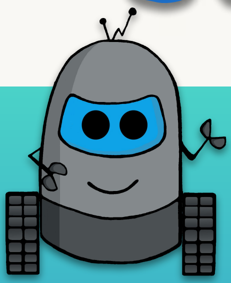
Play Code Learn

DINOSAUR COMMANDS

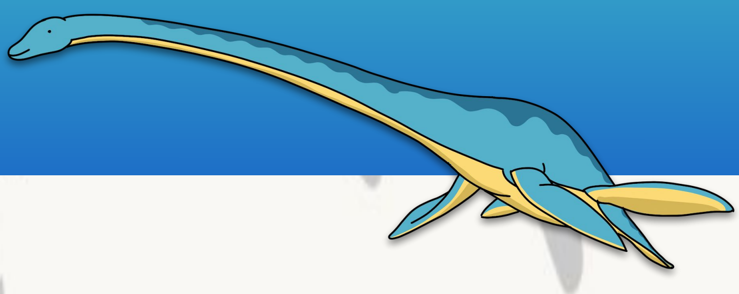
Student Handouts

All handouts are A4 for printing.

Play Code Learn



DINOSAUR COMMANDS

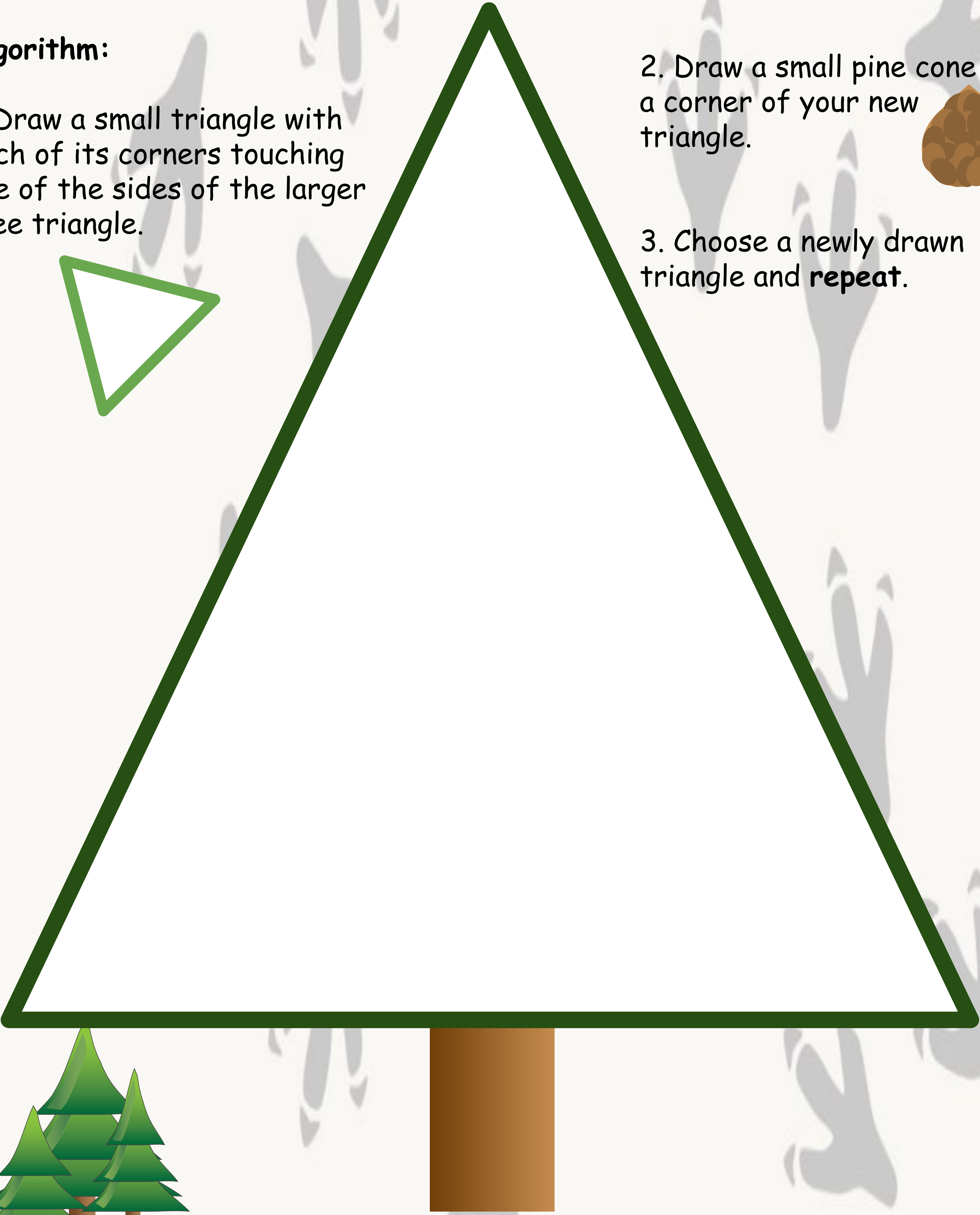


Lesson Three:

Writing efficient algorithms.

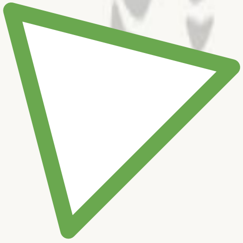
Algorithmic Thinking - dinosaur tree art

Follow the instructions in the algorithm to create a decorative dinosaur tree with repeated patterns.



