

ACTIVITY: BLOCK PRINTING ESCHER-LIKE PATTERNS

Materials

- Letter sized paper
- Markers
- Scissors
- Sticky-backed foam sheets
- Base 10 flats
- Chart paper
- Poster paints (gouache), brushes
- Trays

Skills

Motor

- Tracing
- Cutting
- Printing
- Colour mixing, painting
- Printing

Cognitive

- Seeing symmetries
- Matching orientation
- Recognising similarity/congruence
- Estimating short distances
- Making aesthetic choices

Affective/metacognitive

- Persevering
- Focusing on a task
- Adapting
- Problem solving

Outcomes (Nova Scotia Curriculum)

Grade5 & 6 Visual Art

Outcome 1: Students will explore the creative process, individually and collaboratively, using a range of materials and technologies, to create with respect and sensitivity a variety of artworks that express feelings, ideas, and understandings

Performance Indicators

- Create artworks with emphasis on a broader range of [the elements and principles of design](#).
- Create artworks for a variety of purposes, recognizing influences from personal, social, cultural, community, and/or physical environment(s)
- Use a [variety of materials](#), technologies, and tools to create art in many forms, using examples from diverse cultures for inspiration

Grade 5 Mathematics

SCO G04 Students will be expected to identify and describe a single transformation, including a translation, rotation, and reflection of 2-D shapes

Performance Indicators

G04.06 Identify transformations found in everyday pictures, art, or the environment

Grade 6 Mathematics

SCO G04 Students will be expected to perform a combination of successive transformations of 2-D shapes to create a design and identify and describe the transformations

Performance Indicators

G04.02 Create a design using one or more 2-D shapes and describe the transformations used.

G04.04 Create a tessellation and describe how tessellations are used in the real world

Essential Graduation Competencies (EGCs)

COMMUNICATION (Com)

- listen and interact purposefully and respectfully in a variety of contexts
- express ideas, information, learnings, feelings and perspectives through various media, considering purpose and audience
- engage in constructive and critical dialogue

CREATIVITY AND INNOVATION (CI)

- gather information through senses to imagine, create, and innovate
- develop and apply creative abilities to communicate ideas, perceptions, and feelings
- take responsible risk and accept constructive critical feedback
- reflect and learn from trial and error

CRITICAL THINKING (CT):

- demonstrate curiosity, inquisitiveness, creativity, flexibility, and persistence
- ask relevant questions that support inquiry, decision making, and problem solving

TECHNOLOGICAL FLUENCY (TF)

- recognize technology encompasses a range of learning tools and contexts
- apply technology effectively and productively
- begin to consider how technology and society impact and advance one another

Big Idea

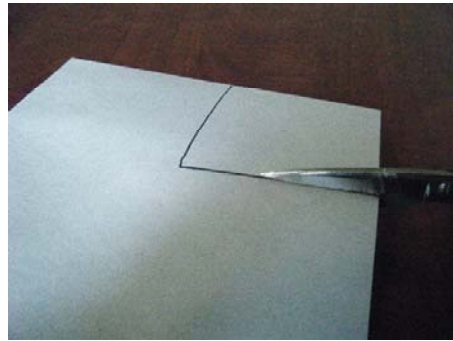
The idea of this activity is to play with and investigate the creation of repeating transformations that use translation only, to produce a tessellation: a tiling of the plane that leaves no gaps or overlaps. The children will create their own tile that tessellates, then use it as a stamp to produce a pattern in two perpendicular directions. The basic tile is made using the base 10 'flats' as the block. The foam shape that is created using the cut-away-and-reassemble process is attached to the block, which makes it easier to use as a printing block.

