Binary Numbers with VV

Elisa and Rachel

Elisa, Rachel and VV

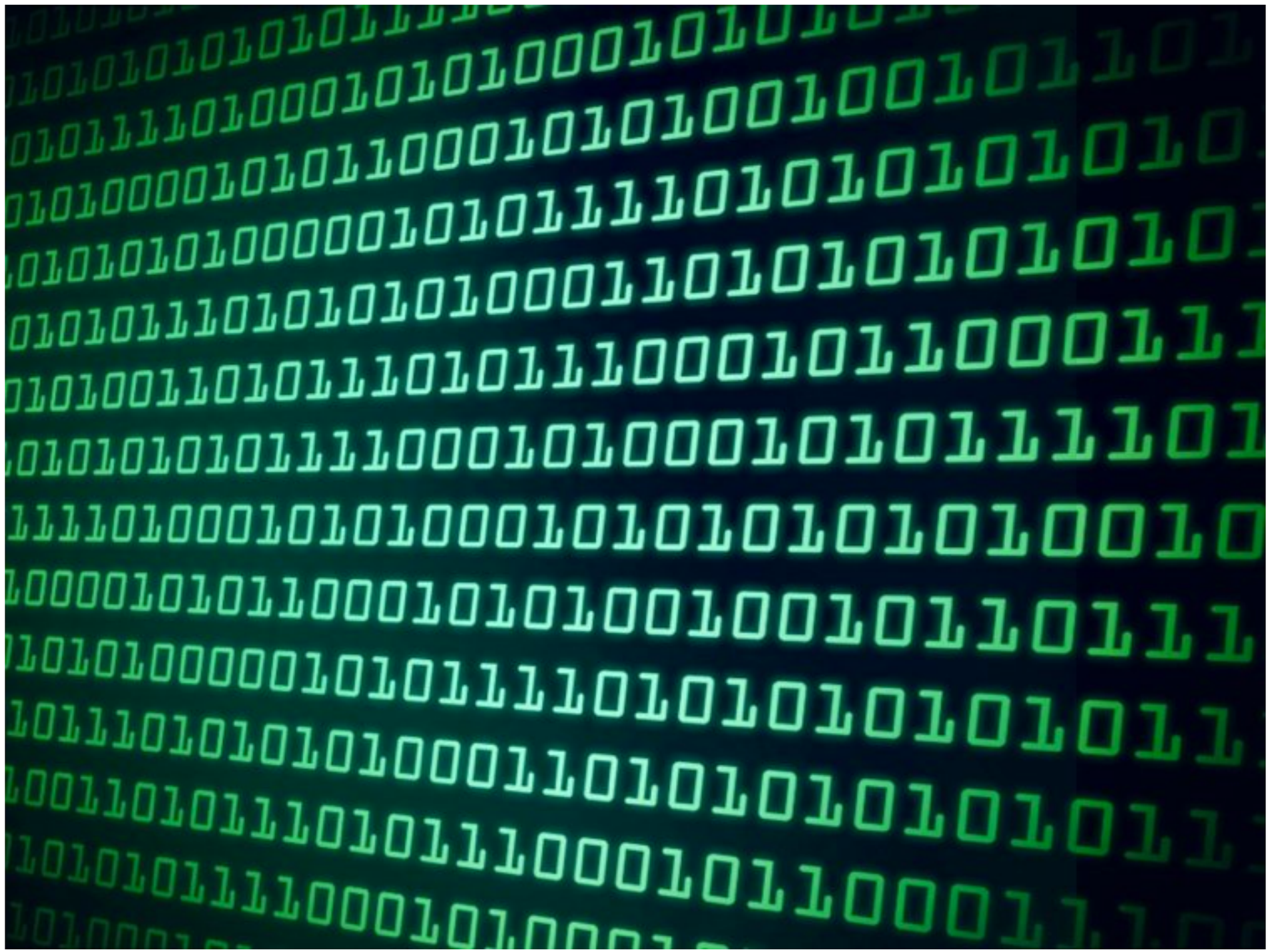
A non-profit organization at Carleton University engaging youth of Ottawa in technology and engineering through summer camps and weekend workshops. A proud member of Actua Canada

VIRTUAL VENTURES

Summer Camps and Programs

"Setting the trend in youth technology education"

What are Binary Numbers?



Binary Number System

- The binary number system is a **base-2** number system.
- Two Numbers: **1** and **0**

Decimal Number System

- The decimal number system is the normal number system we are used to.
- Ten Numbers: **0, 1, 2, 3, 4, 5, 6, 7, 8, 9**

Why Use Binary Numbers?

