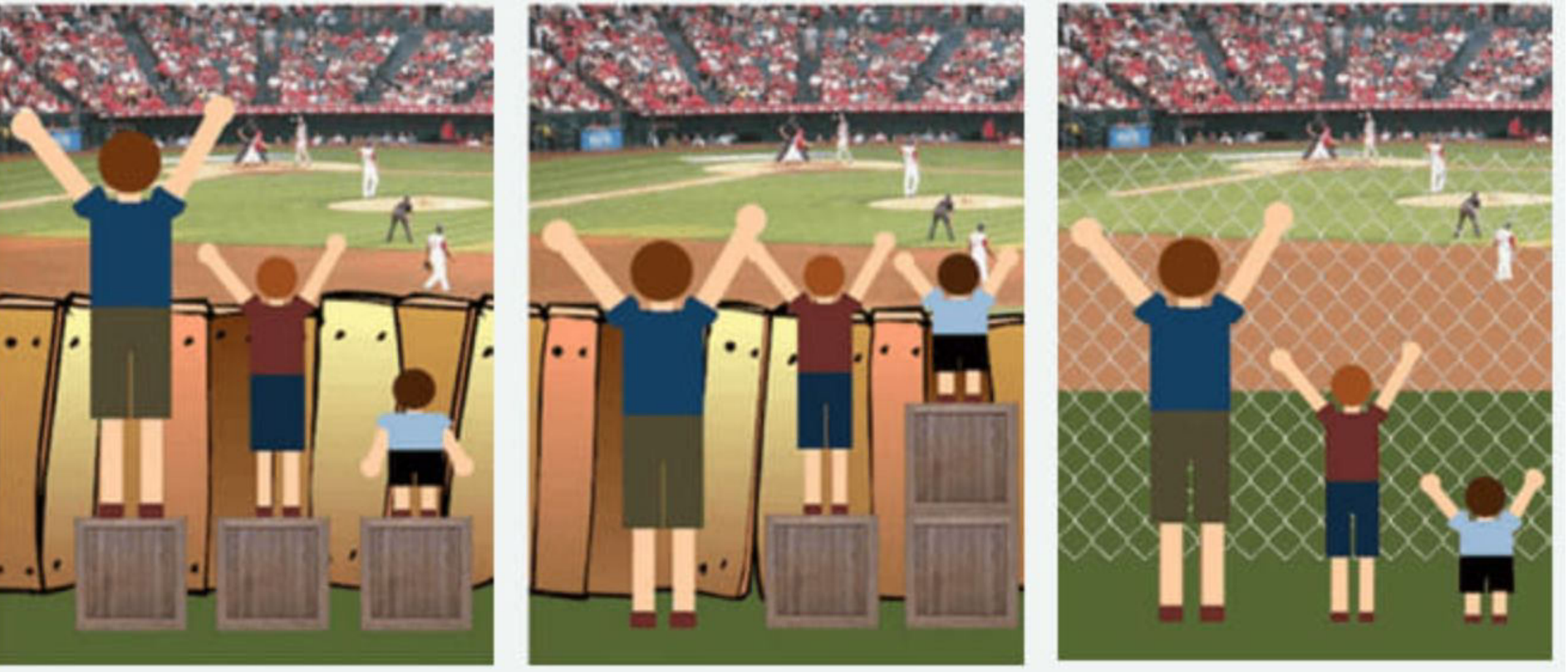
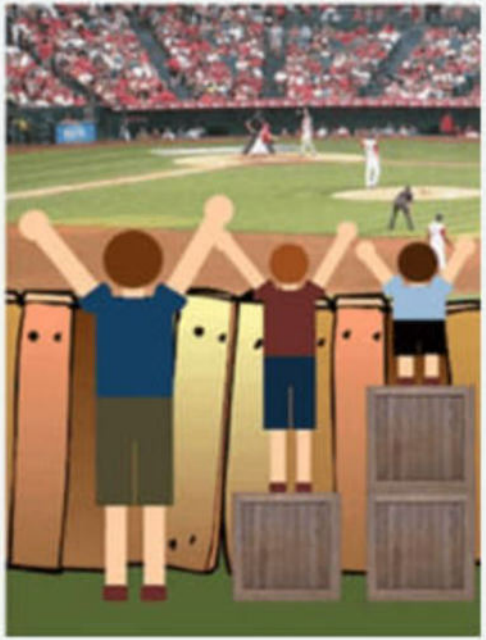


Equality versus equity….. What can these pictures teach us?

EQUALITY VERSUS EQUITY

In the first image, it is assumed that everyone will benefit from the same supports. They are being treated equally.



In the second image, individuals are given different supports to make it possible for them to have equal access to the game. They are being treated equitably.

In the third image, all three can see the game without any supports or accommodations because the cause of the inequity was addressed. The systemic barrier has been removed.

Let’s discuss this definition of failure….. In addition, I always say that your comfort zone is very small, but the magic happens when you step outside of that comfort zone. Why do you think that is?

