To Parents and Adults at Home...

Your child's class is starting a mathematics unit on geometry. Geometric shapes are all around us, and mathematics can help your child recognize them. Understanding geometric form will help your child appreciate the geometry found in art, design, architecture, and nature.

In this unit, your child will:
- Identify and name various shapes with 3 or more sides
- Build, represent, and describe geometric objects
- Draw and talk about 2-D shapes and 3-D objects

Encourage your child to look for geometric shapes and objects around the home and neighbourhood, and talk about them. Here are some suggestions for activities that you can do at home:

Look for geometric shapes in buildings and street signs. For example, a stop sign is the shape of an octagon, and a yield sign is the shape of a triangle.

Look around the house for geometric shapes. Talk about the shapes you find. As you do, look closely at the corners and sides of the shapes. Count the corners and sides with your child.

Look for 3-D objects around your home, such as a fridge, stove, table legs, and so on. If possible, ask your child to count the number of corners and edges. Talk about how the object's shape is related to its purpose.

Look through magazines with your child to find as many different 2-D shapes and 3-D objects as you can find.
Lesson 1: Naming Polygons

1. Use the polygons below. Find:
   a) a triangle
d) a polygon
   b) a pentagon
e) an octagon
   c) a quadrilateral

A  B  C

D  E  F
Lesson 2: Sorting Polygons

1. Use the polygons below.
   Sort the polygons by the number of sides.
   Label the sorting cards to show your sorting rules.
   Use the letters on the polygons. Record how you sorted each set.

   A  B  C  D
   E  F  G

   a)

   a  a
   b  b

   b)
Lesson 4: Describing Prisms and Pyramids

1. Complete the table below.

<table>
<thead>
<tr>
<th>Object</th>
<th>Prism or Pyramid?</th>
<th>Number of Faces</th>
<th>Number of Edges</th>
<th>Number of Vertices</th>
</tr>
</thead>
<tbody>
<tr>
<td>a)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Lesson 5: Describing Cylinders, Cones, and Spheres

1. Complete the table below.

<table>
<thead>
<tr>
<th>Object</th>
<th>Name of Object</th>
<th>Number of Faces</th>
<th>Shape of Faces</th>
<th>Number of Edges</th>
<th>Number of Vertices</th>
</tr>
</thead>
<tbody>
<tr>
<td>a)</td>
<td>&quot;SOUP&quot;</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b)</td>
<td>Ice Cream</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c)</td>
<td>Ball</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Lesson 6: Sorting Objects

1. Use objects like the ones below. Sort the objects. Label each sorting card to show your sorting rules. Use the letters of the objects. Record how you sorted each set.

   A   B   C   D   E   F   G

a)

b)
Lesson 7: Constructing Skeletons

1. Suppose a toothpick represents an edge of an object, and a ball of clay represents a vertex.
   a) How many toothpicks and balls of clay would you need to make the skeleton of a prism with pentagon bases?
   b) How many toothpicks and balls of clay would you need to make the skeleton of a pyramid with a pentagon base?

2. Can the skeleton of an object have fewer than 8 edges?
   Explain your thinking using numbers, words, and pictures.

3. Describe what you think the skeleton of a skyscraper would look like.
Additional Activity 3:  
Sort it Out!

Work with a partner.

You will need a set of Sorting Cards, models of objects, and 4 number cubes.

➢ Player 1, roll 2 number cubes and choose a Sorting Card.  
   Use one of the numbers rolled, or use their sum.  
   Write a number in the space on the Sorting Card.

➢ Player 1, roll again to make another Sorting Card.

➢ Player 2, use the 2 sorting rules to make 2 sets of objects.  
   Sort some or all of the objects.

➢ Player 2 wins 2 points by sorting both sets correctly.

➢ Switch roles.

➢ Compare your scores after 4 rounds of the game.

Take It Further

Play again.  
This time, when you count points,  
add 1 point for each object in each set.

How will you change the sorting rules you make for your partner?
<table>
<thead>
<tr>
<th>Objects with more than ___ faces</th>
<th>Objects with fewer than ___ faces</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objects with more than ___ vertices</td>
<td>Objects with fewer than ___ vertices</td>
</tr>
<tr>
<td>Objects with more than ___ edges</td>
<td>Objects with fewer than ___ edges</td>
</tr>
<tr>
<td>Objects with ___ faces</td>
<td>Objects with ___ vertices</td>
</tr>
</tbody>
</table>