- Electronics and Computer Systems

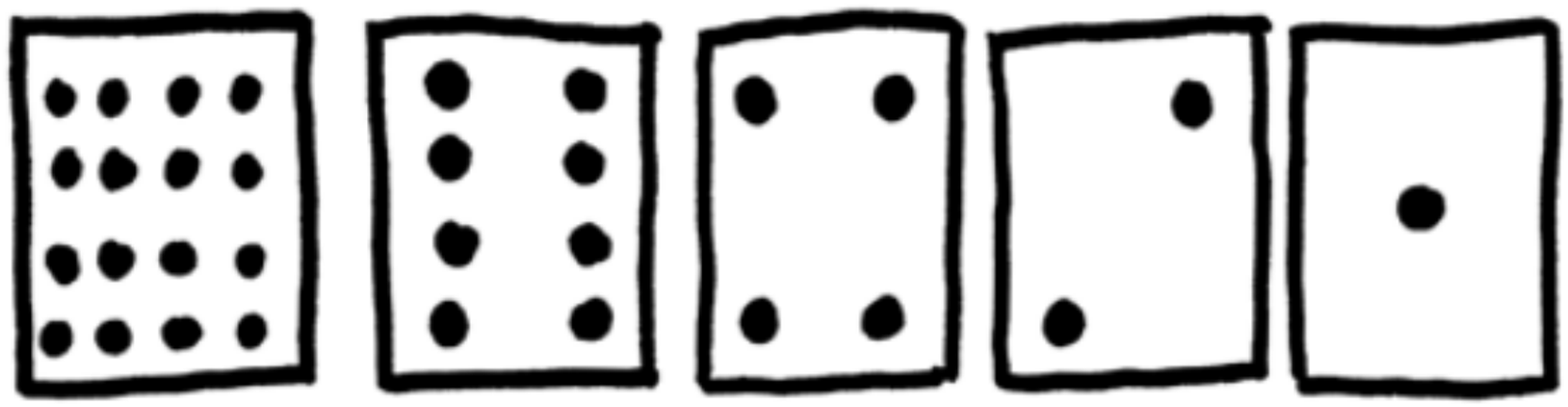
- On or Off (1 or 0)

How do we count in binary?

(Need 5 volunteers)

How Do We Count In Binary?

- What do you notice about the number of dots on the cards?
- How many dots would the next card have if we carried on to the left?

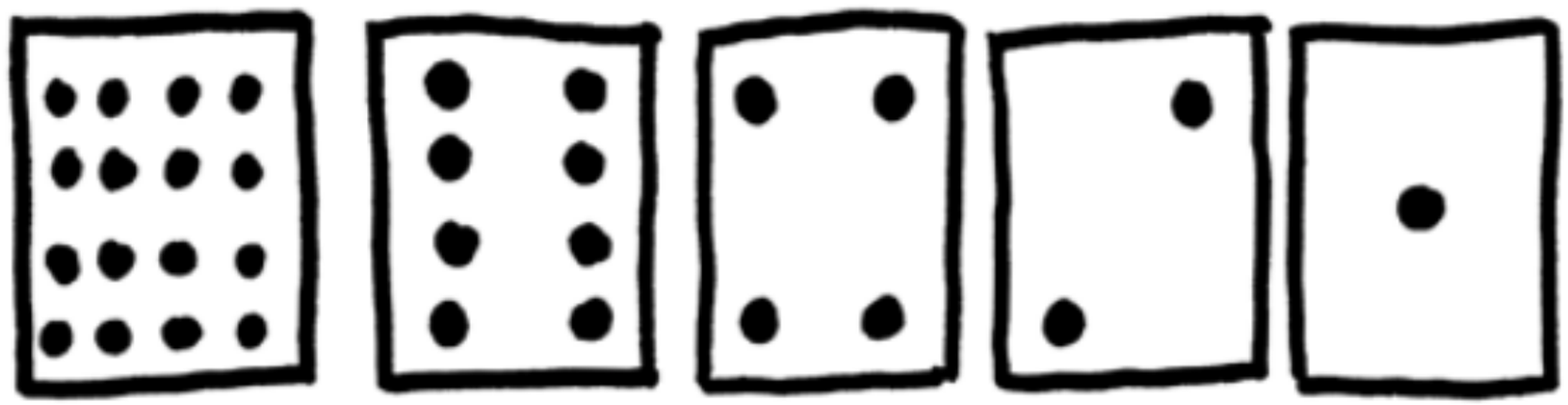


How Do We Count In Binary?

- We can use these cards to make binary numbers!