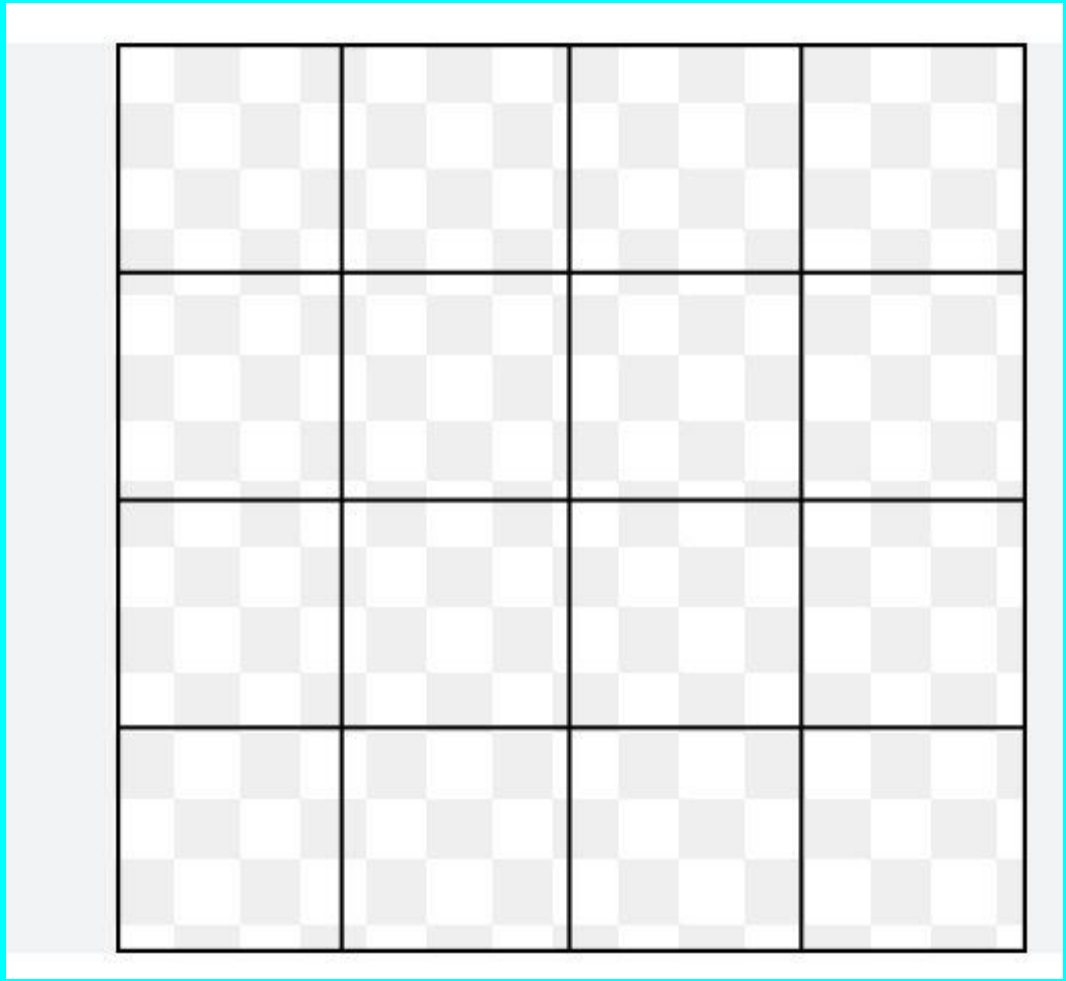
Use fake money to solve this… …Mr Cotter bought a video game for $10, then he sold it for $20. After he sold it, he realized that he really wanted it back, but it cost him $30 to buy it back!

In the end, did he make money or lose money?
How much did he make or lose?

Answer on next slide….

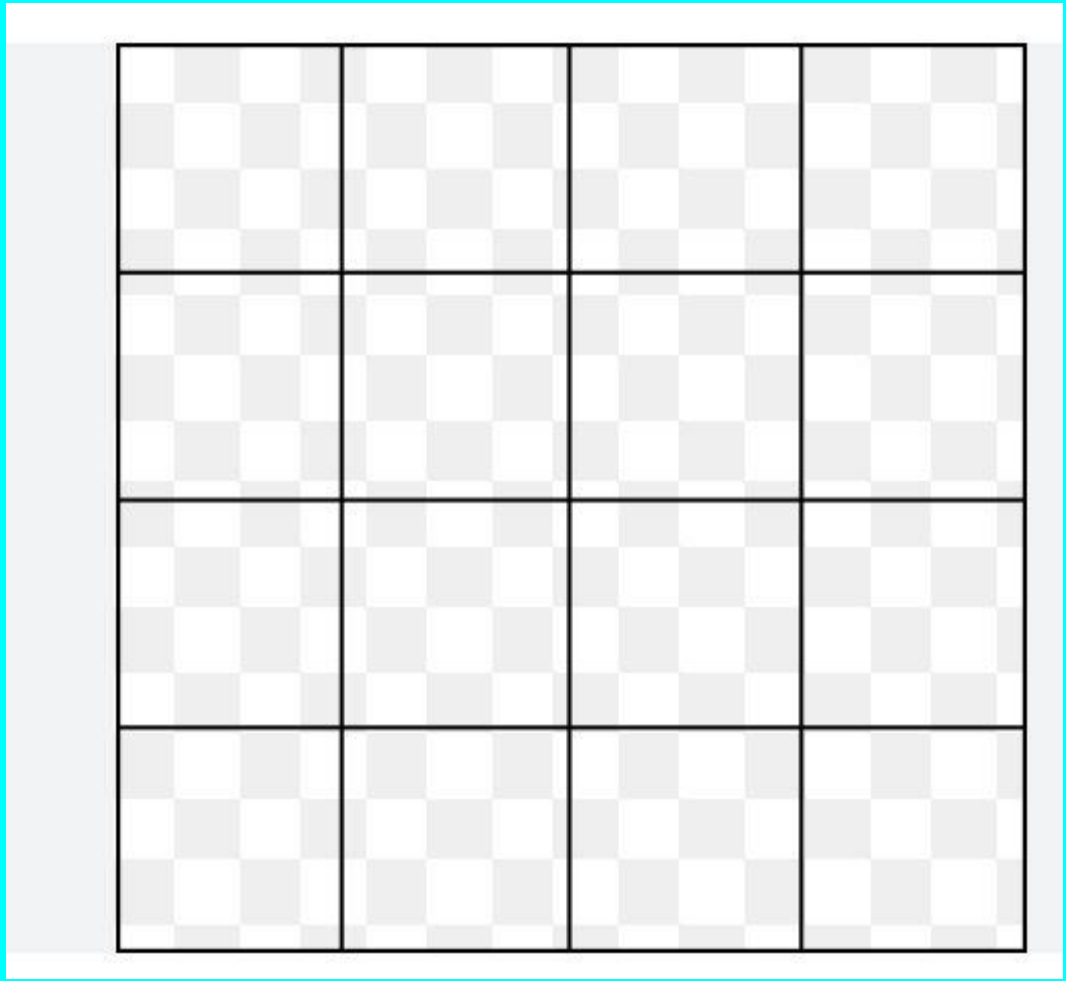
In the end, did he make money or lose money?
How much did he make or lose?

