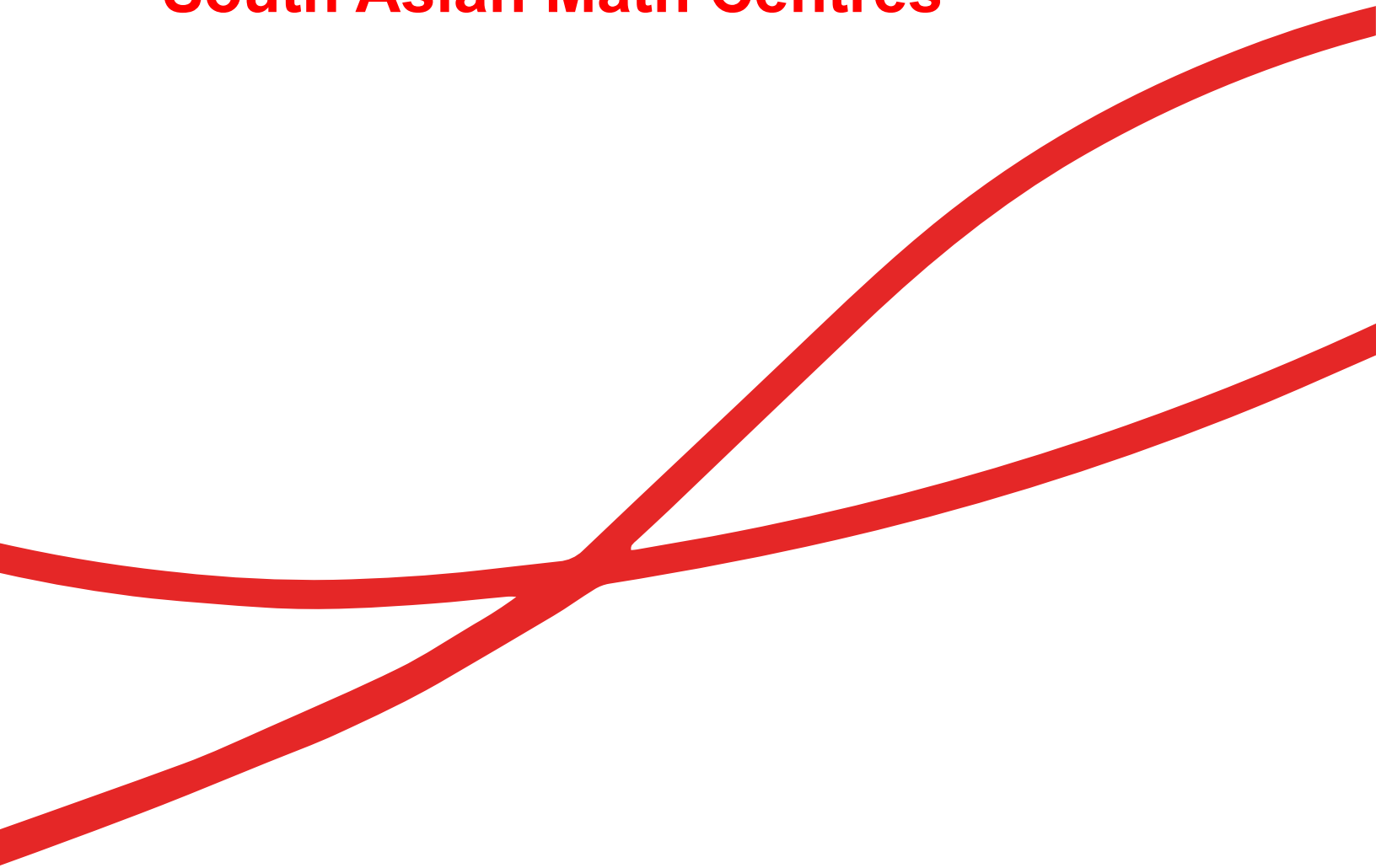




Grades K to 3 | Mathematics

# Activity Plan: South Asian Math Centres



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[www.saffronthreads.ca](http://www.saffronthreads.ca)

## Overview

### Big question

How do we use patterns to understand the world we live in?

### Activity description

Working through different math centres, students will gain understanding of the concepts of patterns both locally and abroad, applying a culturally sensitive lens to regions of South Asia and Canada.

### Grades and curricular area(s)

- Kindergarten to Grade 3
- Mathematics

### Big Ideas

Mathematics	
<b>Kindergarten</b>	Objects have attributes that can be described, measured, and compared.
	Repeating elements in patterns can be identified.
<b>Grade 1</b>	Objects and shapes have attributes that can be described, measured, and compared.
	Repeating elements in patterns can be identified.
<b>Grade 2</b>	Objects and shapes have attributes that can be described, measured, and compared.
	Repeating elements in patterns can be identified.
<b>Grade 3</b>	Regular increases and decreases in patterns can be identified and used to make generalizations.

