

# OBLONG NUMBERS ARE THE PRODUCT OF TWO CONSECUTIVE WHOLE NUMBERS

for example:

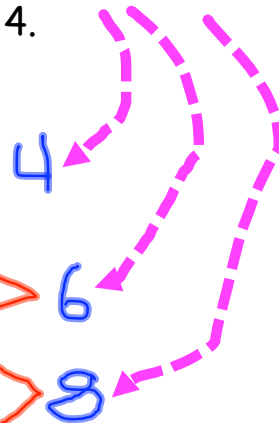
$$1 \times 2 = 2$$

$$2 \times 3 = 6$$

$$3 \times 4 = 12$$

$$4 \times 5 = 20$$

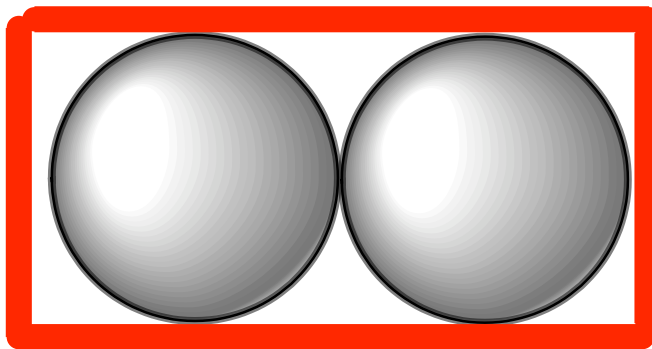
Notice how the difference of consecutive oblong numbers are consecutive even numbers starting with 4.



let's say that below we have two spheres  
that represent an oblong rectangle of  
ONE by TWO.

2

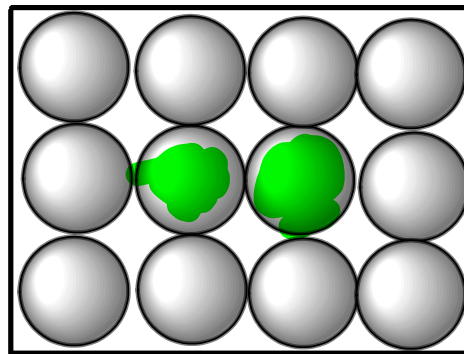
$$1 \times 2 = 2 \text{ units}^2$$



1

what would happen if you added spheres around the entire oblong  
rectangle? How many spheres would you have and what would be  
the dimensions of that oblong rectangle?

$$3 \times 4 = 12 \text{ units}^2$$



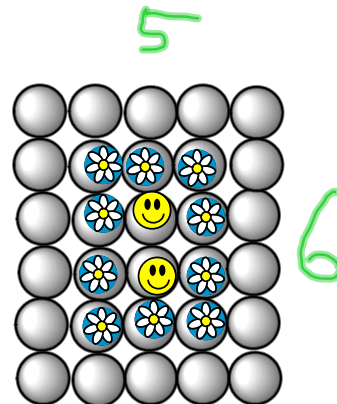
3

4

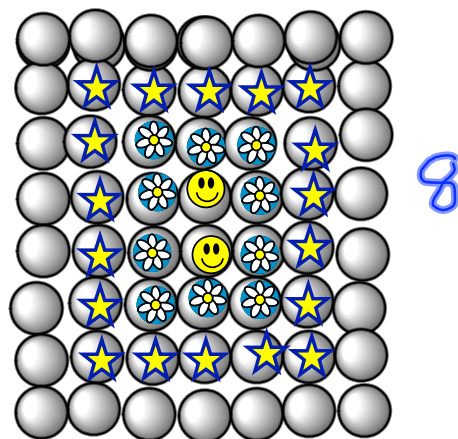
Now, let's keep going and see if we can find this sequence of oblong rectangular numbers and the products they represent.

If you are up for the challenge, now build pyramids from these oblong rectangular bases and count how many spheres are in each oblong rectangular pyramid.

If you see a pattern, see how high you can go and then let's build one.

