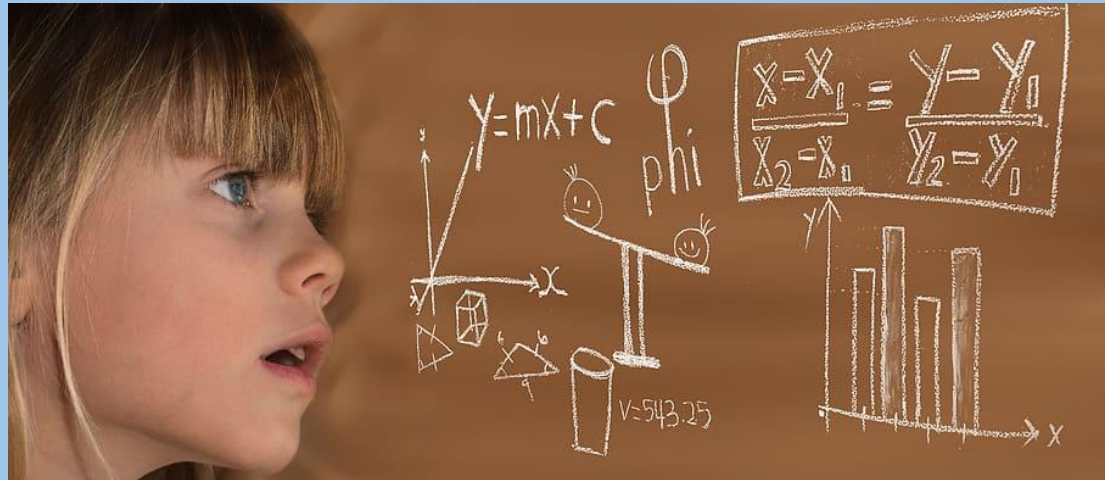


# How do mathematicians engage in problem solving and reasoning?



## RCHK Learners

### Problem Solving Process

- Understand
- Plan
- Do
- Reflect

## Junior RCHK Learners

### Problem Solving Strategies

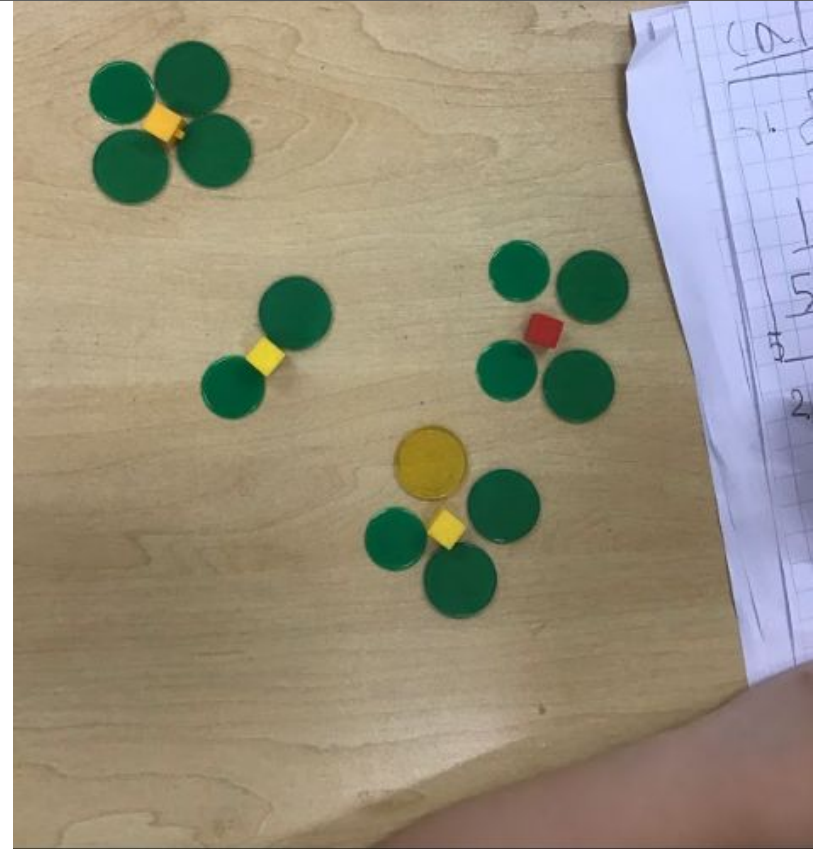
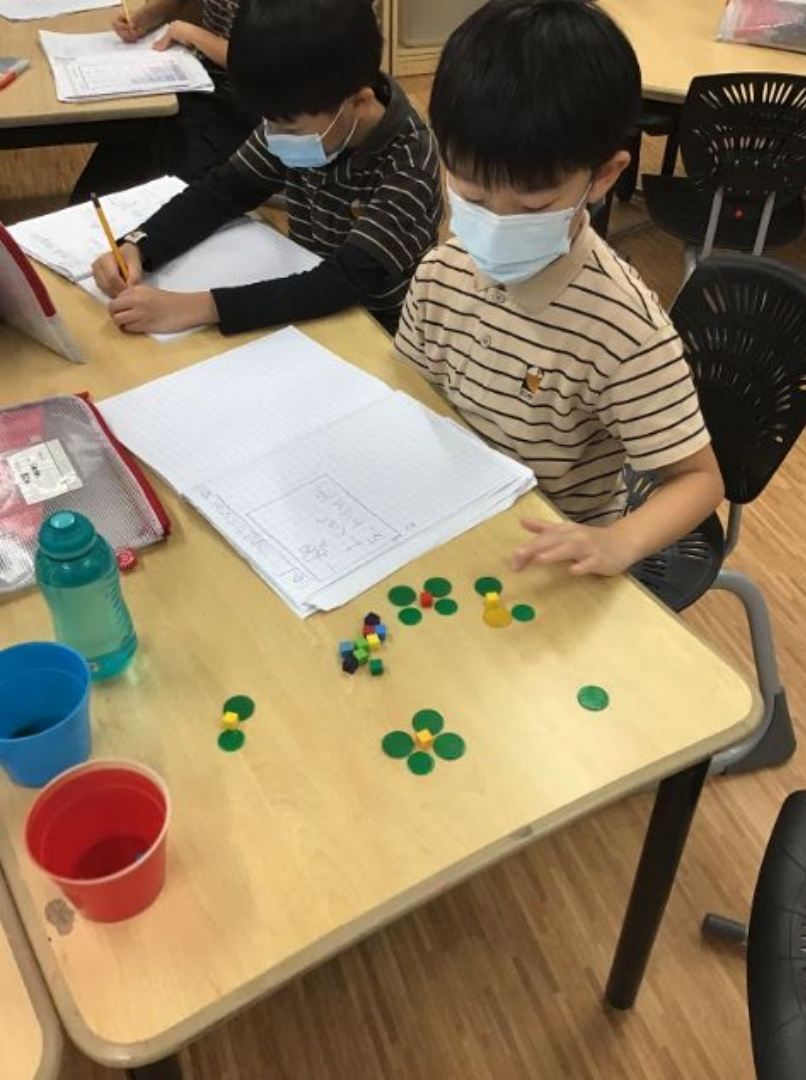
- Draw it.
- Act it.