He lost $20!



How many squares are in this image?

Answer on the next slide.



How many squares are in this image?

1+4+9+16= 30

The Hopkins Ski Club needed to raise money for all students to ski. The total cost is:

$40 per person to ski
$40 if they need a lesson
$30 if they need a rental
$20 for the bus

Answer is on the next slide…

May raised $75, and did not need a lesson or a rental. How much money will she have left?

Shreya raised $80, and needs a lesson, but not a rental. Does she have enough money left?

Ben raised $200, and needs everything. How much money will he have left?

Aryan raised $60, and needs everything. WHich student will have enough money to give to him??

The Hopkins Ski Club needed to raise money for all students to ski. The total costs are::

$40 per person to ski
$40 if they need a lesson
$30 if they need a rental
$20 for the bus

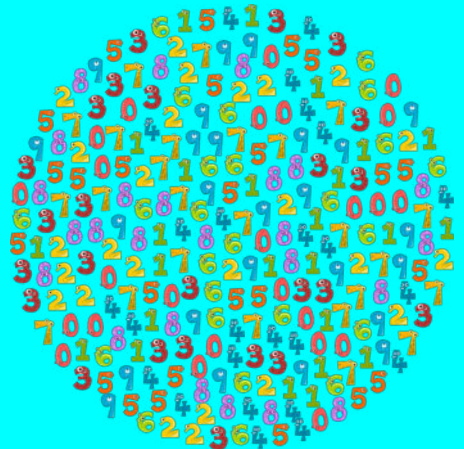
May raised $75, and did not need a lesson or a rental. How much money will she have left? May will have $5 left over

Shreya raised $80, and needs a lesson, but not a rental. Does she have enough money left? No, she will need to borrow $20. BONUS: Would Aryan still have enough left over to help her after he helped Aryan?

Ben raised $200, and needs everything. How much money will he have left? $87 left

Aryan raised $60, and needs everything. Which student will have enough money to give to him? He needs $53 and could borrow from Aryan.

What 3 numbers come after 45,234? What 3 numbers come before? Explain how you could teach this to someone who does not know this..



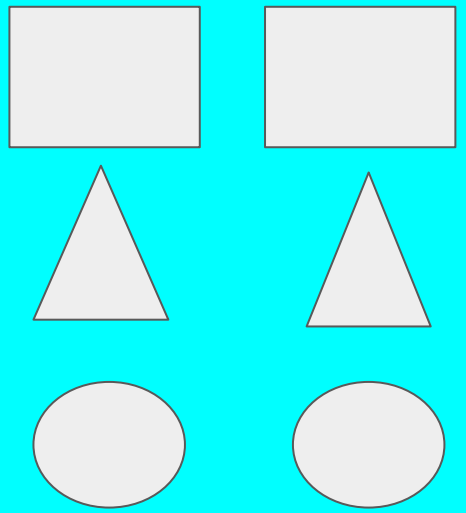
Answer is on the next slide.

What 3 numbers come after 45,234? What 3 numbers come before? Explain how you could teach this to someone who does not know this..

The three numbers that come after 45,234 are 45,235, 45,236, and 45,237, while the three numbers that come before 45,234 are 45,233, 45,232, and 45,231.To determine the three numbers that come after and before 45,234, we need to understand the concept of place value. Each digit in a number holds a specific place value, such as ones, tens, hundreds, thousands, and so on. Hopefully, you mentioned the meaning of each place value , so the ones would increase and decrease depending on whether you are adding or taking away a one.

