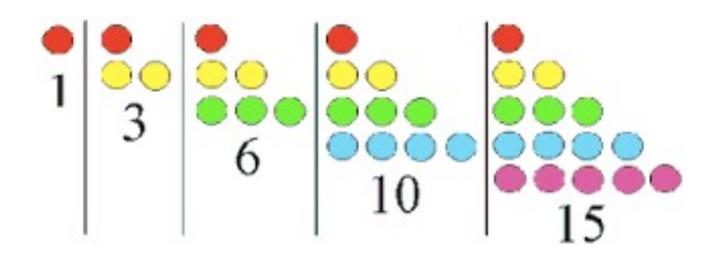# Patterns patterns everywhere

What patterns do you see?

- Symmetries
- Number patterns

What does this tell you?

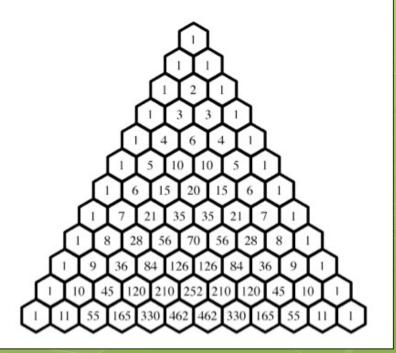# Triangular numbers

- Build the first five triangular numbers using the cubes or number chips

- Complete the worksheet

- Your charge: Using the coolest pattern you found, create an up to 30 second instructional video and submit as outlined in the worksheet

Pascal's Triangle

- How do you think this was created?
- What patterns do you notice here?

Journal entries:

- Look up the relationship between Pascal's triangle and flipping coins
- Look up the relationship between Pascal's triangle and walking blocks (block-walking)
- Write about it!

Clock Arithmetic and Modular Arithmetic

- What hour does 13 o'clock correspond to?

- How about 22 o'clock?

- How about 49 o'clock?

- 1728 o'clock?

- For the purposes of our

discussion, we designate 12, 24,

36 o'clock as 0

- Draw a clock that only counts 4 hours.
    - What is 6 o'clock on this clock?
    - How about 23 o'clock?
- Draw a clock that only counts 7 hours.
    - What is 16 o'clock on this clock?
    - How about 27 o'clock?

Modular Arithmetic

- Let's practice:

    $13 \bmod 4 \equiv$

    $47 \bmod 5 \equiv$

    $124 \bmod 4 \equiv$

    $62 \bmod 3 \equiv$

- What are we actually doing?