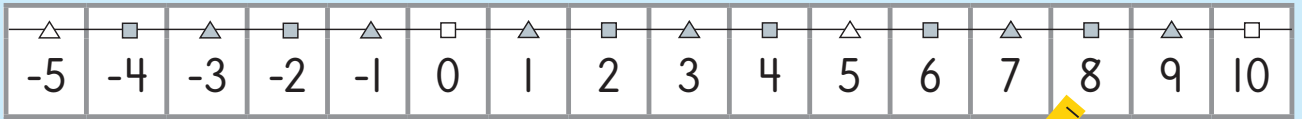
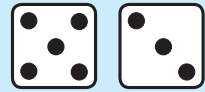
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1	2	3	4	5	6	
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			



7

IIII III

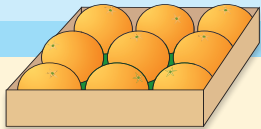
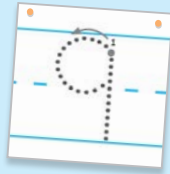
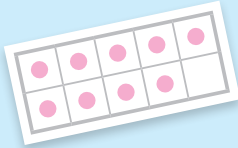
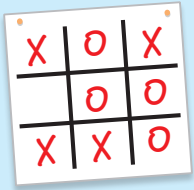
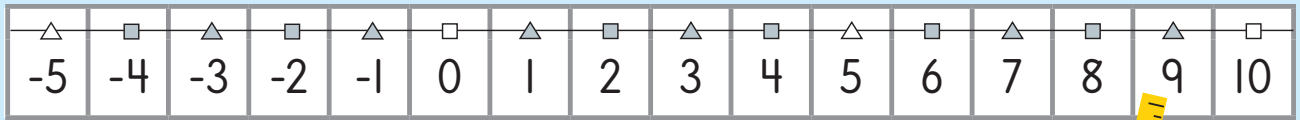
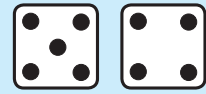
Eight



8

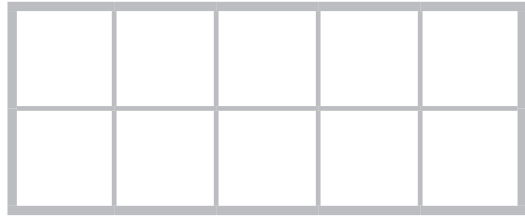
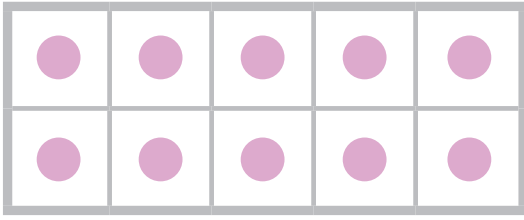
IIII IIII

Nine



9

Ten

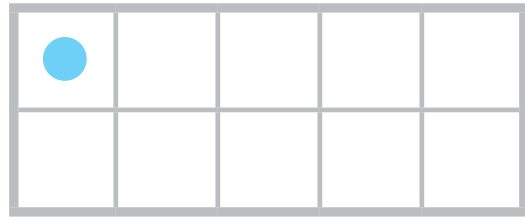
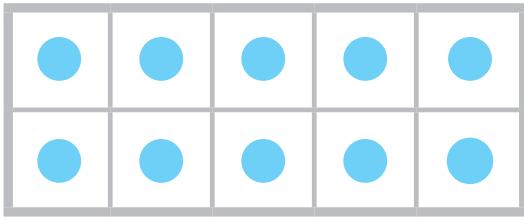


10

$$10 + 0 = 10$$



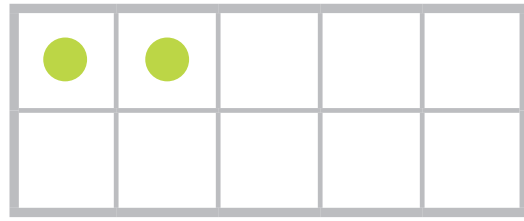
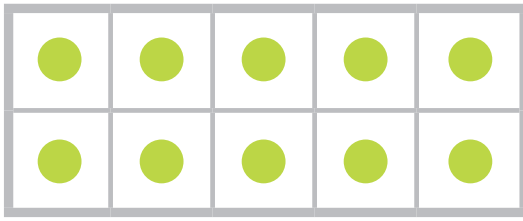
Eleven



$$10 + 1 = 11$$



Twelve

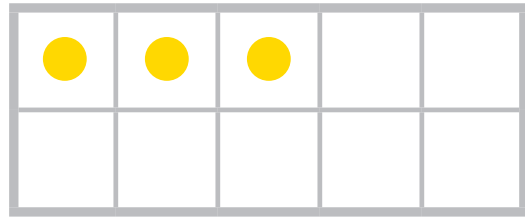
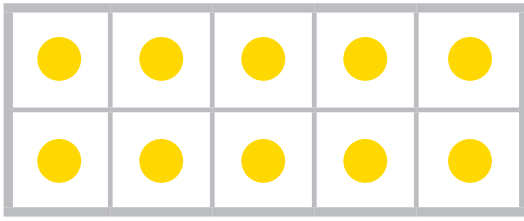


12

$$10 + 2 = 12$$



Thirteen

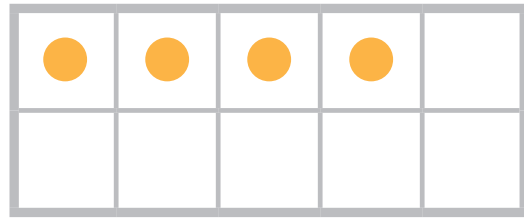
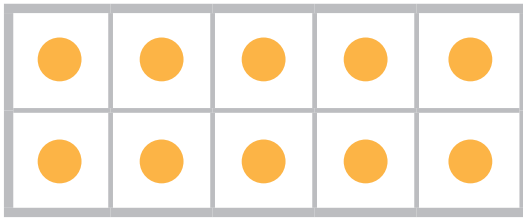


13

$$10 + 3 = 13$$



Fourteen

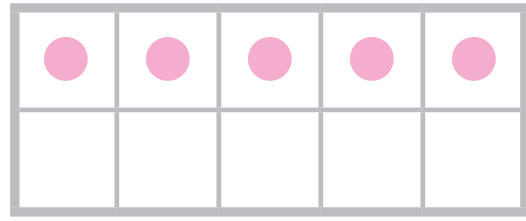
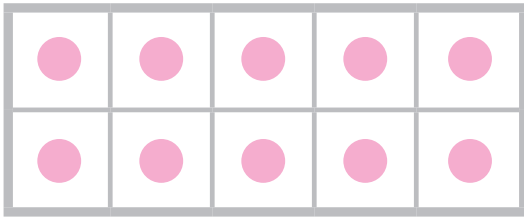


