# ABSS Math Unit Planning Template

## Introduction

<table>
<thead>
<tr>
<th>Grade/Course:  9-12</th>
<th>Discrete Mathematics</th>
<th>Suggested Unit Pacing (in days): 6 days</th>
</tr>
</thead>
</table>

### Unit Number and Title: Unit 9 - Trees

### Mathematical Practices

- P1 Make sense of problems and persevere in solving them.
- P2 Reason abstractly and quantitatively.
- P3 Construct viable arguments and critique the reasoning of others.
- P4 Model with mathematics.
- P5 Use appropriate tools strategically.
- P6 Attend to precision.
- P7 Look for and make use of structure.
- P8 Look for and express regularity in repeated reasoning.

### Conceptual Overview

**Essential Understandings**

**SCS**
The learner will use matrices and graphs to model relationships and solve problems. **SCS.9-12.MA.1.02** Use graph theory to model relationships and solve problems.

**Learning Targets**

- Use appropriate vocabulary to identify the parts of trees
- Use the calculations for finding the number of edges, the maximum leaves and number of vertices using the appropriate equation
- **(HONORS): Create an expression tree given an expression**
- Use preorder traversal to get the Polish Notation from an expression tree
- Use postorder traversal to get the Reverse Notation from an expression tree
- Use Breadth-First and Depth-First search to create the spanning tree
- Use Kruskal’s algorithm to find a minimum spanning tree
- Use Prim’s algorithm to find a minimum spanning tree.

### Essential Terminology

<table>
<thead>
<tr>
<th>Literacy Integration</th>
<th>Literacy Standards</th>
<th>Level</th>
<th>Standard</th>
<th>Standard Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Literature Connections</td>
<td>Technology Standards</td>
<td>Level</td>
<td>Standard</td>
<td>Standard Name</td>
</tr>
<tr>
<td>Websites</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Assessment

- Formative Performance Tasks
- Summative Tasks

### Resources

**Learning Plan**

**Instructional Sequence**

1- Intro trees
2- Expression trees/traversals
3- Spanning trees
4- Minimum spanning trees
5- Review
6- Test

### Differentiation

**Remediation**

- Enrichment