

COMMON CORE MATHEMATICAL PRACTICES IN THE EARLY GRADES

1. *Can You Build My Towers?*

(a) I have used 6 cubes to make a row and have blocked it from your view. As I describe the row of colored blocks see if you make an exact copy.

(b) I have used 6 cubes to make a building and have blocked it from your view. As I describe the building can you make an exact copy just using my verbal description. Listen as I describe and build. You may not ask me questions

Practices: Positional and academic language, communicate precisely

2. *Describe the Data*

Take a handful of inch squares. Sort by color. Describe your data.

Build a bar graph. Use comparative language to describe your data.

Write statements using =, <, and >

Build a circle graph.

Practices: Rich language environment, representations

3. *Links in a Chain*

See separate handout

Practices: Multiple representations, Connections between representations, conceptualize with concrete objects

4. *Gecko*

See separate handout

Practices: Analyze relationships, discern a pattern, explain correspondence between representations, conceptualize with concrete objects

5. *Three in a row*

See separate handout

Practices: Look for and express regularity, discern a pattern

6. *What's in the bag?*

See separate handout

Practices: Interpret results, make conjectures, justify conclusions

Links in a Chain



Children will make loops by gluing the ends of single strips of paper together. Connecting loops together makes a chain.

How many links will be in your chain if you have one minute to make them?

Describe your chain.

Look at other chains for your table.

Which chain has the most links? ?

Which has the least?

How many is two more than your chain?

How many would you have if you took two off your chain?

Write number sentences to represent these relationships

Making Predictions

How will your answers to the above questions change if we do it again?

If you have more people in your group?

If adults do it?

If we work for two minutes?

Use the chains to form a bar graph. Describe the graph.

Which bar is most, which is least? Are any the same?

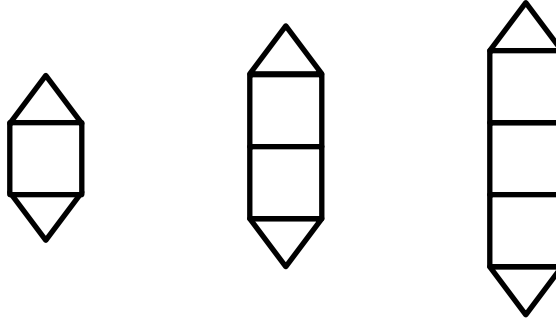
Vary the arrangements of the bars so the graph is sometime vertical and sometimes horizontal. Sometime left to right and sometime right to left.

Transfer the bar graphs to graph paper.

Rearrange the links to make a circle graph.

Growing Gecko

A gecko grows a little each day. The picture below shows the growth.



One day old

Two days old

Three days old

1. Describe how the gecko is growing.
2. Draw what the gecko will look like after four days?
3. How many squares will be needed to make day 5? How many triangles for day five?
4. Pick any day and predict how many squares and how many triangles are needed to build a gecko?
5. On what day will you need 7 squares to build the gecko?
6. When will you need 3 triangles to make a gecko?
7. What might the gecko have looked like the moment it was born?

Counting in Three Columns

A	B	C
1	2	3
4	5	6
7	8	9

Complete the next three rows of the table.

Represent each number in the first four rows using the Cuisenaire rods. Use as many 3-rods as you can, then use 2-rods, then use the 1-rod. Organize the blocks in the same order of rows and columns as the table.

Do you see any pattern as you look down the columns?

Do you see any patterns as you look across rows?

Look at the blocks showing the number 4. I want to write a number sentence that represents the number 4. The blocks that make the number 4 are 3 and 1 so, $3 + 1 = 4$ or $4 = 3 + 1$

Choose some other number and look at the blocks that show that number. Write your own number sentence in two ways.

If you add any two numbers in column A together, in what column is the sum?

How do you know?

If you add any two numbers in column B together, in what column is the sum?

How do you know?

If you add any two numbers in column C together, in what column is the sum?

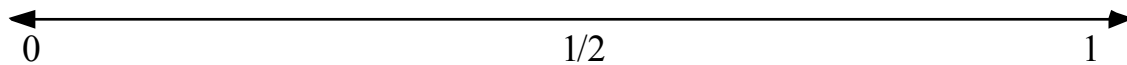
How do you know?

If you add one number from column A together and one number from column B, in what column is the sum? How do you know?

What can you say about subtracting numbers in different columns? In the same columns?

Probability Continuum

Never				Always
Never		Sometimes		Always
Never	Unlikely		Likely	Always
Impossible	Unlikely	Equally likely and unlikely	Likely	Certain



What's in the bag?

There are four cubes in each bag. Some cubes may be the same color. **DO NOT LOOK IN THE BAG!** Your job is to predict which color you will pick after sampling the cubes in the bag.

This is how you should take a sample:

1. take one cube out at a time,
2. record its color by coloring a square on the record sheet,
3. replace it, and
4. shake the bag.

You should repeat this process 10 times. Color in a white square each time to show the colors that you picked on your 10 samples.

Now if you pick one more time, what color do you think you will get? Why?

What colors do you think are in your bag? Look at the ten squares you colored on the record sheet. Use this information to predict the colors of the four blocks in your bag. Color in the four squares to show your prediction

Make a Bag

Suppose you were to make a sampling bag using red and green cubes. What six cubes should you use to get the following:

In Bag 1 you will never draw a green cube

In Bag 2 you will always draw a green cube

In Bag 3 most of the time you will draw green, but sometimes you may get red

In Bag 4 most of the time you will draw red, but sometimes you may get green

In Bag 5 getting a red or green is equally likely.