



Young Innovators

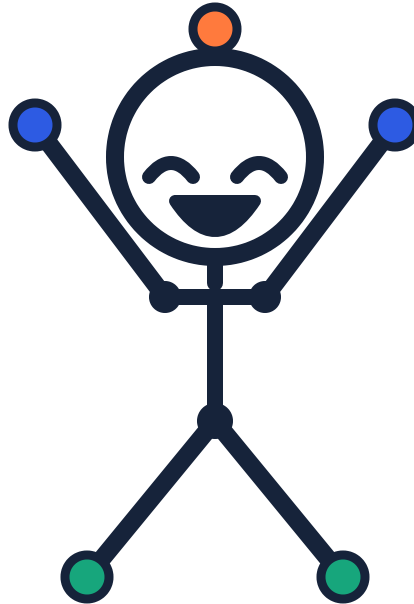
FOR CHANGE

innovateyouth.org

A FULL-YEAR ENRICHMENT PROGRAM • GRADE 1

What Goes Together

36 weekly assignments, sorting, matching, patterns,
and the reason things *belong together*



This book belongs to

Teacher

School year

One assignment a week • two pages, front and back • about 20 to 30 minutes
Built to sit alongside the California Grade 1 math curriculum, not to replace it.

How This Book Works

A grown-up should read this page out loud before Week 1.



Hi. I am Pip.

I am made of **dots** and **lines**. In Week 20 you will draw dots and lines too, and they will be people at a table.

One assignment a week, two pages

Page 1 has a note for the teacher about what the class is doing this week, a two-minute **Number Warm-Up**, then **one big sentence** saying what to do, then the picture to do it on.

Page 2 has more to try, a **Talk About It** question to answer out loud, a hint, and a ★ **Challenge Zone**.

Read the big sentence out loud

This book is for six-year-olds, and in September many of them cannot read it yet. That is expected and it is designed for. Every page has exactly **one** sentence that states the task, and the picture underneath it is the task. Read the sentence out loud, point at the picture, and most children will take it from there.

Three rules for this book

1. Guessing and checking is allowed. Real mathematicians do it.
2. If you are stuck, say the problem out loud to somebody.
3. Some pages have **more than one right answer**. Finding a second one is better than finding the first one fast.

For the grown-up helping

The best question you can ask is not “is that right?” but “**how do you know?**” This whole year is about being able to say the reason two things go together, and a child who can point at the reason has done the work, even when the answer is wrong. The teacher guide has a line to say out loud for every week.

The Year at a Glance

Weeks 1–18. The last column is what the class is usually doing that week.

WK	ASSIGNMENT	STRAND	IN CLASS THIS WEEK
TRIMESTER 1 · WEEKS 1–12			
1	One Pile or the Other	Sorting & Rules	Sorting and describing objects
2	What Is the Same?	Sorting & Rules	Comparing objects
3	What Is Different?	Sorting & Rules	Comparing objects
4	Does It Belong?	Sorting & Rules	Sorting into categories (1.MD.4)
5	Sort It Two Ways	Sorting & Rules	Sorting into categories (1.MD.4)
6	One for Each	Matching	Counting and one-to-one (1.OA.1)
7	More, Fewer, or Same	Matching	Comparing numbers (1.NBT.3)
8	Which Row Ran Out?	Matching	Comparing numbers (1.NBT.3)
9	What Comes Next?	Patterns	Patterns and reasoning
10	Find the Part That Repeats	Patterns	Patterns and reasoning
11	It Grows	Patterns	Counting on (1.OA.5)
12	Sorting Fair	Sorting & Rules	Review & reasoning
TRIMESTER 2 · WEEKS 13–24			
13	Line Them Up	Order & Time	Ordering by length (1.MD.1)
14	Longer Than the Pencil	Order & Time	Indirect comparison (1.MD.2)
15	How Many Paper Clips?	Order & Time	Length units (1.MD.2)
16	Sort the Shapes	Shape & Space	Shape attributes (1.G.1)
17	What Makes It a Triangle?	Shape & Space	Defining attributes (1.G.1)
18	Two Shapes Make One	Shape & Space	Composing shapes (1.G.2)

The Year at a Glance

Weeks 19–36. The last column is what the class is usually doing that week.

WK	ASSIGNMENT	STRAND	IN CLASS THIS WEEK
19	Cut It Fair	Shape & Space	Halves and fourths (1.G.3)
20	Around the Table	Dots & Lines	Adding within 20 (1.OA.6)
21	Everybody Waves	Dots & Lines	Adding within 20 (1.OA.6)
22	Do Not Touch the Same Color	Dots & Lines	Shape attributes (1.G.1)
23	Three Buckets	Pictures & Data	Organizing data (1.MD.4)
24	Which Bucket Has More?	Pictures & Data	Interpreting data (1.MD.4)
TRIMESTER 3 · WEEKS 25–36			
25	Getting There	Steps & Paths	Adding within 20 (1.OA.6)
26	The Short Way	Steps & Paths	Comparing sums (1.OA.1)
27	Follow the Arrows	Steps & Paths	Adding and subtracting (1.OA.1)
28	Write the Arrows	Steps & Paths	Missing addends (1.OA.8)
29	A Ten and Some More	Numbers & Tens	Tens and ones (1.NBT.2)
30	Ten More, Ten Less	Numbers & Tens	Ten more, ten less (1.NBT.5)
31	Rows of Ten	Numbers & Tens	Counting to 120 (1.NBT.1)
32	Every Way to Make 6	Ways of Counting	Making 6 (1.OA.6)
33	Two Hats, Two Scarves	Ways of Counting	Counting combinations (1.OA.6)
34	Three Friends, Two Chairs	Ways of Counting	Counting combinations (1.OA.6)
35	First, Next, Last	Order & Time	Time to the hour (1.MD.3)
36	The Last Sort	Sorting & Rules	Review & reasoning

One Pile or the Other

The rule is given. Every object goes in exactly one pile, and none is left over.

IN CLASS THIS WEEK

Sorting and describing objects

NUMBER WARM-UP · 2 MINUTES

Count out loud to 20, then back down to 0.

Put every shape in one pile or the other.



Round



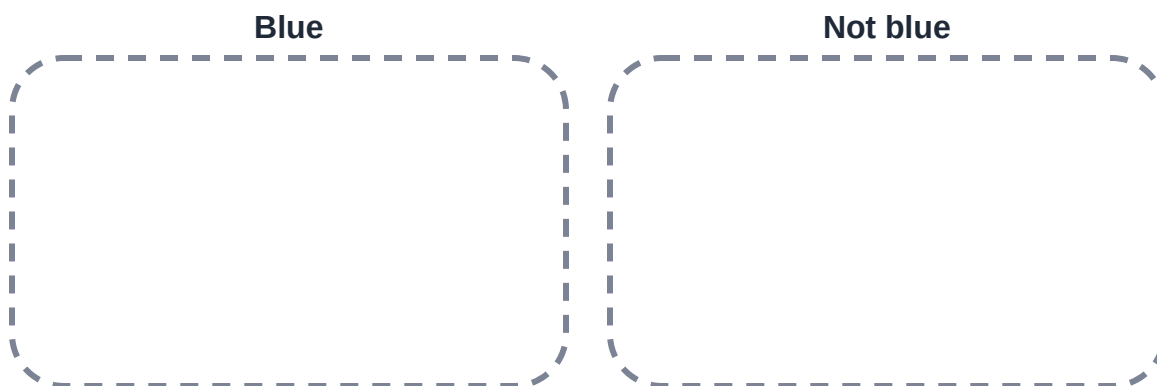
Not round



ROOM TO DRAW

More to try

Sort the same eight shapes again, with a new rule.



1. How many went in the first hoop?
2. How many went in the other one?
3. Did every shape find a home?

 TALK ABOUT IT

Every shape had to go somewhere. Was there one that was hard to place?
Could a shape ever go in both hoops at once?

**STUCK? TRY THIS**

Touch each shape once, and say the hoop out loud before you draw it.

★ CHALLENGE ZONE

Sort them by **round or not round** and by **blue or not blue** at the same time. How many hoops do you need now?

What Is the Same?

Naming a shared attribute out loud. The answer is a sentence, not a word.

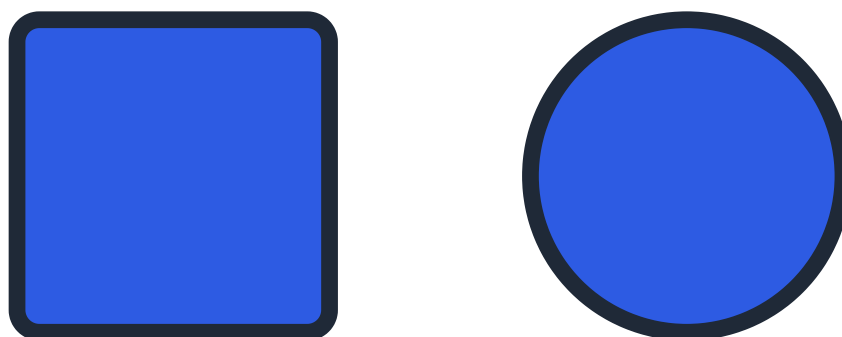
IN CLASS THIS WEEK

Comparing objects

NUMBER WARM-UP · 2 MINUTES

Say the numbers from 10 to 20.

