Growing Patterns

Tables & Chairs Investigation

**Problem:** Restaurants often use small square tables to seat customers. One chair is placed on each side of the table. Four chairs fit around one square table [Figure 1]. Restaurants handle larger groups of customers by pushing together tables. Two tables pushed together [Figure 2] will seat six customers.

- Draw a diagram showing how many customers would be seated at three square tables pushed together [Figure 3].
- Complete the table for reference:
- Find a pattern you can use to predict the number of customers that may be seated at any size table. Describe the pattern in words.

### CHALLENGE:
- Use your pattern to complete this table without drawing a picture or using manipulatives.
- Write an algebraic rule for the number of customers (c) in terms of the number of tables (t).

<table>
<thead>
<tr>
<th>Number of Tables</th>
<th>Number of Customers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>3</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>

\[ \text{c} = \]