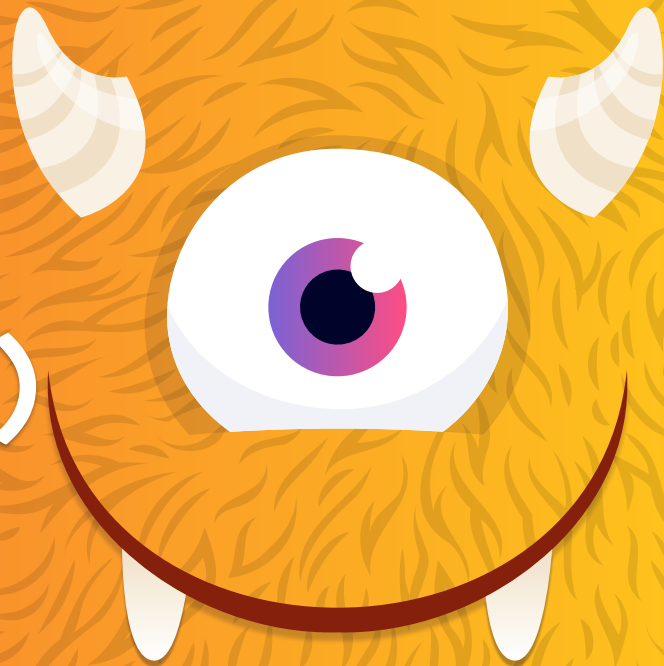


Counting Adventures: Connecting Mathematics to Science and our Community (PreK, K)



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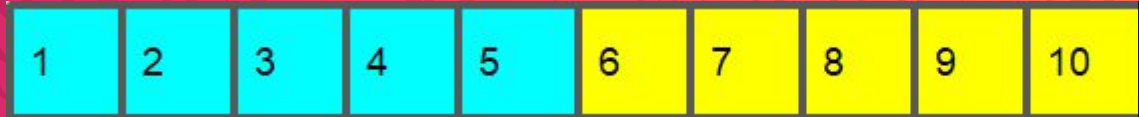


**Let's build a numbertrack
with our linking cubes or
color tiles.**

**Be sure to match them
with your numerals just
like I did.**

**Be sure to use two colors
like I did.**

**Locate the counters you
will use (beans, buttons,
cubes, etc.)**



Saguaro Arms

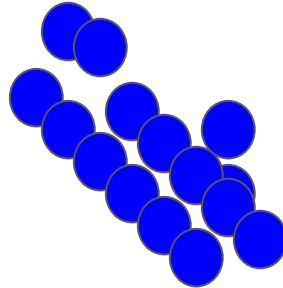


The branches on a Saguaro Cactus are called *arms*. A saguaro cactus with no arms looks like this. We can say it has 0 arms.

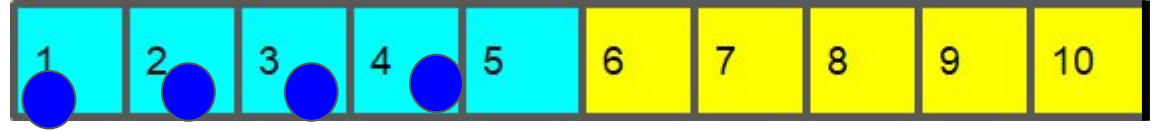
Saguaro Arms



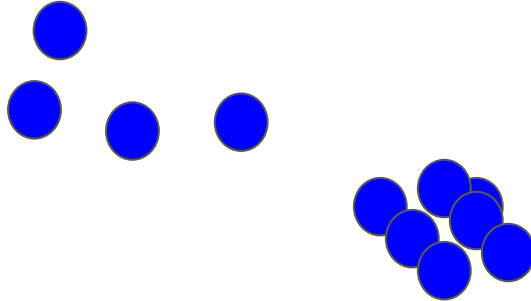
I was driving to the grocery store with my mom and I saw this Saguaro. How many arms can you see on this Saguaro?



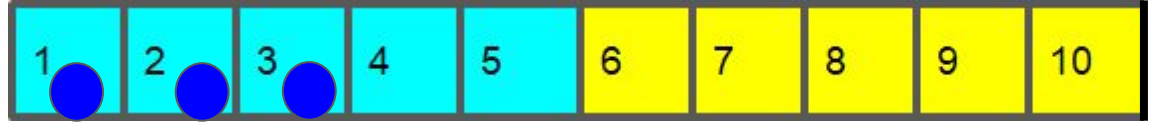
Saguaro Arms



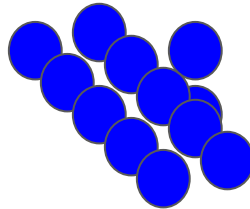
I can see a Saguaro Cactus across the street from my front yard. How many arms can you see on this Saguaro?



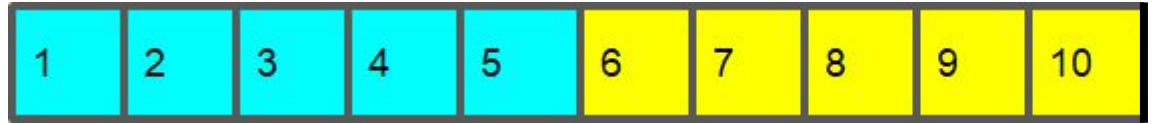
Saguaro Arms



My family went to Saguaro National Park this weekend to hike. We saw lots of Saguaro Cactus. This was my favorite one. How many arms do you see?



Let's go on a counting adventure and look for saguaro cactus. How many Saguaro Cactus can we find in our community?



From whole group to Center work

What was your experience like?

What did you notice about the structure?

Highlight science vocabulary and math vocabulary

Each slide had the same process.

Photo with counter, track with counter, count, answer our question.



Breakout rooms

As a team go through slides 10-14 as if you are learners.

After you finish, look back at them through the lens of a teacher.



Bird Habitats

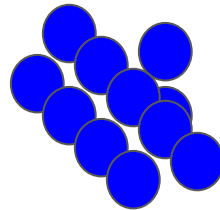


Birds like woodpeckers, hawks, and owls create holes in the Saguaro cactuses to make nests.

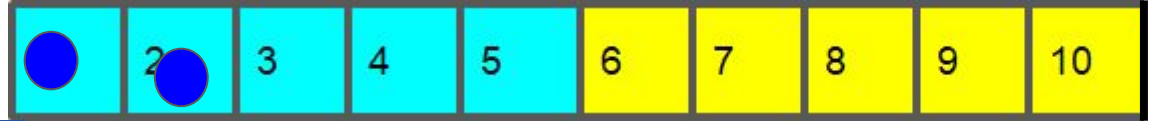
Bird Habitats



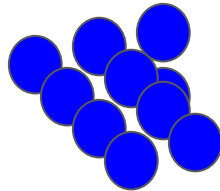
My brother saw this Saguaro with a bird.
How many holes for a nest do you see?