Say one way these two are the same.



Write it

They are both _____.

ROOM TO DRAW

More to try

They are both _____.



They are both _____.

 TALK ABOUT IT

Two things can be the same in more than one way. Find a second way for one pair.
Pick any two things in this room. Say one way they are the same.

**STUCK? TRY THIS**

Look at the color first. Then look at the shape. Then look at the size.

★ CHALLENGE ZONE

Find two things in the room that are the same in **three** ways.

What Is Different?

The same pairs as last week, asked the other way. Same and different are one skill.

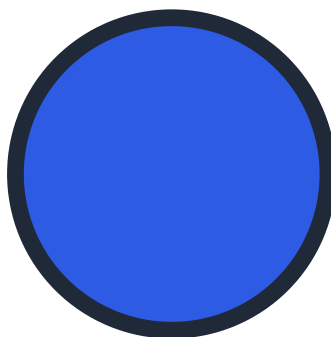
IN CLASS THIS WEEK

Comparing objects

NUMBER WARM-UP · 2 MINUTES

Say the numbers from 20 down to 10.

Say one way these two are different.



Write it

One is _____ and one is not.

ROOM TO DRAW

More to try

They are different because



They are different because

 TALK ABOUT IT

Last week you said how two things were the same. This week you said how they were different. Can both be true about the same two things?

Say one way you and a friend are the same, and one way you are different.

**STUCK? TRY THIS**

Say what the first one is. Then say what the second one is. Then look for the part that changed.

★ CHALLENGE ZONE

Find two things that are different in only **one** way. Just one, and everything else the same.

Does It Belong?

Applying a stated rule to a new object. Yes or no, with a reason.

IN CLASS THIS WEEK

Sorting into categories (1.MD.4)

NUMBER WARM-UP · 2 MINUTES

Count by 2s to 20.

Does this one belong in the group?

The rule: every shape here has three corners.



Now these



Circle the ones that belong.

ROOM TO DRAW

More to try

New rule: every shape here is **red**.



1. Which one does not belong?
2. Say why, out loud.
3. How many do belong?

 TALK ABOUT IT

A shape can follow one rule and break a different one. Show one.

Make up a rule. Ask someone to find a thing that belongs.

**STUCK? TRY THIS**

Say the rule out loud first. Then look at the shape and ask, is that true about this one?

★ CHALLENGE ZONE

Here is a rule: **three corners and red**. Draw a shape that follows half of it.

Sort It Two Ways

The same objects, a second rule, and different piles. Sorting is a choice.

IN CLASS THIS WEEK

Sorting into categories (1.MD.4)

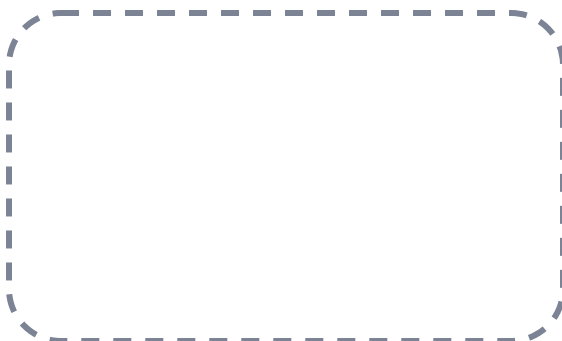
NUMBER WARM-UP · 2 MINUTES

Count by 5s to 50.

Sort them again, but use a different rule.



Red



Blue



ROOM TO DRAW

Now a new rule

Round



Not round



1. Did the same shapes end up together both times?
2. Name one shape that moved.

 TALK ABOUT IT

The shapes did not change. The piles did. What changed?

Sort the crayons in the room two different ways.

**STUCK? TRY THIS**

Do the first rule all the way through. Then start over with the new one.

★ CHALLENGE ZONE

Find a third rule for the same six shapes.

One for Each

One-to-one matching. Enough or not enough, decided without counting either row.

IN CLASS THIS WEEK

Counting and one-to-one (1.OA.1)

NUMBER WARM-UP · 2 MINUTES

Count on from 7 up to 15.

Draw a line to match each one.

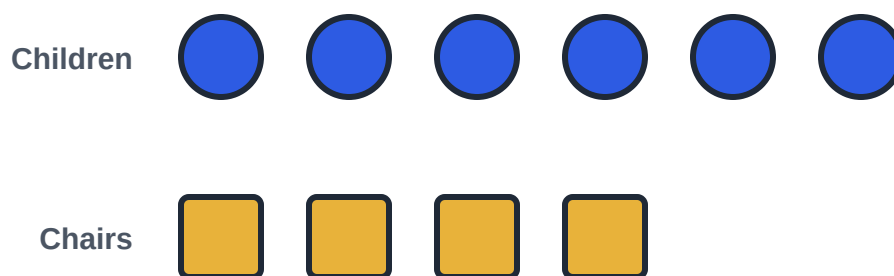
Children



Chairs



ROOM TO DRAW

More to try

1. Is there a chair for every child?
2. How many children have no chair?
3. How many more chairs do you need?

 TALK ABOUT IT

You can answer without counting either row. How?

At home tonight, check there is a fork for every plate.

**STUCK? TRY THIS**

Draw one line at a time. Cross off the two you just used.

★ CHALLENGE ZONE

There are 6 children and 4 chairs. Two more children come in. How many chairs do you need now?

More, Fewer, or Same

Comparing two sets by pairing them off, not by counting them (1.NBT.3).

IN CLASS THIS WEEK

Comparing numbers (1.NBT.3)

NUMBER WARM-UP · 2 MINUTES

Which is more, 8 or 5? Say it out loud.

Which row has more?

Red



Blue



ROOM TO DRAW

More to try

1. Which row has more?
2. How do you know without counting?



1. Which row has fewer?
2. How many more are in the long row?

 TALK ABOUT IT

Pair them up and one row runs out first. What does that tell you?

Is there a row here with the same number as another row?

**STUCK? TRY THIS**

Match one to one until a row runs out. The row still going has more.

★ CHALLENGE ZONE

Two rows have the same number. You take one away from each. Do they still have the same number?

Which Row Ran Out?

Three sets put in order by pairing them against each other, none of them counted.

IN CLASS THIS WEEK

Comparing numbers (1.NBT.3)

NUMBER WARM-UP · 2 MINUTES

Count by 10s to 100.

Put the three rows in order.

Red



Blue



Blue



Yellow



ROOM TO DRAW

More to try

Write the color of each row.

1. Most: _____

2. In the middle: _____

3. Fewest: _____

You never had to count. You matched twice.

 TALK ABOUT IT

Red beat blue. Yellow beat blue. Does that tell you about red and yellow?

What is the fewest number of matchings you need for three rows?

**STUCK? TRY THIS**

Do one pair at a time. Write down who won before you start the next one.

★ CHALLENGE ZONE

Four rows now. How many times do you have to match to put them all in order?

What Comes Next?

Repeating patterns, AB and ABB. The child continues the strip.

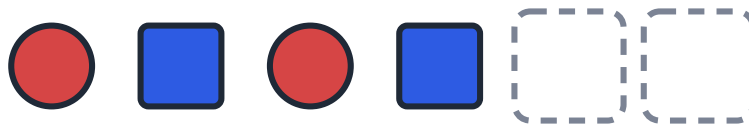
IN CLASS THIS WEEK

Patterns and reasoning

NUMBER WARM-UP · 2 MINUTES

Clap this: clap, clap, rest. Do it three times.

Draw the next two.



ROOM TO DRAW

More to try

1. What would come after those two?
2. Make your own pattern in the empty boxes below.

A large dashed rectangular box for creating a pattern. **TALK ABOUT IT**

Say the first pattern out loud as you point. What did your voice do?

Find a pattern in this room. Say it out loud.

**STUCK? TRY THIS**

Point and say each one out loud. Your voice will find the pattern before your eyes do.

★ CHALLENGE ZONE

Make a pattern that uses **three** different shapes before it repeats.

Find the Part That Repeats

Naming the unit of a repeating pattern, which is the thing that makes it a pattern.