14

$$10 + 4 = 14$$



Fifteen

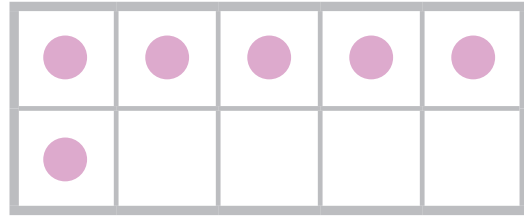
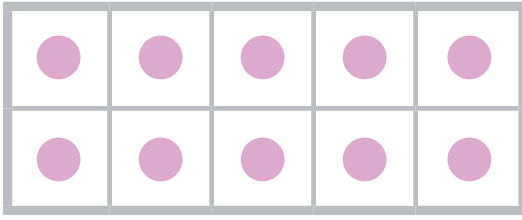


15

$$10 + 5 = 15$$

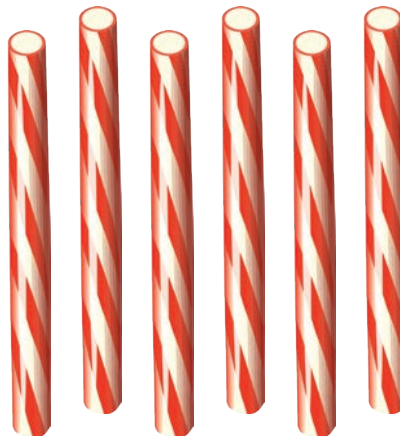


Sixteen

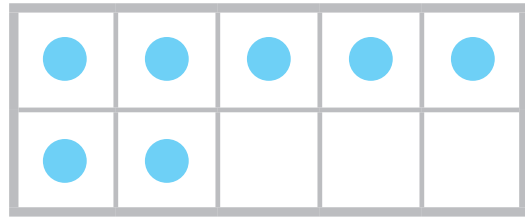
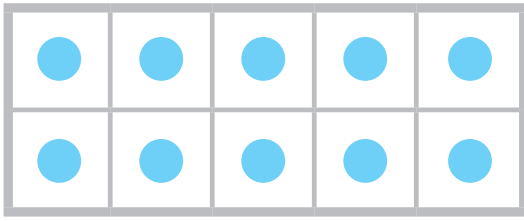


16

$$10 + 6 = 16$$

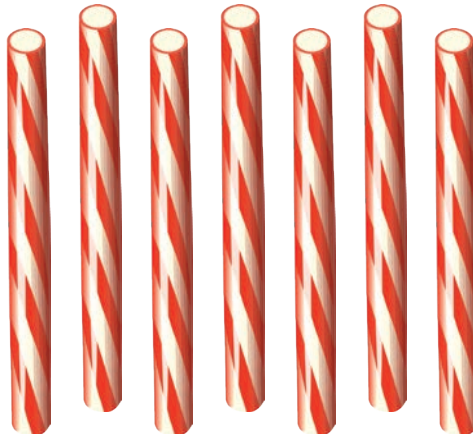


Seventeen

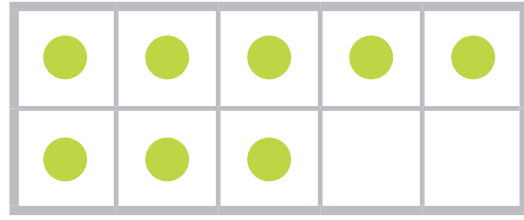
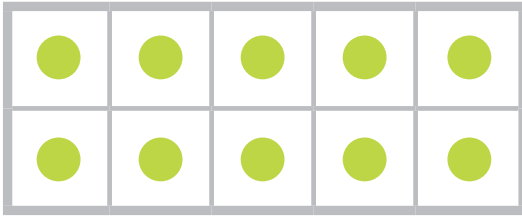


17

$$10 + 7 = 17$$

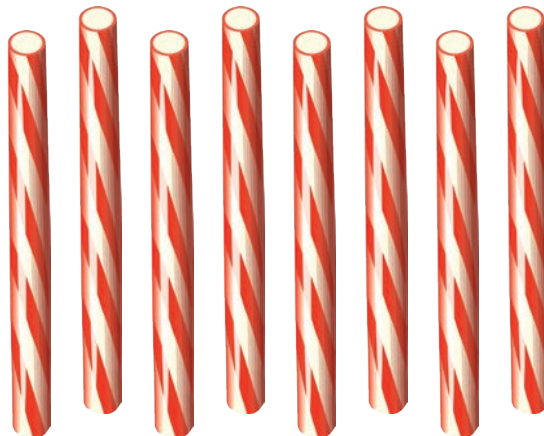


Eighteen

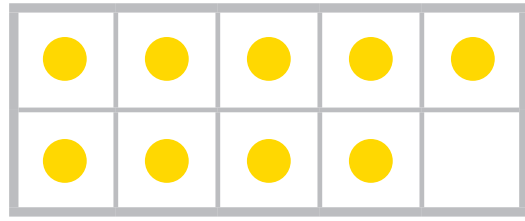
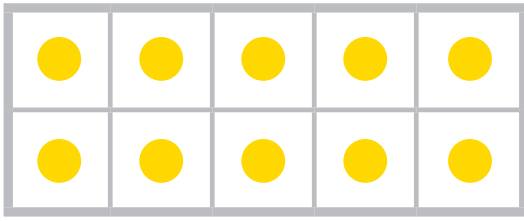


18

$$10 + 8 = 18$$

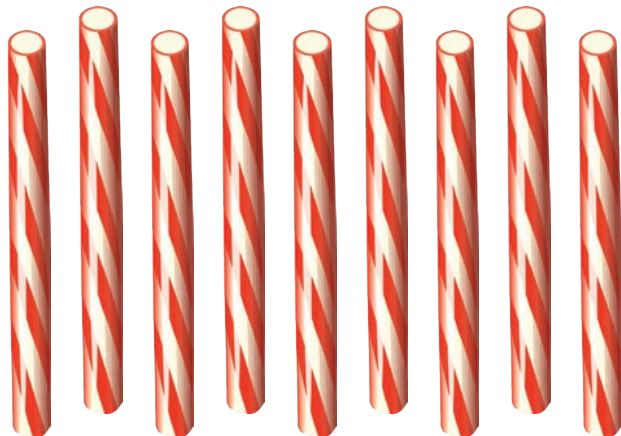


Nineteen

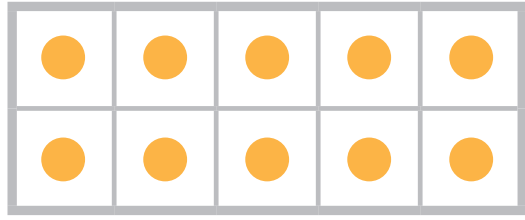
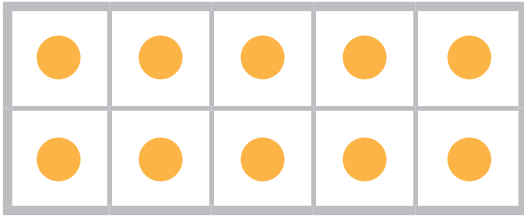


