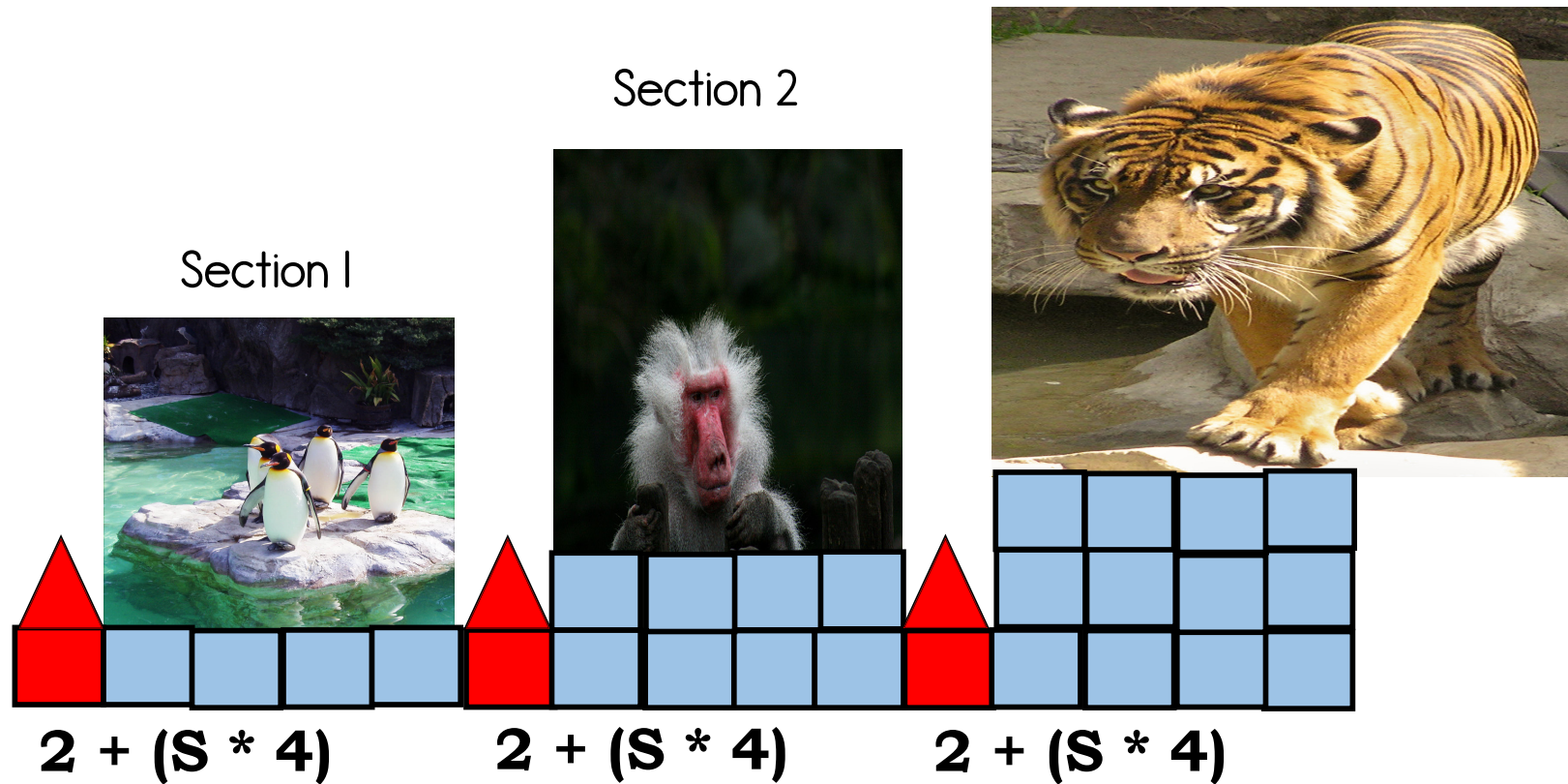# THE GREAT WALL

CHALLENGE 1

❑ Students use <u>GROWTH PATTERNS</u> to <u>CREATE FORMULAS</u> and <u>SOLVE FOR VARIABLES</u>!