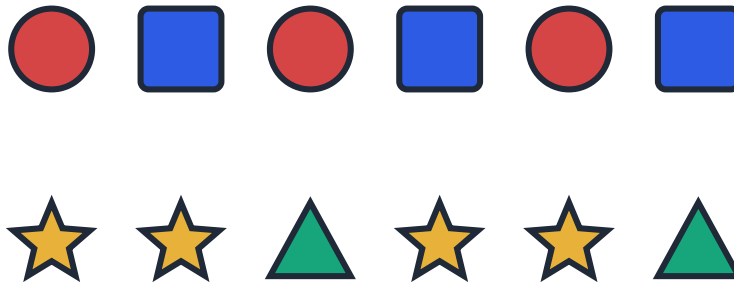
IN CLASS THIS WEEK

Patterns and reasoning

NUMBER WARM-UP · 2 MINUTES

Count by 2s to 20, then by 5s to 25.

Circle the part that repeats.



ROOM TO DRAW

More to try

1. How many shapes are in the part that repeats?
2. How many times does it repeat here?
3. Draw what comes next.

 TALK ABOUT IT

Two patterns can look different and repeat the same way. Show one.

How short can the repeating part be? How long?

**STUCK? TRY THIS**

Say the pattern out loud. When you hear yourself start over, that is the end of the part.

★ CHALLENGE ZONE

A pattern repeats every 4 shapes. What is the 8th shape? What is the 12th?

It Grows

A growing pattern, not a repeating one. Each stage is bigger than the last.

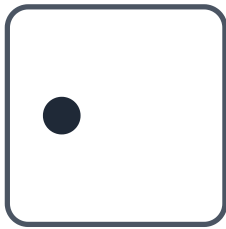
IN CLASS THIS WEEK

Counting on (1.OA.5)

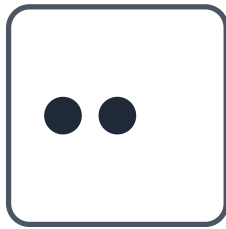
NUMBER WARM-UP · 2 MINUTES

Count on from 4 to 12.

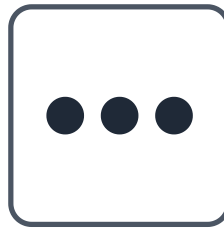
Draw the next one.



1



2



3



4

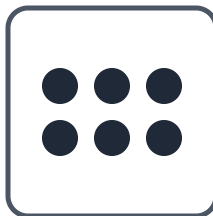
ROOM TO DRAW

More to try

1



2



3



4

1. How many dots in the one you drew?
2. How many more each time?
3. Would this pattern ever start over?

 TALK ABOUT IT

This pattern does not repeat. Say how it is different from last week's.
How many dots would the 5th picture have?

**STUCK? TRY THIS**

Count the dots in each picture. Write the number under it. Then look at the numbers.

★ CHALLENGE ZONE

A pattern goes 1, 3, 5, 7. Draw the next picture and say how many dots.

Sorting Fair

Review of weeks 1 to 11. Every kind of question the year has asked so far.

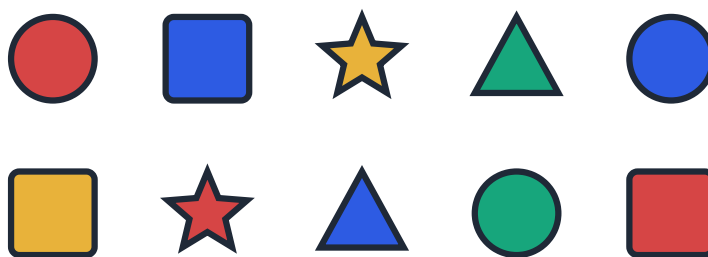
IN CLASS THIS WEEK

Review and reasoning

NUMBER WARM-UP · 2 MINUTES

Count to 30. Then say the numbers with a 0 at the end.

Sort these into two groups your own way.



Write your rule here:

ROOM TO DRAW

More to try**1.** Which row has more?**2.** Draw the next two.**3.** Say one way these are the same, and one way they are different.**TALK ABOUT IT**

Which of these was easiest? Which was hardest?

You picked your own rule at the top. Could someone else have picked a different one and still been right?

**STUCK? TRY THIS**

Go back and look at the week the question came from. The pages are still in this book.

★ CHALLENGE ZONESort the ten shapes into **three** groups so that no group is empty.

Line Them Up

Three objects in order by length (1.MD.1). Compared directly, never measured.

IN CLASS THIS WEEK

Ordering by length (1.MD.1)

NUMBER WARM-UP · 2 MINUTES

Which is more, 6 or 9?

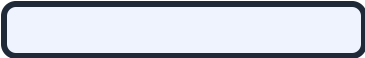
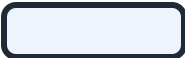
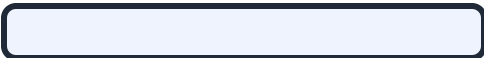
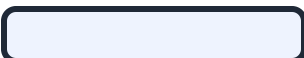
Write 1 on the shortest and 3 on the longest.

Pencil

Ribbon

Clip

ROOM TO DRAW

More to tryRope Straw Stick Spoon 

1. Write 1, 2, 3, 4 from shortest to longest.
2. Which is longer, the straw or the spoon?
3. Which two are closest in length?

 TALK ABOUT IT

You did not use a ruler. How did you know?

Line up three things on your desk from shortest to longest.

**STUCK? TRY THIS**

Put your finger at the left end of two bars. The one that keeps going is longer.

★ CHALLENGE ZONE

Put five things in order. What is the fewest number of times you have to compare two of them?

Longer Than the Pencil

Indirect comparison (1.MD.2). Two things compared using a third that touches both.

IN CLASS THIS WEEK

Indirect comparison (1.MD.2)

NUMBER WARM-UP · 2 MINUTES

Count back from 12 to 3.

Which one is longer?

Pencil

Clip

Pencil

Rope

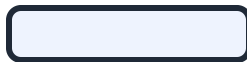
Finish the sentence

The rope is longer than the _____.

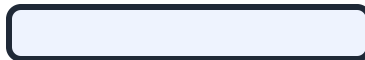
ROOM TO DRAW

More to try

Straw



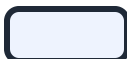
Spoon



Straw



Nail



1. Which is longer, the spoon or the nail?
2. Did you ever see them next to each other?
3. How did you know?

 TALK ABOUT IT

You never put the rope and the clip side by side, but you know which is longer. Say why that works.

Find two things too big to move. Use a piece of string to compare them.

**STUCK? TRY THIS**

The pencil is in both pictures. Use the pencil to talk about the other two.

★ CHALLENGE ZONE

The spoon is longer than the straw. The straw is longer than the nail. Is the nail longer than the spoon? Say how you know.

How Many Paper Clips?

Length as a row of same-size units laid end to end, with no gaps (1.MD.2).

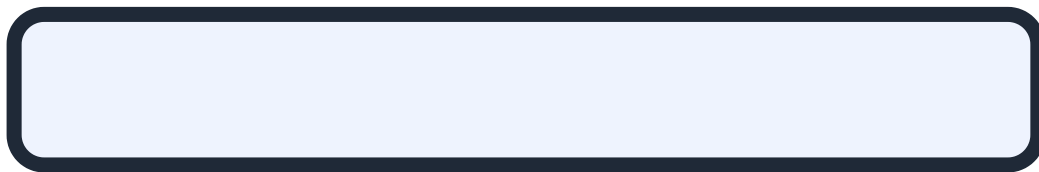
IN CLASS THIS WEEK

Length units (1.MD.2)

NUMBER WARM-UP · 2 MINUTES

Count by 1s from 10 to 20.

How many clips long is it?



ROOM TO DRAW

More to try

This one is _____ clips long.



1. How many clips is this one?
2. How many more clips than the first one?

**TALK ABOUT IT**

The clips have to touch, with no space between them. What goes wrong if you leave gaps?

Measure your book in paper clips. Then in erasers. Why are the numbers different?

**STUCK? TRY THIS**

Put your finger on the first clip and count along without lifting it.

★ CHALLENGE ZONE

Something is 8 clips long. Each clip is 2 erasers long. How many erasers long is it?

Sort the Shapes

Shapes into piles by a rule the page states (1.G.1). The first shape week.

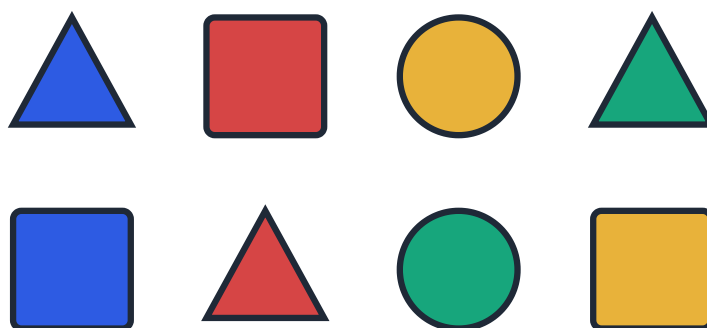
IN CLASS THIS WEEK

Shape attributes (1.G.1)

NUMBER WARM-UP · 2 MINUTES

Count by 2s to 20.

Put the shapes with three sides here.



