Standard: Technology Literacy (2009)

8.1: Education Technology: All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaboratively and to create and communicate knowledge.

8.2: Technology Education, Engineering, and Design: All students will develop an understanding of the nature and impact of technology, engineering, technology design, and the designed world, as they relate to the individual, global, and the environment.

9.1: 21st Century Life and Career Skills: All students will demonstrate the creativity, critical thinking, collaboration, and problem-solving skills needed to function successfully as both global citizens and workers in diverse ethnic and organizational cultures.

Strand:

8.1.A: Technology Operations and Concepts
8.1.F: Critical Thinking, Problem Solving, and Decision Making

8.2.B: Design: Critical Thinking, Problem Solving, and Decision Making
8.2.F: Resources for a Technological World
8.2.G: The Designed World

9.1.A: Critical Thinking and Problem Solving
9.2.E: Communication and Media Fluency
9.2.F: Accountability, Productivity, and Ethics

Curriculum aligned with: 2009 New Jersey Core Curriculum Content Standards for 21st Century Skills (9.1 A-F)

21st Century Theme: *Global Awareness ☐,Financial, economic, business and entrepreneurial literacy ☐ Civic literacy ☐,Health literacy ☐Environmental Literacy X*

21st Century Skills: *Critical Thinking & Problem Solving ☐,Creativity and Innovation ☐,Collaboration, Teamwork and Leadership ☐,Cross-Cultural Understanding and Interpersonal Communications X Communication and Media Fluency ☐, Accountability, Productivity and Ethics ☐*

Interdisciplinary Connection: Math=MA, English=ELA, Science=SCI, Social Studies=SS, Physical Education=PE, Art=ART, Music=MU, Technology=TECH, World Language=WL Business = BU

Essential Questions	Enduring Understandings	Activities, Investigation, and Student Experiences

● How is the Greenfoot interface used? ● How do you interact with objects? ● How are methods invoked? ● How is a scenario run?	*Students will understand….* ● Greenfoot scenarios consist of a set of classes. ● Objects can be created from a class. ● Objects have methods. Invoking these performs an action. ● The return type of a method specifies what a method call will return.	**Task 1:** Playing with Leaves and Wombats In the Wombat and Leaf classes creating in class create two additional wombats and leaves in the world. **Task 2:** Invoke the move() method on a wombat. What does this do? Try it several times, invoke the turnLeft() method. Place two additional wombats in your world and make them face each other. **Task 3:** Invoke the canMove() method on your wombat. Does it always return true? Or can you find a situation where it returns false? **Task 4:** Using a newly created wombat, the getLeavesEaten() method will always return zero. Can you create a situation in which the result of this method is not zero? (In other words: can you make your own wombat eat some leaves?) **Task 5:** Invoke the setDirection (int direction) method. Provide a parameter value and see what happens. Which number corresponds to which direction? Write them down. What happens when you type a number in greater than 3? What happens when you provide input that is not a whole number, such as (2.5) or a word (three)?

Content Statements	**Cumulative Progress Indicators**	
Students will know… ● Vocabulary: object, class, method call, parameter, return value ● The class diagram ● Source Code	● Chapter Tests ● Quizzes ● Practice problems for homework ● Programming Assignments ● Worksheets	
Desired Results		

Students will be able to… ● Create a new project ● Distinguish the difference between objects and classes and how to use them. ● Establish return types and parameters. ● Invoke and experiment with methods. ● Compare return values between methods. ● Create specified situations to be returned by the methods. ● Analyze the results of a method and interpret the results. ● Improve pre-defines programs and alter code to stream-line methods. ● Place objects in a world. ● Edit and compile given source code.	

Standards for Mathematical Practices	Teacher Resources
1. Make sense of problems and persevere in solving them. 2. Reason abstractly and quantitatively. 3. Construct viable arguments and critique the reasoning of others. 4. Model with mathematics. 5. Use appropriate tools strategically. 6. Attend to precision. 7. Look for and make use of structure. 8. Look for and express regularity in repeated reasoning.	http://www.cengage.com/us http://achievethecore.org https://learnzillion.com https://www.khanacademy.org/ https://www.desmos.com/ http://www.ixl.com http://www.parcconline.org

LGBT and Disabilities Law: *N.J.S.A. 18A:35-4.35*

Darla K. Anderson - h ttps://www.youtube.com/watch?v=_IZMVMf4NQ0
https://www.youtube.com/watch?v=4a4MR8oI_B8
https://en.wikipedia.org/wiki/Darla_K._Anderson

The mission is to ensure that every student is able to see themselves in our rich and diverse history.

Social and Emotional Learning: ***Competencies***	**Social and Emotional Learning:** ***Sub-Competencies***
Self-Awareness Social Awareness Self-Management Relationship Skills Responsible Decision-Making	• Recognizing the importance of self-confidence in handling daily tasks and challenges. • Demonstrate an awareness of the expectations for social interactions in a variety of ways. • Demonstrate an understanding of the need for mutual respect when viewpoints differ. • Recognize the skills needed to establish and achieve personal and educational goals. • Utilize positive communication and social skills to interact effectively with others. • Develop, implement, and model effective problem solving and critical thinking skills.