- Make it.
- Estimate it.

# Reasoning Process:

- share answer and explain why it is correct.
- make connections between solutions of different problems

How do mathematicians  
work?

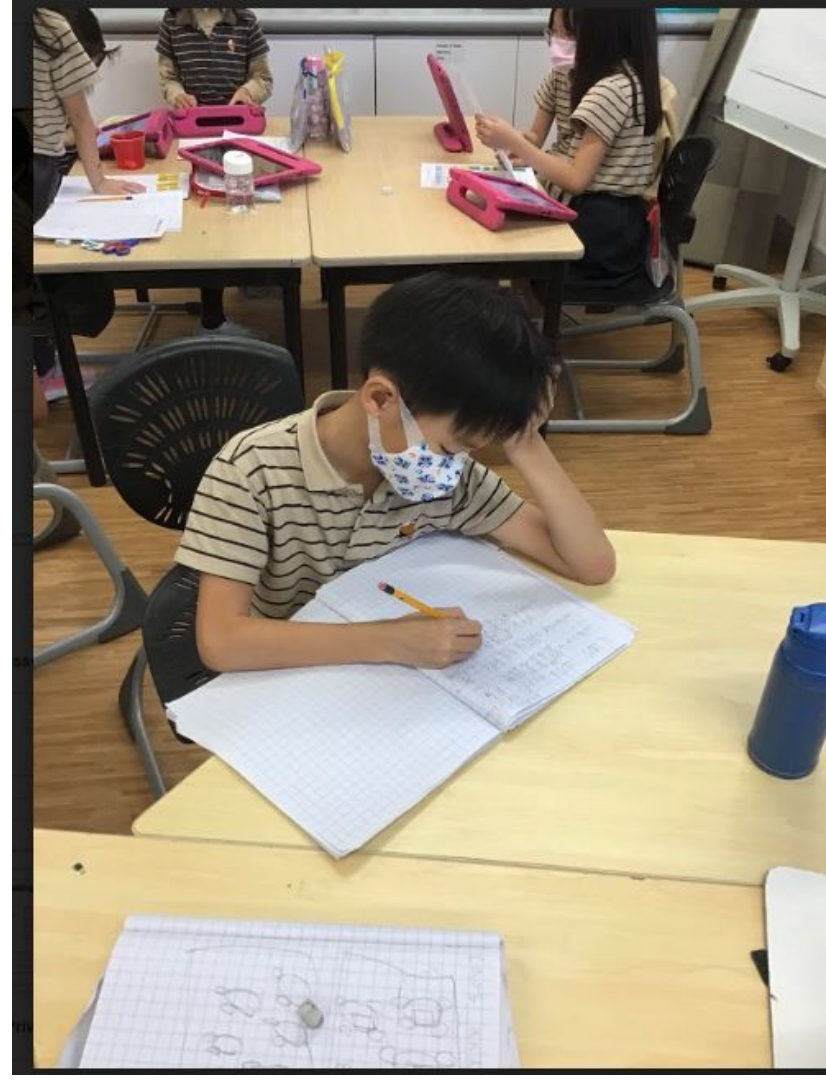
Sometimes mathematicians **use counters** so they can move them around and count or just imagine the problem they are solving.



