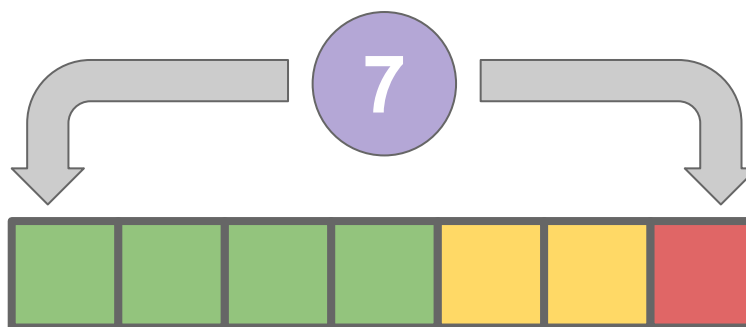**Julia Robinson Mathematics Festival**

SFMC
SFSU

Challenges

1. What is the largest number you can make with these sticks? What is the smallest number? Can you make every number in between?

2. Are there any numbers you can make with different possible sticks?

3. What is the next largest sized stick you need? What is the largest number you can make using all five of these measuring sticks?

4. Can you make every number between 1 and the number you got from Challenge 3? Explain your answer?

5. If this pattern continues, how many sticks would you need to make all the number 1 to 1000. What sizes will all those sticks be?

7

7 = G Y R

Writing Codes

For all the numbers to the right, write down the sticks you needed to make the numbers by writing a 1 if you needed the number, and a 0 if you did not.

What patterns do you notice in these numbers? Are there any similarities in which numbers need certain sticks?

Red =

Yellow =

Green =

Blue =

0	___ ___ ___ ___ B G Y R	8	___ ___ ___ ___ B G Y R
1	___ ___ ___ ___ B G Y R	9	___ ___ ___ ___ B G Y R
2	___ ___ ___ ___ B G Y R	10	___ ___ ___ ___ B G Y R
3	___ ___ ___ ___ B G Y R	11	___ ___ ___ ___ B G Y R
4	___ ___ ___ ___ B G Y R	12	___ ___ ___ ___ B G Y R
5	___ ___ ___ ___ B G Y R	13	___ ___ ___ ___ B G Y R
6	___ ___ ___ ___ B G Y R	14	___ ___ ___ ___ B G Y R
7	___ ___ ___ ___ B G Y R	15	___ ___ ___ ___ B G Y R