What color is each shape if:

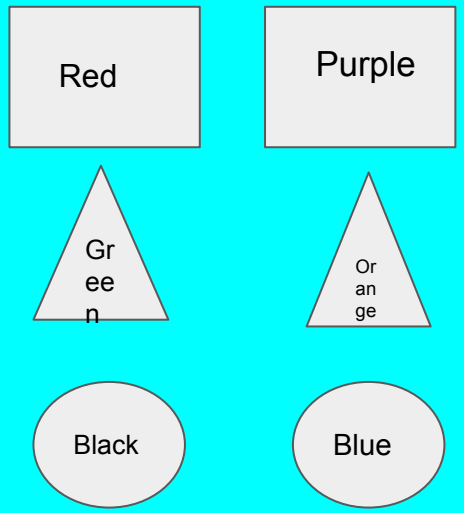
- Blue has no corners
- Green is between red and black
- Green is on the left of orange
- Purple is next to red



Answer is on the next slide. Discuss: Can there be more than one correct answer? Why or why not?

What color is each shape if:

- Blue has no corners
- Green is between red and black
- Green is on the left of orange
- Purple is next to red



If I were to write the numbers from 1-100, how many times would I use the digit 7?

What if I wrote 1- 1,000? How many zeros would I write?

Answers on the next 2 slides

If I were to write the numbers from 1-100, how many times would I use the digit 7?

7, 17, 27, 37, 47, 57, 67, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 87, 97

So, the digit 7 appears 19 times when writing the numbers from 1 to 100.

What if I wrote 1- 1,000? How many zeros would I write?

- Numbers ending in zero (10, 20, 30, ..., 1,000): There are 100 such numbers (10 for each ten's place: 10, 20, 30, ..., 100, 110, ..., 990, 1,000).
- Numbers with a zero in the tens place (10, 20, 30, ..., 90): There are 10 such numbers.
- Numbers with a zero in the hundreds place (100, 200, 300, ..., 900): There are 10 such numbers.

So, in total, there are 100 + 10 + 10 = 120 numbers that have zeros.

Therefore, when writing the numbers from 1 to 1,000, you would write 120 zeros.

Select any four numbers using your Marcy Cook Tiles (1-9).

Make as many sums and differences from 1-30 as you can.

What is your strategy?

Answers vary…discuss….

Bill’s Pizza is allowing Hopkins students to pay for pizza using links on a chain. You have 50 links on your chain, and each pizza has a cost of 3 links. Here is the catch: You have to pay Bill one extra link each time you get a pizza.
How many pizzas can you purchase with your Hopkins links?

Sarah is collecting stickers for her album. She has 18 stickers already, and her goal is to have 50 stickers in total. Her friend gives her some stickers as a gift, but Sarah forgot to count how many she received. All she knows is that after receiving the stickers, she reached her goal of 50 stickers. How many stickers did Sarah's friend give her?

Answer on the next slide.

Sarah is collecting stickers for her album. She has 18 stickers already, and her goal is to have 50 stickers in total. Her friend gives her some stickers as a gift, but Sarah forgot to count how many she received. All she knows is that after receiving the stickers, she reached her goal of 50 stickers. How many stickers did Sarah's friend give her?

We can subtract the number of stickers Sarah already had from her goal to find the missing quantity:

50 stickers - 18 stickers = 32 stickers.

Therefore, Sarah's friend gave her 32 stickers as a gift.

Hop Yo has 10 flavors of yogurt. How many different 2 flavor combinations can you make?

Answer on the next slide.

Hop Yo has 10 flavors of yogurt. How many different 2 flavor combinations can you make?

45 different combinations

A palindrome can be letters or numbers that are the same forward and backward. Some examples are the word mom and the number 141.
List the numbers that are palindromes from 1-200.

A palindrome can be letters or numbers that are the same forward and backward. Some examples are the word mom and the number 141.
List the numbers that are palindromes from 1-200.

11, 22, 33, 44, 55, 66, 77, 88, 99, 101, 111, 121, 131, 141, 151, 161, 171, 181, 191.

Think about the digits 0, 1,2,3,4,5,6,7,8,9…. Are they also considered to be palindromes?

Teachers: Draw 12 envelopes on the board, with $1, $2, $3, etc. on each one.

Say: I have 12 envelopes with your money in it. I am holding them for you, but you may ask for any envelope at any time. Which envelope do you want first? (Students will likely say $12)

Whichever envelope they choose will be crossed out and is gone.

Say: Oh no! I forgot to tell you that in life, we have to pay taxes on this money! You chose _____, so we will cross out all of the _____ (they should guess factors) of _____. This is your tax amount.

So, which one will you take next? (Likely $11)

Oh, another fact, tax collectors ALWAYS take something, so you cannot choose an envelope that has no factors. Guess again (likely $10) Cross out whatever they chose, and ask what the tax collector will take.

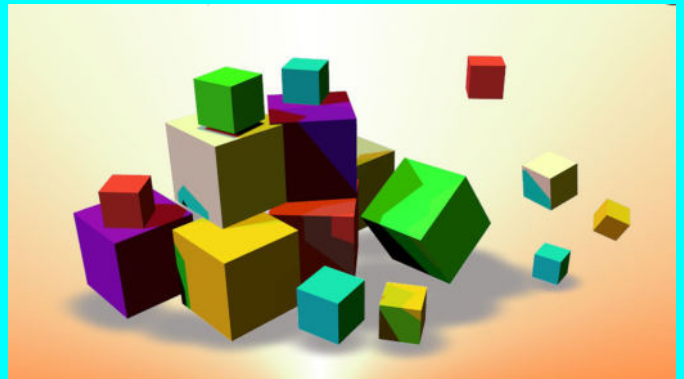
Now what can we take? When the answer is nothing, Say: Since the tax collector does not want your money to go to waste, he will take ALL of the rest.