Three sides

A large, empty rectangular box with a dashed border, intended for sorting shapes that have three sides.

Not three sides

A large, empty rectangular box with a dashed border, intended for sorting shapes that do not have three sides.

ROOM TO DRAW

A large, empty rectangular box with a dashed border, intended for drawing.

More to try

New rule: **four sides**.

Four sides



Not four sides



1. How many shapes have three sides?
2. How many have four?
3. How many have no sides at all?

 TALK ABOUT IT

A circle has no sides and no corners. Is it still a shape?

Find something in this room with four sides.

**STUCK? TRY THIS**

Touch each side with your finger and count out loud as you go.

★ CHALLENGE ZONE

Draw a shape with **five** sides. How many corners does it have?

What Makes It a Triangle?

Defining and non-defining attributes (1.G.1). Three sides matters. Color does not.

IN CLASS THIS WEEK

Defining attributes (1.G.1)

NUMBER WARM-UP · 2 MINUTES

Say the numbers from 15 to 25.

Color every shape that is a triangle.



ROOM TO DRAW

More to try

Two of these are triangles. They are not the same color and they are not the same size.



1. Are they both triangles?
2. What makes a triangle a triangle?
3. Does the color matter? Does the size?

 TALK ABOUT IT

A big red triangle and a small blue one are both triangles. What has to be true, and what does not?

Name something about a square that does not matter.

**STUCK? TRY THIS**

Count the sides. Then count the corners. Color does not help you here.

★ CHALLENGE ZONE

Draw a triangle that does not look like the ones on this page, and is still a triangle.

Two Shapes Make One

Composing shapes (1.G.2). Two pieces put together and the whole named.

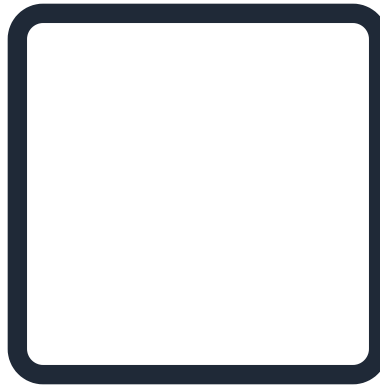
IN CLASS THIS WEEK

Composing shapes (1.G.2)

NUMBER WARM-UP · 2 MINUTES

Count on from 9 to 17.

Draw two shapes that make this one.



Draw your two pieces here

ROOM TO DRAW

More to try

Two of these triangles make a square.



1. How many triangles make one square?
2. How many triangles make two squares?
3. Can two squares make a triangle?

 TALK ABOUT IT

You cut a square into two pieces. Is the amount of paper the same?

Use two shapes to make a shape with more corners than either one.

**STUCK? TRY THIS**

Cut a square of paper corner to corner and look at what you get.

★ CHALLENGE ZONE

Four small squares make one big square. How many small squares make **two** big squares?

Cut It Fair

Halves and fourths by folding (1.G.3). Equal parts, decided by matching them up.

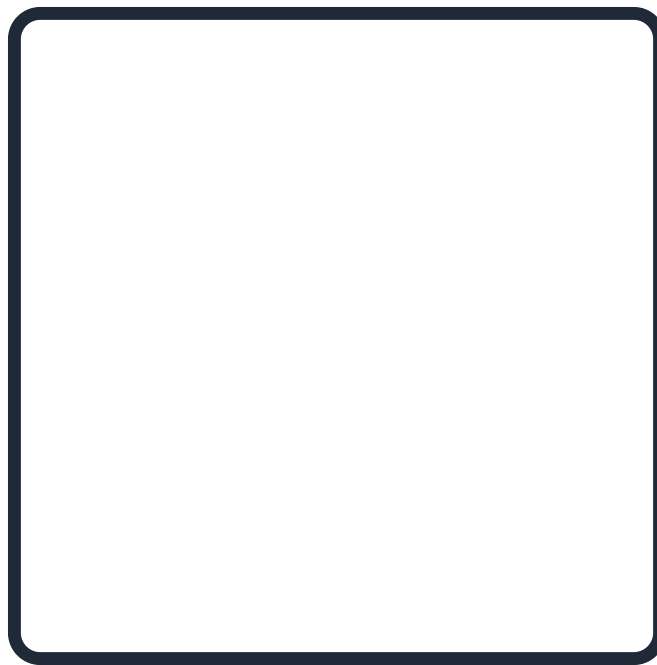
IN CLASS THIS WEEK

Halves and fourths (1.G.3)

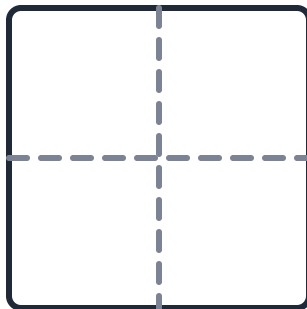
NUMBER WARM-UP · 2 MINUTES

Count by 5s to 30.

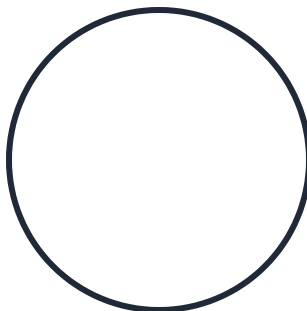
Fold it, then draw the fold line.



ROOM TO DRAW

More to try

1. How many equal parts now?
2. Is one part more than half, or less?
3. How many of these parts make the whole square?



Fold this one into two equal parts too.

**TALK ABOUT IT**

Equal parts have to be the same size. How can you check without a ruler?
Share a cracker with a friend so it is fair. How did you do it?

**STUCK? TRY THIS**

Fold the paper and hold it up to the light. If the edges line up, the parts are equal.

★ CHALLENGE ZONE

Fold a square into four equal parts in a way that is **not** four little squares.

Around the Table

A picture of who is next to who. Adjacency, drawn, and never named.

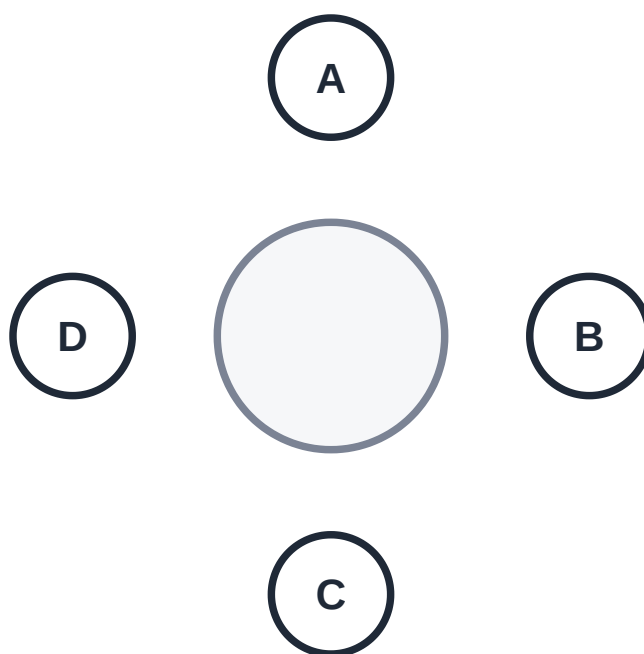
IN CLASS THIS WEEK

Adding within 20 (1.OA.6)

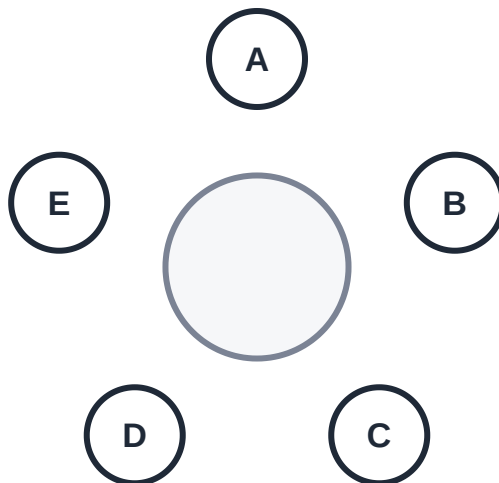
NUMBER WARM-UP · 2 MINUTES

What is $6 + 4$? What is $4 + 6$?

Draw a line to every friend you sit beside.



ROOM TO DRAW

More to try

1. How many friends does A sit beside?
2. Does everyone sit beside the same number of friends?
3. How many lines did you draw in all?

TALK ABOUT IT

At a round table, does everyone have the same number of neighbors?
What if the table were a long straight one instead? Who would change?

**STUCK? TRY THIS**

Start at A and go around the table one way. Then go back the other way.

★ CHALLENGE ZONE

Six friends at a round table. How many lines will you draw? Say the number before you draw them.

Everybody Waves

Three friends, every wave drawn once. The handshake problem at its smallest.