Algorithm:

1. Draw a small triangle with each of its corners touching one of the sides of the larger tree triangle.



2. Draw a small pine cone in a corner of your new triangle.

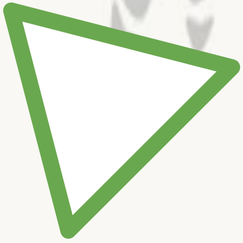
3. Choose a newly drawn triangle and **repeat**.

Algorithmic Thinking - dinosaur tree art (one solution)

Follow the instructions in the algorithm to create a decorative dinosaur tree with repeated patterns.

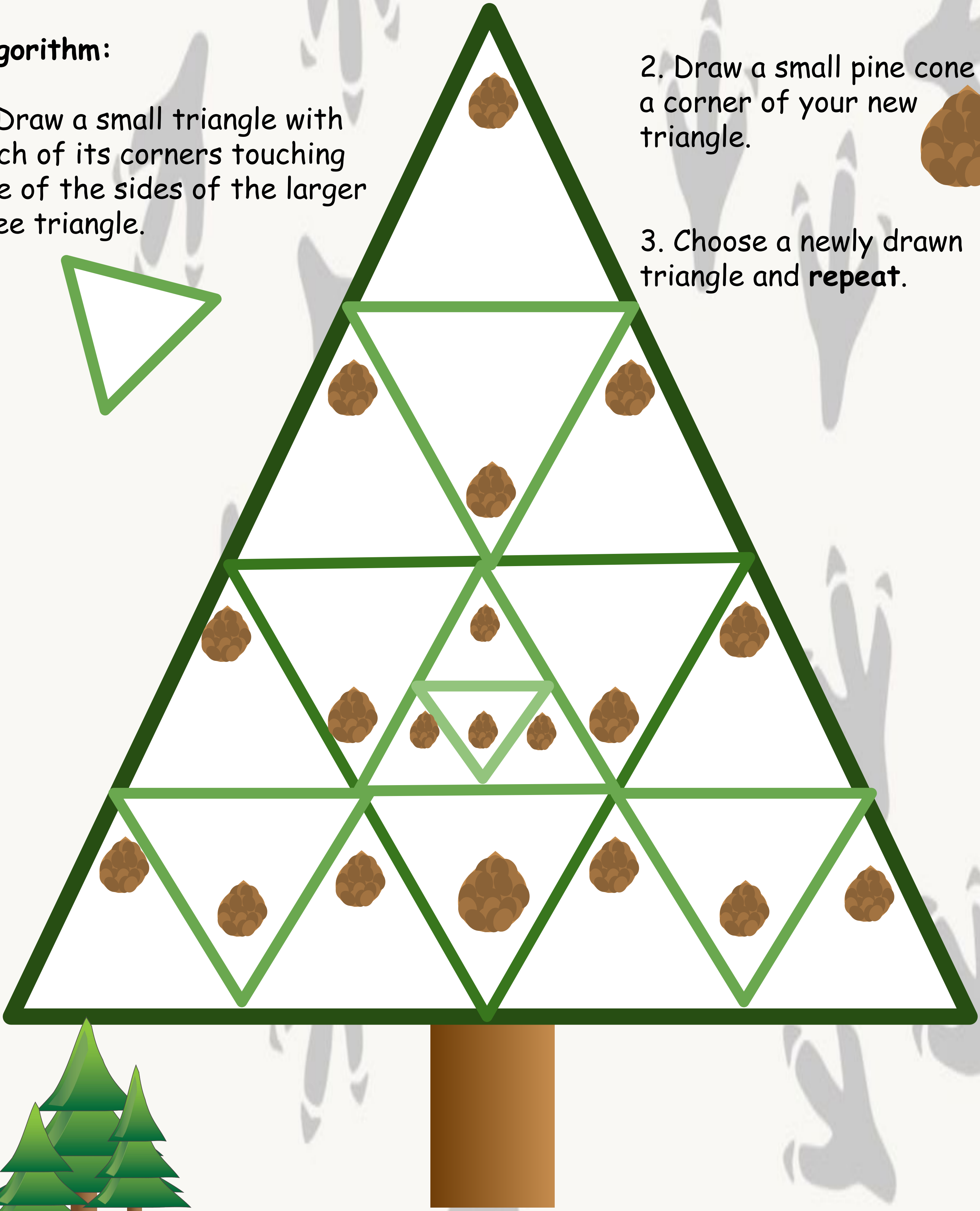
Algorithm:

