

West Deptford Middle School Curriculum Map
Creative Computing - Grade 7

Unit/ Duration	Essential Questions	Content	Skills	Assessment	Standards
Unit 1: Introduction To Turtle Art 6 Sessions	<ul style="list-style-type: none"> • How can an algorithm be used to solve a problem? • Why is it important to be clear and concise when describing a process? 	<ul style="list-style-type: none"> • The commands used in Turtle Art. • The definitions of rational numbers, construction, opposite quantities, and inverses. • The definitions of the iteration, algorithm, program, and programming language. • The geometric properties of a rectangle, square, pentagon, hexagon, octagon, and circle. • The geometric properties of different types of triangles. 	<ul style="list-style-type: none"> • Create a polygon using the Turtle Art interface. • Develop an algorithm to complete a task, both kinetically and using Turtle Art. • Manipulate the Turtle Art interface artistically. • Navigate the coordinate plane. 	<ul style="list-style-type: none"> • Kinesthetic Turtle Art • Coordinate Grid Game • Polygons • Addition vs. Multiplication • Classwork • Homework • Performance Task • Quiz 	<p><u>Common Core State Standards (CCSS)</u></p> <ul style="list-style-type: none"> • MA.7.CCSS.Math.Content.7.G.B.6 • MA.7.CCSS.Math.Content.7.G.B.5 • MA.7.CCSS.Math.Content.7.NS.A.1b • MA.7.CCSS.Math.Content.7.NS.A.1c • MA.7.CCSS.Math.Content.7.NS.A.1d • MA.7.CCSS.Math.Content.7.EE.A.2 • MA.7.CCSS.Math.Content.7.EE.B.3 • MA.7.CCSS.Math.Content.7.G.A.1 • MA.7.CCSS.Math.Content.7.G.A.2 <p><u>Computer Science Teachers Association (CSTA)</u></p> <ul style="list-style-type: none"> • L1.6:CPP.5. Construct a program as a set of step-by-step instructions to be acted out. • L1.6:CPP.6. Implement problem solutions using a block-based visual programming language. • L1.6:CT.1. Understand and use the basic steps in algorithmic problem-solving (e.g., problem statement and

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					<p>exploration, examination of sample instances, design, implementation, and testing).</p> <ul style="list-style-type: none"> L1:6CT.2. Develop a simple understanding of an algorithm using computer free exercises.
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Unit/ Duration	Essential Questions	Content	Skills	Assessment	Standards
<p>Unit 2: Application of Turtle Art</p> <p>10 Sessions</p>	<ul style="list-style-type: none"> How can you decide what steps to take to create, adjust, or troubleshoot a program? What should you look for in a well-written program? 	<ul style="list-style-type: none"> The commands used in Turtle Art, especially the difference between the repeat and forever commands. The definitions of fraction, subroutine, troubleshoot, compile, and execute. 	<ul style="list-style-type: none"> Adjust a written algorithm to change just one aspect of the resulting image. Create a visual representation of a fraction and explain how to adjust their code to create a different fraction. Create subroutines and use them in a 	<ul style="list-style-type: none"> Creating a Visual Fraction Model Changing a Working Program Troubleshooting a Program Creating an Image Classwork Homework 	<p><u>Common Core State Standards (CCSS)</u></p> <ul style="list-style-type: none"> MA.7.CCSS.Math.Content.7.EE.A.1 MA.7.CCSS.Math.Content.7.EE.A.2 MA.7.CCSS.Math.Content.7.G.A.1 MA.7.CCSS.Math.Content.7.NS.A.2 <p><u>Computer Science Teachers Association (CSTA)</u></p> <ul style="list-style-type: none"> L1.6:CPP.5. Construct a program as a set of step-by-step instructions to be acted out. L1.6:CPP.6. Implement problem solutions using a