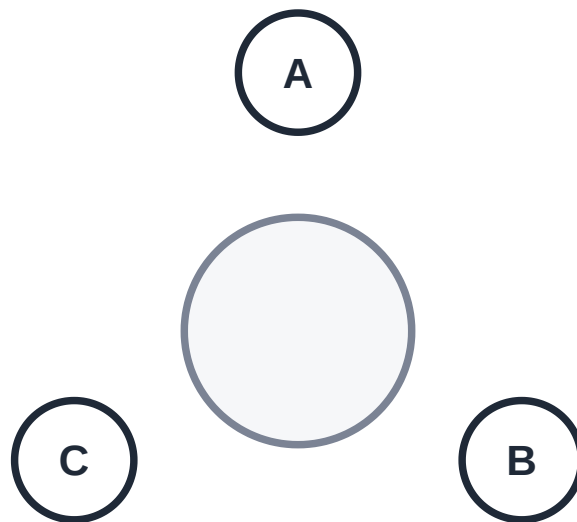
IN CLASS THIS WEEK

Adding within 20 (1.OA.6)

NUMBER WARM-UP · 2 MINUTES

What is $3 + 3$? What is $3 + 3 + 3$?

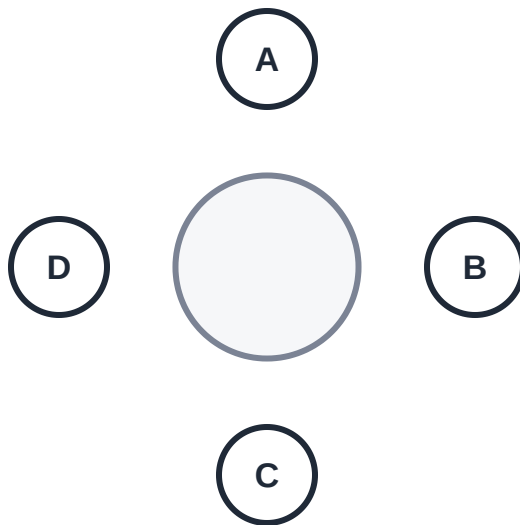
Draw every wave one time only.



Count them

You drew _____ waves.

ROOM TO DRAW

More to try

1. How many waves now?
2. How many waves does each friend send?
3. Did you draw any wave twice?

TALK ABOUT IT

A waves at B, and B waves at A. Is that one wave or two? The page says one. Why? Wave at everyone in your group. Count the waves.

**STUCK? TRY THIS**

Go in order. Do all of A's waves first, then all of B's new ones.

★ CHALLENGE ZONE

Five friends. Draw it, then count. Is it more or less than double the answer for four?

Do Not Touch the Same Color

Coloring so no two touching parts match. The rule is checked, never minimized.

IN CLASS THIS WEEK

Shape attributes (1.G.1)

NUMBER WARM-UP · 2 MINUTES

Count by 10s to 100, then back to 0.

Color it so no two touching parts match.

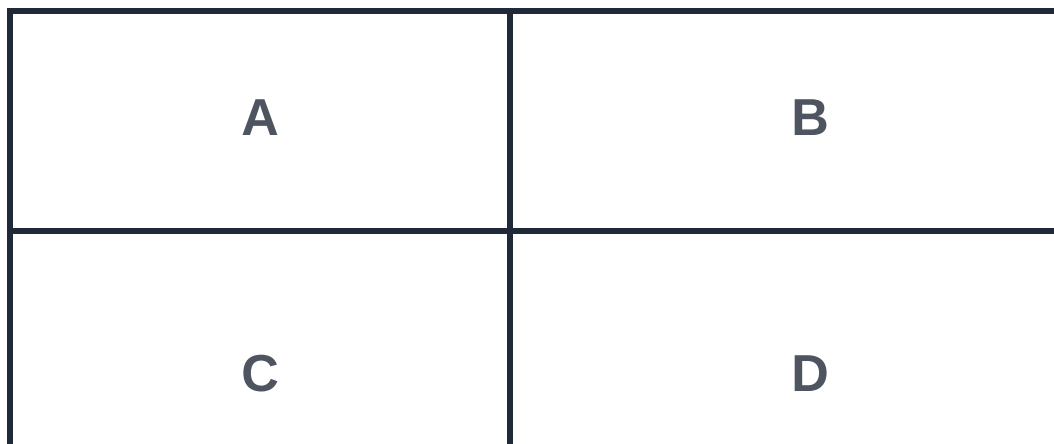
A	B
C	D

ROOM TO DRAW

More to try

1. How many colors did you use?
2. Do A and D touch? Can they be the same color?
3. Find two parts that touch. Are they different colors?

Now color it again with a different set of colors.

 **TALK ABOUT IT**

Two parts that only meet at a corner are not touching. Does that change anything here?

Look at a map. Are any two touching places the same color?

**STUCK? TRY THIS**

Color one part. Then look at everything it touches and pick something else for those.

★ CHALLENGE ZONE

Can you do this whole picture with only **two** colors? Try it, and say what happened.

Three Buckets

Sorting into three categories and drawing what you found (1.MD.4).

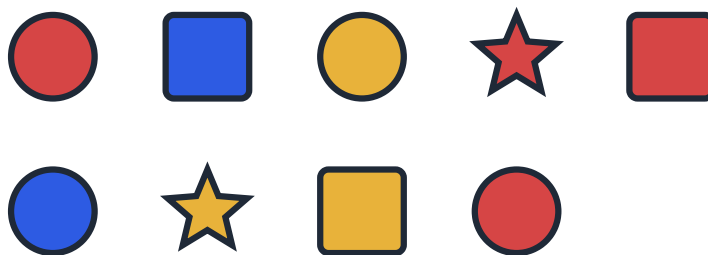
IN CLASS THIS WEEK

Organizing data (1.MD.4)

NUMBER WARM-UP · 2 MINUTES

Count to 15 and back down to 5.

Sort them into the three buckets.



Circles

Squares

Stars

Three dashed-line boxes with rounded corners, arranged horizontally. These boxes are intended for sorting the shapes from the image above into three categories: Circles, Squares, and Stars.

ROOM TO DRAW

More to try

Draw one dot for each shape you found.

Circles



Squares



Stars



1. How many circles?
2. How many shapes in all?
3. Which bucket got the most?

**TALK ABOUT IT**

Every shape went in exactly one bucket. Why does that matter?

Sort the class by how they got to school today. How many buckets?

**STUCK? TRY THIS**

Cross off each shape as you put it in a bucket, so you do not count it twice.

★ CHALLENGE ZONE

Sort the same nine shapes by **color** instead. Do the buckets have the same numbers in them?

Which Bucket Has More?

Reading a picture graph back and comparing its bars (1.MD.4).

IN CLASS THIS WEEK

Interpreting data (1.MD.4)

NUMBER WARM-UP · 2 MINUTES

What is $5 + 3$? What is $8 - 3$?

Which bucket has the most?

Dogs 

Cats 

Fish 

ROOM TO DRAW

More to try

1. Which one has the fewest?
2. How many more fish than cats?
3. How many pets in all?
4. Are there more dogs than cats and fish together?

 TALK ABOUT IT

You can answer the first question without counting. How?

Make a picture like this for something in your house.

**STUCK? TRY THIS**

Put your finger at the end of two rows. The row that reaches farther has more.

★ CHALLENGE ZONE

Two more cats arrive. Now which bucket has the most? Say the answer before you draw them.

Getting There

Any path from the start to the flag on a small grid, drawn by the child.

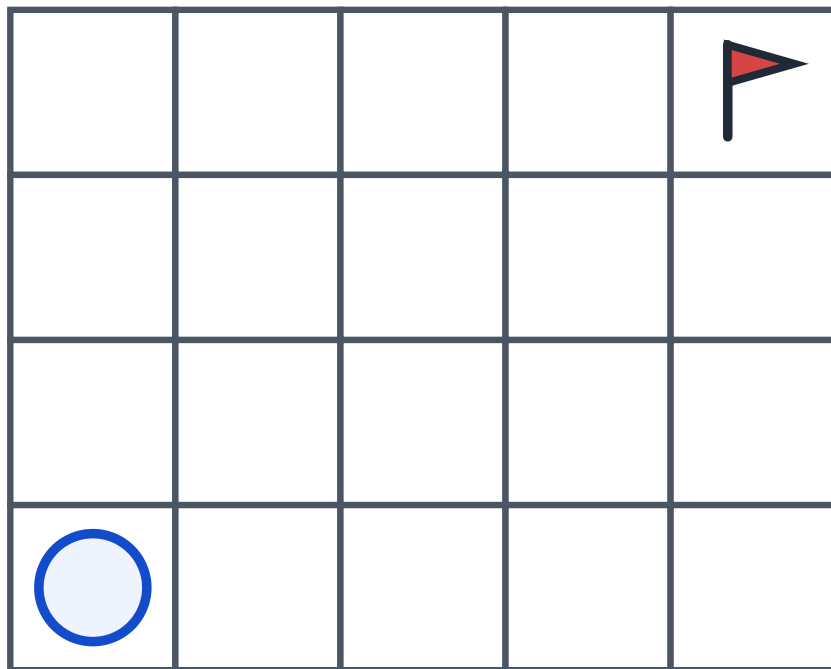
IN CLASS THIS WEEK

Adding within 20 (1.OA.6)

NUMBER WARM-UP · 2 MINUTES

Count on from 8 to 14.