1. Draw a small triangle with each of its corners touching one of the sides of the larger tree triangle.



2. Draw a small pine cone in a corner of your new triangle.

3. Choose a newly drawn triangle and **repeat**.



Algorithmic Thinking - fun with fractals

Follow the instructions to make a Sierpinski triangle!

Algorithm:

1. Join the blue dots to make a triangle inside the main triangle *(these are midpoints on the sides of the equilateral triangle.)*

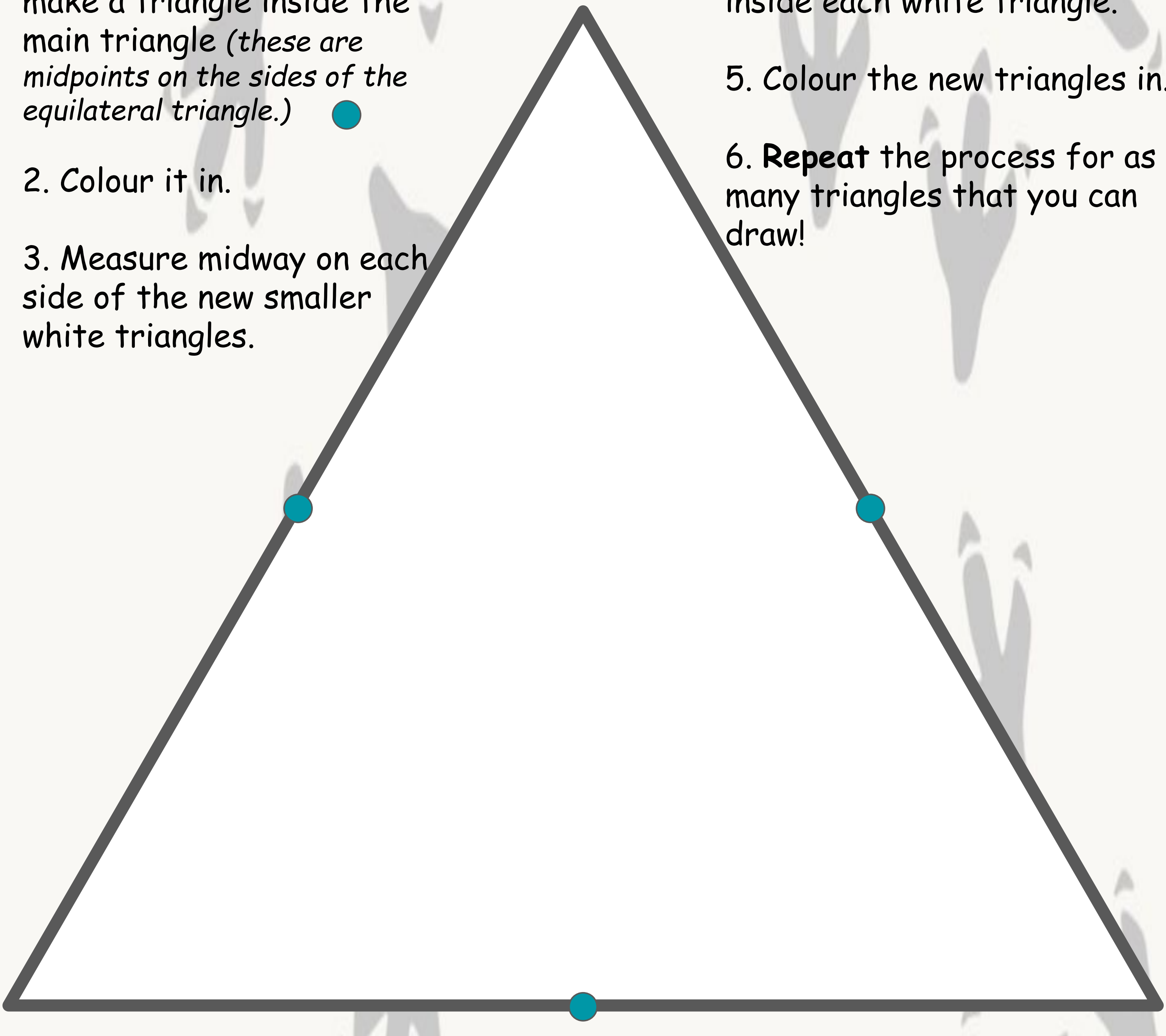
2. Colour it in.