19

$$10 + 9 = 19$$

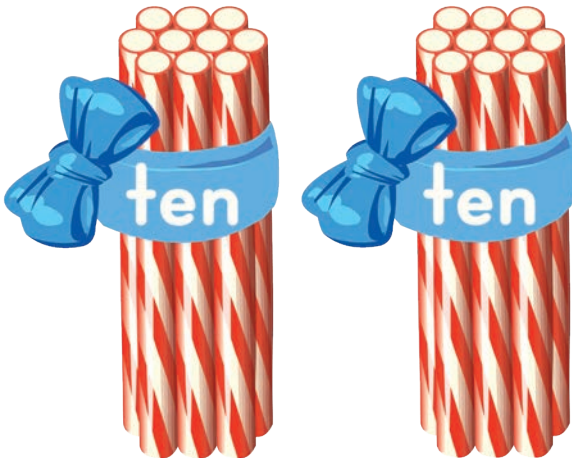


Twenty



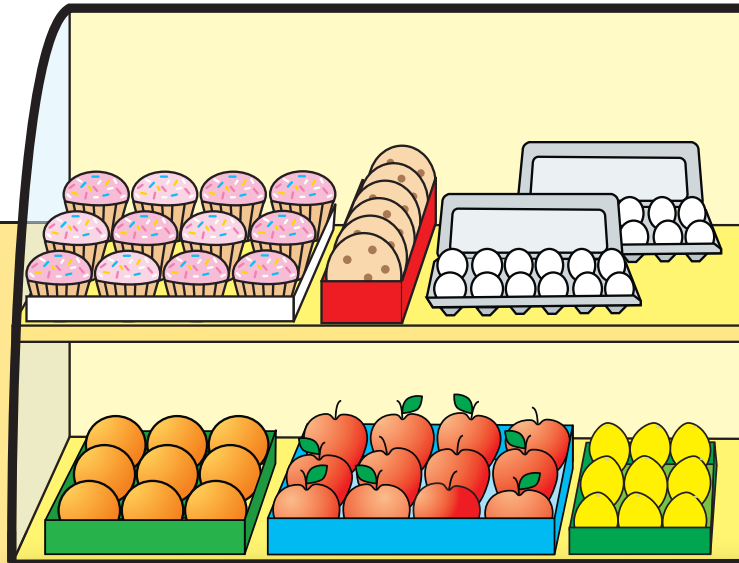
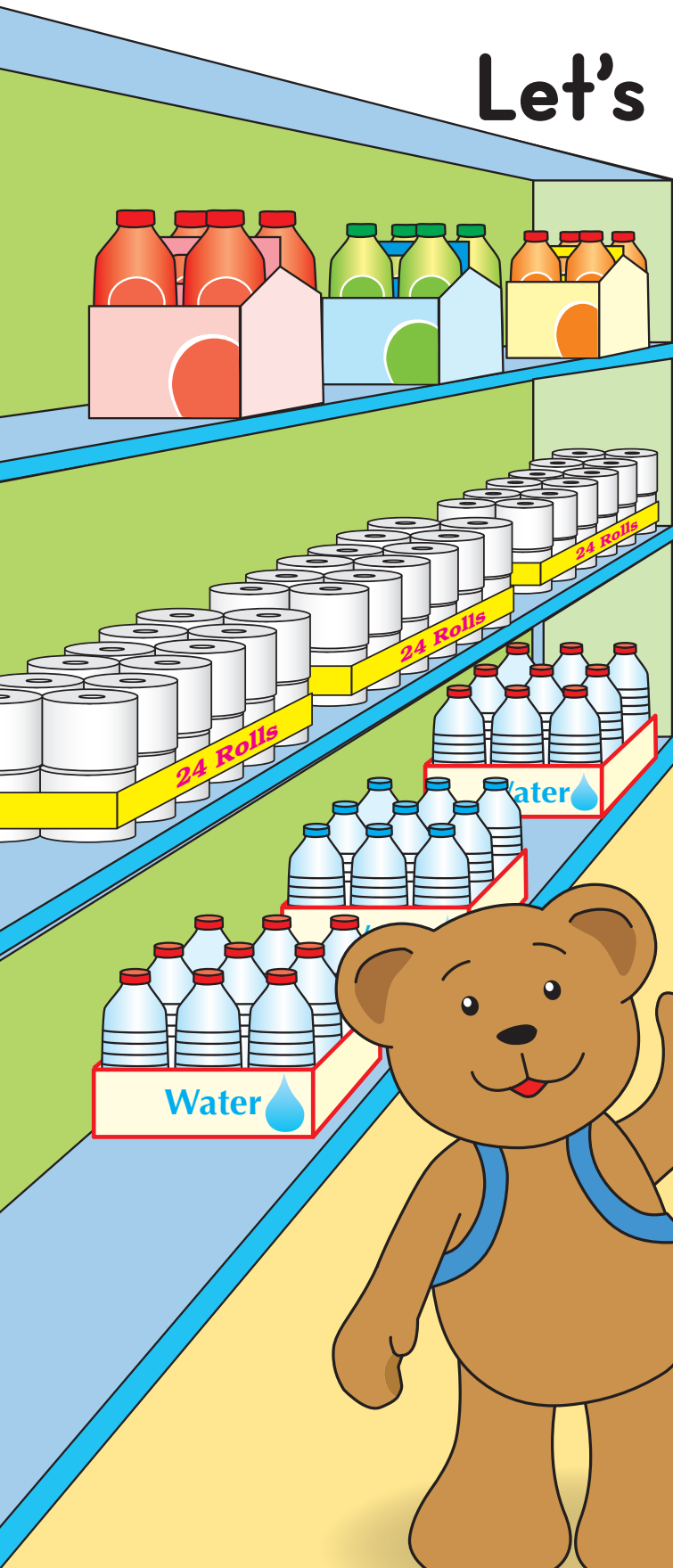
20

$$10 + 10 = 20$$



Let's Look for Arrays

Arrays are objects organized into equal groups.

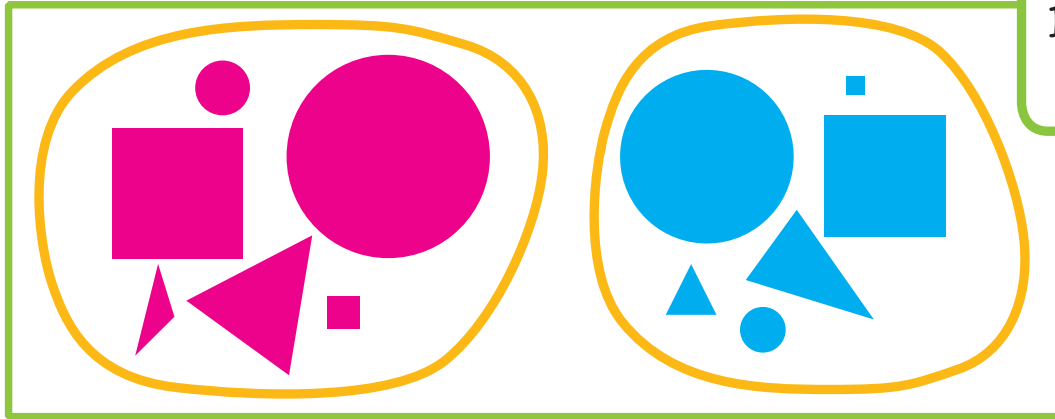
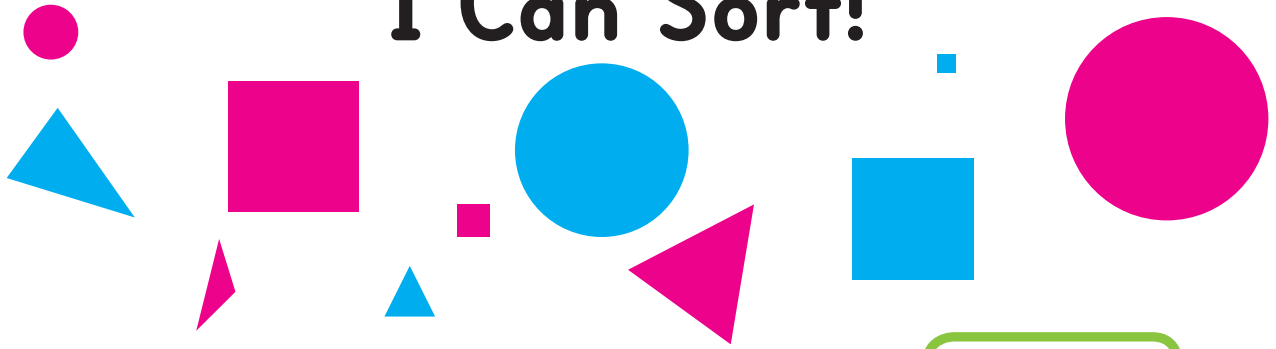