❑ Includes a Video Tutorial for Each Problem!

Section 1

Section 2

Section 3

2 + (S * 4)   **2 + (S * 4)**   **2 + (S * 4)**

THE GREAT WALL
HOW TO USE THIS BOOK

Teachers

❑ Upload this PDF into your Google Classroom.

Students

❑ Complete each problem.
❑ Watching the video tutorials, and copy the strategies into your notebook, or onto your portfolio cover.
❑ After completing each problem, take your paper to your teacher for a final check.

CHALLENGE 1
THE GREAT WALL

## POISONOUS PENGUINS, BABBLING BABOONS, AND TERRIBLE TIGERS ARE ATTACKING!

Poisonous penguins are waddling menacingly, squawking with their hard, pointed beaks, as they race toward your school. Babbling baboons are push and shove one another, talking nonsensically as they make their way to your school. And, terrible tigers make a deep guttural growl, as they stalk towards your school. But that's not the worst of it - more animals are coming! You have just been told that there are 39 different animals attacking your school.

Lucky for you – your school architects have designed a wall that grows at the same rate that these animals are growing. Your job, as School Mathematician, is to discover how many bricks are needed to build your wall. If you solve these algebraic problems, your GREAT WALL will protect all the children within your school!
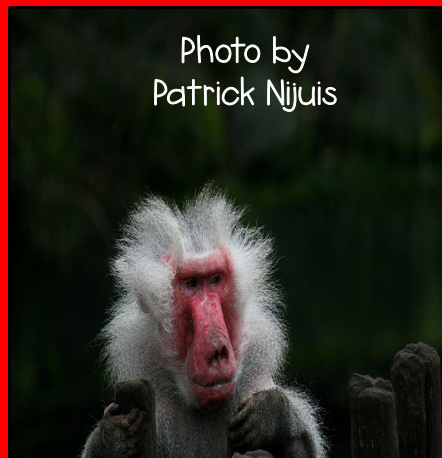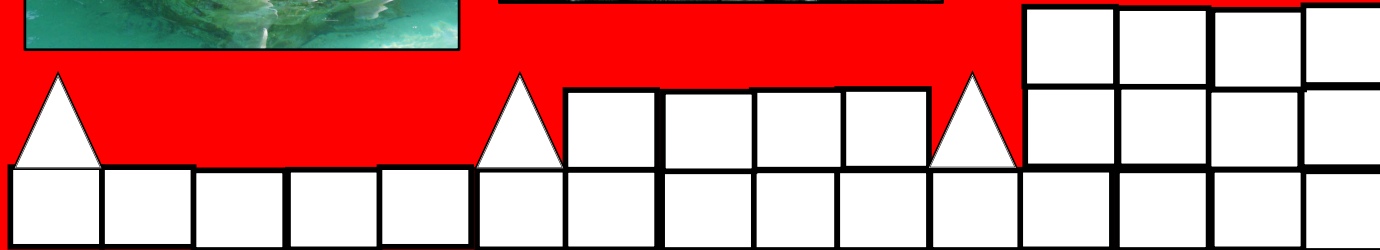
Growth Pattern for your GREAT WALL!

Section 3

Photo by
Chad Littlejohn

Section 2

Photo by
Patrick Nijuis

Section 1

Photo by
Mayumi Ueno
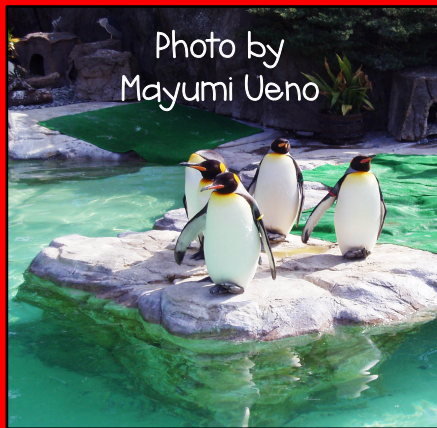
Each square or triangle counts as one block!