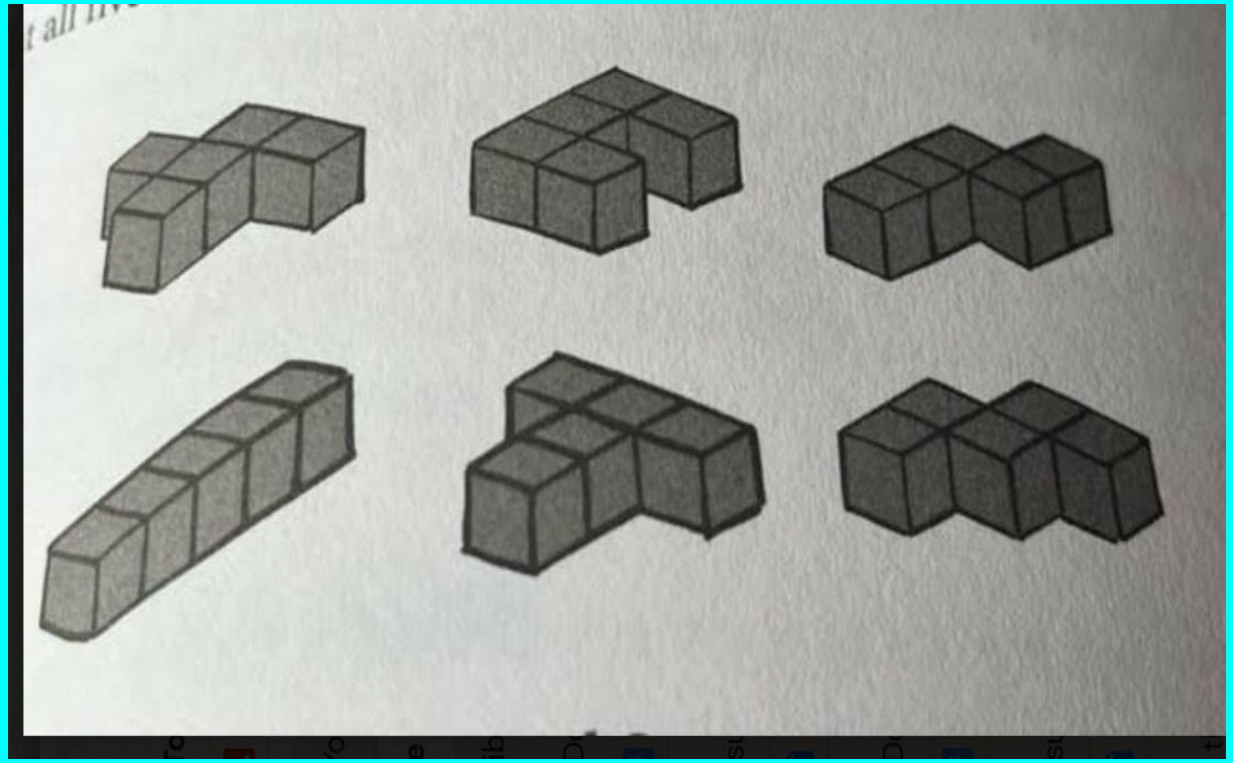
Your total $ is _____ (add up what they have), Now, break into your groups and do better.

Make the envelopes for each group ahead of time if you wish, or have them draw it on white boards. Make sure they know what a factor is. Prime is not necessarily needed, but some groups may figure it out. A good intro to Prime, too!!

Use 5 cubes to make as many different shapes that you can. All 5 cubes must touch your table/desk.

Some thoughts are on the next slide. Can you find others?





Some ideas…

Use 5 cubes to make as many different shapes that you can. All 5 cubes must touch your table/desk.

Use play money to see how many ways you can make a dollar using only nickels, dimes and quarters.

Answer is on the next slide.

Use play money to see how many ways you can make a dollar using only nickels, dimes and quarters.

1. Using 0 quarters: In this case, we have a dollar in nickels and dimes. Since the minimum value is 5 cents (a nickel), and we need to reach 100 cents, the increment between combinations is 5 cents. Thus, there are (100 / 5) + 1 = 21 combinations.
2. Using 1 quarter: In this case, we have 75 cents remaining. Again, we need to calculate the combinations of nickels and dimes to reach 75 cents. The minimum value is 5 cents (a nickel), and the increment is 5 cents. So, there are (75 / 5) + 1 = 16 combinations.
3. Using 2 quarters: This leaves us with 50 cents. The combinations of nickels and dimes to reach 50 cents are (50 / 5) + 1 = 11.
4. Using 3 quarters: This leaves us with 25 cents. The combinations of nickels and dimes to reach 25 cents are (25 / 5) + 1 = 6.

Adding up all the combinations for each case, we have:

21 (0 quarters) + 16 (1 quarter) + 11 (2 quarters) + 6 (3 quarters) = 54

Therefore, there are 54 different ways to make a dollar using only nickels, dimes, and quarters.

Guess my number: I will give you one hint:
If I double my number and add 3 the answer is 15.

Answer is on the next slide.

Guess my number: I will give you one hint:
If I double my number and add 3 the answer is 15.

My number is 6

Now,Let’s write an equation for what I just thought:
$n \times 2+3 = 15$

Guess my number: I will give you one hint:

For this one, you can use a calculator, but you must write down everything that you type into the calculator on your white board.

$z + 3.01 = 7.02$

$22.98 - y = 7.88$

$c - 4.25 = 24.8$

Tell me how you solved these equations.