Arrays make it easy to count things.

Where Is Backpack Bear?



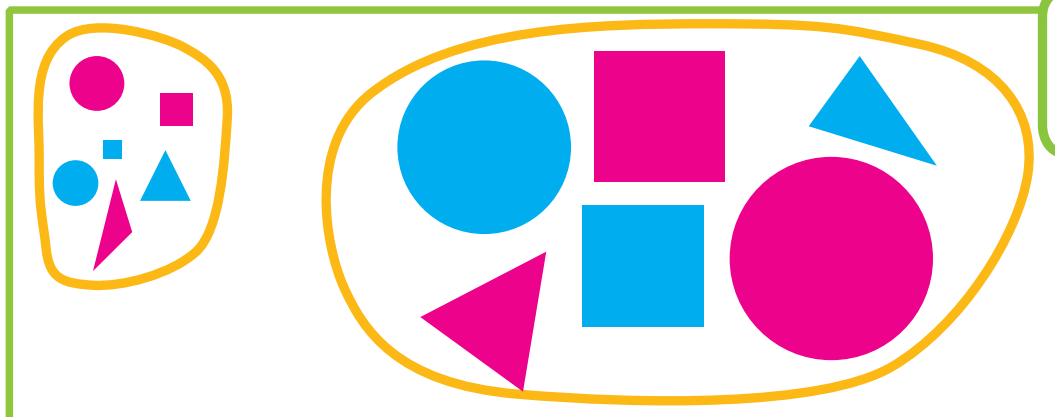
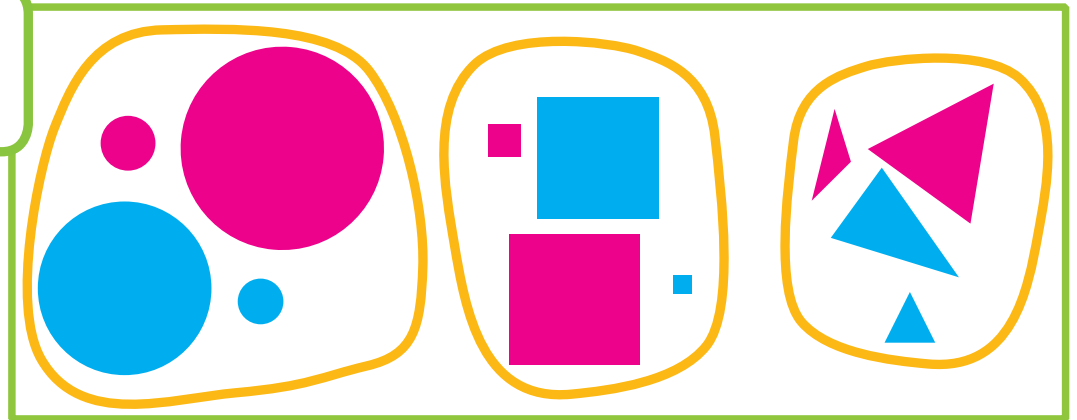
I Can Sort!



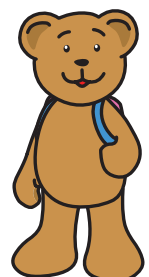
I can sort
by color.



I can sort
by shape.