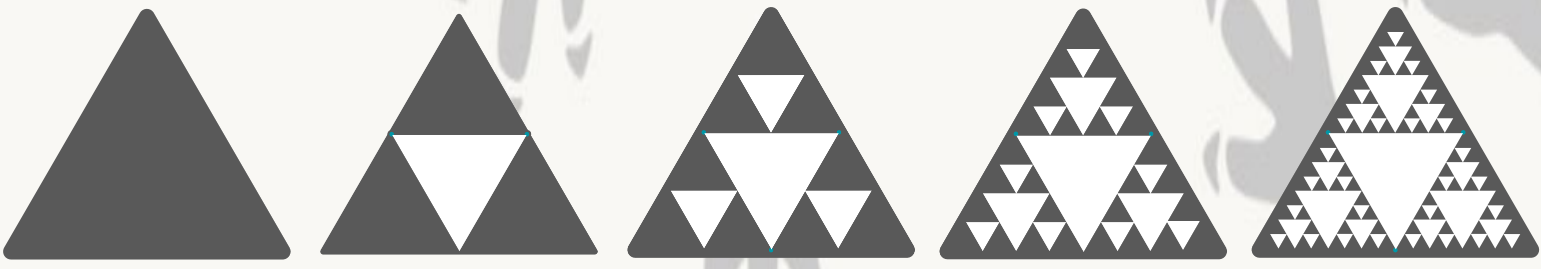
3. Measure midway on each side of the new smaller white triangles.

4. Draw lines to connect making new triangles - one inside each white triangle.

5. Colour the new triangles in.

6. **Repeat** the process for as many triangles that you can draw!





Algorithmic Thinking - fun with fractals - answer

Follow the instructions to make a Sierpinski triangle!

Algorithm:

1. Join the blue dots to make a triangle inside the main triangle *(these are midpoints on the sides of the equilateral triangle.)*