Draw a path from the dot to the flag.



ROOM TO DRAW

More to try



1. Two squares are blocked. Draw a path around them.
2. Did your path have to get longer?
3. Draw a second path that is different from your first.

TALK ABOUT IT

There is more than one right answer here. How many did you find?
Draw the path you take from your desk to the door.



STUCK? TRY THIS

Move one square at a time, up, down, left or right. No jumping.

★ CHALLENGE ZONE

Block one more square so that **no** path can get through.

The Short Way

Two drawn paths, each one counted, and the shorter one named (1.OA.1).

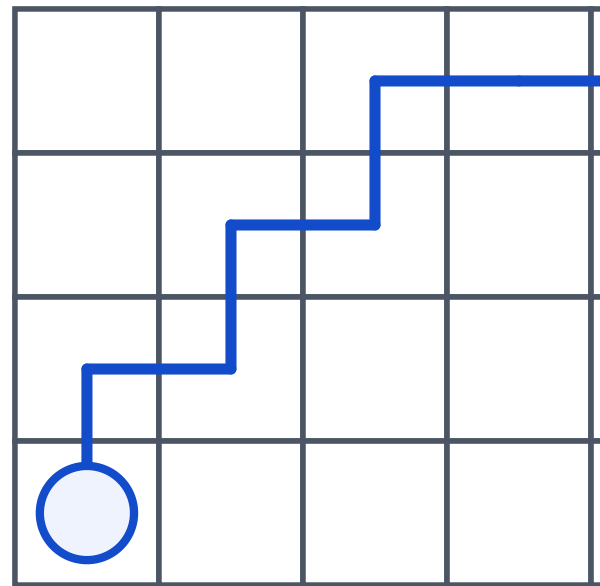
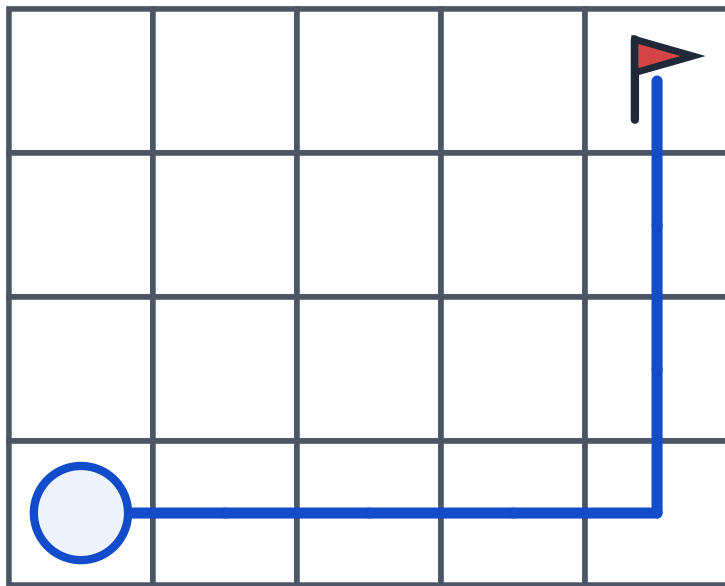
IN CLASS THIS WEEK

Comparing sums (1.OA.1)

NUMBER WARM-UP · 2 MINUTES

What is $7 + 2$? What is $9 - 2$?

Count the steps on each path.



ROOM TO DRAW

More to try

1. How many steps on the first path?
2. How many steps on the second?
3. Which one is shorter?
4. Can you find a path with fewer steps than both?

 TALK ABOUT IT

Both paths start and end in the same place. Say what that tells you.

Is the path that looks longer always the one with more steps?

**STUCK? TRY THIS**

Put a dot on every square the path goes through, then count the dots.

★ CHALLENGE ZONE

Every path from the dot to the flag has the same number of steps, as long as you never go back. Say why.

Follow the Arrows

Three arrows executed in order, and the landing square marked.

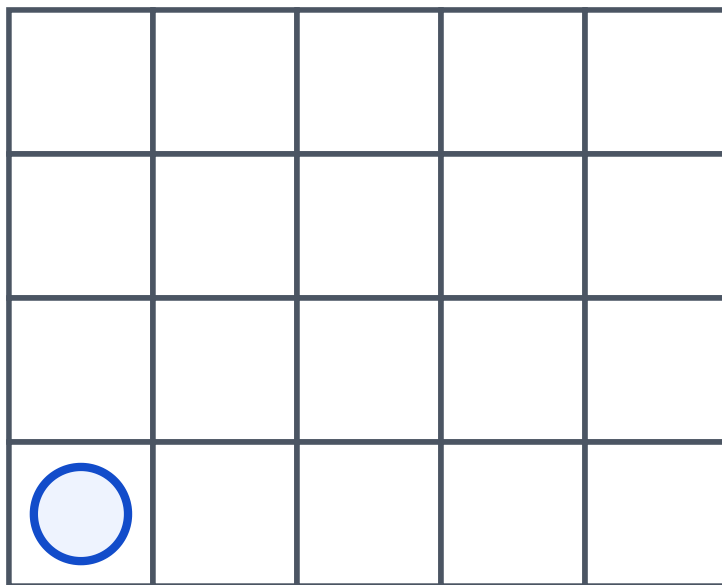
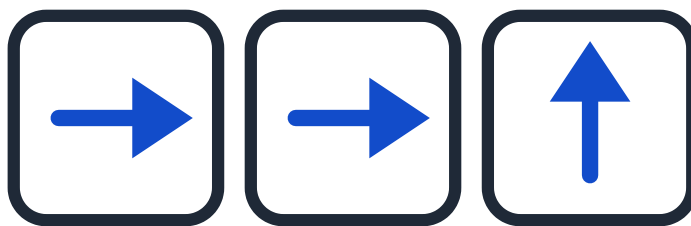
IN CLASS THIS WEEK

Adding and subtracting (1.OA.1)

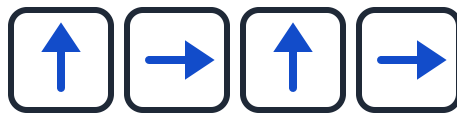
NUMBER WARM-UP · 2 MINUTES

What is $4 + 4$? What is $8 - 4$?

Do the arrows and color where you land.



ROOM TO DRAW

More to try

1. Where did you land this time?
2. How many steps up in all?
3. Would a different order land you in the same square?

 TALK ABOUT IT

You did the arrows in order. Try the same arrows in a different order. Where do you end up?

Give a friend three arrows and see where they land.

**STUCK? TRY THIS**

Do one arrow at a time and put your finger on the new square before you read the next one.

★ CHALLENGE ZONE

Write three arrows that bring you back to the square you started on.

Write the Arrows

The reverse of last week: the start and the end are given, the arrows are not.

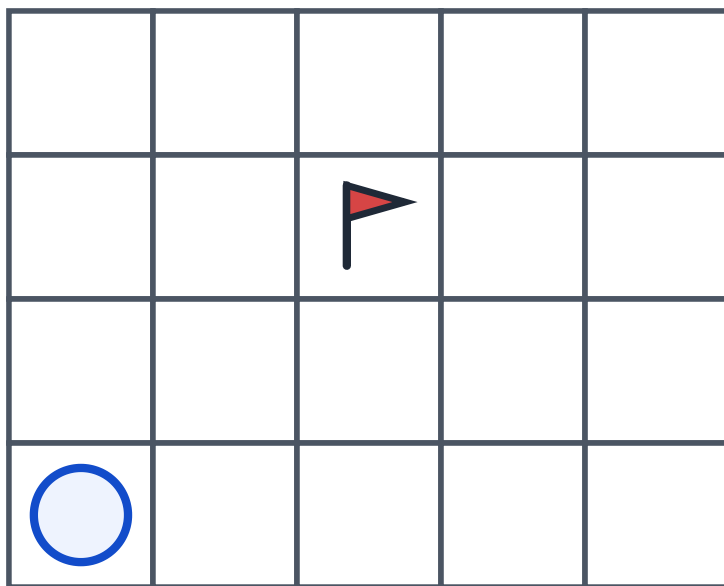
IN CLASS THIS WEEK

Missing addends (1.OA.8)

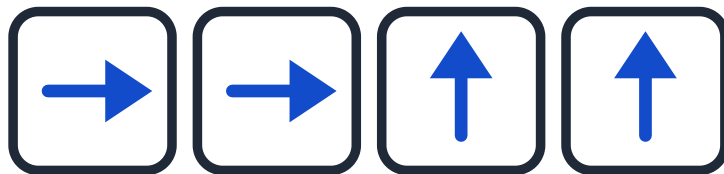
NUMBER WARM-UP · 2 MINUTES

What plus 3 makes 7?

