## CMAG Lesson Planning Template

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### I. Content of Lesson

<table>
<thead>
<tr>
<th>Topic of lesson: Recognizing Patterns Grade 4</th>
<th>Learning Results / Indicator(s) recognize, describe and extend number patterns</th>
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</table>

**NCTM National Standards:** What national standards, goals, & expectations does this lesson target? Algebraic Relationships

What are critical considerations regarding this content? Big ideas? Developmental readiness? Students will discover, describe and generalize simple and complex patterns and relationships. Students will use algebraic techniques to define and describe the problem to determine and justify appropriate solutions.

**Goal(s) of the Lesson:**
- What do you want the students to know and be able to do? Recognize and extend number patterns
- What overarching questions do you want them to be able to answer? Recognize that different models can represent the same pattern or relationship

### Assessment Targets and Methods:
Review what you want students to know and be able to do. How will you determine that they have met the target? Independently complete an informal, 5 question assessment with 80% accuracy.

### II. Pedagogical Considerations and Differentiation

What should students know to engage in the lesson? How will you build on previous knowledge? Students need to know basic linear number patterns working on identifying simple to more complex patterns.

How will you meet the needs of all learners? (Consider learning styles, personal and social characteristics, and physical and emotional abilities) Work with varying degrees of patterns beginning with simple patterns from shapes/colors/blocks to single/multi-digit numbers where patterns could be demonstrated orally, physically with manipulatives or paper/pencil.

What are common misconceptions regarding the content in this lesson? Some misconceptions are the rule of a pattern is not always repeating as in adding 3 each step where you may need to alternate with another operation or the pattern is not obvious or easily recognizable but is a pattern.
# LESSON DESCRIPTION

**Preparation**

What resources will you need? What type of preparation is needed before you can begin the lesson? You will need internet/computer lab access for web browsing. Have varying materials for all levels and abilities that will participate in pattern recognition lesson. White board/overhead or tool of choice for class demonstration and introduction of lesson. Teacher designed rubric or expectations for pattern outcomes and informal assessment for students to complete or demonstrate knowledge learned.

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### III. Technology Components / Considerations

**What technology tools or resources you will use for this lesson?** Basic websites such as [www.nlvm.usu.edu](http://www.nlvm.usu.edu), [www.resources.oswego.org/games](http://www.resources.oswego.org/games) and [www.shodor.org](http://www.shodor.org).

What management strategies will you utilize during the lesson? Students will have a preset time limit on web exploration of listed websites prior to applying learned strategies to assigned task.

What are the key features that should be highlighted when introducing the lesson? Identify varying patterns and ways to identify them using a multisensory approach.

What are the limitations of the tool? How will you compensate for these limitations? Access to computers, technology issues with internet access to all sites, websites above students level, hard to understand, navigate or read. Teacher will need to preview and bookmark sites for easy access prior to lesson. Print material if available.

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### LESSON DESCRIPTION

<table>
<thead>
<tr>
<th>Intro</th>
<th>Lesson</th>
<th>Questions for Learners</th>
<th>Notes / Reflections</th>
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</table>
| **Introduction** | Day 1  
Steps of the lesson: learning activities (and time allocation)  
Lesson introduction – 5-10 minutes  
*Attention getting  
*Brief explanation  
*Demonstration on whiteboard/overhead | Day 2  
Review lesson on pattern recognition and discuss patterns extension 5-10 minutes  
*Discuss rubric/expectations  
*Demonstration on whiteboard/overhead | Probe prior knowledge of patterns?  
Identify patterns around the room/life situations? |  |
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<td><strong>Core Instruction</strong>&lt;br&gt;Day 1&lt;br&gt;Guided instruction/practice – 20-30 minutes&lt;br&gt;*Hands on, use of manipulatives for students in small groups with all level materials available&lt;br&gt;Comp. Lab – 10-15 minutes to explore bookmarked websites for information and interactive experiences</td>
<td>Day 2&lt;br&gt;Review expectations in lab&lt;br&gt;*Guided instruction/practice 15-20 in computer lab&lt;br&gt;*Individual Conference with each student for differentiated activity based on student levels</td>
<td>What materials did students like best? Which websites did they prefer? Why? Understand expectations of outcomes?</td>
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<td><strong>Closure</strong>&lt;br&gt;Day 1&lt;br&gt;Review of pattern introduction, completed activities and expectations of day 2.</td>
<td>Day 2&lt;br&gt;Students complete 5 question assessment on individual basis for scoring (adapt as needed for differentiated levels)</td>
<td>Did students enjoy lesson? How can you apply this outside of class?</td>
</tr>
</tbody>
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