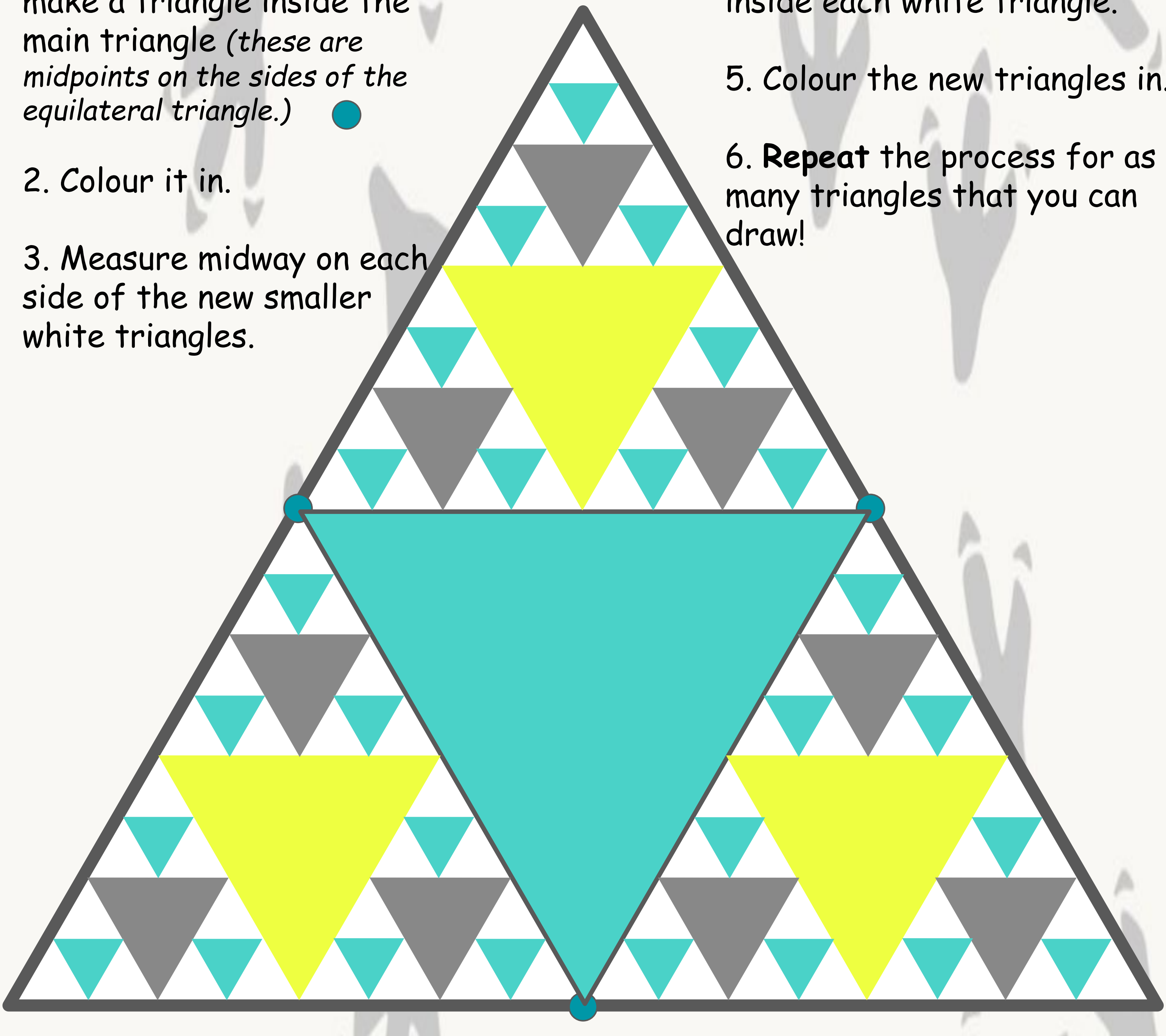
2. Colour it in.

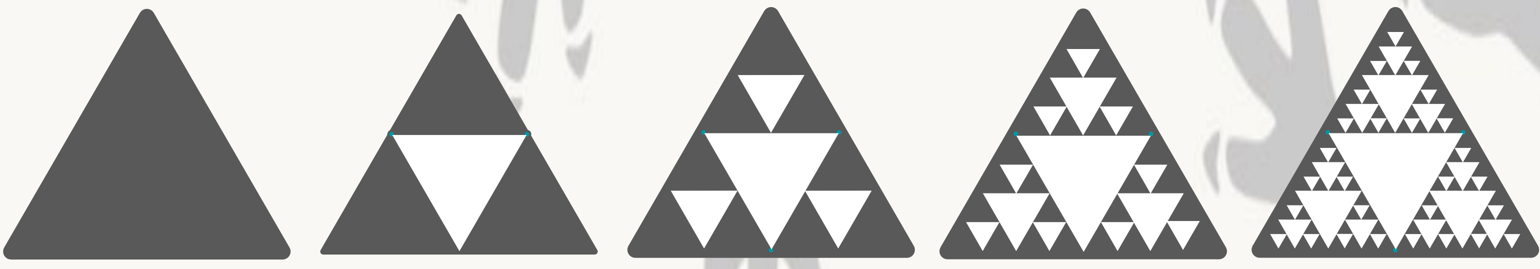
3. Measure midway on each side of the new smaller white triangles.

