

<p>Unit 6</p>  <p>Week 4</p>	<p>Small Group: Garden Designers</p> <p>Low Support</p>	<p>Math</p> <p>SG 2</p>	<p>Standards:</p> <p>MELDS.M.G.PS.2</p> <p>MELDS.M.G.PS.3</p> <p>MELDS.M.G.PS.4</p> <p>MELDS.M.G.PS.7</p>
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Guiding Math Ideas:

- Living things are part of interdependent systems- (Enduring Understandings)
- Patterns- Extension and Creation
- Manipulating Shapes

Math Concepts from Unit Learning Progressions:

- Growing accuracy in discovering describing and comparing attributes of shapes and patterns.
- Composing and decomposing shapes contributes to learning numbers and later understanding of fractions.

This is a Maine-connection Activity

Materials:

- Pattern Blocks and Templates (Math materials)
- *ABABA Book of Pattern Play* (for reference)
- Garden Templates resources
- 2 Magic Boxes (Re-use from SG1)
- Numbers – Small plastic/wooden, or numeral cards
- Maine Coastal Botanical Garden Map resource
- Tablet, computer to display Pictures of Maine’s Coastal botanical garden for inspiration – Visit the gallery for photographs and inspiration
<http://www.mainegardens.org/>
- Placemats to define work space

Math Vocabulary:

- Spiral- a growing shape that is coiled like a snake or snail.
- Garden Designer- someone knows a lot about plants and uses math to plan a garden.

Preparation:

Place Pattern Blocks in Math Center several days prior to SG for exploration

Copy Garden Templates, making several copies of the different shapes of gardens. Copy Maine Coastal Botanical Garden Map. If possible, use a Tablet or Laptop and display the Maine Garden website. The Gallery has beautiful pictures of the gardens.

Place small numbers in one Magic Box and several of each kind of pattern block in the other Magic Box. Set up a work area for each child in Small Group, and place pattern blocks, Magic Boxes, and Garden Templates in center of table.

Procedure:

We read our book *Swirl by Swirl* earlier this week. We sing about **Spirals** in SWPL. We made Tangram Gardens. Today we are going to use these special Pattern Blocks to make our own Gardens. We are going to be **Garden Designers**. Do you have any ideas about what a **garden designer** does?

A garden designer knows a lot about flower and plants. She or he uses math and makes a plan for where plants will grow. In Maine we have a beautiful garden that lots of people visit each year, the Maine Coastal Botanical Garden. Garden designers planned it. Here is a map of the garden and some of the flowers chosen by garden designers.

Show the map and the photos on the Tablet.

We'll be garden designers using these Pattern blocks and some garden designs.

Show Pattern blocks and garden templates.

We've played with pattern blocks in our math center. Today we are going to use our pattern blocks and our Magic Boxes to create some color and shape gardens. We are pretending that our pattern blocks are different flowers or vegetables. Garden designers choose plants and decide how many they will need. What shapes are these garden maps?

Children name spirals and rectangles.

Children create pattern gardens by drawing out a number from one Magic Box, then drawing out a shape from the other box. They find that shape in the large pile of patterns blocks in the center of the table and begin creating their gardens. They continue until their garden is complete. Comment on any patterns you see emerging. Take photos of the gardens before putting the materials away. Leave materials out on math shelves for children to play with throughout the next few weeks.

Strategies to Provoke Math Thinking:

- Set patterns or emerging ones? Many pattern-making activities present set patterns. Most pattern block sets include pre-set cards. Week 1 SG 2 had this more structured type of pattern activity. This activity is free-flowing. It encourages children to create patterns with a certain degree of randomness. Offer both types of experiences. There is a place for by-the-book pattern making and a place to be pattern-designers.
- Maine Connections: Continually look for ways to connect the surrounding environment with math. The more that children think of math as a typical part of their everyday lives, the more likely they are to develop positive math attitudes and diminish negative fears about math.

Adaptations for Additional Challenge:

- Invite children to research the Maine Coastal Botanical Garden and its Alford Children's Garden. Add Investigating Maine Gardens as a LFOAI activity.
- Make a pattern garden using the ABABA Book of Patterns as guide. Refer to book on patterns play and make an ABBA garden, an ABA garden, etc. using pattern blocks.

Documentation:

- Make a bulletin board display using the photos of the gardens and adding some photos of Maine's Coastal Botanical Garden.

Provocation:

- Is there a local garden that is accessible to your program? Plan a visit.
- Many programs do not allow field trips with PreK children, so create a virtual garden tour of any local or Maine gardens. Create a slide show that can roll during center time, lunch or rest time.