**Introduction:**

<table>
<thead>
<tr>
<th>Grade/Course:</th>
<th>9-12</th>
<th>Discrete Mathematics</th>
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<tbody>
<tr>
<td><strong>Unit Number and Title:</strong></td>
<td>Unit 5 - Voting</td>
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<tr>
<td><strong>Suggested Unit Pacing (# of days):</strong></td>
<td>7 days</td>
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**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**

**SCS** The learner will analyze data and apply probability concepts to solve problems.

**SCS.9_12.MA.2.03.b** Election Theory.

**SCS** The learner will analyze data and apply probability concepts to solve problems.

**SCS.9_12.MA.2.03.c** Voting Power.

**Learning Targets**

- Create a preference schedule from a preference ballot
- Use plurality and majority methods to determine a winner (if any)
- Use Borda method to determine a winner
- Use run-off method to determine a winner
- Use sequential run-off method to determine a winner
- Use Condorcet method (with points) to determine a winner
- Determine the winning coalitions from a weighted voting list
- Determine the critical voters in a winning coalition
- Calculate the power index for each person in a weighted voting situation

**Essential Terminology**

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<thead>
<tr>
<th>Literacy Integration</th>
<th>Level</th>
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<tr>
<td>Literature Connections</td>
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<table>
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<tr>
<th>Technology Integration</th>
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<td>Technology Standards</td>
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<td>Websites</td>
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**Assessment**

- Formative
- Performance Tasks
- Summative

**Resources**

**Learning Plan**

1. Preference ballots/plurality method
2. Borda, run off, sequential run-off
3. Condorcet
4. Honors: Arrows Conditions
5. Weighted voting
6. Review
7. Test

**Differentiation**

- Remediation
- Enrichment