Kōwhaiwhai Patterns

Year 8 Geometry

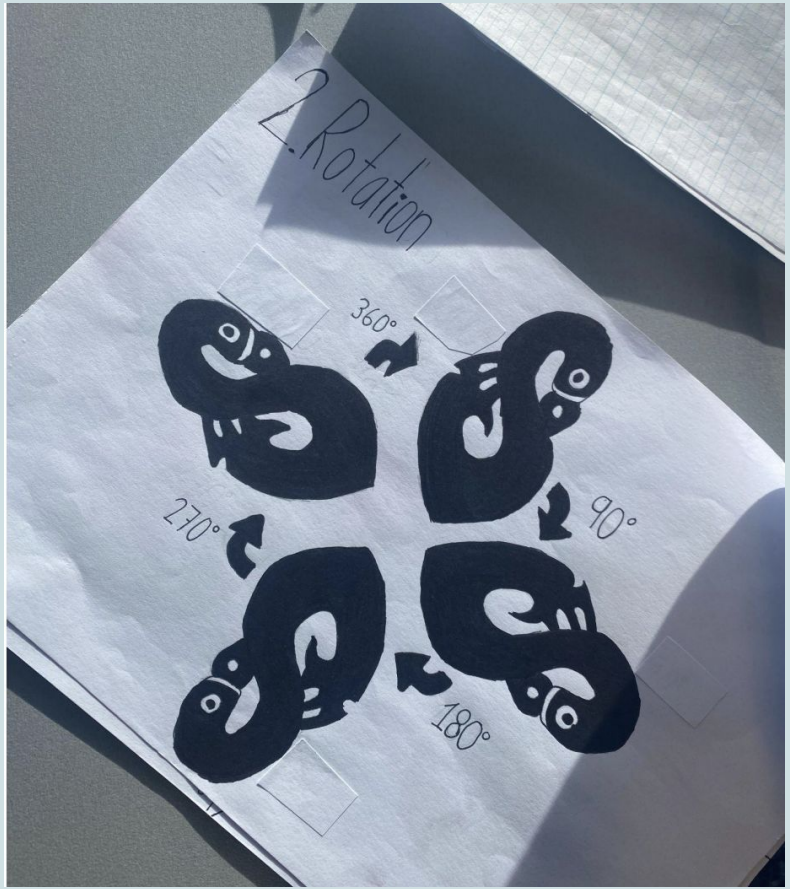
Examples

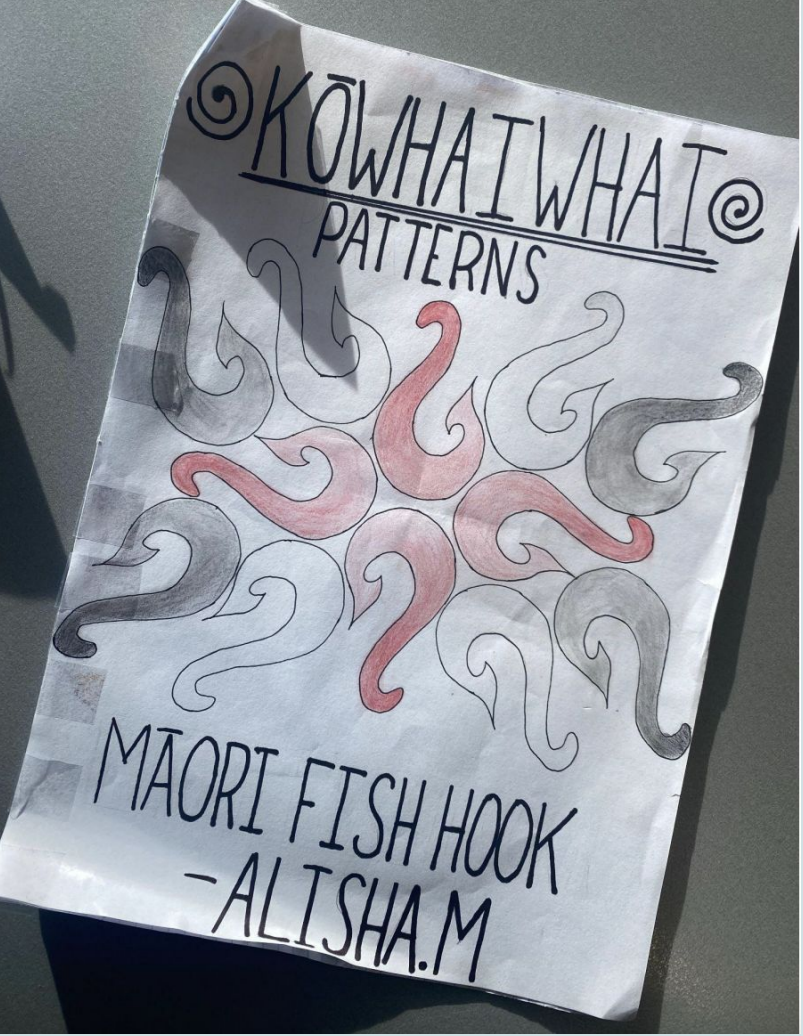
EXAMPLE

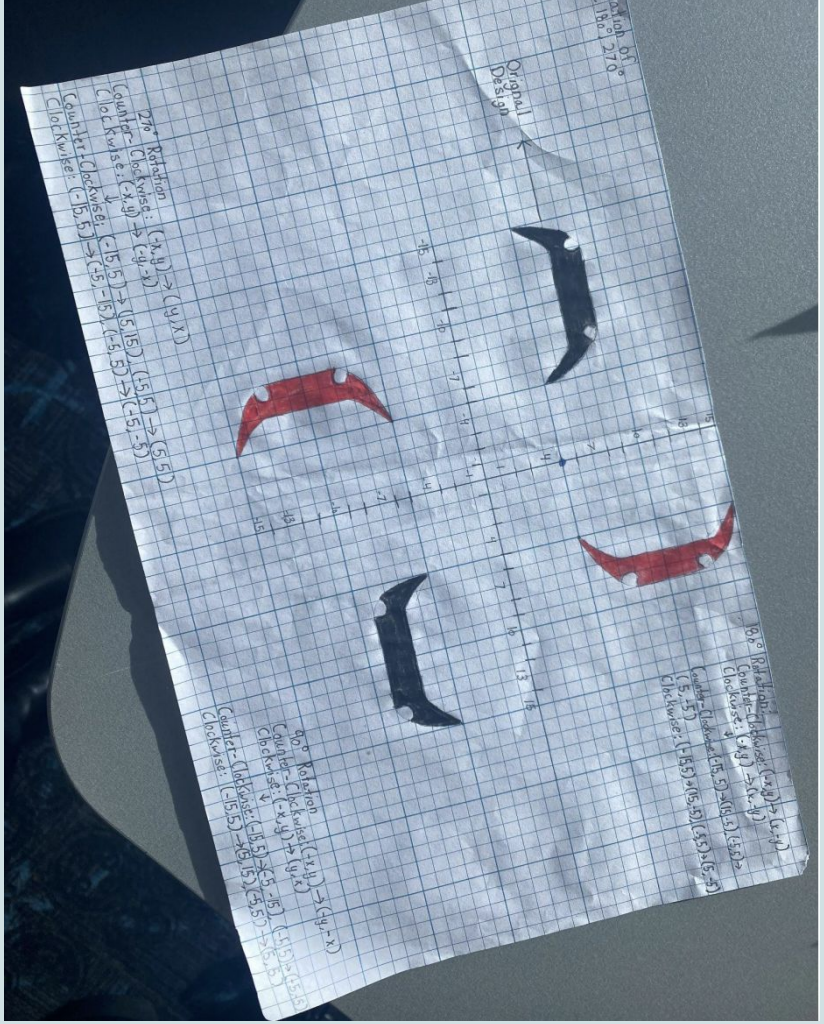
Symmetry
My particular depiction of the Koru shape is asymmetrical
It does not have either vertical or horizontal line symm
each point of the picture can not be reflected in another po
mirror line. There is also an absence of rotational symm
as this Koru must be rotated a full 360 degrees
connected with itself. As its total order of symmetry
concluded that this particular Koru shape is asym