Bird Habitats



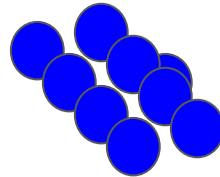
We walked past a school on our way home from the store. We saw this cactus on our walk. How many holes do you see in this Saguaro?



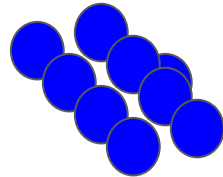
Bird Habitats



Here is another Saguaro I found! How many holes and nests do you see?



Let's go on a counting adventure and look for saguaro cactus. Can we find any with holes? How many holes can we find?

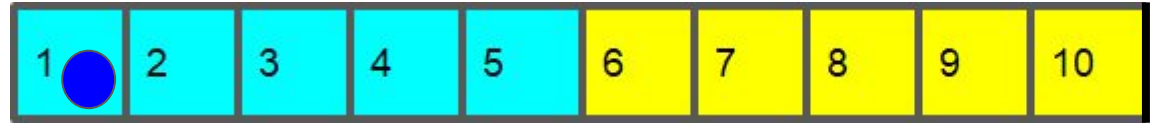


Bird Habitats

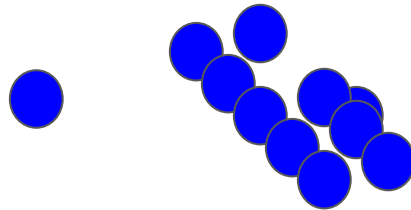


Birds like woodpeckers, hawks, and owls create holes in the Saguaro cactuses to make nests.

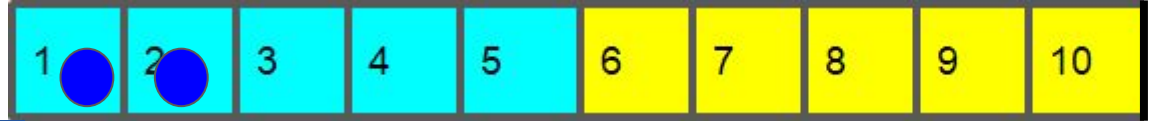
Bird Habitats



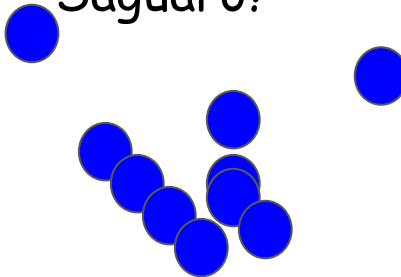
My brother saw this Saguaro with a bird.
How many holes for a nest do you see?



Bird Habitats



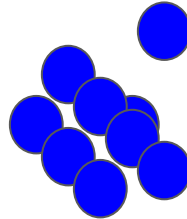
We walked past a school on our way home from the store. We saw this cactus on our walk. How many holes do you see in this Saguaro?



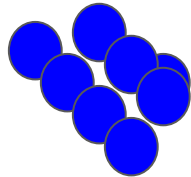
Bird Habitats



Here is another Saguaro I found! How many holes and nests do you see?



Let's go on a counting adventure and look for saguaro cactus. Can we find any with holes? How many holes can we find?



Bird Habitats

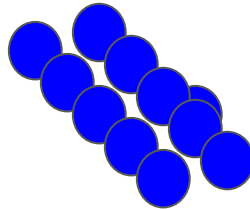


Birds like woodpeckers, hawks, and owls create holes in the Saguaro cactuses to make nests.

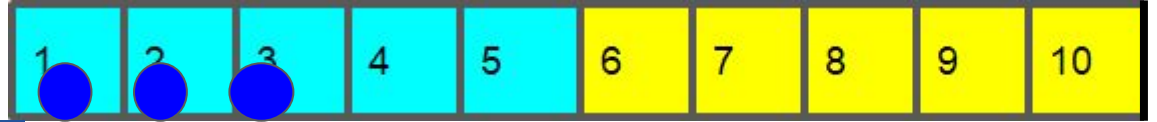
Bird Habitats



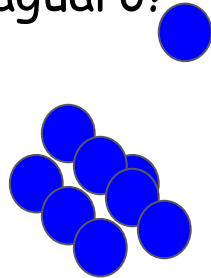
My brother saw this Saguaro with a bird.
How many holes for a nest do you see?



Bird Habitats



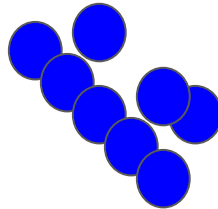
We walked past a school on our way home from the store. We saw this cactus on our walk. How many holes do you see in this Saguaro?



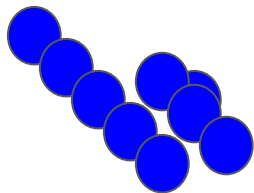
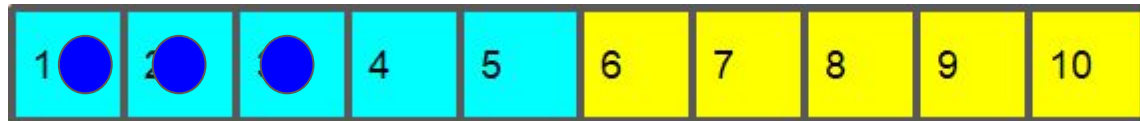
Bird Habitats



Here is another Saguaro I found! How many holes and nests do you see?



Let's go on a counting adventure and look for saguaro cactus. Can we find any with holes? How many holes can we find?



Bird Habitats

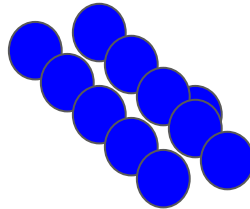


Birds like woodpeckers, hawks, and owls create holes in the Saguaro cactuses to make nests.

Bird Habitats



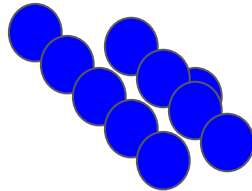
My brother saw this Saguaro with a bird.
How many holes for a nest do you see?



Bird Habitats



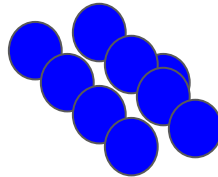
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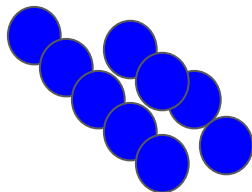
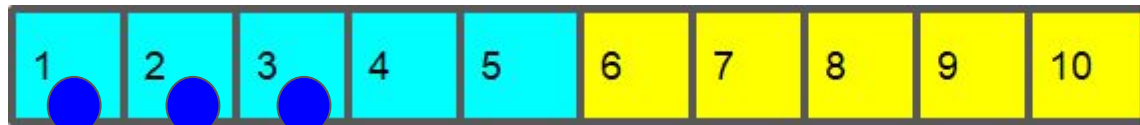
Bird Habitats



Here is another Saguaro I found! How many holes and nests do you see?