Mathematicians use pictures, numbers and words that are neat and easy to read.



Mathematicians **persevere**. Sometimes math problems take time to solve. It can be hard work.



# What will you use today?

## **Think about:**

- Using counters
- Drawing pictures
- Using numbers and words that are neat and easy to read
- Drawing boxes around your solutions to keep them neat
- Persevering even if the math is difficult or challenging

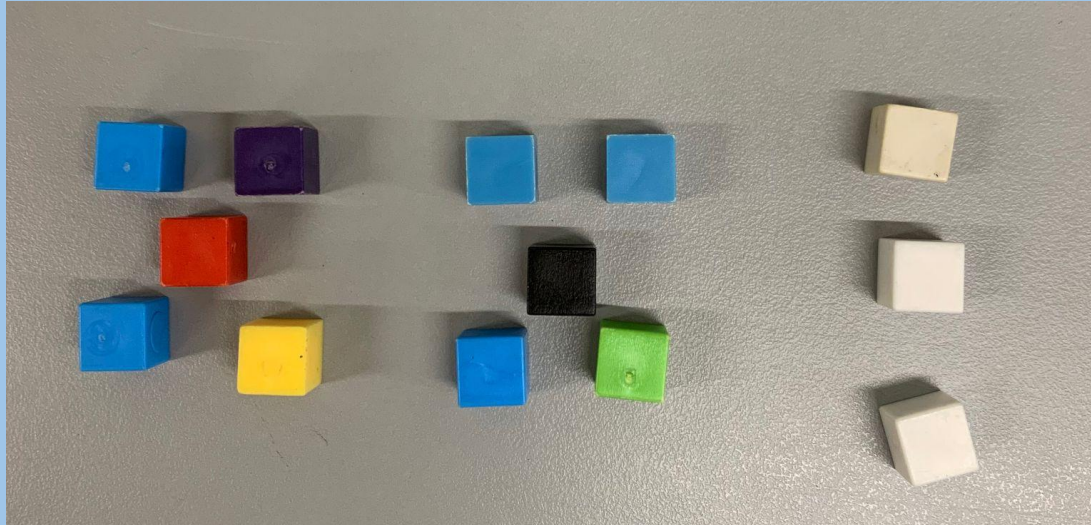


$$\underline{\quad} + \underline{\quad} + \underline{\quad} = 13$$

What might the missing numbers be?

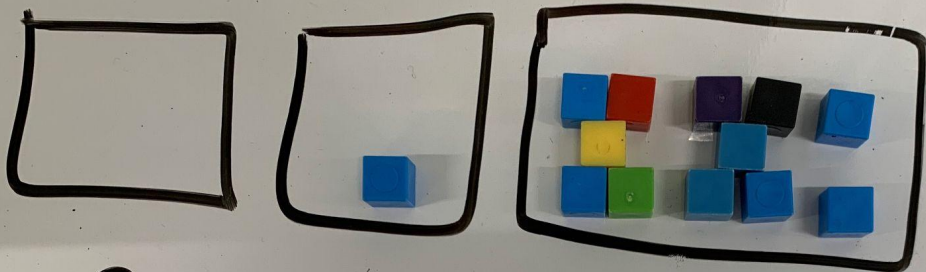
How will you know if you find all the possibilities?

How might counters help me get all the possibilities for  
 $\underline{\quad} + \underline{\quad} + \underline{\quad} = 13$ ?