What are Kōwhaiwhai Patterns?
Page
Kōwhaiwhai patterns are traditional Māori art forms which
Māori history and in so doing have many different meanings
behind them. They are normally found in a meeting house or
whare nui and the placement of them within the building is specific
to the pattern and meaning they portray. Those Kōwhaiwhai
displayed on the tāhia (ridge poles) tell the story of tribal ancestors
or the tribes genealogy. On the heke or rafters of the meeting house
are the Kōwhaiwhai that depict the whānau. Normally produced in the
colours of red, black and white, which in turn have meanings specific
to life, purity and earth, the Kōwhaiwhai patterns combined represent
the spiritual presence of the tribe, its ancestors and generations.

EXAMPLE




KŌWHAIWHAI
PATTERNS
MĀORI FISH HOOK
-ALISHA.M


Original Design
270° Rotation
Counter-Clockwise: (-x,y) → (-y,-x)
Clockwise: (x,y) → (y,x)
90° Rotation
Counter-Clockwise: (x,y) → (-y,x)
Clockwise: (x,y) → (y,-x)
180° Rotation
Counter-Clockwise: (x,y) → (-x,-y)
Clockwise: (x,y) → (-x,-y)

EXAMPLE

Explaining your pattern

The pattern of all conjoined Kape shapes has been designed to symbolise a flower. I have done this since our context is revolved around the environment, and the flower is a crucial part of it. This pattern can be repeated as many times to your personal liking.

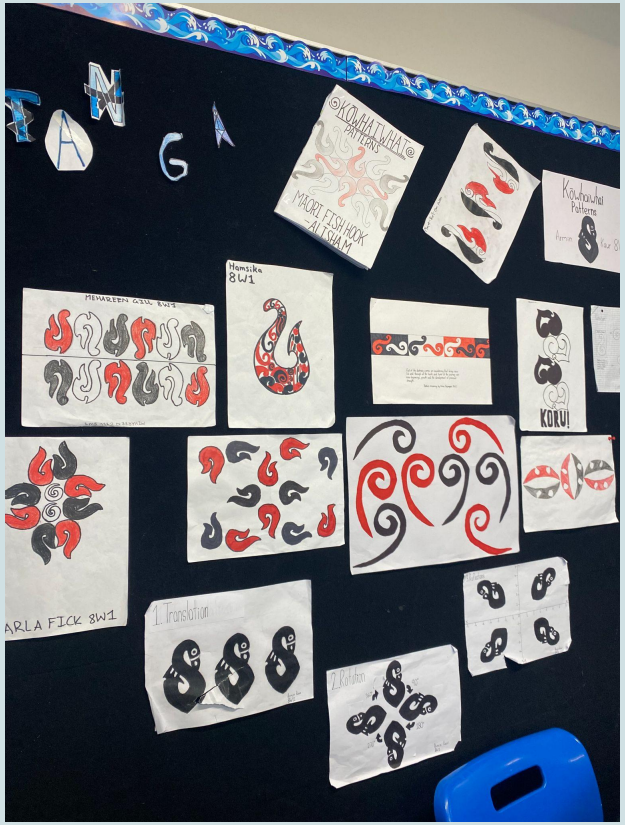
Ways of how I have designed this Pattern:
Rotation: The two Kape shapes that are connected to the original and reflected Kape shape, has been rotated clockwise. The left side of the two shapes has been rotated 270 degrees, while the right side has been rotated 90 degrees.