Let's go on a counting adventure and look for saguaro cactus. Can we find any with holes? How many holes can we find?



What did you notice?

Were there any differences?

Can you imagine how this might shift to a home opportunity/connection?

Can you imagine how this might shift to a center?



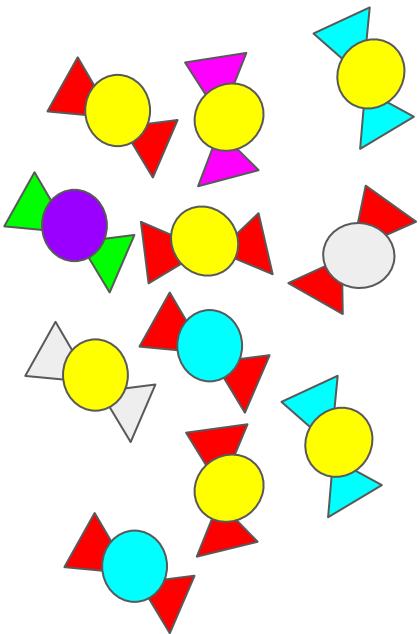
Breakout rooms

As a team go through slides 17-22 as if you are learners.

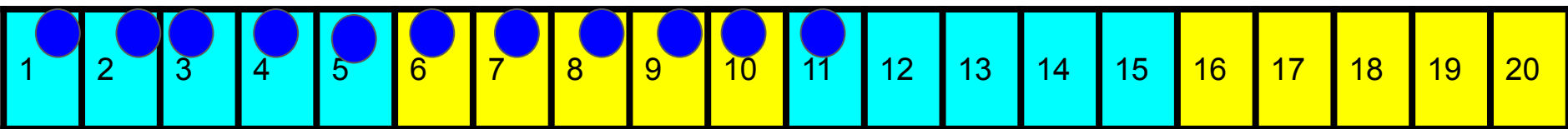
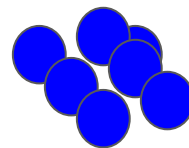
After you finish, look back at them through the lens of a teacher.



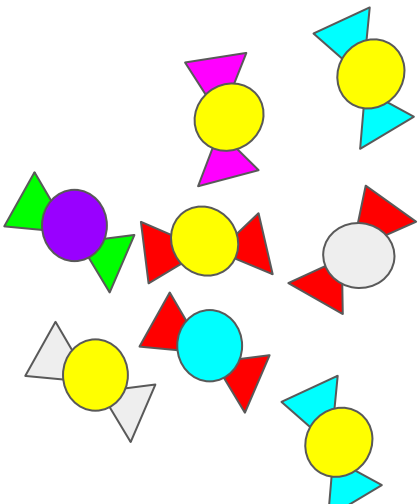
Party Piñata



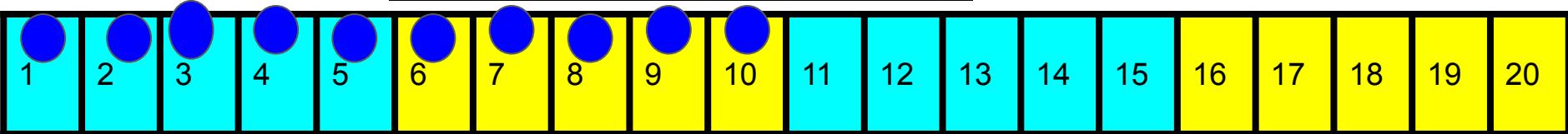
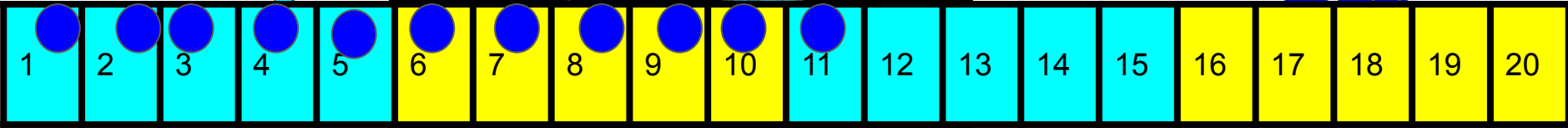
I asked for a piñata at my birthday party. We are filling it with candy. How many pieces of candy do you see here?



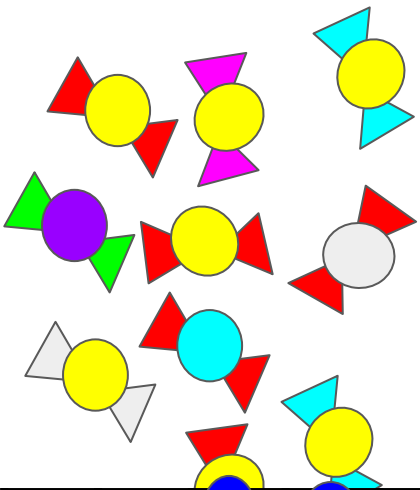
Party Piñata



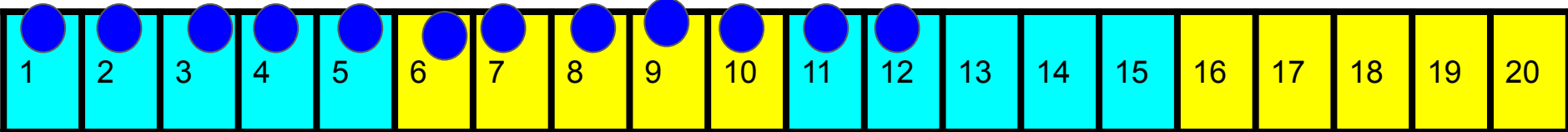
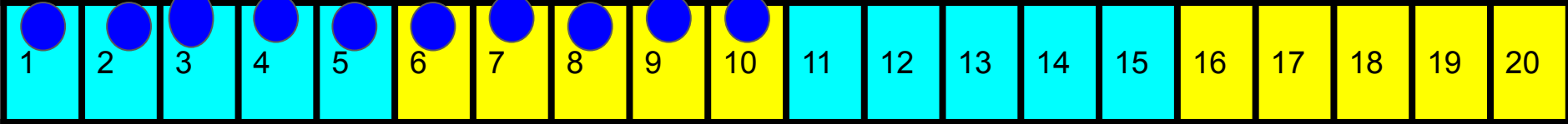
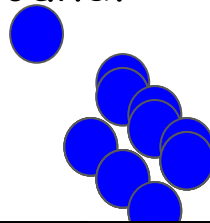
My mom gave me another bag of candy to fill the piñata. How many pieces of candy do you see here that my mom gave me?