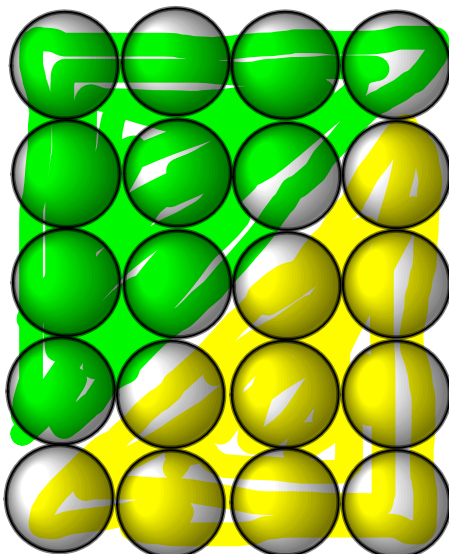
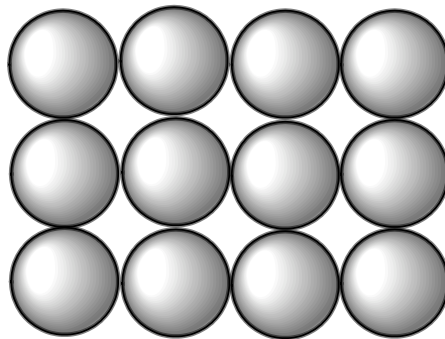


$$5 \times 6 = 30$$



$$7 \times 8 = 56$$

notice that all oblong numbers are  
twice a triangular number



this is a triangular  
number of 10 and an  
oblong number of  
dimension 4x5 or 20



your job is to find the first nine oblong numbers. Then you build an oblong pyramid with those nine oblong numbers and figure out the total number of spheres

Dimensions of Oblong Rectangle of Spheres  ( <i>Oblong numbers</i> are the product of any consecutive numbers)	Number of Spheres in Oblong Rectangle of Dimensions in left column.	Number of Spheres in Oblong Rectangular Pyramid with base of Dimensions in left column.	Calculations for Number of Spheres in Oblong Rectangular Pyramid by adding consecutive oblong numbers with a base of Dimensions in left column.
1x2	2	2	1x2
2x3	6	8	(1x2)+(2x3)
3x4			(1x2)+(2x3)+(3x4)
4x5			(1x2)+(2x3)+(3x4)+(4x5)
5x6			(1x2)+(2x3)+(3x4)+(4x5)+(5x6)
6x7			(1x2)+(2x3)+(3x4)+(4x5)+(5x6)+(6x7)
7x8			(1x2)+(2x3)+(3x4)+(4x5)+(5x6)+(6x7)+(7x8)
8x9			(1x2)+(2x3)+(3x4)+(4x5)+(5x6)+(6x7)+(7x8)+(8x9)
9x10			(1x2)+(2x3)+(3x4)+(4x5)+(5x6)+(6x7)+(7x8)+(8x9)+(9x10)

Dimensions of Oblong Rectangle of Spheres  ( <i>Oblong numbers</i> are the product of any consecutive numbers)	Number of Spheres in Oblong Rectangle of Dimensions in left column.	Number of Spheres in Oblong Rectangular Pyramid with base of Dimensions in left column.	Calculations for Number of Spheres in Oblong Rectangular Pyramid by adding consecutive oblong numbers with a base of Dimensions in left column.
1x2	2	2	1x2
2x3	6	8	(1x2)+(2x3)
3x4	12	20	(1x2)+(2x3)+(3x4)
4x5	20	40	(1x2)+(2x3)+(3x4)+(4x5)
5x6	30	70	(1x2)+(2x3)+(3x4)+(4x5)+(5x6)
6x7	42	112	(1x2)+(2x3)+(3x4)+(4x5)+(5x6)+(6x7)
7x8	56	168	(1x2)+(2x3)+(3x4)+(4x5)+(5x6)+(6x7)+(7x8)
8x9	72	240	(1x2)+(2x3)+(3x4)+(4x5)+(5x6)+(6x7)+(7x8)+(8x9)
9x10	90	330	(1x2)+(2x3)+(3x4)+(4x5)+(5x6)+(6x7)+(7x8)+(8x9)+(9x10)