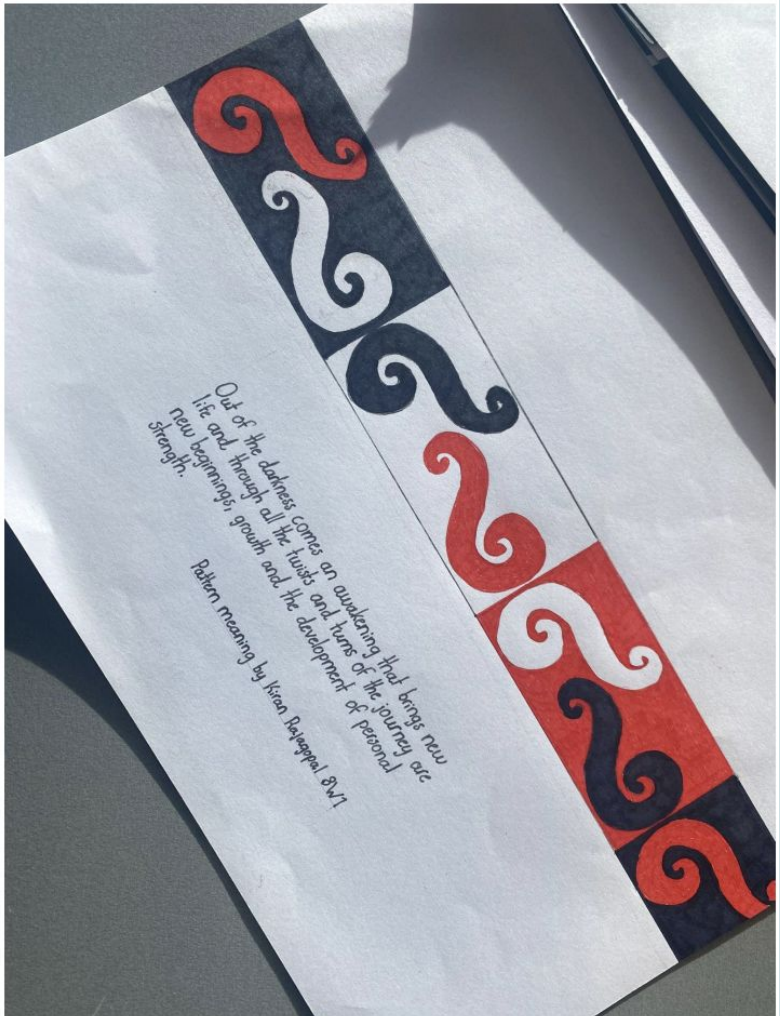
Reflection: The original Kape shape has been reflected on the X-axis, and then placed at bottom of the 4 linked petals.

Translation: To start repeating the inside of the flower, each Kape shape has been translated to the side it is facing.

Description:
Visual colors: Red (a traditional Maori Pattern color), Black (a traditional Maori Pattern color).
Shape: Kape, a common Maori Kowhaiwhai shape.
Symbolises: A flower.

EXAMPLE


TONGA
©KOWHAIWHAI©
PATTERNS
MAORI FISH HOOK
ARTSIAM
Hemsika
8W1
KORU
ARLA FICK 8W1
1. Translation


Out of the darkness comes an awakening that brings new life and through all the twists and turns of the journey are new beginnings, growth and the development of personal strength.
Pattern meaning by Kiran Nalagopal 8W1

Kōwhaiwhai Patterns

What are Kōwhaiwhai patterns?

Read: https://www.twinkl.co.nz/teaching-wiki/maori-patterns

Summarise what they are in 2-3 sentences

Selecting your Kōwhaiwhai shape

Browse: https://www.twinkl.co.nz/teaching-wiki/maori-patterns

And the options on the next slide…..

Selecting your Kōwhaiwhai shape

koru	Aramoana
	

rauru	Puhoro
	

kape	Ngutu kākā
	

Name of your chosen shape here

Photos of your chosen shape here

Name of your chosen shape here

Write a paragraph that includes the following information:

a) History / origins of this shape
b) Is it connected to a specific iwi/tribe?
c) What does the black, white and red symbolise?
d) What does your chosen shape symbolise/represent?
e) If there is a certain place or object where your shape/pattern is most commonly used?