Write the arrows that get you there.

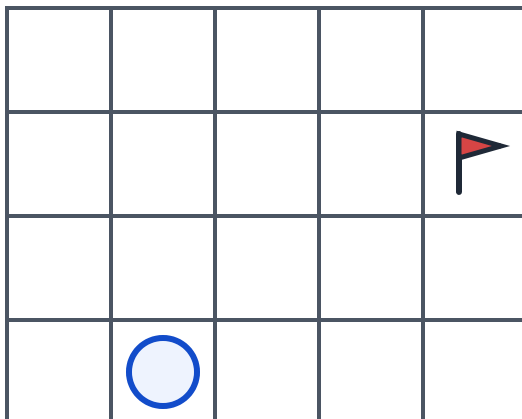


Your arrows



Cross out any you do not need.

ROOM TO DRAW

More to try

1. How many arrows did you need?
2. How many go right? How many go up?
3. Write other arrows that get you there too.

 TALK ABOUT IT

Two children wrote different arrows and both landed on the flag. Can they both be right?

What is the fewest arrows that will get you there?

**STUCK? TRY THIS**

Count how many squares across first. Then count how many squares up.

★ CHALLENGE ZONE

You need 2 right and 2 up. Write every different order you could put them in.

A Ten and Some More

A teen number is one full ten and some ones (1.NBT.2). Seen, not told.

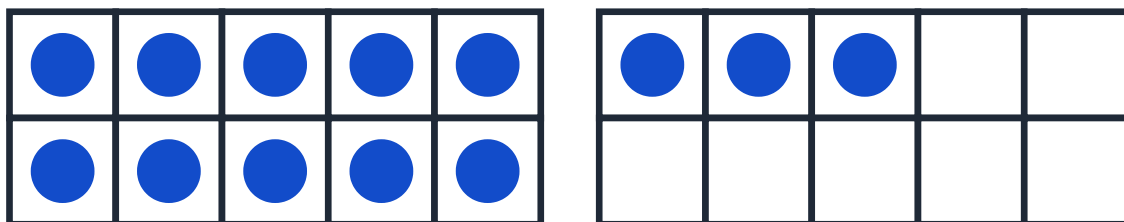
IN CLASS THIS WEEK

Tens and ones (1.NBT.2)

NUMBER WARM-UP · 2 MINUTES

Count from 10 to 20.

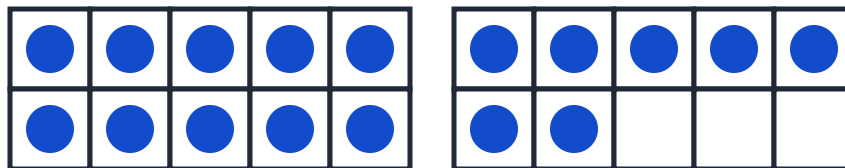
Write how many tens and how many ones.



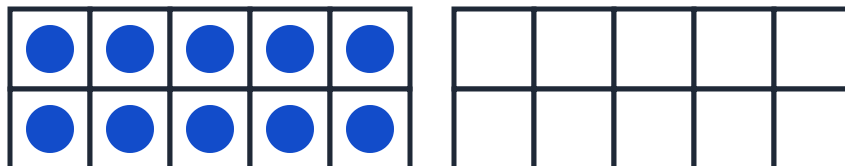
Finish the sentence

_____ ten and _____ ones makes _____.

ROOM TO DRAW

More to try

This is _____.



1. What number is this?
2. How many ones are in the second frame?
3. Which is more, 13 or 17? How do you know?

 TALK ABOUT IT

Every teen number starts with the same full ten. Which part tells you which teen it is?

Show 15 with your fingers and a friend's.

**STUCK? TRY THIS**

Fill the first frame all the way before you start the second one.

★ CHALLENGE ZONE

Show 20 with these frames. How many frames do you need?

Ten More, Ten Less

One row down is ten more, one row up is ten less (1.NBT.5).

IN CLASS THIS WEEK

Ten more, ten less (1.NBT.5)

NUMBER WARM-UP · 2 MINUTES

Count by 10s from 20 to 70.

Circle ten more, then circle ten less.

21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50

ROOM TO DRAW

More to try

41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70

1. What is ten more than 55?
2. What is ten less than 55?
3. What is the same about all three numbers?

 TALK ABOUT IT

Ten more moves you one row down, not ten squares along. Say why.

Pick any number on the chart. Say ten more without counting.

**STUCK? TRY THIS**

Put your finger on the number and move straight down one row.

★ CHALLENGE ZONE

What is **twenty** more than 34? How many rows do you move?

Rows of Ten

Why the chart's columns end in the same digit, and what that says about ten (1.NBT.1).

IN CLASS THIS WEEK

Counting to 120 (1.NBT.1)

NUMBER WARM-UP · 2 MINUTES

Count by 10s to 100.

Color every number that ends in zero.

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	32	33	34	35	36	37	38	39	40

ROOM TO DRAW

More to try

1. Where are the numbers you colored?
2. Color every number that ends in 5. What do you see?
3. How many numbers are in one row?

 TALK ABOUT IT

The chart has ten in every row. What would change if it had nine?
Count by 10s and follow along on the chart with your finger.

**STUCK? TRY THIS**

Look down a column, not across a row. The last digit stays the same.

★ CHALLENGE ZONE

Cover the chart. What number is directly below 27? How do you know?

Every Way to Make 6

All the number pairs that make 6, listed in order so none is missed (1.OA.6).

IN CLASS THIS WEEK

Making 6 (1.OA.6)

NUMBER WARM-UP · 2 MINUTES

What is $4 + 2$? What is $2 + 4$?

Write every way to make 6.

First number	Second number
0	
1	
2	
3	
4	
5	
6	

ROOM TO DRAW

More to try

1. How many ways did you find?
2. Which way has the same number twice?
3. Do 2 and 4 and then 4 and 2 count as two ways?

Now do the same for **5**.

First number	Second number
0	
1	
2	
3	
4	
5	

TALK ABOUT IT

You went 0, 1, 2, 3 in order down the first column. What would happen if you jumped around?

How many ways are there to make 10? Guess first, then check.

**STUCK? TRY THIS**

Start the first number at 0 and go up by one each row. The second number takes care of itself.

★ CHALLENGE ZONE

Without writing them all out, how many ways are there to make **9**?

Two Hats, Two Scarves

Every outfit, drawn. There are four, and drawing them is the whole method.

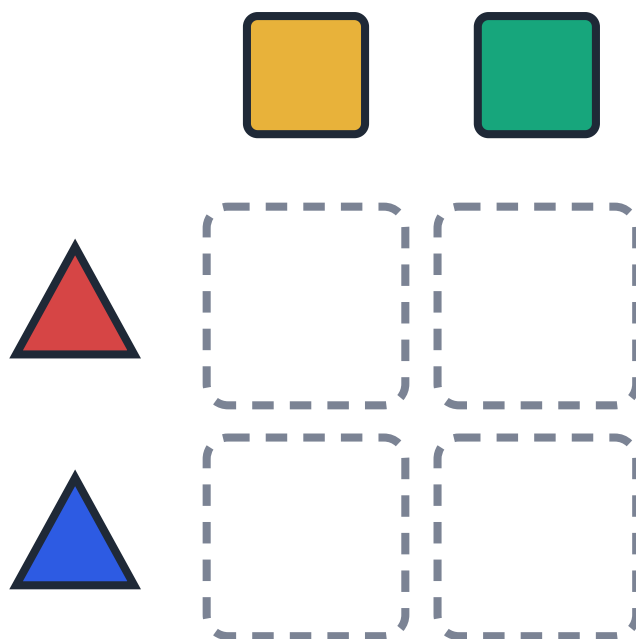
IN CLASS THIS WEEK

Counting combinations (1.OA.6)

NUMBER WARM-UP · 2 MINUTES

What is $2 + 2$? What is $2 + 2 + 2$?

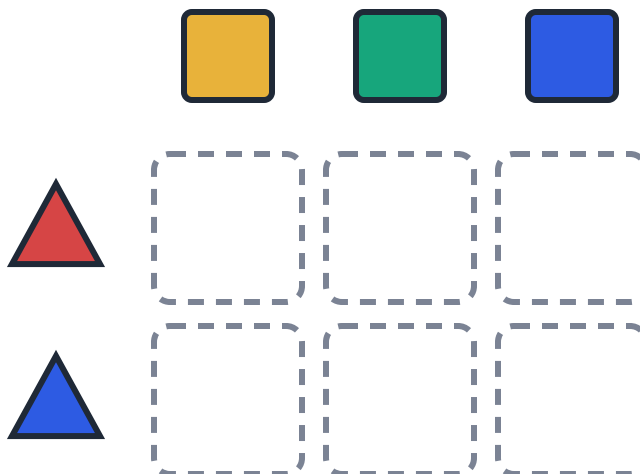
Draw every outfit one time only.