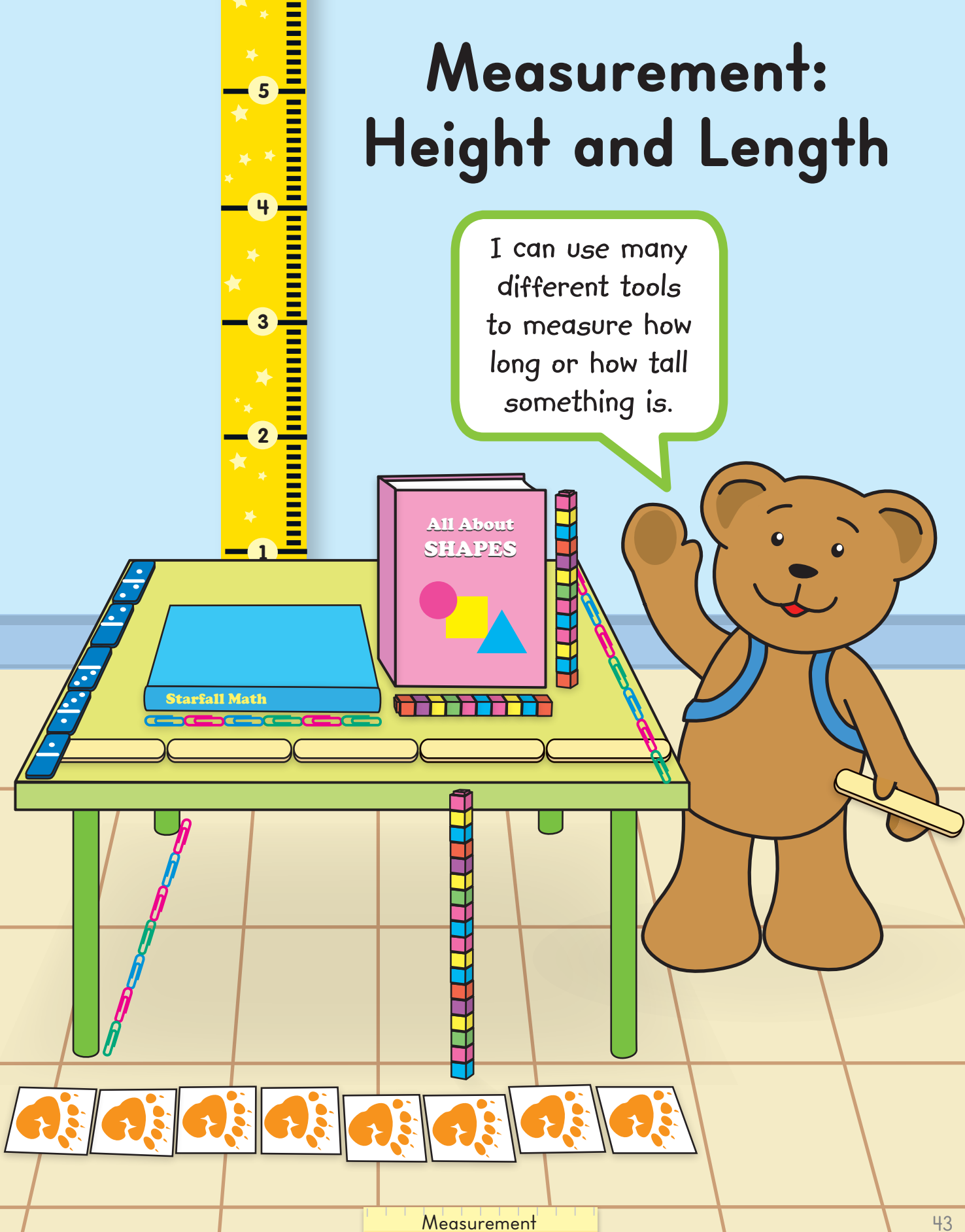


I can sort
by size.

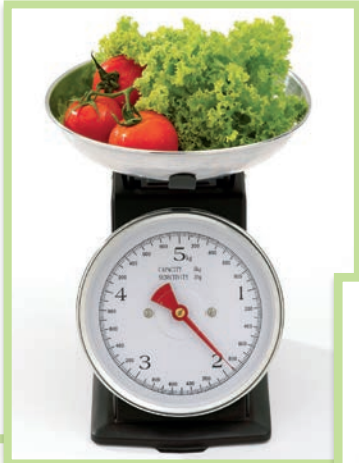


Measurement: Height and Length

I can use many
different tools
to measure how
long or how tall
something is.



Measurement: Capacity and Weight



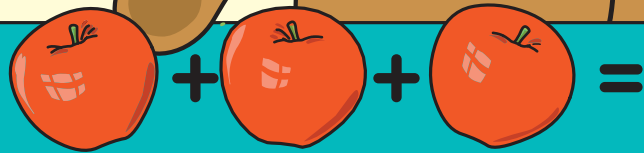
I can use many different tools
to measure how heavy or
how light something is, or how
much something will hold.



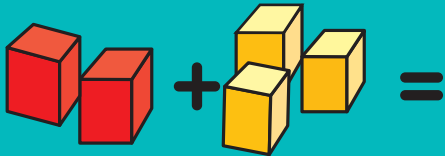
Plus



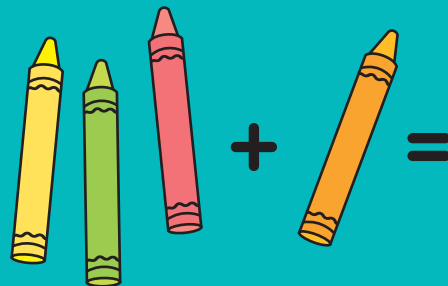
When I see a plus sign
I know just what to do—
I add up all the numbers and...
Find the total when I'm through!



$$1 + 1 + 1 = 3$$



$$2 + 3 = 5$$



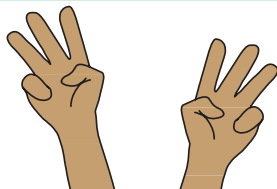
$$3 + 1 = 4$$

Strategies for Adding

I can...

1

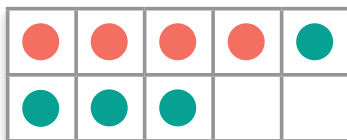
use my fingers



$$3 + 3 = 6$$

2

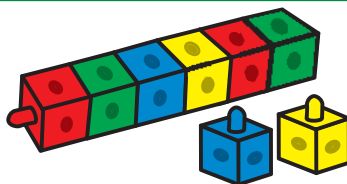
use a ten-frame



$$4 + 4 = 8$$

3

use counters



$$6 + 2 = 8$$

4

use the
number line



$$4 + 3 = 7$$

5

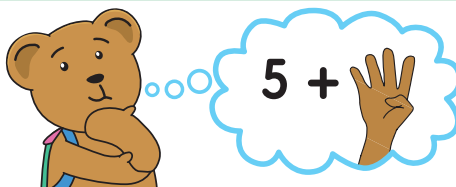
use tally marks



$$5 + 5 = 10$$

6

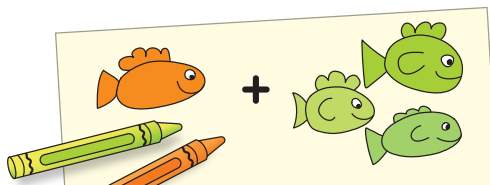
use my head
and count on



$$5 + 4 = 9$$

7

draw pictures



$$1 + 3 = 4$$

8

act it out



$$2 + 2 = 4$$

Minus



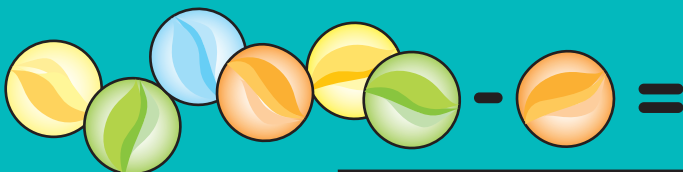
When I see a minus sign
Subtraction is the way—
Take the smaller from the larger
Subtract to save the day!



$$4 - 3 = 1$$



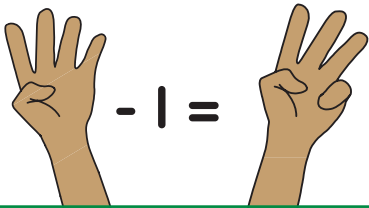
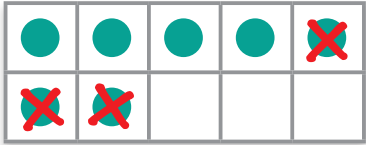

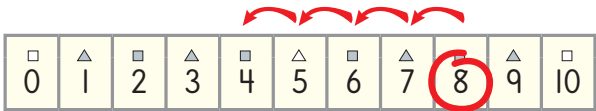


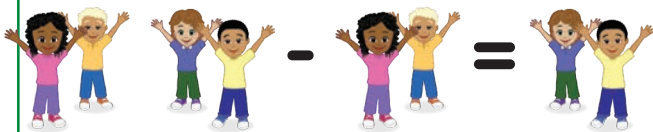
$$5 - 2 = 3$$



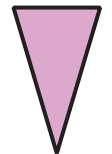
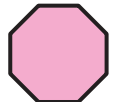
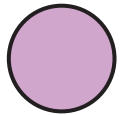
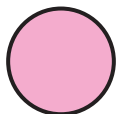
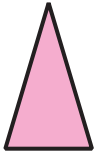
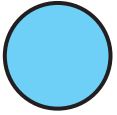
$$6 - 1 = 5$$

Strategies for Subtraction

I can...