Write paragraph on next slide

Name of your chosen shape here

Paragraph here

Transformations

Basic Transformations (graph paper)

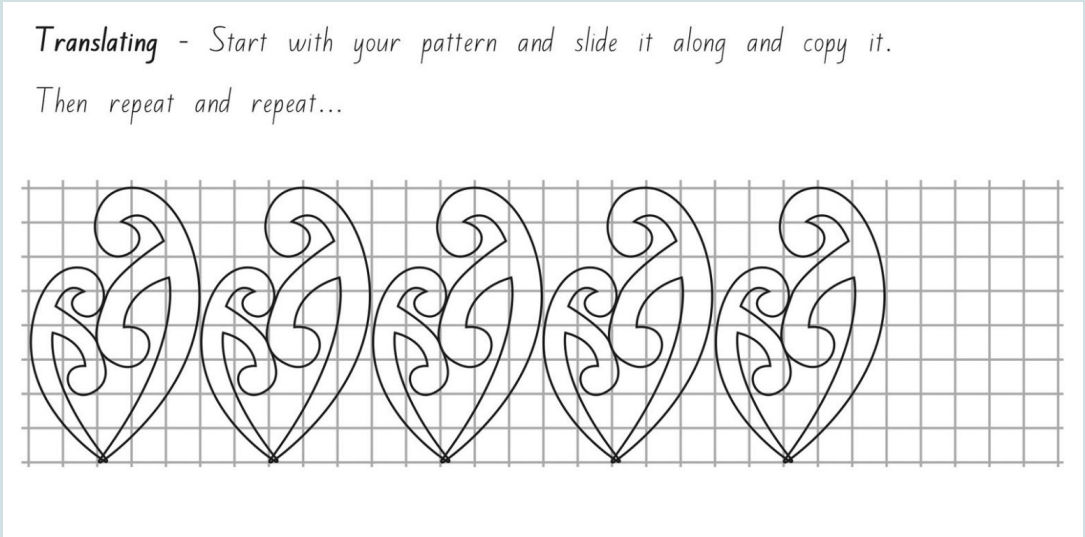
Create a Stencil

1. Draw your shape (or shapes) that make up your pattern and cut them out

Translation

1. Translate your shape 3 times, and draw

   Example:



Rotation

2. a) rotate 90 degrees and then draw your image
   b) rotate 180 degrees and then draw your image
   c) rotate 270 degrees and then draw your image

Reflections

3. a) reflect along y-axis and then draw
   b) reflect along x- axis and then draw

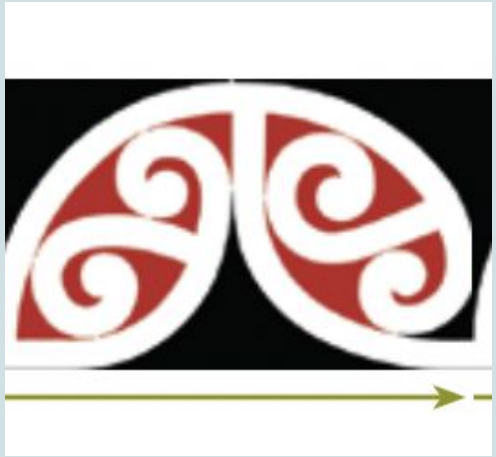
Symmetry

Describe the type of symmetry of your shape (line, rotational symmetry) in a sentence or two.

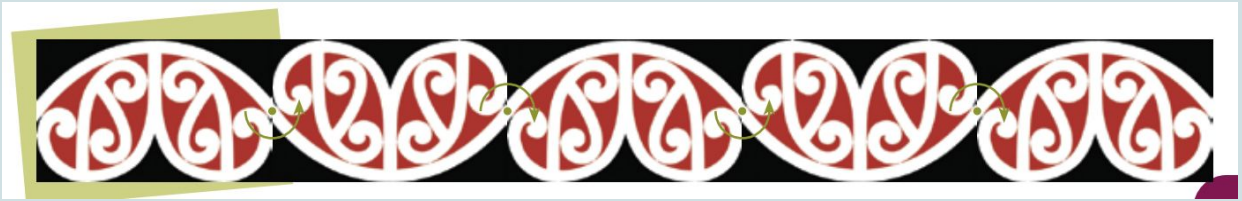
Creating your Pattern (printer paper)

Create your own pattern

Now that you can see what your shape looks like after all transformations you can pick 1 or more transformations and create a repeating pattern on white paper that is also coloured in.



(example of a shape using reflections to create a pattern)



Explaining your pattern

Ready to submit your assessment?

- Is every slide complete?
- Have I uploaded my google slides to Mission Heights Online (not google class)
- Have I handed in my graph paper with basic transformations and my own created pattern on printer paper to your teacher?