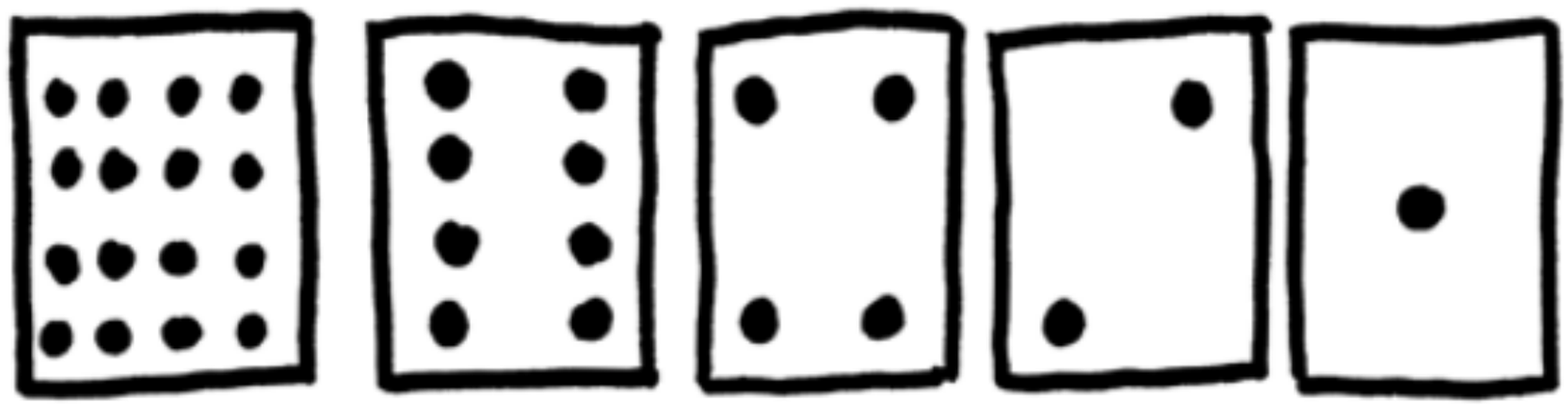
- **Dots = 1** (on)

- **Back = 0** (off)