1	use my fingers		$4 - 1 = 3$
2	use a ten-frame		$7 - 3 = 4$
3	use counters		$4 - 1 = 3$
4	use the number line		$8 - 4 = 4$
5	use my head and count backward		$9 - 4 = 5$
6	draw pictures		$5 - 2 = 3$
7	act it out		$4 - 2 = 2$

0 1 2 3 4 5 6 7 8 9




Math Dictionary



Dear Educators:

Our **Math Dictionary** pictures the concepts that young children will encounter as they explore mathematics. The labels are meant to be read by adults. This dictionary is not intended for use as part of your reading and language arts instruction.

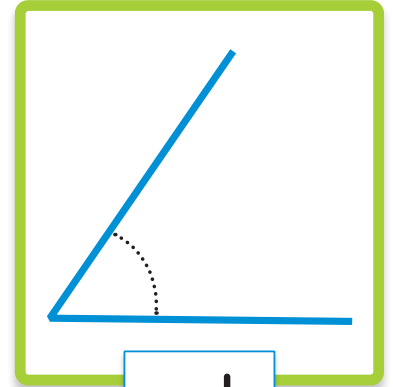
Aa


$$\text{apple} + \text{apple} = ?$$

addition



above



angle

Bb



beneath

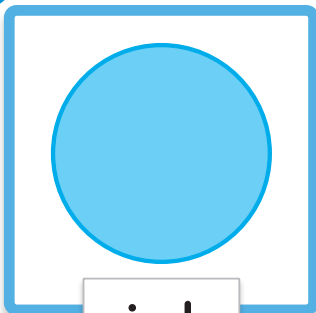


between



beside

Cc



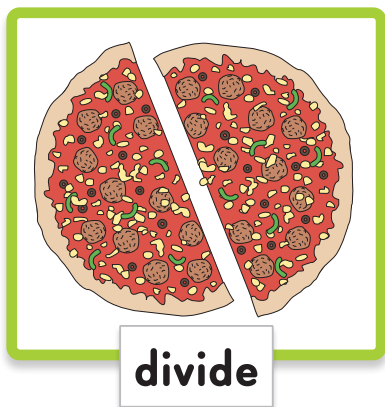
circle



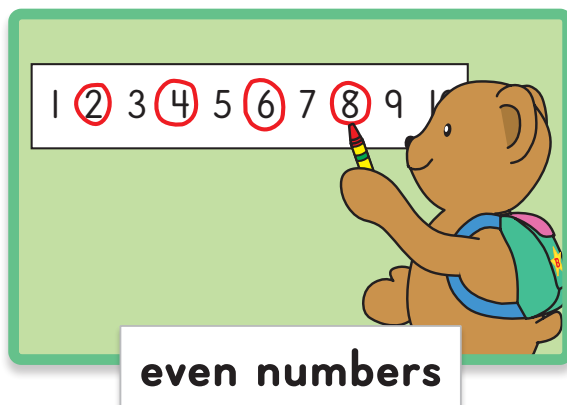
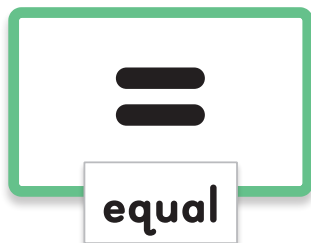
cone



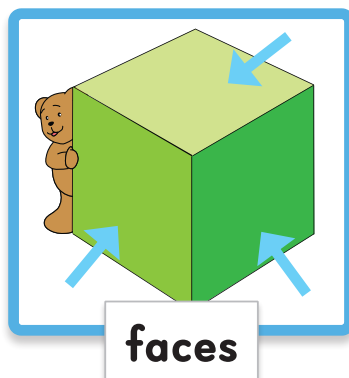
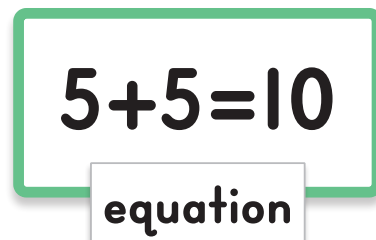
cylinder



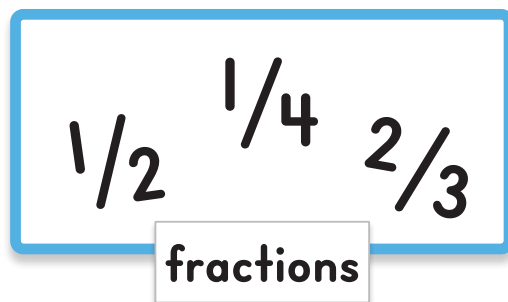
Dd



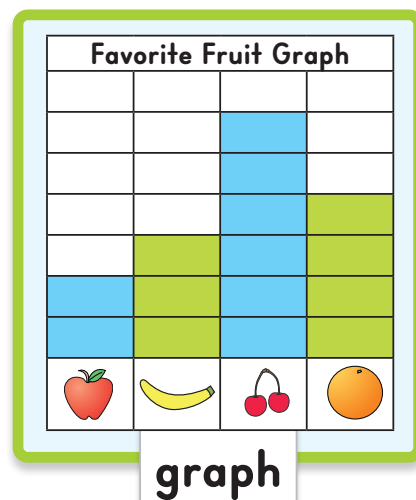
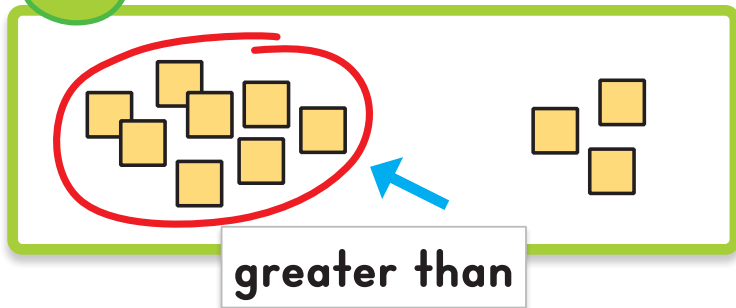
Ee