Guess my number: I will give you one hint:

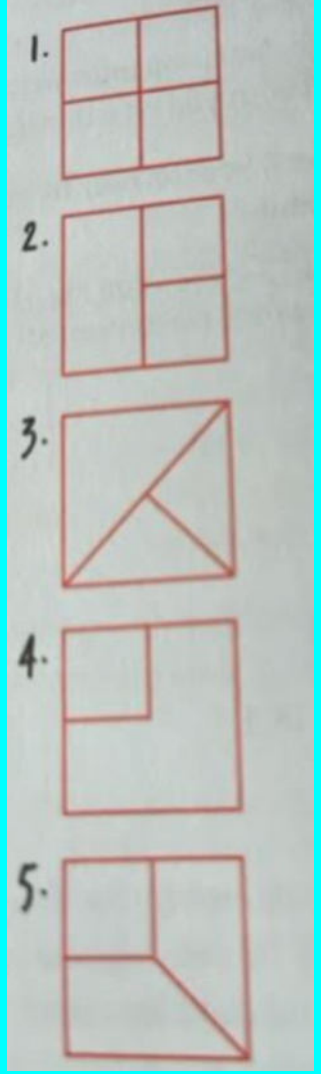
For this one, you can use a calculator, but you must write down everything that you type into the calculator on your white board.

4.01 + 3.01 = 7.02

22.98 - 15.1 = 7.88

29.05 - 4.25 = 24.8

Tell me how you solved these equations.



What fraction of the cake is each piece?

Answers on the next slide.

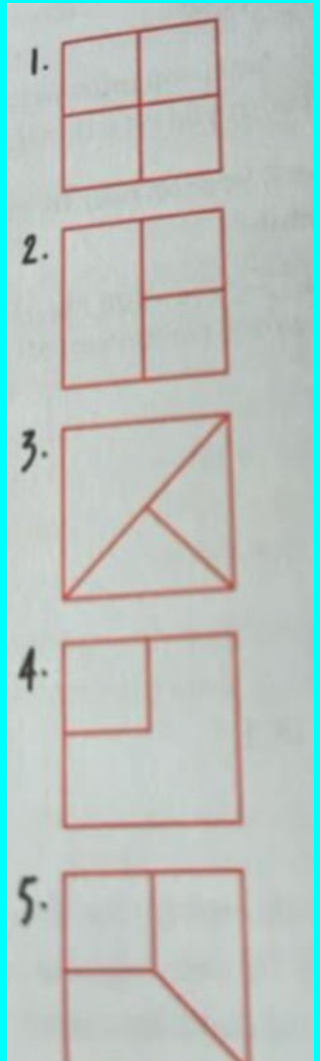
1: ¼+ ¼ + ¼ + ¼

2: ½ + 2/4

3:½ + 2/4

4: ¾ + ¼

5: ¼ +⅜ + ⅜



What fraction of the cake is each piece?

Complete the sequences

2,4,6,_____,_____,_____

1,3,5,_____,_____,_____

13,15,17, _____,_____,_____

15,18,21,_____,_____,_____

49,52,55 _____,_____,_____

44,51,58,_____,_____,_____

Now try to come up with your own patterns. Can you use more than one operation? Write your new pattern at the top of your vertical work space.

Answers are on the next slide.

Complete the sequences

2,4,6,8,10,12

1,3,5,7,9,11

13,15,17,19,21,23

15,18,21,24,27,30

49,52,55,58,61,64

44,51,58,65,72,79

Let’s build equations! What is an equation?

We will use the numbers 1-10 and will only use **addition** and **subtraction.**

Your task: Make 5 equations who have a sum or difference of 17,17,8,1, and 2

Think about this: How is an equation different from an expression?

Let’s build expressions! What is an expression?

We will use the numbers 1-10 (each number **exactly once**, and will only use **addition** and **subtraction at least twice -** one of them will
Your task: Make 5 expressions who have a sum or difference of 17,17,8,1, and 2

Some thoughts:

9 + 8 = 17
10 + 7 = 17
9 + 1 + 5 = 15, then 15 + 2 = 17
9 - 1 = 8
10 - 9 + 2 = 3, then 3 - 1 = 2

Farmer John has some chickens and some pigs. He noticed that there were a total of 22 legs in his barnyard! How many chickens and how many pigs **might** he have? Yes, each pig has 4 legs and each chicken has 2 legs. None are missing legs!