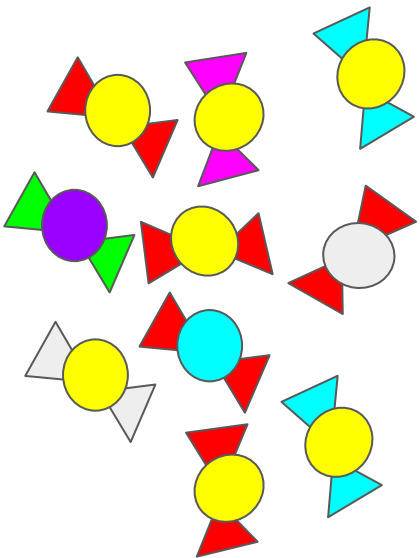
Party Piñata



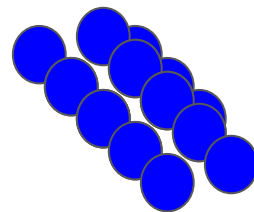
My dad found another bag of candy in our pantry. How many pieces of candy do you see here that my dad found?



Party Piñata



I sent all my friends home with a bag of candy. How many pieces of candy do each of my friends get to take home?

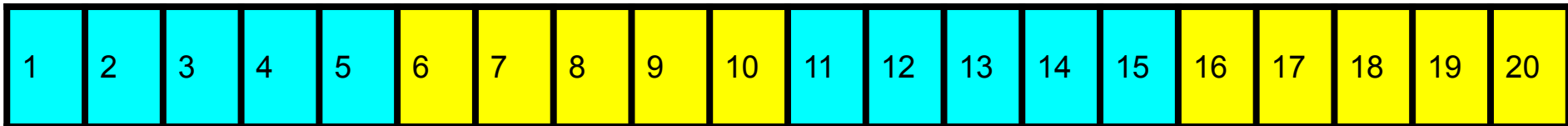
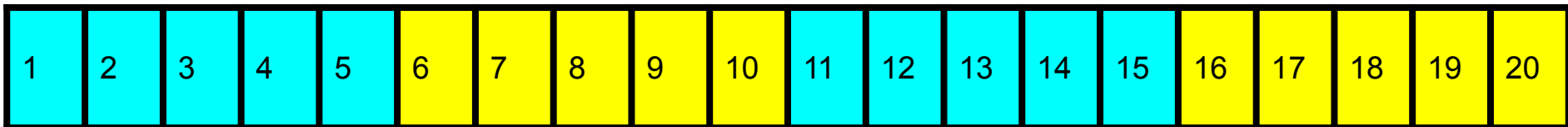


1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----

Party Piñata



You and your partner have some candies that will be placed into a piñata.
How many candies do you have? How many candies does your partner have?
Do you think you have more candies or fewer candies than your partner, why?



Party Piñata



What can we discover?

I started with some candies.

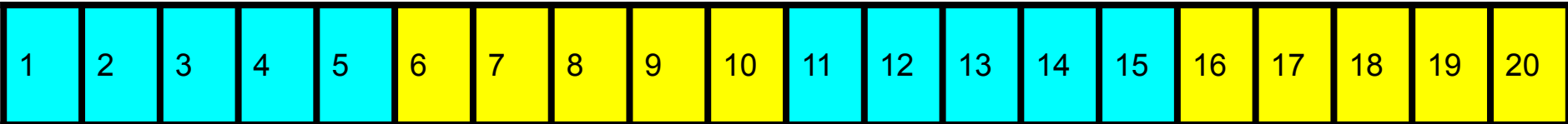
My mom found some candies.

My dad found some candies.

My friends took home some candies.

Let's compare some of these and see what we can find.

We will use the words MORE, LESS, and the SAME amount.



**What is something you noticed?
Compare, describe the number**

**How are these adventures
becoming more complex?**

**How do they work alongside
your other lesson components?**



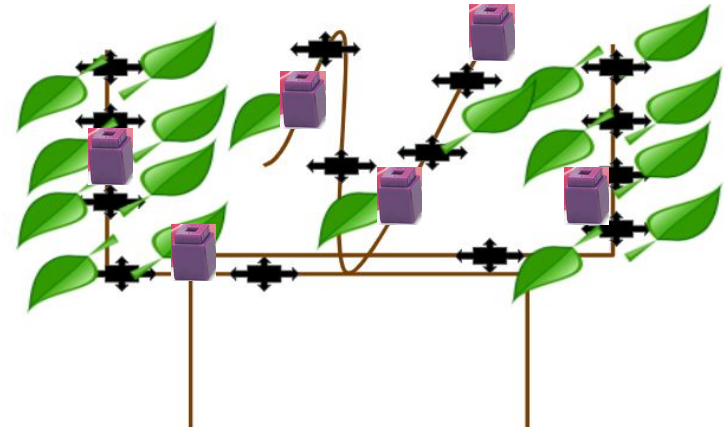
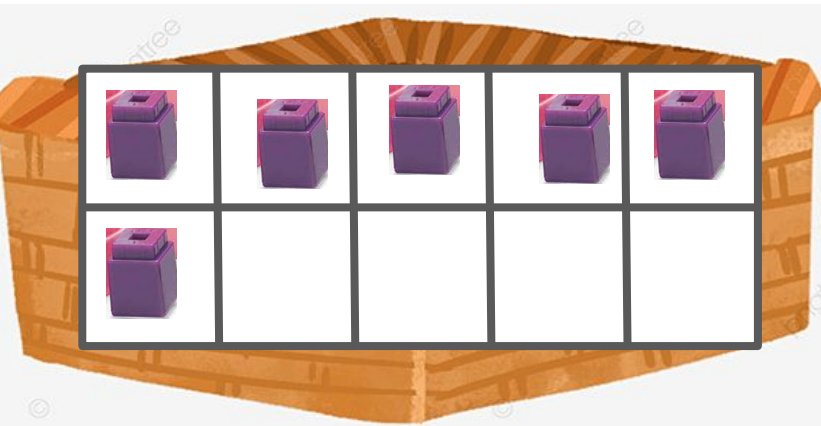
When I was a young girl growing up in Oregon, I loved to pick blackberries. It was a real adventure to avoid the thorns and the blackberry stains on our clothes. We would walk down the path to the blackberry patch with our baskets in our hands.