ROOM TO DRAW

More to try

1. How many outfits did you draw?
2. How many use the red hat?
3. If there were three scarves, how many outfits?

 **TALK ABOUT IT**

Every box in the grid is one outfit, and no outfit is in two boxes. Say why that means you did not miss any.

How many outfits with three hats and three scarves? Draw the grid first.

**STUCK? TRY THIS**

Do one row at a time. Keep the hat the same all the way across.

★ CHALLENGE ZONE

Two hats, two scarves, and now two pairs of shoes. How many outfits? Try to say it before you draw.

Three Friends, Two Chairs

Every pair from three, drawn. There are three, and order does not matter.

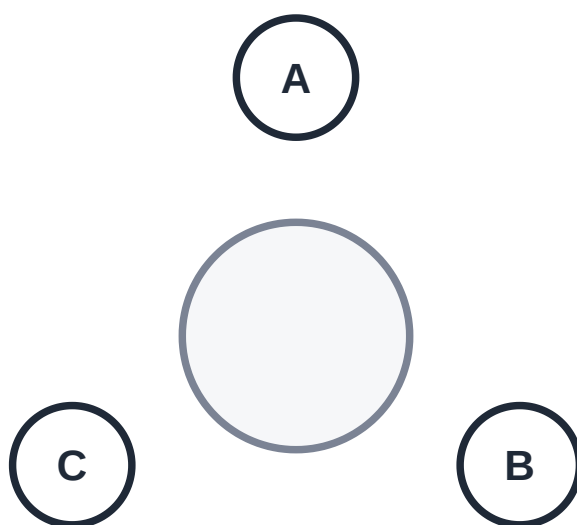
IN CLASS THIS WEEK

Counting combinations (1.OA.6)

NUMBER WARM-UP · 2 MINUTES

What is 3 - 1? What is 3 - 2?

Draw every pair of friends.



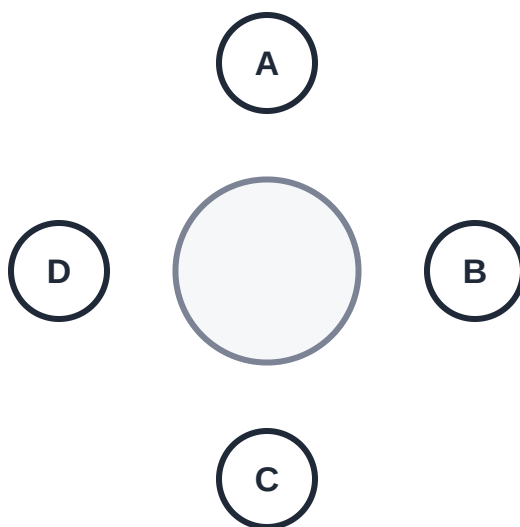
Chair 1	Chair 2

ROOM TO DRAW

More to try

1. How many pairs did you find?
2. Is A and B the same pair as B and A?
3. Who is left out each time?

Now try it with **four** friends.

 **TALK ABOUT IT**

Each pair leaves exactly one friend standing. Does that help you count the pairs?
You drew every wave in week 21. Is this the same question?

**STUCK? TRY THIS**

Pick one friend and pair them with everyone else. Then move to the next one and skip the pairs you already have.

★ CHALLENGE ZONE

Five friends, two chairs. How many pairs? Look back at week 21 before you start.

First, Next, Last

Putting a day in order, and reading a clock on the hour (1.MD.3).

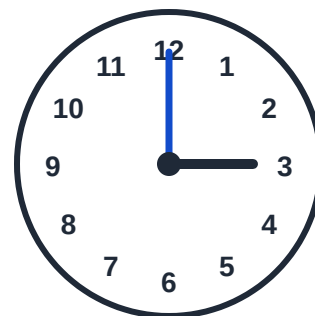
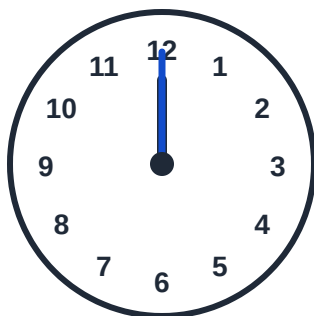
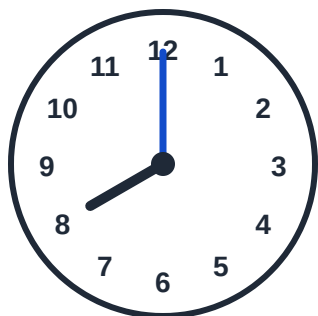
IN CLASS THIS WEEK

Time to the hour (1.MD.3)

NUMBER WARM-UP · 2 MINUTES

Count by 5s to 60.

Write 1, 2, and 3 in order.



Write the time

Clock	Time	In order
First one		
Middle one		
Last one		

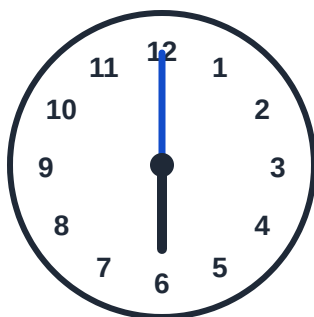
ROOM TO DRAW

More to try

Put these in the order they happen in a day.

1. Eat lunch
2. Wake up
3. Go to sleep
4. Eat breakfast

Write 1, 2, 3, 4 beside them.



This clock says _____ o'clock.

TALK ABOUT IT

The clocks on this page are already in order by time. Are they in order on the page?

What do you do at 3 o'clock? What about at 8?

**STUCK? TRY THIS**

The short hand points at the hour. The long hand points straight up when it is o'clock.

★ CHALLENGE ZONE

It is 3 o'clock. What time will it be in four hours?

The Last Sort

Everything once more, and a look at what Grade 2 does with all of it.

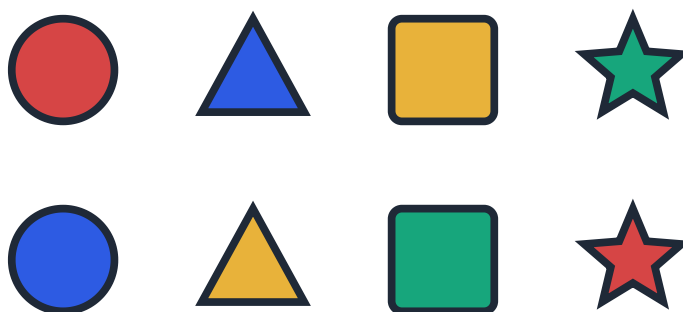
IN CLASS THIS WEEK

Review and reasoning

NUMBER WARM-UP · 2 MINUTES

Count to 50. Then count by 10s to 100.

Sort these your own way, and say the rule.

Two large, empty rectangular boxes with dashed outlines, intended for students to sort the shapes into categories based on their rule.

My rule:

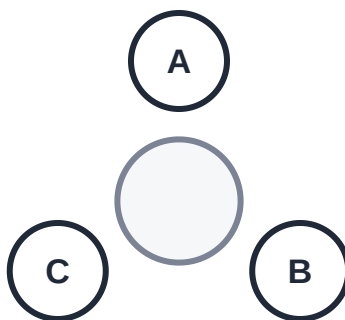
ROOM TO DRAW

More to try

1. Draw the next two.



2. Draw every wave one time only.



3. Write every way to make 5 on these lines.

 TALK ABOUT IT

You sorted at the top and you picked the rule yourself. In week 1 the rule was given to you. Which is harder?

Next year you will be handed two piles and asked what the rule was. Try one on a friend today.

**STUCK? TRY THIS**

Every question on this page came from a week you already did. Find the week and look.

★ **CHALLENGE ZONE**

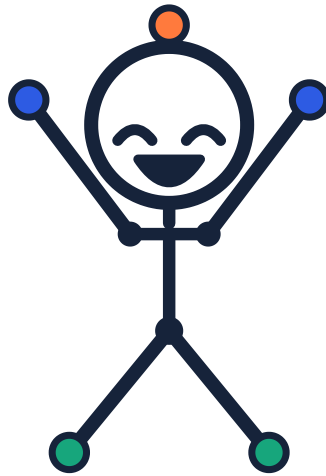
Sort the eight shapes so that one hoop has exactly **three** shapes in it, and say a rule that does it.

CERTIFICATE OF COMPLETION

What Goes Together

awarded to

for a whole year of sorting shapes, matching rows, finding patterns,
drawing waves, coloring maps, and, hardest of all, saying the
reason.



a Young Innovator for Change

Teacher

Date



Young Innovators
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