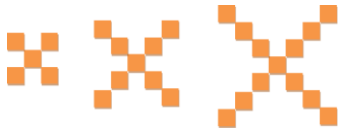
Warmup 5/(# of sides on an angle)

PARTNER UP WITH SOMEONE AT YOUR TABLE. EVERY PAIR SHOULD HAVE A WHITEBOARD, MARKER, & ERASER!!!

1. **Draw the next step (step 4). How many blocks are there?**
2. **How many blocks would be in step 40?**
3. **Make a "quick sketch" of step 40. (you don't have to draw all the squares!)**
4. **If "n" is the step number, write an expression that gives the number of blocks in step "n".**



Step 1 **Step 2** **Step 3**

Line Designs

TURN IN WITH RUBRIC!

If it's not quite done, you should finish it and turn it in later.

A line design that is good but late is will get a better grade than a not-so-great one that is on time.

Escape Problem

36 Creatures, 150 arms

Strategy: Guess & Check

18 of each: $18 \cdot 5 + 18 \cdot 3 = 90 + 54 = 144$ **Too low! (need more zeebles)**

19 Zeebles, 17 Quarks: $19 \cdot 5 + 17 \cdot 3 = 95 + 51 = 146$ **Too low!**

20 Zeebles, 16 Quarks: $20 \cdot 5 + 16 \cdot 3 = 100 + 48 = 148$ **Too low!**

*****If we take out a Quark and add a Zeeble, we add two arms!*****

21 Zeebles, 15 Quarks: $21 \cdot 5 + 15 \cdot 3 = 105 + 45 = 150$ **Too low!**

Escape Problem

36 Creatures, 150 arms

Strategy: Start w/ all Zeebles

36 Zeebles: $36 \cdot 5 = 180$ **We have 30 arms too many!!!**

*****If we change a Zeeble into a Quark, we subtract two arms.**

So, we need to change 15 of the Zeebles into Quarks.

36 – 15 = 21 Zeebles, 15 Quarks

Escape Problem

36 Creatures, 150 arms

Strategy: Start w/ all Quarks

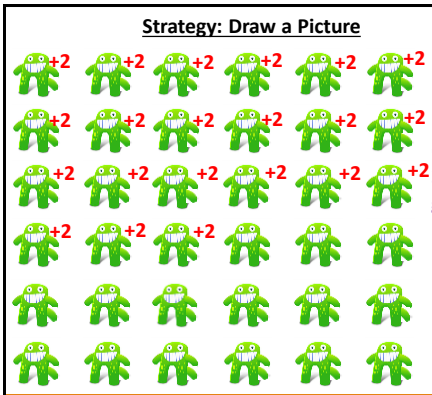
36 Quarks: $36 \cdot 3 = 108$ **We need 42 more arms!**

*****If we change a Quark into a Zeeble, we add two arms.**

So, we need to change 21 of the Quarks into Zeebles.

36 – 21 = 15 Quarks, 21 Zeebles

Strategy: Draw a Picture



36 x 3 = 108 arms

(Need to add 2 21 times to get to 150)

Escape Problem

36 Creatures, 150 arms

Strategy: System of Equations

Creatures Equation: $Q + Z = 36$

Arms Equation: $3Q + 5Z = 150$

You can multiply the top equation by -3 to eliminate Q, or by -5 to eliminate Z.

Expectations: Whiteboards

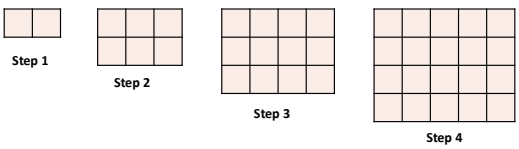
For each pattern, you will:

1) Draw the next step (exactly)

2) Make a "rough sketch" of step 40 and calculate how many blocks, units, etc. there are

3) Write an expression using "n"

Another pattern



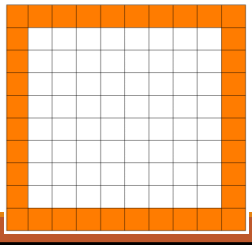
Draw the next step. How many squares are there?

Step 40? (With picture!!!)

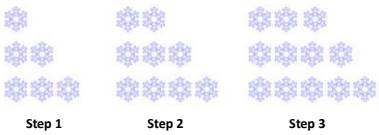
Expression using "n"?

Remember this one?

Here is a 10 by 10 square. How many border squares would be shaded in a 40 by 40 square?



Another pattern

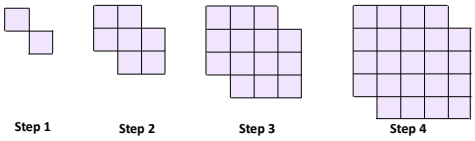


Draw the next step. How many snowflakes are there?

Step 40? (With picture!)

Expression using "n"?

Another pattern



Next step?

Step 40? (With picture!)

Expression using "n"?

Homework

Visual Patterns Worksheet