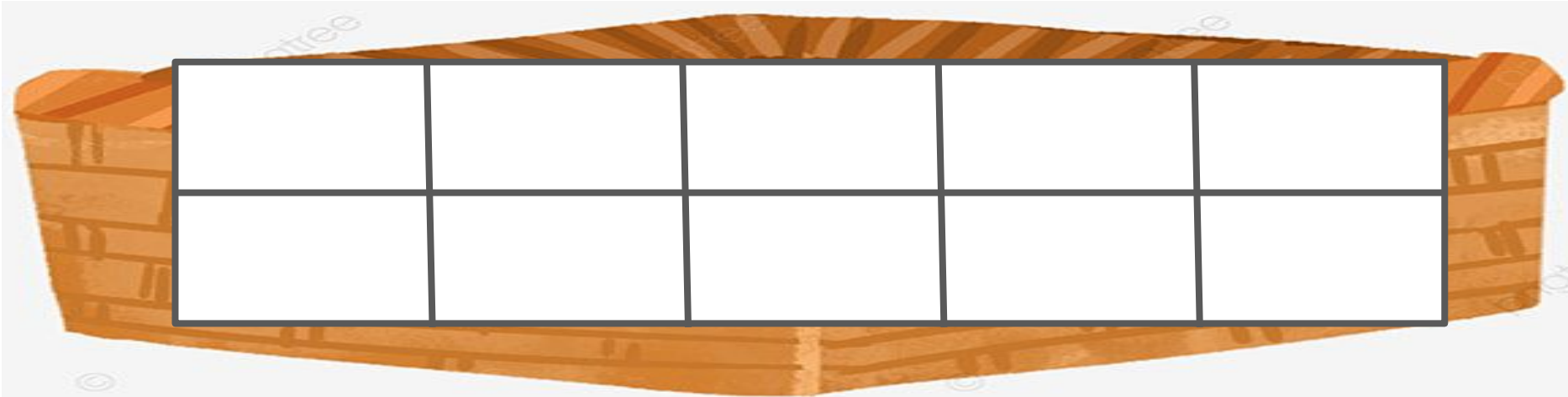
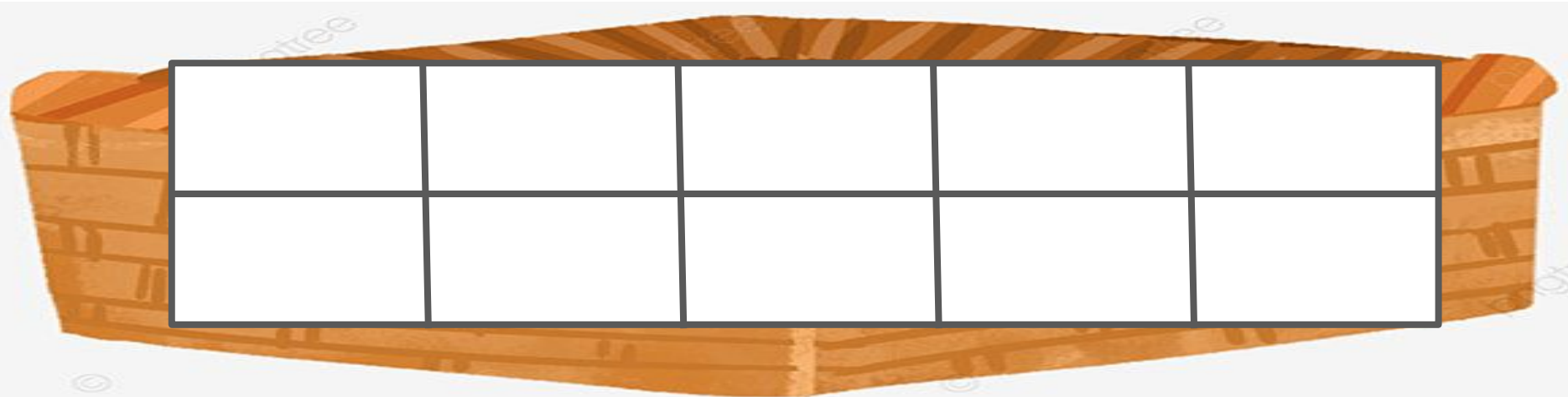
Let's grab our baskets (ten frames - We will pretend the ten frame is our basket today!) and walk down the path. Can you stand up and "walk" with me down the path? Get your baskets!

When we get to the blackberry patch we will see a big bush with bright purple blackberries, green leaves, and black pointy thorns. Can you see the blackberry patch? Let's pick the blackberries!

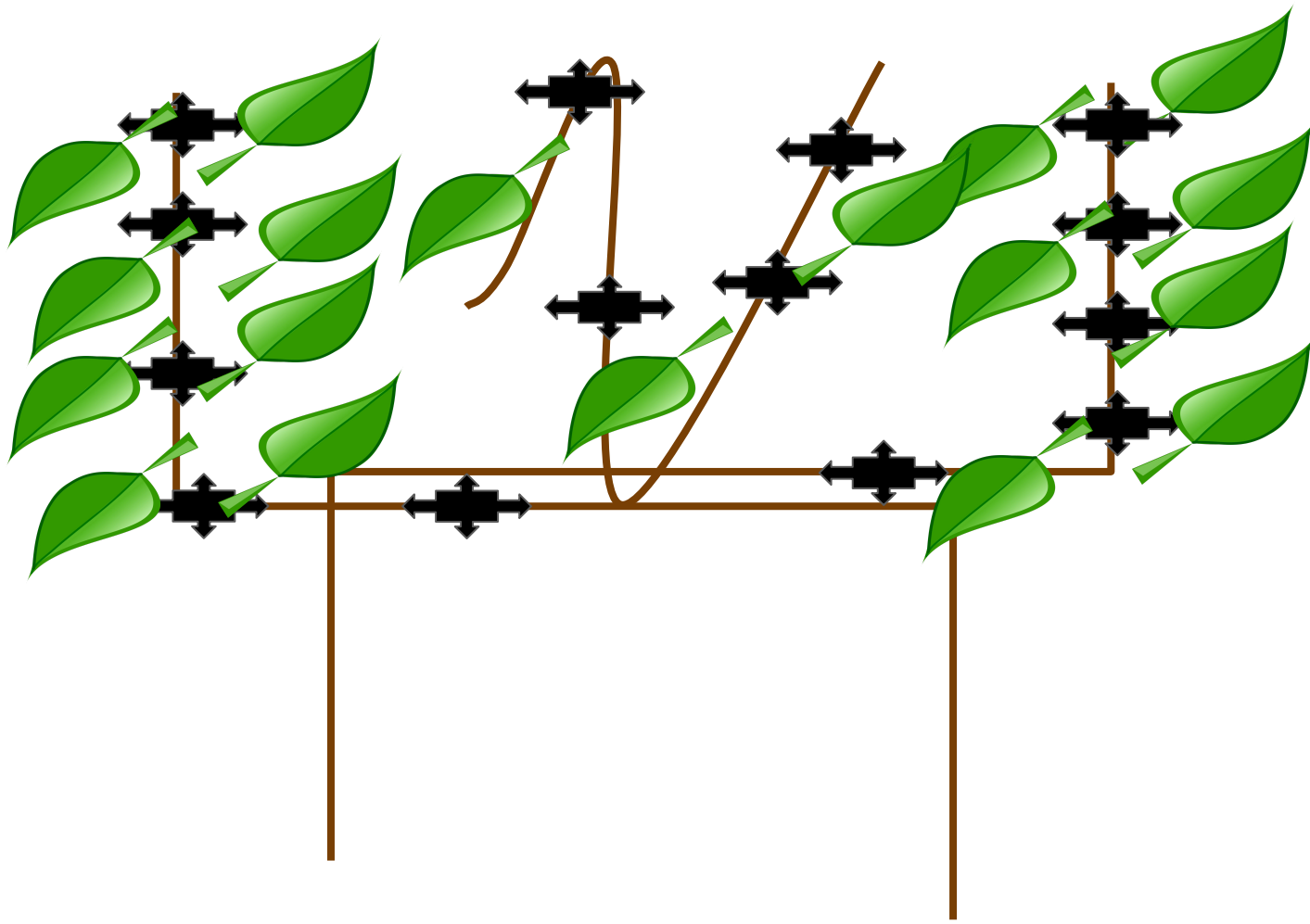
As you pick the blackberries watch out for the thorns. Be sure to place the blackberries in your basket.