4. Draw lines to connect making new triangles - one inside each white triangle.

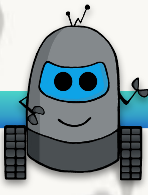
5. Colour the new triangles in.

6. **Repeat** the process for as many triangles that you can draw!





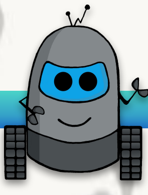
Where should we loop? - beginner



Find the pattern. *Where does it begin to repeat?*
Rewrite as an algorithm in the space next to the pattern - make sure you use the repeat & loop commands!

No.	Pattern	Algorithm
1	→ → ↰ → → ↰	
2	↓ ↑ ↓ ↑ ↓ ↑	
3	← ← ← ← ← ←	
4	↰ 🐾 ↓ ↰ 🐾 ↓ ↰ 🐾 ↓	
5	↱ 🐾 🐾 🐾 🐾 🐾 🐾	

Where should we loop? - beginner (answers)



Find the pattern. *Where does it begin to repeat?* Rewrite as an algorithm in the space next to the pattern - make sure you use the repeat & loop commands!

No.	Pattern	Algorithm
1	→ → ↶ → → ↶	→ ✖ 2 ↶] ✖ 2
2	↓ ↑ ↓ ↑ ↓ ↑	↓ ↑] ✖ 3
3	← ← ← ← ← ←	← ✖ 6
4	↶ 🐾 ↓ ↶ 🐾 ↓ ↶ 🐾 ↓	↶ 🐾 ↓] ✖ 3
5	↷ 🐾 🐾 🐾 🐾 🐾 🐾	↷ 🐾 ✖ 6

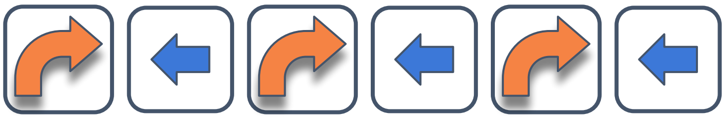
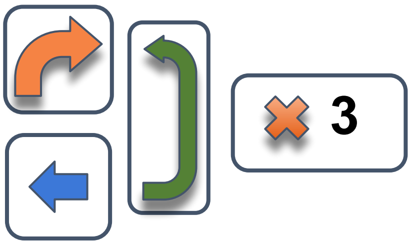
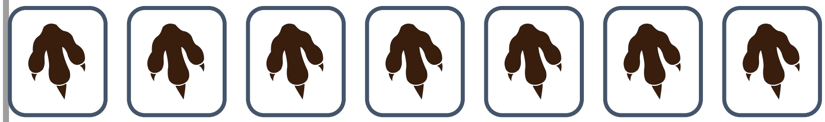
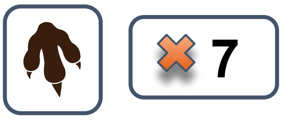
Where should we loop? - intermediate

Find the pattern. *Where does it begin to repeat?* Rewrite as an algorithm in the space next to the pattern - make sure you use the repeat & loop commands!

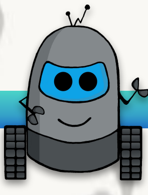
No.	Pattern	Algorithm
1	↱ ← ↱ ← ↱ ←	
2	blue,red,blue,red,blue,red,green	
3	on,on,on,off,on,on,on,off,on,on,on	
4	🐾 🐾 🐾 🐾 🐾 🐾 🐾	
5	left,right,left,right,left,right	

Where should we loop? - intermediate (answers)