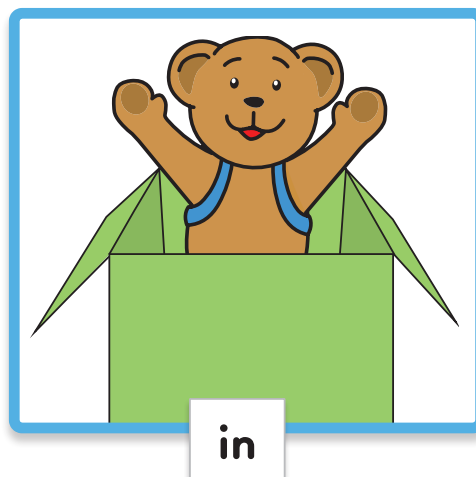
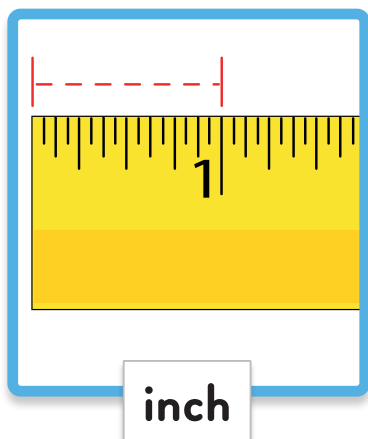
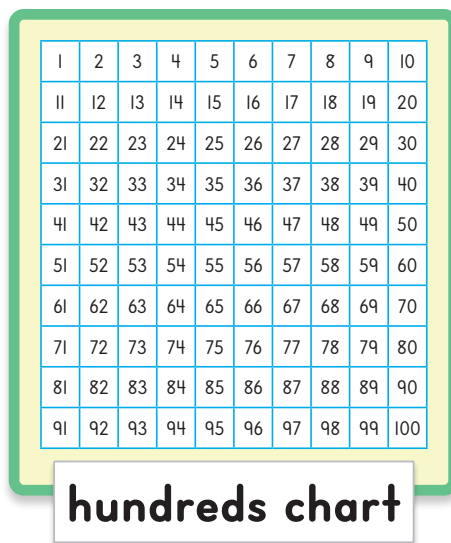
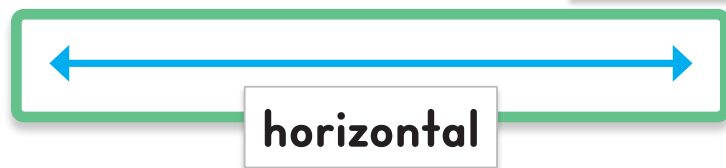
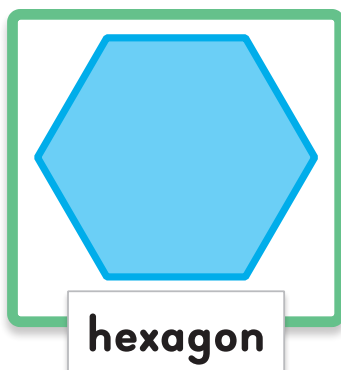
Ff



Gg

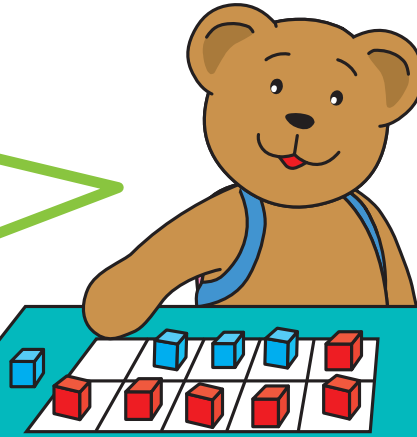


Н н



$$6+4=10$$

I know this is
true because...



justify your answer

Jj

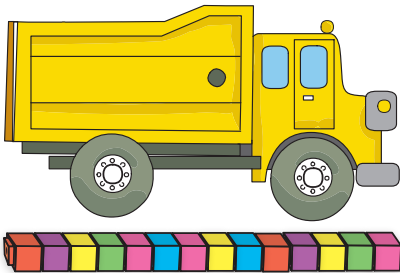
$$6-2=4$$

$$2+3=5$$



Kindergarten Mathematician

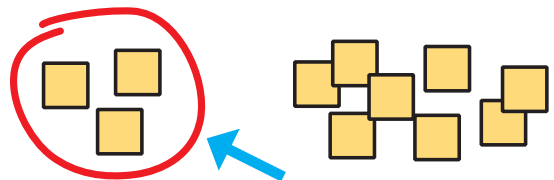
Kk



length

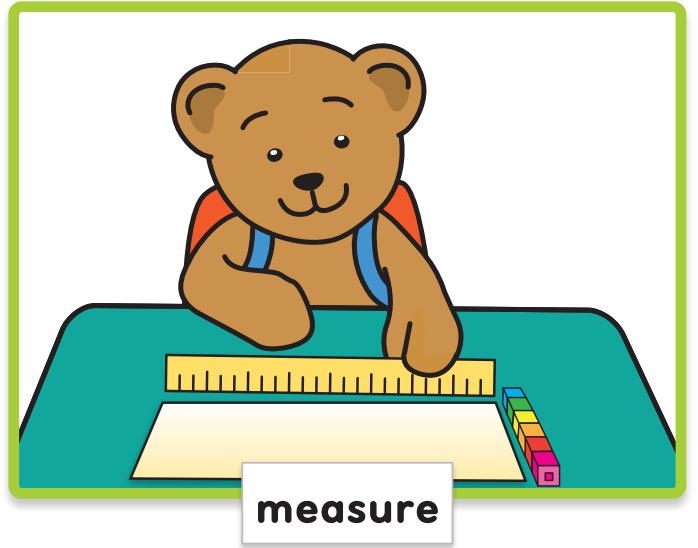
line

Ll

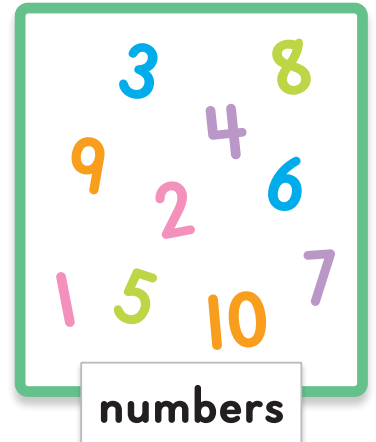
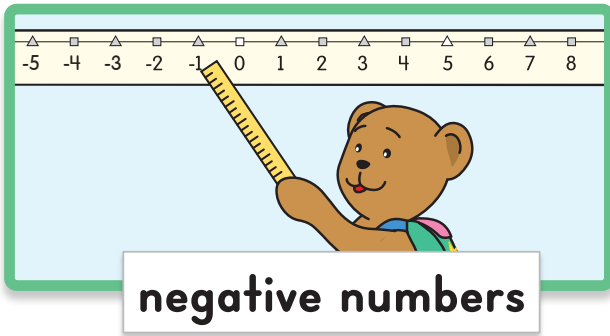


less than

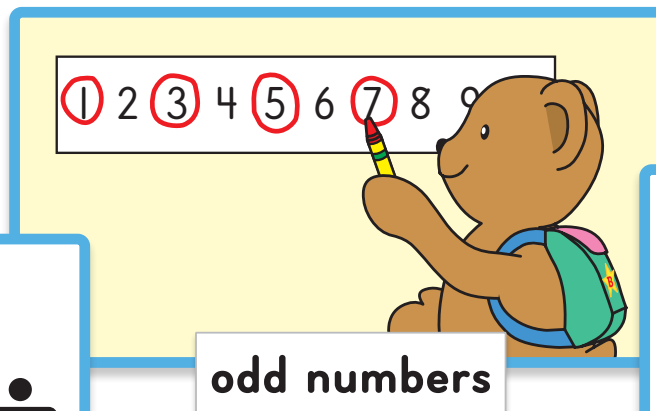
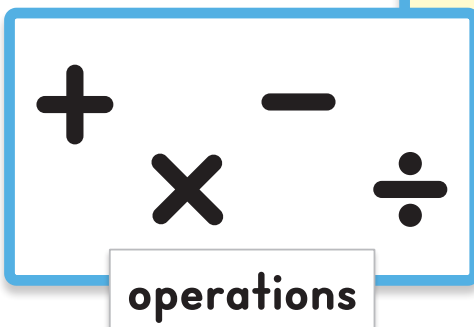
Mm