Watch ME
Step A

For this first problem, simply watch how the problem is solved. Relax and focus on the strategies for solving this problem. Then, copy these strategies into your notes, or onto your portfolio cover.

Follow these Steps:
1. Refer to the prior page. Copy the first three Sections of the GREAT WALL on your paper.
2. Based on the pattern, figure out the 4th section of the wall and draw that section next to the first three sections.

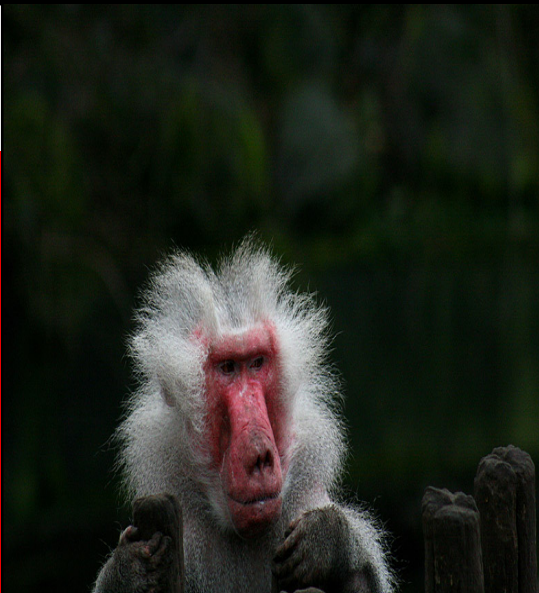Click on the Poisonous Penguins

To Watch This Video

Watch ME
Step B

For this first problem, simply watch how the problem is solved. Relax and focus on the strategies for solving this problem. Then, copy these strategies into your notes, or onto your portfolio cover.

Follow these Steps:
1. Create a T-Chart that shows the number of blocks needed to build the 7th section.
2. Solve for the **Iterative Function**, which is also the **Co-Efficient**.
3. Color the Co-Efficient <u>blue</u> on each section that you drew.
4. Color the constant <u>red</u> on each section that you drew.

Click on the Babbling Baboon   To Watch This Video

Watch ME
Step C

For this first problem, simply watch how the problem is solved. Relax and focus on the strategies for solving this problem. Then, copy these strategies into your notes, or onto your portfolio cover.

Use your **iterative function** and your **drawings** to create a formula that will work for any section number. Be sure to illustrate your formula on your drawings.

Test your formula against section 5, section 6, and section 7 to make sure that it agrees with your T-Chart!

Click on the Terrible Tiger

To Watch This Video

WatcH ME
Step D

For this first problem, simply watch how the problem is solved. Relax and focus on the strategies for solving this problem. Then, copy these strategies into your notes, or onto your portfolio cover.
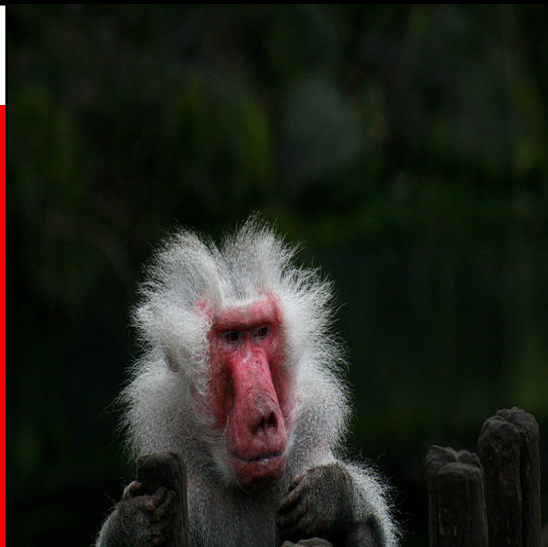
Your school scientists have just discovered more animals!
There are 39 different types of animals attacking you school.
You need a section for each animal.
How many blocks are needed to build the

39th

section?

Click on the Babbling Baboon

To Watch This Video

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