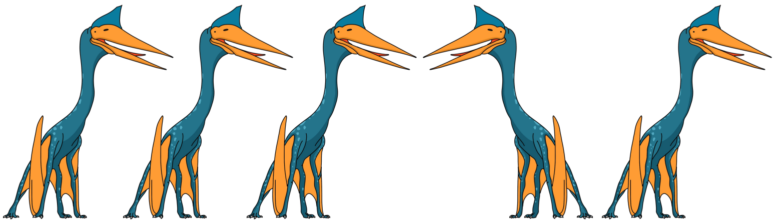
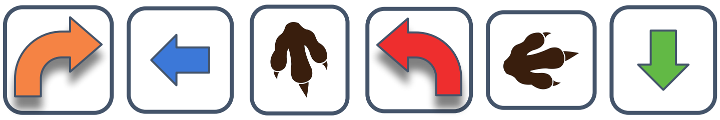
Find the pattern. *Where does it begin to repeat?*
Rewrite as an algorithm in the space next to the pattern - make sure you use the repeat & loop commands!

No.	Pattern	Algorithm
1		
2	blue,red,blue,red,blue,red,green	Blue] Red] ✖ 3 Green
3	on,on,on,off,on,on,on,off,on,on,on	On ✖ 3] Off] ✖ 2 on ✖ 3
4		
5	left,right,left,right,left,right	Left] Right] ✖ 3

Where should we loop? - advanced

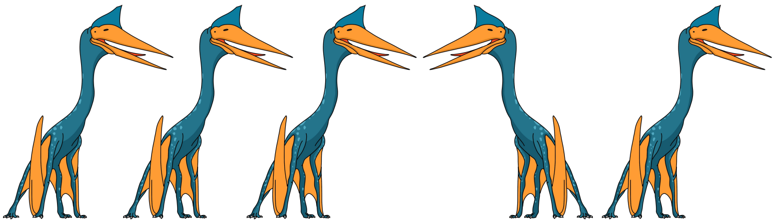
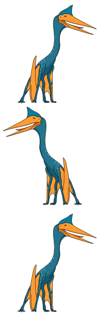
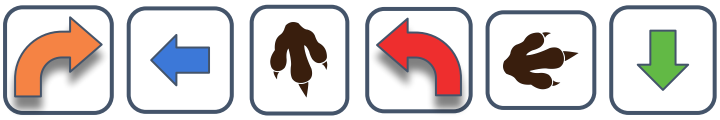


Find the pattern. *Where does it begin to repeat?*
Rewrite as an algorithm in the space next to the pattern - make sure you use the repeat & loop commands!

No.	Pattern	Algorithm
1	2,7,8,2,7,8,2,7,8,2,7,8	
2		
3	bug,bug,bug,debug,bug,bug,bug,debug	
4		
5	1,0,0,0,1,0,0,0,1,0,0,0,1,0	

Where should we loop? - advanced (answers)

Find the pattern. *Where does it begin to repeat?*
Rewrite as an algorithm in the space next to the pattern - make sure you use the repeat & loop commands!

No.	Pattern	Algorithm
1	2,7,8,2,7,8,2,7,8,2,7,8	2 7 8 ↺ ✖ 4
2		 ✖ 3
3	bug,bug,bug,debug,bug,bug,bug,debug	bug ✖ 3 debug ↺ ✖ 2
4		No loop or repeats so the algorithm is the same as the pattern.
5	1,0,0,0,1,0,0,0,1,0,0,0,1,0	1 0 ✖ 3 ↺ ✖ 3 1 0

Exit Statement for Lesson Three:

Writing efficient algorithms

Learning Intention:

...how to create efficient algorithms.

1. How **do you feel** about today's lesson?

Circle the emoji bug that links to you!

2. What **key words** can you remember from the lesson today?

Circle the words:

Input

Repeat

Process

Algorithm

Robot

Efficient

Patterns

Decomposition

Abstraction

Loop

Logic

Think

Camera

Cipher

Commands

Play Code Learn

Exit Statement for Lesson Three:

Writing efficient algorithms

Learning Intention:

...how to create efficient algorithms.

1. How **do you feel** about today's lesson?

Circle the emoji bug that links to you!

Why do you feel this way?

2. What **key words** can you remember from the lesson today?

Exit Statement for Lesson Three:

Writing efficient algorithms

Learning Intention:

...how to create efficient algorithms.

1. How **do you feel** about today's lesson?

😋 😒 😏 😫 😓 😎

Circle the emoji that you relate to!

2. What were your **key takeaways** from this lesson today?

3. What would you like to **learn more about?**