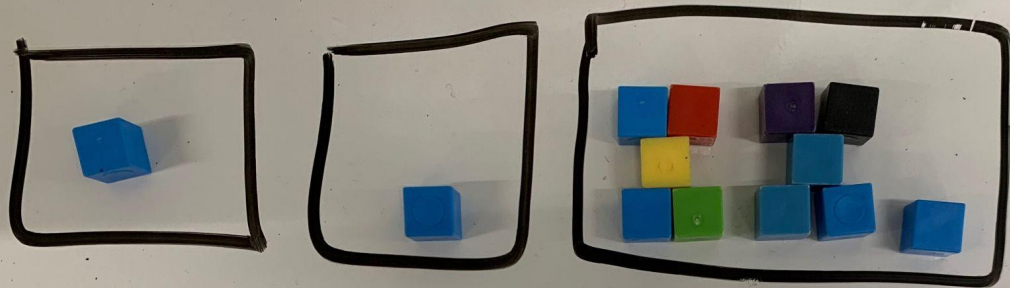




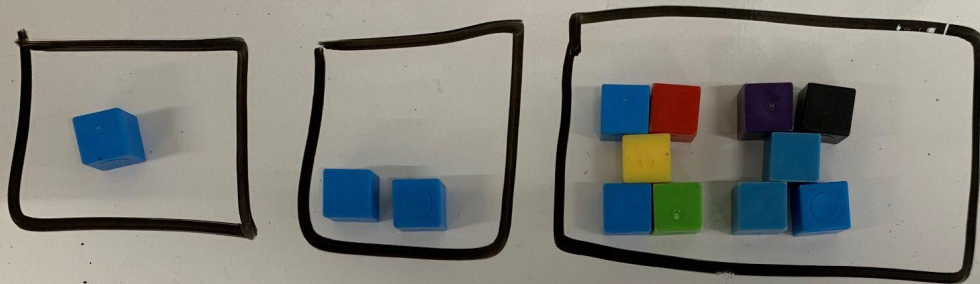
$$0 + 0 + 13 = 13$$



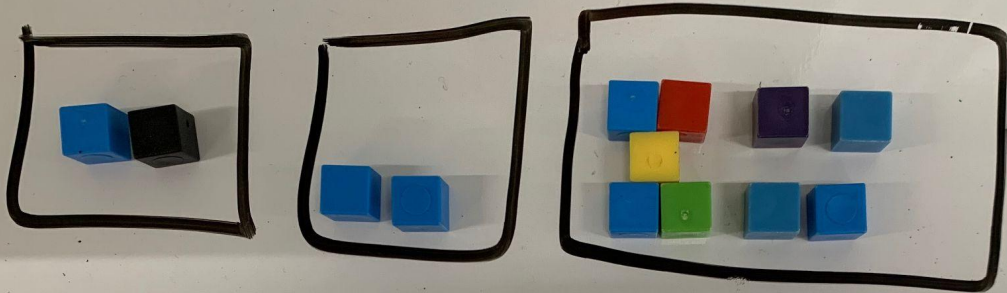
$$0 + 1 + 12 = 13$$



$$1 + 1 + 11 = 13$$



$$1 + 2 + 10 = 13$$



$$2 + 2 + 9 = 13$$

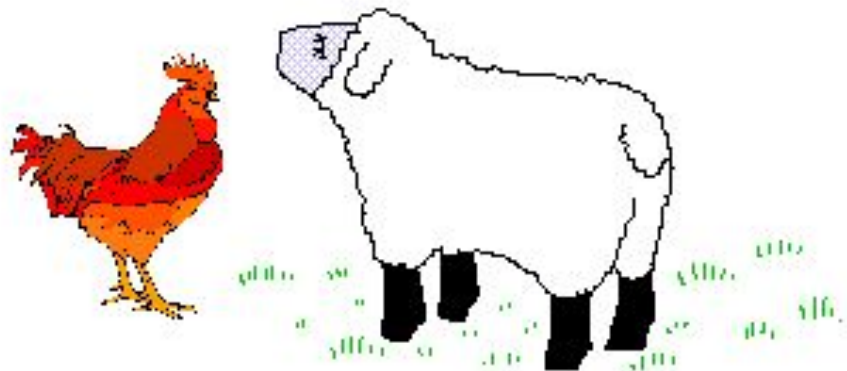
# Challenge Question:

$$\square + \square + \square + \square = 13$$

Can you find all the ways?



# Heads and Feet



On a farm there were some hens and sheep.

Altogether there were 8 heads and 22 feet.

How many hens were there?