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			<p>program. (The "My Blocks" command.)</p> <ul style="list-style-type: none"> • Create their own Turtle Art image given a set of constraints. • Troubleshoot an ineffective program using their knowledge of Turtle Art. 	<ul style="list-style-type: none"> • Performance Task • Quiz 	<p>block-based visual programming language.</p> <ul style="list-style-type: none"> • L1.6:CT.1. Understand and use the basic steps in algorithmic problem-solving (e.g., problem statement and exploration, examination of sample instances, design, implementation, and testing). • L1:6CT.2. Develop a simple understanding of an algorithm using computer free exercises.
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Unit/ Duration	Essential Questions	Content	Skills	Assessment	Standards
Unit 3: Introduction To Scratch	<ul style="list-style-type: none"> • How can an algorithm be used to solve a problem? • How do you edit, compile, run, and test a program using Scratch? 	<ul style="list-style-type: none"> • The commands used in Scratch. • The definition of coordinate, area, circumference, variable, and degree. • The definitions of setting and 	<ul style="list-style-type: none"> • Consider the necessary commands to execute a program. • Create a polygon using the Scratch interface. 	<ul style="list-style-type: none"> • Classwork • Homework • Performance Task • Quiz • Creating a Greeting Card • Polygons • 10 blocks Challenge 	<p><u>Common Core State Standards (CCSS)</u></p> <ul style="list-style-type: none"> • MA.7.CCSS.Math.Content.7.NS.A.1a • MA.7.CCSS.Math.Content.7.NS.A.1b • MA.7.CCSS.Math.Content.7.NS.A.1d • MA.7.CCSS.Math.Content.7.EE.A.2 • MA.7.CCSS.Math.Content.7.EE.B.3 • MA.7.CCSS.Math.Content.7.G.A.1

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	<ul style="list-style-type: none"> How do I use the Scratch interface to develop my own ideas? 	<p>calling a variable, sprite, backdrop, and user input.</p> <ul style="list-style-type: none"> The geometric properties of various polygons. 	<ul style="list-style-type: none"> Develop an algorithm to complete a task given a set of parameters. Navigate the coordinate plane within the Scratch limitations. 		<ul style="list-style-type: none"> MA.7.CCSS.Math.Content.7.G.A.2 MA.7.CCSS.Math.Content.7.G.B.4 MA.7.CCSS.Math.Content.7.G.B.6 <p><u>Computer Science Teachers Association (CSTA)</u></p> <ul style="list-style-type: none"> L1.6:CPP.5. Construct a program as a set of step-by-step instructions to be acted out. L1.6:CPP.6. Implement problem solutions using a block-based visual programming language. L1.6:CT.1. Understand and use the basic steps in algorithmic problem-solving (e.g., problem statement and exploration, examination of sample instances, design, implementation, and testing). L1:6CT.2. Develop a simple understanding of an algorithm using computer free exercises.
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Unit 4: Applications of Scratch	<ul style="list-style-type: none"> • How is computer programming related to the problem solving method you use in math and science class? • How can I work collaboratively with a group to improve my ideas and designs? 	<ul style="list-style-type: none"> • The commands used in Scratch. • The definitions of debugging, variable, command, event, and algorithm. 	<ul style="list-style-type: none"> • Create a variable and use it in a program. • Debug or adjust lines of code to correct, complete, or change an outcome. • Use several instances of code in a program in order to trigger different events and outcomes. • Write code for a basic interactive animated video and/or game. • Write code for a basic interactive animated conversation. • Write code for a basic interactive animated story. 	<ul style="list-style-type: none"> • Classwork • Homework • Performance Task • Quiz • Debug It Chapter 1, 2, & 3 • About Me interactive collage • 3 Scratch Stations • Music Video • Conversation • Pass it on story 	<p><u>Common Core State Standards (CCSS)</u></p> <ul style="list-style-type: none"> • MA.7.CCSS.Math.Content.7.NS.A.1a • MA.7.CCSS.Math.Content.7.NS.A.1b • MA.7.CCSS.Math.Content.7.NS.A.1d • MA.7.CCSS.Math.Content.7.EE.A.2 • MA.7.CCSS.Math.Content.7.EE.B.3 • MA.7.CCSS.Math.Content.7.EE.B.4.B • MA.7.CCSS.Math.Content.7.G.A.1 • MA.7.CCSS.Math.Content.7.G.A.2 • MA.7.CCSS.Math.Content.7.G.B.4 • MA.7.CCSS.Math.Content.7.G.B.5 • MA.7.CCSS.Math.Content.7.G.B.6 <p><u>Computer Science Teachers Association (CSTA)</u></p> <ul style="list-style-type: none"> • L1.6:CPP.5. Construct a program as a set of step-by-step instructions to be acted out. • L1.6:CPP.6. Implement problem solutions using a block-based visual programming language. • L1.6:CT.1. Understand and use the basic steps in

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					<p>algorithmic problem-solving (e.g., problem statement and exploration, examination of sample instances, design, implementation, and testing).</p> <ul style="list-style-type: none">• L1:6CT.2. Develop a simple understanding of an algorithm using computer free exercises.
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