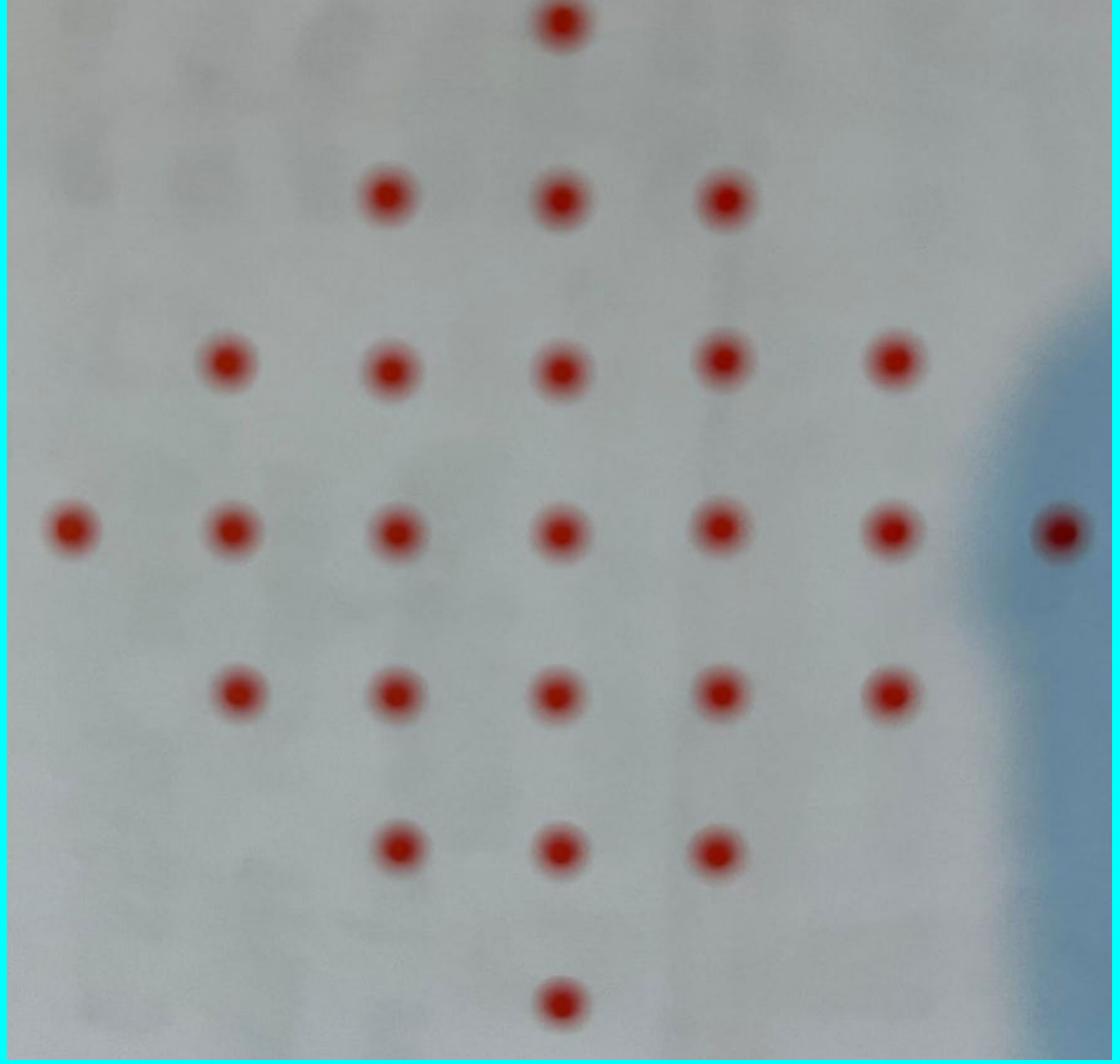
Could there be more than one solution?

Some thoughts are on the next slide…..

Farmer John has some chickens and some pigs. He noticed that there were a total of 22 legs in his barnyard! How many chickens and how many pigs might he have? Could there be more than one solution?

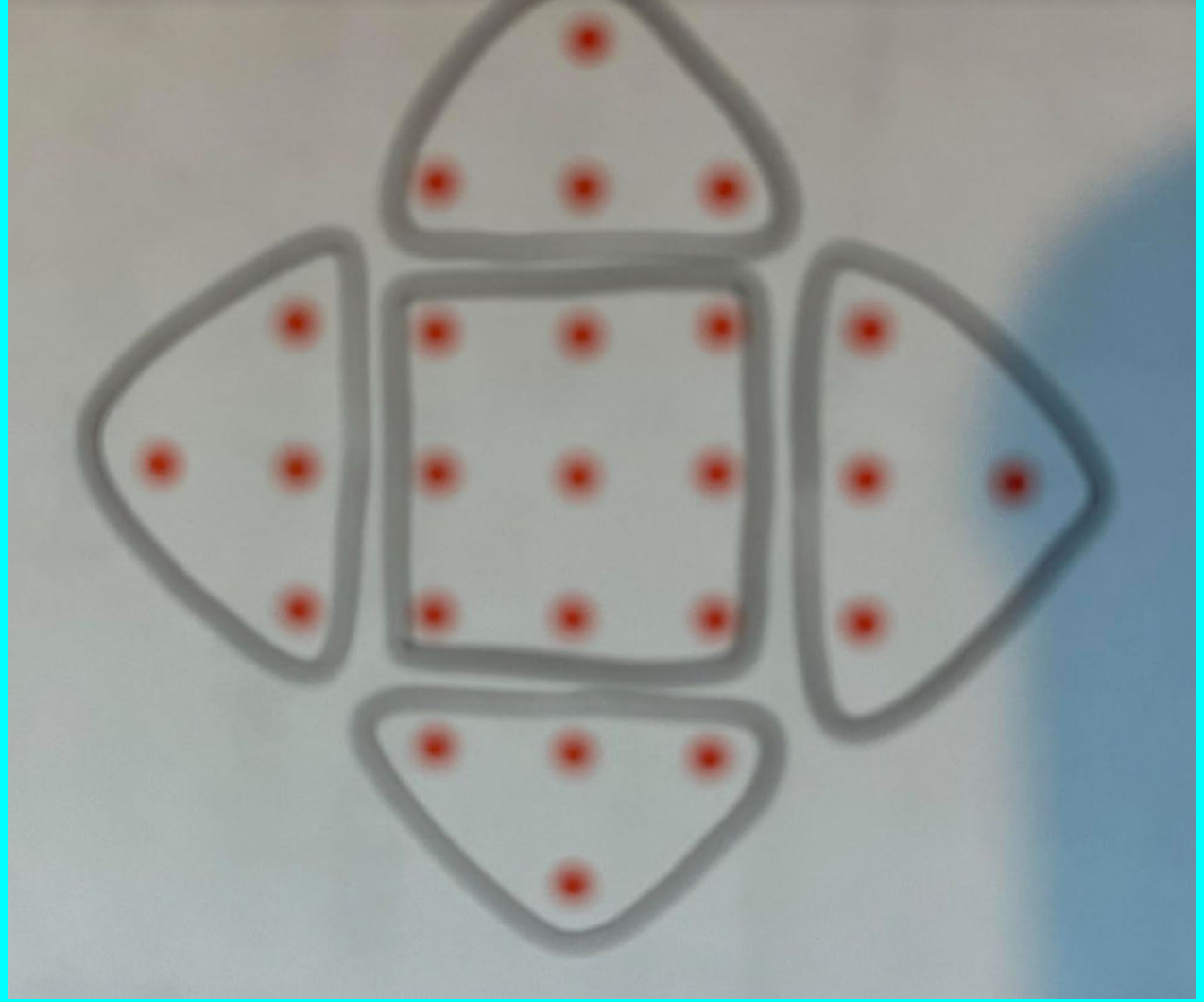
- 11 chickens and 0 pigs,
- 1 chicken and 5 pigs,
- 2 chickens and 4 pigs, or
- 3 chickens and 3 pigs.