Nn



Oo

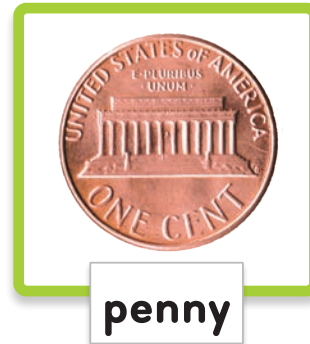




pyramid



pentagon

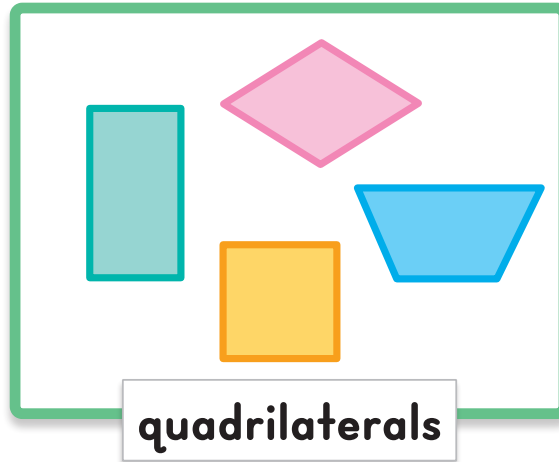


penny

Pp

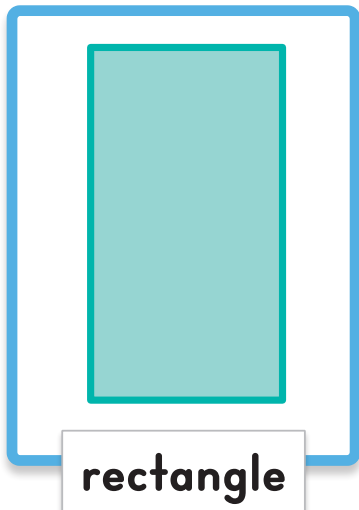


quarter



quadrilaterals

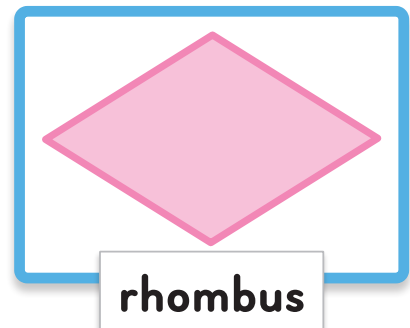
Qq



rectangle



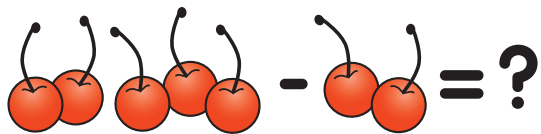
rectangular
prism



rhombus

Rr

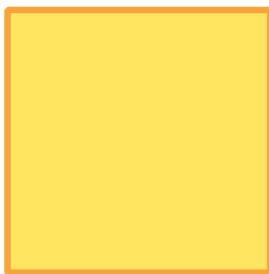
Ss



subtraction

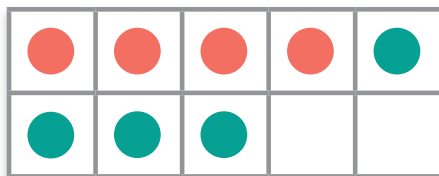


sphere



square

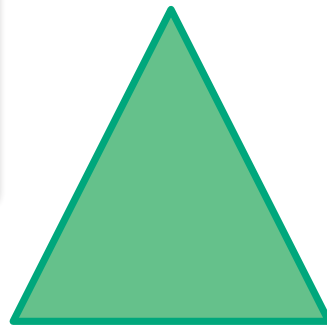
Tt



ten-frame



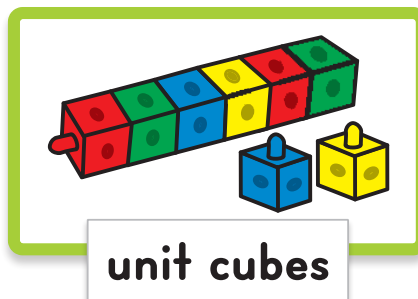
trapezoid



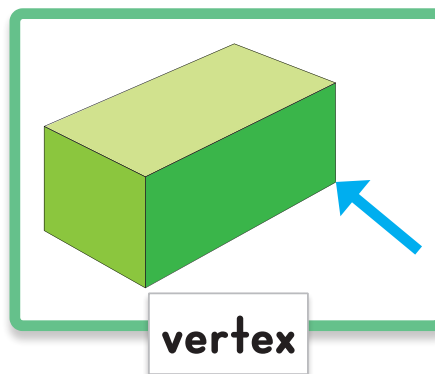
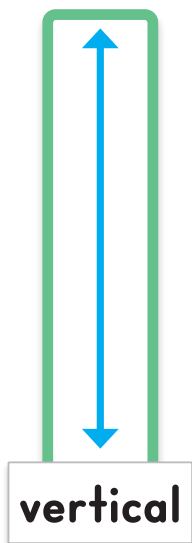
triangle



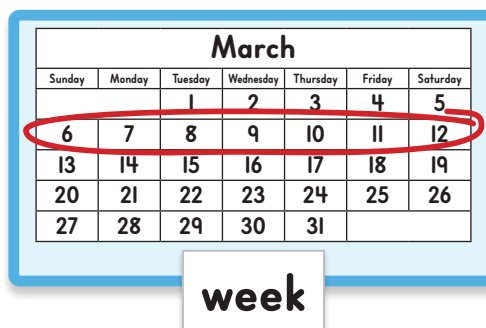
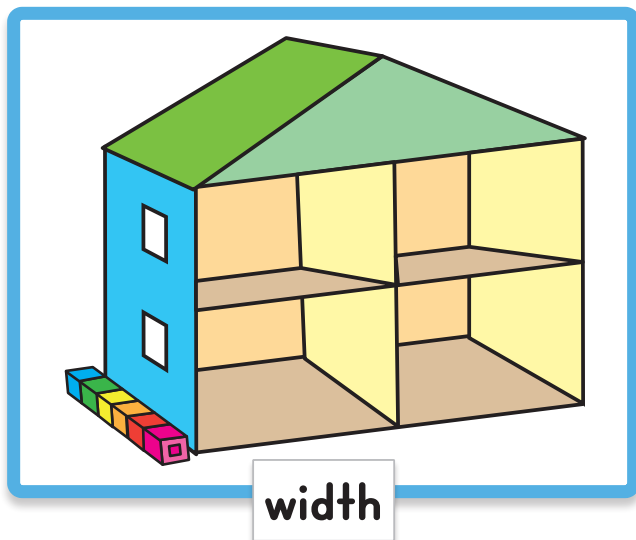
tally marks



U u



V v



W w

Xx



X-cellent
Problem Solver

8 ? 7
4 ?



$$5 + 2 = X$$

$$X =$$

Solve for X

Yy



yard



year

Zz

0

zero