## Curricular Competencies

Mathematics	
Kindergarten	Model mathematics in contextualized experiences
	Engage in problem-solving experiences that are connected to place, story, cultural practices, and perspectives relevant to local First Peoples communities, the local community, and other cultures
Grade 1	Model mathematics in contextualized experiences
	Engage in problem-solving experiences that are connected to place, story, cultural practices, and perspectives relevant to local First Peoples communities, the local community, and other cultures
Grade 2	Model mathematics in contextualized experiences
	Engage in problem-solving experiences that are connected to place, story, cultural practices, and perspectives relevant to local First Peoples communities, the local community, and other cultures
Grade 3	Model mathematics in contextualized experiences
	Engage in problem-solving experiences that are connected to place, story, cultural practices, and perspectives relevant to local First Peoples communities, the local community, and other cultures

## Materials/Resources

### Supplies

- Pictures of animals from South Asia and around the world: <https://www.firstpalette.com/printable-theme/animals.html>, <https://itabc.ca>
- Printable maps of countries from South Asia: [www.geoguessr.com/seterra](http://www.geoguessr.com/seterra)
- Pattern blocks
- Graph paper
- Manipulatives for counting (bingo counters, beads, popsicle sticks, etc.)
- Two iPads or laptops
- Games such as Snakes and Ladders, [Pachisi](#) or chess
- Beads
- String

### Books

*Bracelets for Bina's Brothers*, Rajani LaRocca

## Counting videos

- [Learn Hindi Numbers 1 to 10](#)
- [Punjabi Numbers 1 to 10](#)
- [Numbers 1 to 10 in Tamil](#)
- [Numbers in Bengali, 1 to 10](#)

## Kick Off and Connect

### Step 1

Ask students what they know about patterns. Some questions you might ask:

- What is a pattern?
- Where do we see patterns?
- Why are patterns useful?

### Step 2

Read the book *Bracelets for Bina's Brothers*, by Rajani LaRocca (or another book about patterns).

Ask questions about the book – for example:

- Do you ever make bracelets like Bina did? Do your bracelets have a pattern?
- What patterns did we see in the bracelets Bina made?
- How are the patterns different?
- How are the patterns similar?

### Step 3

Provide some examples of patterns; these could be in pictures online or objects you've brought in.

Ask students to look around the room and identify patterns they see. Create a list of the patterns.

### Step 4

Review the list of patterns with the class. Begin a group discussion about the patterns in the room. Some guiding questions you might ask:

- How do you know it is a pattern?
- Where else do you see patterns (for example, at home, in the park)?
- Why are patterns useful (for example, weather, seasons, predictions about the future)?

## Explore and Engage

### Step 1

Before class, set up four math centres:

#### Centre 1: Animals

Students will create a variety of patterns of increasing complexity, using pictures of animals from British Columbia and South Asia (such as ABAB – Lion-Monkey-Lion-Monkey; or ABBABABB – Tiger-Lion-Lion-Tiger-Lion-Tiger-Lion-Lion). You may choose to focus on one country within South Asia or in South Asia broadly.

#### Centre 2: Bracelets

Just like Bina in the story, students will create their own bracelets. They may choose to create one for a friend, a parent or themselves. (Note: If you read a different story, you can adjust this activity as needed.)

Students will first lay out their beads in a pattern and write out what the pattern is (e.g., ABBA, ABAB). Students in higher grades may create more complex patterns/bracelets. They should use a minimum of 10 beads but can use more depending on the size of the bracelet they want to create. Beads can be different shapes, colours and so on, but should form a recognizable pattern.

#### Centre 3: Measuring Maps

Students will use pattern blocks to cover the area of different parts of the world. They can measure:

- Their town or city
- British Columbia
- Canada
- Sri Lanka
- India
- New Delhi, India, or Kabul, Afghanistan (or another South Asian capital)

Have students colour in blocks on graph paper for each of the places they measure and write down how many blocks were needed for each part of the map (e.g., 4 triangles and 2 squares for India). You may add, or remove, places from this list.

Have students answer the following questions:

- Is your city **bigger** or **smaller** than the city in South Asia?
- Is Canada **bigger** or **smaller** than India?
- Is British Columbia **bigger** or **smaller** than Sri Lanka? What about India?

### **Centre 4: Counting**

Students will learn to count to 10 in a common South Asian language and then count different objects in that language. The video resources listed above include four South Asian languages: Hindi, Punjabi, Tamil and Bengali.

### **Step 2**

In class, explain each of the four math centres.

### **Step 3**

Students rotate through the four math centres.

### **Step 4**

After they have completed the math centres, have students play a game that is popular (or originated) in South Asia, such as Snakes and Ladders, [Pachisi](#) or chess. (Note: Snakes and Ladders, which originated in South Asia but is very popular in Canada, may be the best choice for Kindergarten/Grade 1 students.)

## **Wrap-Up and Assess**

### **Wrap-up**

Students can share their learning by “teaching” their favourite centre to a peer from their buddy class.

### **Assessment**

Teacher will move between centres, using formative assessment, discussions and conversations to determine whether students identify patterns concretely, pictorially and/or verbally. Can they extend existing patterns?

Ask students to explain what pattern blocks they would use to measure objects around the room (such as, seat of a chair, a small table). How do they compare? What can you use to measure a ball?



## Extend and Transform

- Using the knowledge students have gained about patterns, show different examples of Indigenous weaving and how different patterns are created. You may choose to invite an Elder or local Indigenous teacher to give a lesson on weaving and have students do their own weaving.
- Look at patterns in Rangoli art. What patterns can students identify?
- Identify patterns at home, on the playground, in the park, and so on. Have students compare patterns. Are they finding similar patterns? What's different?
- Divide students into three or four groups and provide each group with two different weather forecasts – one for your location and another for a city in South Asia. Try to assign a different country to each group (Bangladesh, India, etc.). Have students look at the weather and identify any patterns they see. Ask students to think about whether the weather is similar to or different from their location in Canada. Have them consider how weather forecasts are created, and if patterns are important.
- Explore how patterns appear in music. For example, clapping, banging on a drum or tapping on a desk can all form patterns. For higher grades, you may choose to play different songs/music from across South Asian regions and cultures and identify patterns in the music or lyrics.