See next slide for one idea.



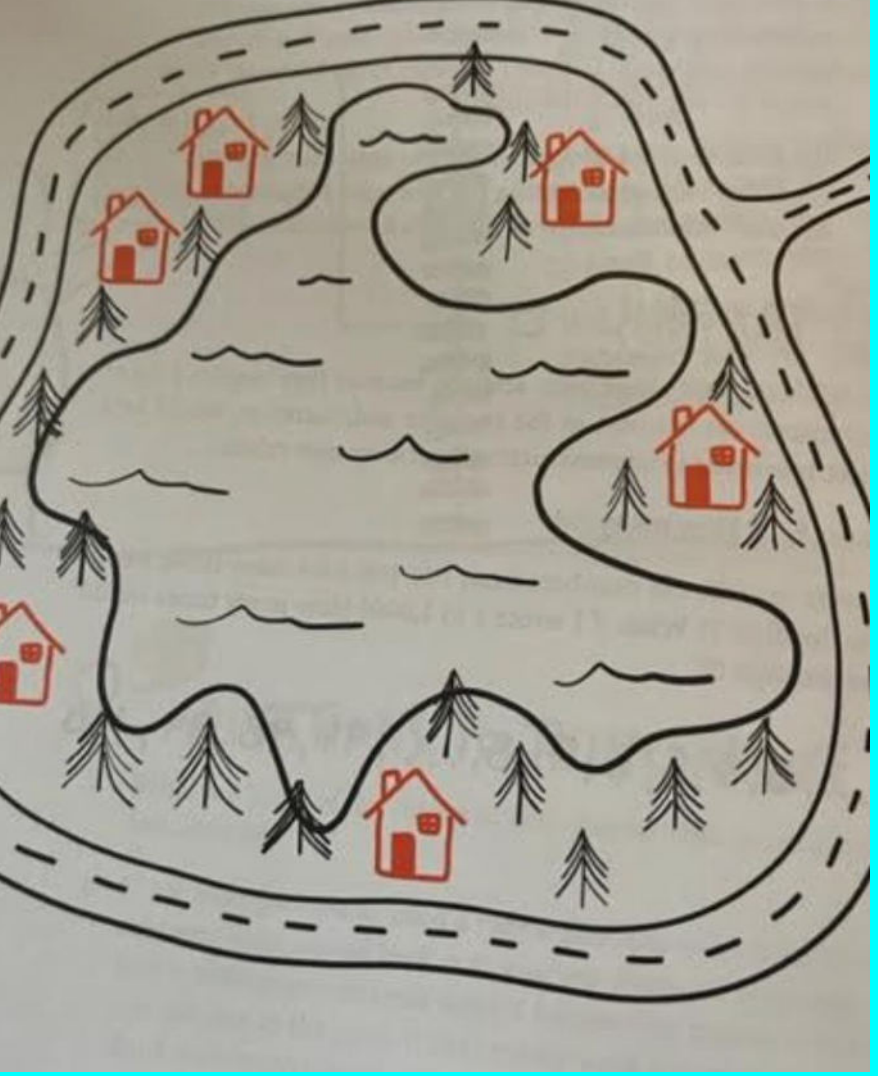
Photocopy for each group from page 206.
I could not find this configuration on line…

There are 25 dots. Find many ways to show that there are 25 dots by circling different parts and writing a number sentence for each.



One idea:

4+4+4+4+9
or
4+4 + 3 x 3



This road is 27 miles long and goes around a lake. It connects the 6 cottages that you see.

Two of the cottages are 1 mile apart.
Two of the cottages are 2 miles apart.
Two of the cottages are 3 miles apart.
Two of the cottages are 4 miles apart.

How are the cottages distributed?

POSSIBLE SOLUTION ON NEXT SLIDE

I cut this down for now, but am interested to see what 4th graders can do with it!!