Lets Make Numbers

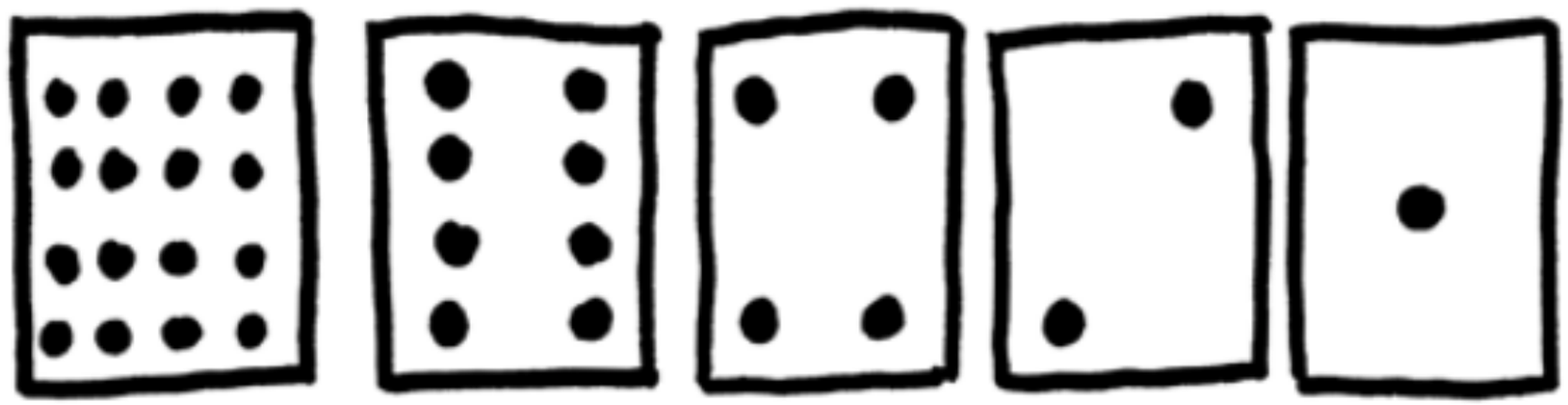
- Try making the number…



Lets Make Numbers

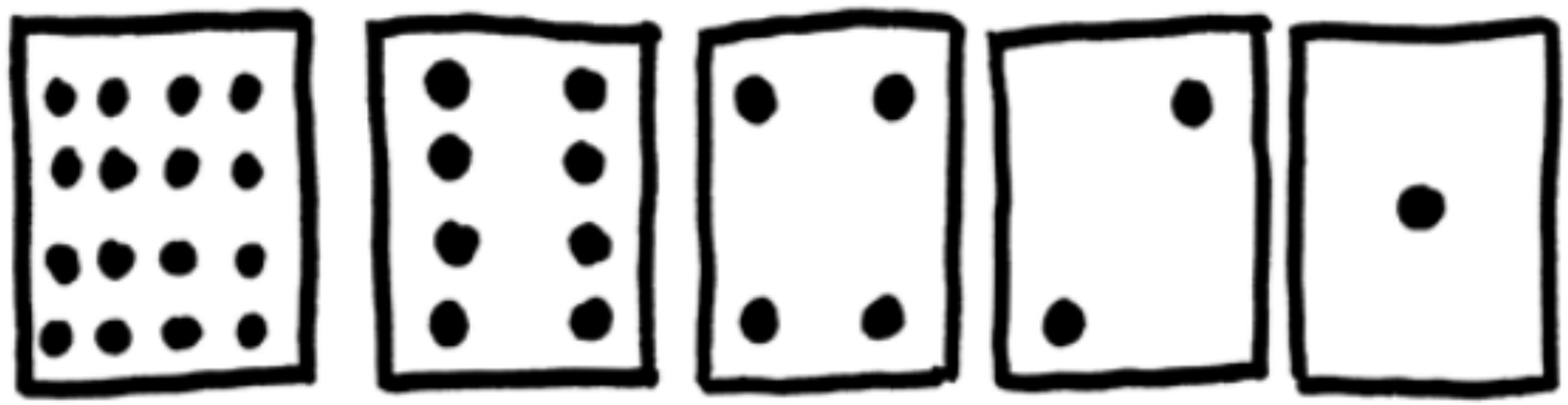
- What's the **smallest** number?

- What's the **largest** number?



Lets Make Numbers

- On a piece of paper try **counting from 0 to 10**.



Word Scramble Activity!

- In **groups of 4**, you will be working together to **convert binary numbers into decimal numbers**.

- Using the decoder chart, turn the **decimal numbers into letters**.

- Once you have all the letters, come show us and head over to the room next door to **find the letters on the wall**. Bring them back to the lab.

- **Unscramble the word** and show us when your group is done!

Decoder

1	2	3	4	5	6	7	8	9	10	11	12	13
a	b	c	d	e	f	g	h	i	j	k	l	m

14	15	16	17	18	19	20	21	22	23	24	25	26
n	o	p	q	r	s	t	u	v	w	x	y	z

Come see us when you have all the letters!

Rachel Yip

- Second Year Mechanical Engineering (Minor in Computer Science)

- I am an Executive Member of Engineers Without Borders and I play 7 instruments

Elisa Kazan

- Second Year Computer Science (Game Dev + App Dev)

- I am an Executive Member of the CCSS, I love video games and sushi

Virtual Ventures

- Virtual Ventures is an organization run under the ***Faculty of Engineering and Design*** at **Carleton University** by students who want to make a difference in the lives of youth.

- Virtual Ventures offer **technology and engineering camps** for youth who have completed Grade 1-10.

- **Camps include:** Girls@VV, Game Design, Trailblazers leadership camp (grades 9-11), Programming (grades 7-10), Engineering Week (all ages)

- **Other Events:** Go Eng Girl and Go Code Girl

VIRTUAL VENTURES

Summer Camps and Programs

"Setting the trend in youth technology education"

Girls@VV

- Fun and interactive way for young girls to learn about and enjoy computers and technology.

- ***Goal:*** learn about graphic design, websites, and programming and participate in exciting engineering challenges, while gaining confidence and leadership skills.

VIRTUAL VENTURES

Summer Camps and Programs

"Setting the trend in youth technology education"

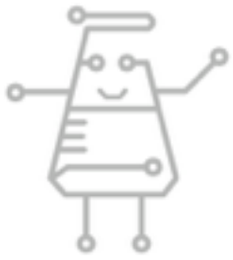
CodeMakers

- CodeMakers is a project powered by **Google** and **Actua** to develop computer science and technology experiences for kids

- Create exciting hands-on computer science experiences through national camps, school workshops and club programs.

- Topics include: fundamentals of data and coding, building blocks of hardware and new product development.

- **Goal:** inspire *100,000+ young Canadians* to become the innovative computer science **technology builders of tomorrow**.



actüa™
Learning for Change
Découvrir pour demain

Google™

/code:makers_

2015 Coding Workshop – May 23

- **When**: May 23, 2015
- **Time**: 9:00 AM - 3:00 PM
- **Location:** Architecture Building
- **Room**: 510
- **Cost**: Free
- **Intended Audience**: Prospective Students

The Department of Systems and Computer Engineering and the Carleton University Robotics Club host workshops for local high school students to explore Arduino Programming and Autonomous Robotics.

For more Info: https://carleton.ca/engineering-design/cu-events/high-school-coding-workshop/

Questions?