Blank Basket Ten Frames

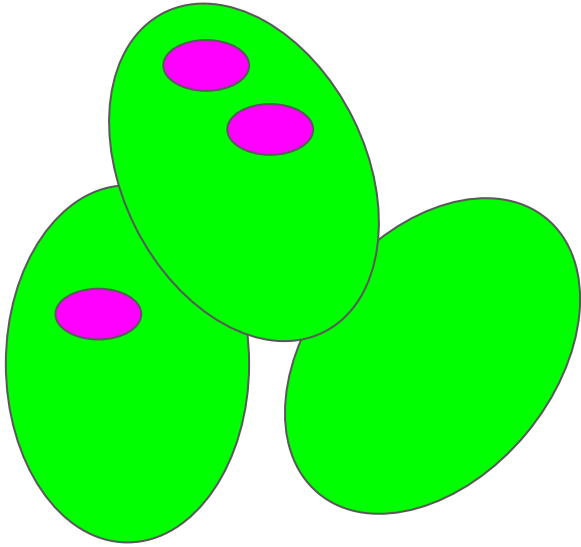


Blackberry Patch Mat



How many blackberries are in your basket?
Touch each blackberry and count. Let's share.

Let's put our blackberries back on the bush and
go to a new blackberry bush. We can collect
blackberries and count them again!



What contexts do you imagine using?

Quail

Cactus Wren

Pumpkins

Eggs

Prickly Pear

San Bernardino

Wildlife Refuge

Ideas:

Rocks

Branches

Leaves

Lizards

Mesquite trees

Mesquite pods

Rose bushes

Clouds

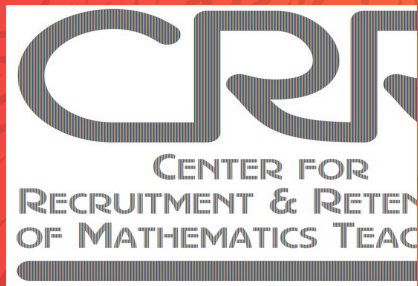
Birds



How will you incorporate these ideas into your lessons?



Visualizing Change: a Powerful Tool for Algebraic Thinking (PreK, K)

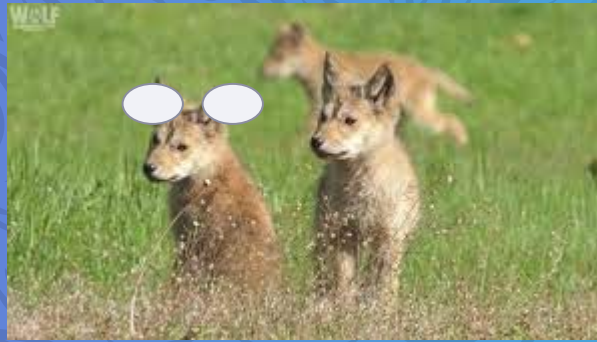


Melissa Hosten

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Which one
does not
belong?



Which one
is unique?



Which one
is
different?

What did you notice?

What are some of the differences you noticed in the progression?

What was the same across the progression?

What kind of thinking do you think this will develop?



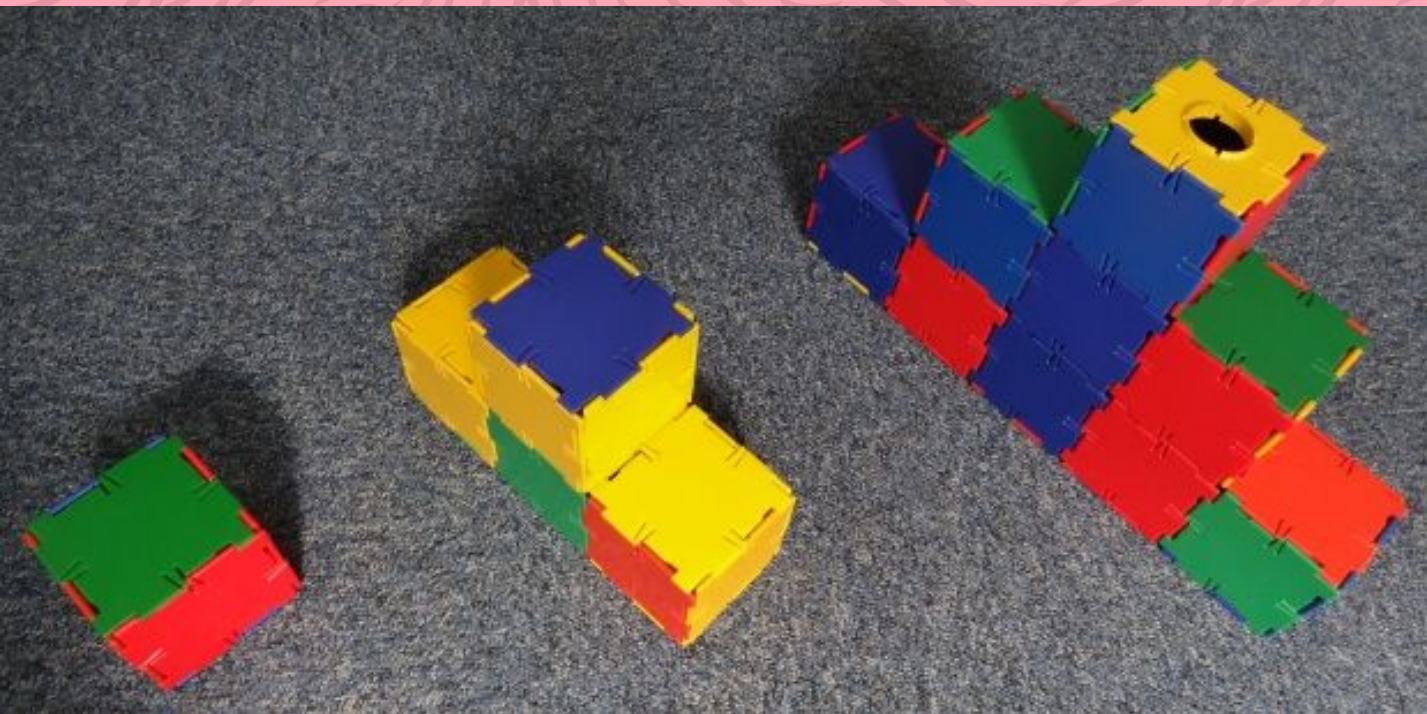
How does this grow?