Activity

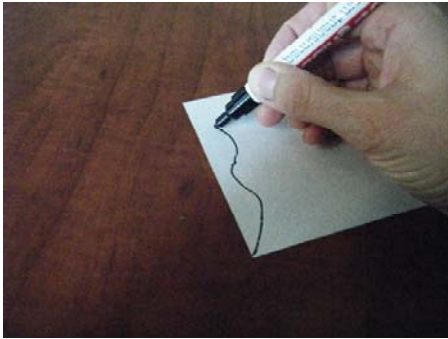
1. Trace your stamping block onto a piece of paper



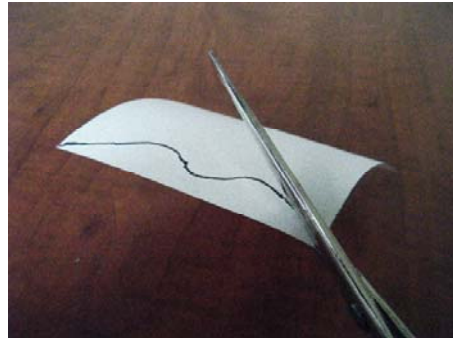
2. Cut out the traced shape



3. Draw a line from one corner of the square to a corner that is adjacent (beside it, not opposite)



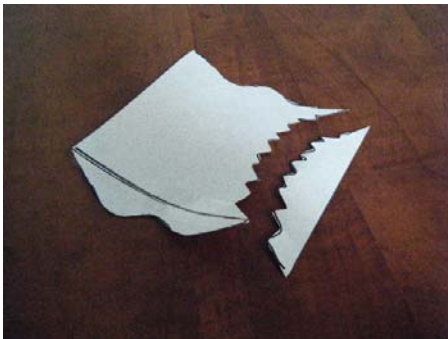
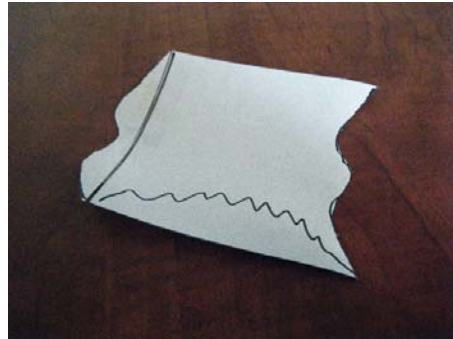
4. Cut along the line you drew



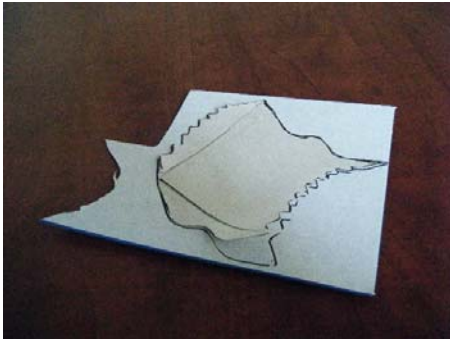
5. Re-attach the piece on the opposite side without flipping it



6. Do the same for the other two opposing sides



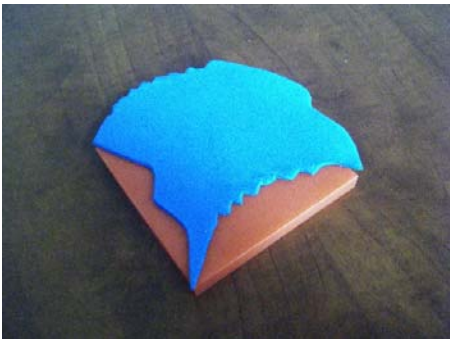
7. Place your new shape on the foam backing paper and trace two copies



8. Cut the foam shapes



9. Attach them to the stamping blocks, ensuring that the corners of the original square shape match the corners of the stamping block



10. Use the two stamps to print in two different colours, switching colours each time, and interlocking the shapes (see sample on the right)

What if...?



...you start with a different 2D shape (ex. an equilateral triangle...or any triangle or polygon!)?

...you glue or tape the foam blocks to a rolling pin?

...you use more than one colour on each stamp?