<table>
<thead>
<tr>
<th>UNIT 1: Introduction to Applets</th>
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</table>

### NATIONAL STANDARDS:

**ALL STUDENTS...**

- Demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology.
- Apply digital tools to gather, evaluate, and use information.
- Use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.
- Understand human, cultural, and societal issues related to technology and practice legal and ethical behavior.
- Demonstrate interpersonal, teamwork, problem solving, and leadership skills
- Develop career awareness, make career choices, and become employable in a variety of careers
- Prepare for further education and lifelong learning

### STATE STANDARDS:

2.5.11A. Select and use appropriate mathematical concepts and techniques from different areas of mathematics and apply them to solving non-routine and multi-step problems.

2.5.11B. Use symbols, mathematical terminology, standard notation, mathematical rules, graphing and other types of mathematical representations to communicate observations, predictions, concepts, procedures, generalizations, ideas and results.

2.5.11C. Present mathematical procedures and results clearly, systematically, succinctly and correctly.

2.5.11D. Conclude a solution process with a summary of results and evaluate the degree to which the results obtained represent an acceptable response to the initial problem and why the reasoning is valid.

### UNIT OBJECTIVES:

1.1 Write and run JAVA applets that generate output to the screen
1.2 Use variables for input and storage
1.3 Write and run JAVA applets accepting input from the user textfields
1.4 Use simple Java math operators for calculations

### ACTIVITIES:

1.1 Use graphics objects to generate output on screen
1.2 1.3 1.4
Write and run applets...
Accepting input and manipulating numbers
Write and run applets using graphics to output design, pictures and text

### RESOURCES:

JAVA Programming - Farrel

### ASSESSMENTS:

- Applet to output specific images

### REMEDIATION:

- Work with partners
- Examine well written programs of other students

### ENRICHMENT:

- If and if/else statements to determine selection
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## Unit Objectives:

2.1 Understand and evaluate Boolean expressions

2.2 Use if statements and if … else statements

2.3 Use Java logical operators &&, ||, !

2.4 Use Java math operators +, -, *, ?, %

2.5 Use variables for simple primitive data types int, double, char, and Boolean

## Activities:

2.1 – 2.5

Write and run applets...

- Accepting numbers and outputting if positive or negative, odd or even, integer or float
- Prompting user for input, then using the input to determine what code to execute
- Days in a month applet

## Resources:

JAVA Programming - Farrell

## Assessments:

Converting Fahrenheit to Celsius Applet

## Remediation:

Work with partners and
Examine other programmers code
Smaller numbers program

## Enrichment:

Easter Sunday Program
ISBN Program
COURSE: Introduction to JAVA Programming  GRADE(S): 9-12

UNIT 3: Introduction to Objects

NATIONAL STANDARDS: ALL STUDENTS...
- Demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology.
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UNIT OBJECTIVES:

3.1 Use methods paint() and init() to write applets
3.2 Use Graphics class to output to the screen
3.3 Use the ActionListener Interface to accept input from the user

ACTIVITIES:

3.1 – 3.3
Business Applications Applet
Fertilizer Applet
Xmas Lights Applet
Magic 8 Ball Applet

RESOURCES:
JAVA Programming - Farrell

ASSESSMENTS:
SAT Acceptance Applet
Multiple Choice Quiz Applet
Date Conversion Applet

REMEDIATION:
Work with partners and Examine other programmers code

ENRICHMENT:
Error proof the Date Conversion Applet
Add colors, AudioClips, Images, etc. to any program
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### UNIT OBJECTIVES:

- 4.1 Use MouseListener Interface to accept input from the user
- 4.2 Write methods to implement blocks of code
- 4.3 Use Key Listener interface to accept key input

### ACTIVITIES:

- 4.1 4.2
- The Shape Builder Applet
- Advanced NIM Game
- Mastermind Tutorial Applet

### RESOURCES:

- JAVA Programming - Farrell

### ASSESSMENTS:

- Mastermind Game
- Mid Term Exam
- Pong

### REMEDIATION:

- Work with partners and
- Examine other programmers code

### ENRICHMENT:

- Add colors, AudioClips, Images, etc. to any program
<table>
<thead>
<tr>
<th>The Guessing Game Program (Artificial Intelligence)</th>
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<tbody>
<tr>
<td>Use the MouseMotionListener Interface</td>
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### UNIT OBJECTIVES:

| 5.1 | Implement single dimensional arrays of simple data types to store data |
| 5.2 | Implement single dimensional arrays of Objects to store data |

### ACTIVITIES:

<table>
<thead>
<tr>
<th>5.1</th>
<th>5.2</th>
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<tbody>
<tr>
<td>Array Activities – Initializing, outputting, find high, find low, linear searching, sorting</td>
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<tr>
<td>Hangman Program</td>
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<tr>
<td>Mancala Program</td>
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<tr>
<td>Olympic Diving Program</td>
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### ASSESSMENTS:

- Array Assignment with 5 different methods
- Array Quiz
- Final Test (2 versions)
- Trivia Challenge Program
- Final Project

### REMEDIATION:

- Modify previous programs to use arrays
- Who Wants to be a Millionaire Program

### RESOURCES:

- JAVA Programming – Joyce Farrell
<table>
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<th>ENRICHMENT:</th>
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<tr>
<td>Add graphics to hangman and mancala program</td>
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<tr>
<td>Use Threads and the Runnable Interface to create games with movement</td>
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