How does this grow?



How does this grow?



What did you notice?

What are some of the differences you noticed in the progression?

What was the same across the progression?

What kind of thinking do you think this will develop?

Could your learners build their own?



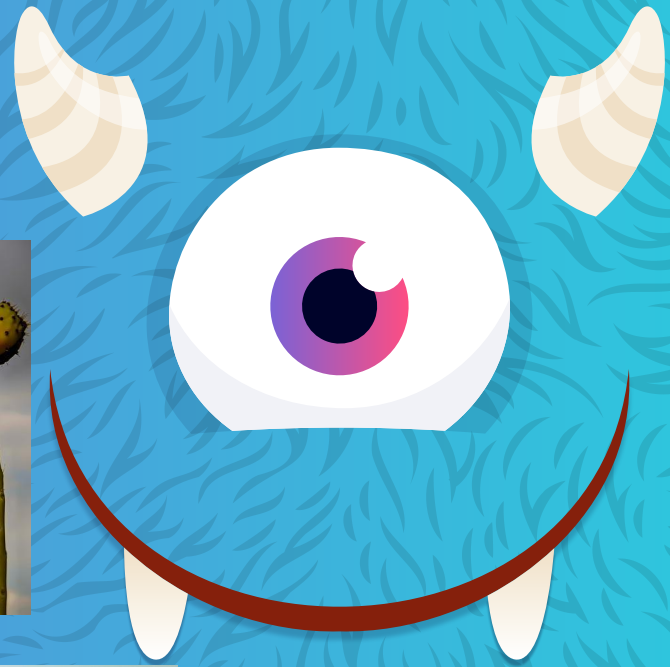
Breakout rooms

As a team, make a slide that you can use with your learners based on the two routines we have discussed.



Breakout room 1

Which one is different?



Which one does not belong?



In the slide notes you might type possible answers.

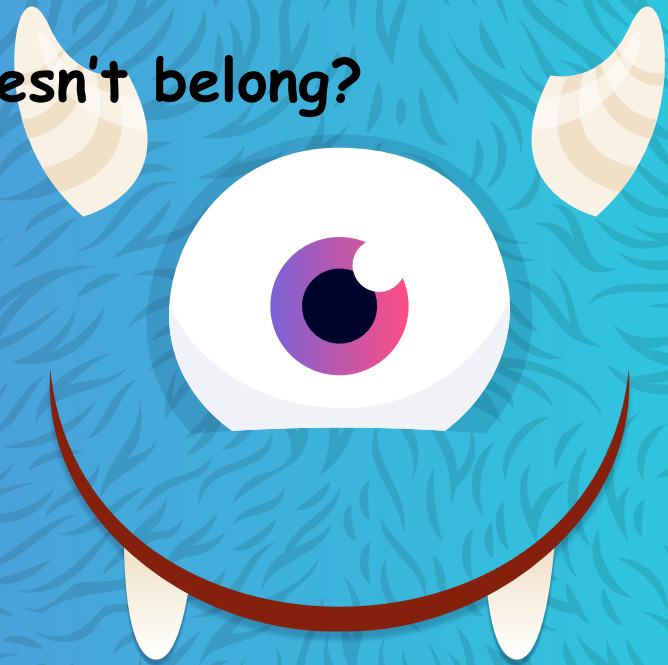
Breakout room 3

How does it grow?



Breakout room 4

Which one doesn't belong?



Breakout room 5

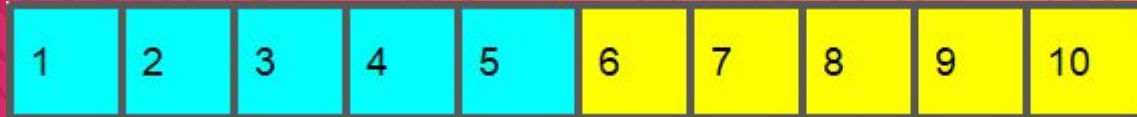
Which one does not belong?



**Let's build two
numbertracks with our
linking cubes or color tiles.
Be sure to match them with
your numerals just like I
did.**

**Be sure to use two colors
like I did.**

**Locate the counters you
will use (beans, buttons,
cubes, etc.)**



How are these the same and how are they different?

Same:
Quail
On the ground

Different:
Quail are different colors
There are different amounts of quail
Not facing the same direction



How are these the same
and how are they
different?



What did you notice?

What are some of the differences you noticed in the two slides?

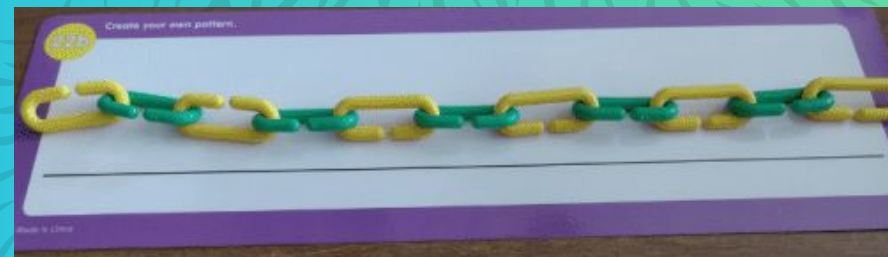
What was the same across the two slides?

Is this something that can be done outside?

What kind of thinking do you think this will develop?



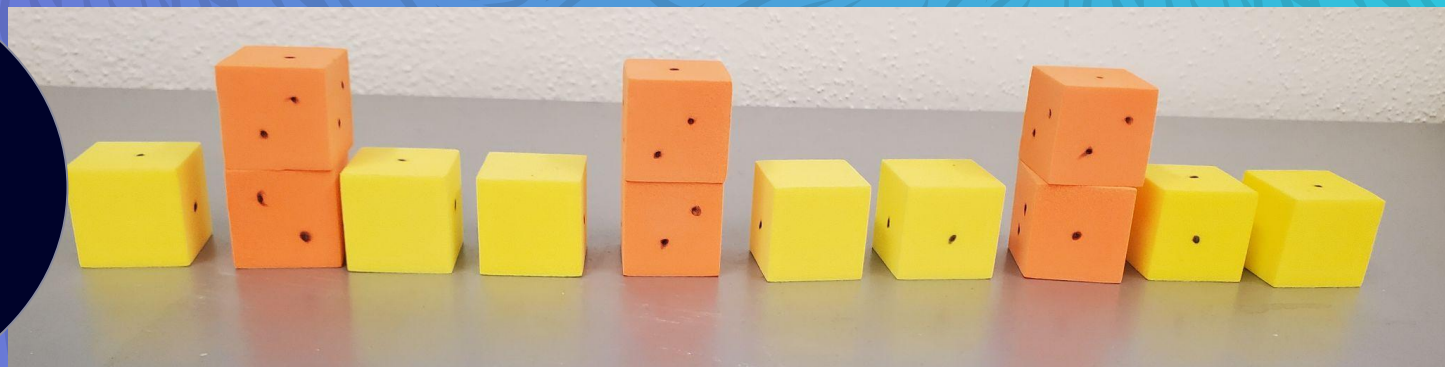
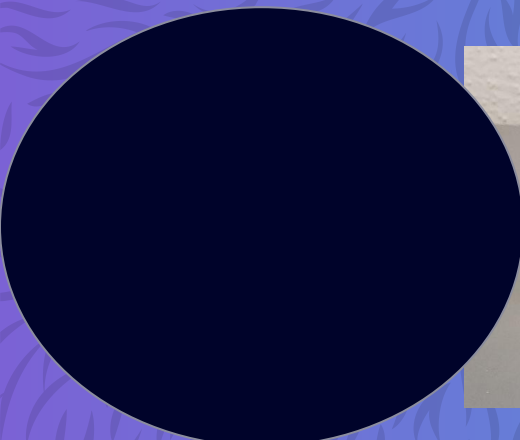
What comes next?



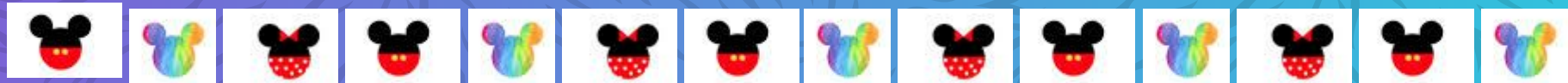
What comes next?



What comes before?

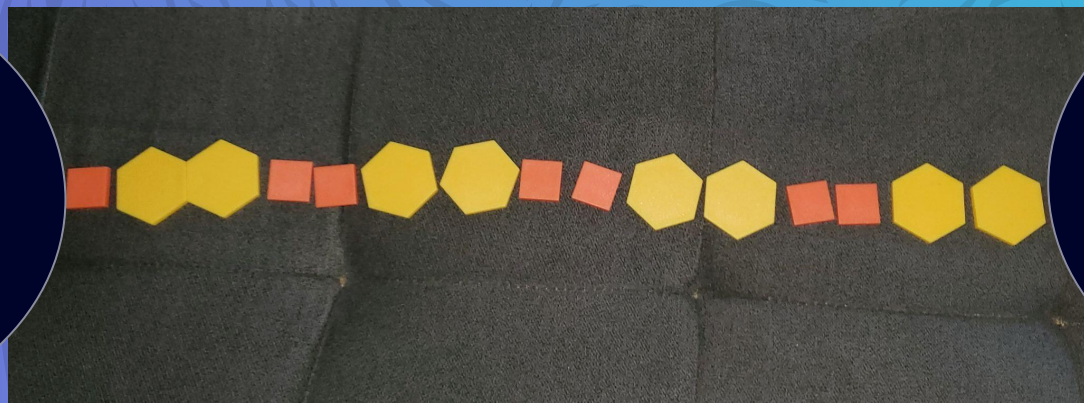


What comes before?



What comes before?

What comes next?



What is missing?



How many are missing?



What is missing?



What did you notice?

What are some of the differences you noticed in the progression?

What was the same across the progression?

What kind of thinking do you think this will develop?

Could your learners build their own?



Breakout rooms

As a team, make a slide that you can use with your learners based on the routines we have discussed.



Breakout room 1



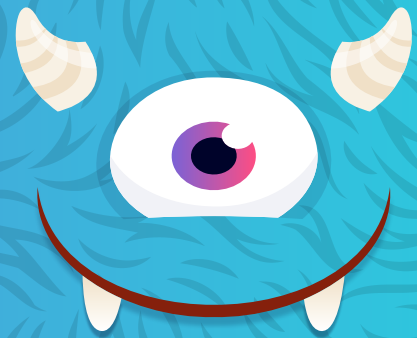
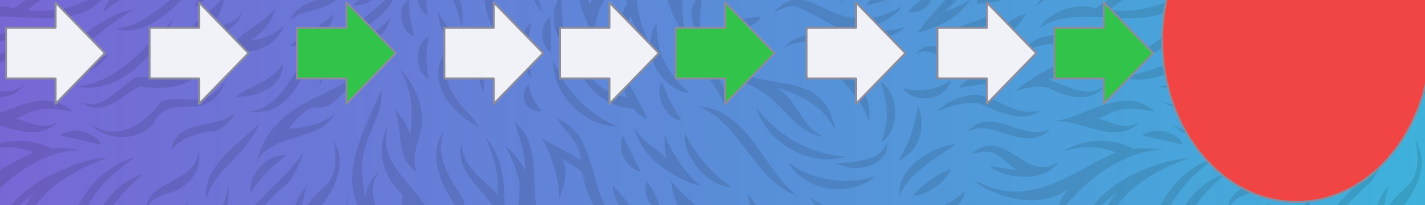
What comes next?



Breakout room 3

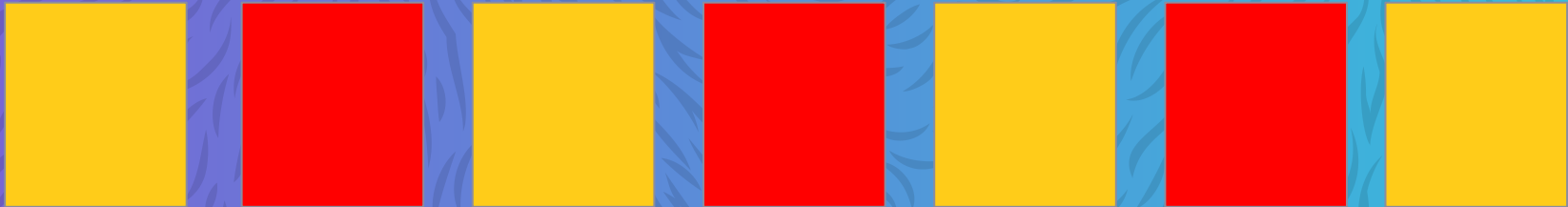
Prompt:

What comes next?



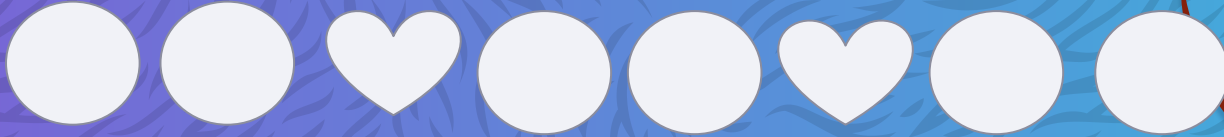
Breakout room 4

What is missing?



Breakout room 5

What comes next?



Using routines to focus on change...

- **What are questions/ponderings you have?**
- **What are new ideas you are percolating?**
- **What concerns are surfacing?**



**Thank you so much for
participating today!**

**Please share your
feedback!**

Link:

https://uarizona.co1.qualtrics.com/jfe/form/SV_5tKLWVOEVtuy6Ue

