

Glen Ridge Public Schools –Mathematics Curriculum



Course Title: 7th Computers Cycle

Subject: Computers

Grade Level: 7th Grade

Duration: one cycle (approximately 6-7 weeks)

Prerequisite: none

Elective or Required: required

Mathematics Mission Statement

Mathematics is an integral part of our lives. Students must be actively involved in their mathematics education through the use of modeling and demonstrating the ability to persevere through problem solving. The mathematics curricula will emphasize critical thinking skills through a balance of logic and reasoning, attention to precision by utilizing patterns and structure, and bridging these ideas to cross-curricular learning. Students will be engaged and challenged in a student-centered learning environment that is developmentally appropriate and will communicate mathematical ideas, both in a verbal and written form. Through effectively applying hands-on manipulatives, basic computation skills and the use of technical writing to justify their processes, students will critique the work of themselves and others.

Course Description:

This course provides students with the opportunities to use word-processing and spreadsheet software in managing and displaying information derived from real world situations. Students gain word processing, Google Docs, Google Sheets, Excel, Google Slides, Google Forms, and Powerpoint skills while operating the tools integrated in the Microsoft Windows and Google environment. Internet Safety measure will also be integrated into the course.

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Course Name: Computers

Topic/Unit: Google Form & Google Sheets (compatible with Microsoft Excel)

Approximate # Of Weeks: 8 Days for Unit

Essential Questions:

- How will you create a spreadsheet, label columns, and use the sum function?
- How can you create a bar or column graph from a spreadsheet?
- How will you collect and calculate data within a Google form and present the results?
- How will you publish information regarding a local or global issue?
- How will you use a variety of search tools to find information to solve a real world problem?
- How can you create a professional look to the worksheet containing the spreadsheet?

Upon completion of this unit students will be able to:

- Create a Google form which will be used to collect data regarding a Global Issue.
- Gather data through research and insert into a spreadsheet
- Use the information from a Google form to create a spreadsheet on Excel or Google Sheets.
- Create a Simple Spreadsheet with multiple columns and rows
- Create a bar graph from the spreadsheet data
- Create a pie chart from the spreadsheet data
- Add Borders, shading and varied fonts to enhance a spreadsheet or graph

Technology Common Core Standards

- 8.1.8.A.1 - Demonstrate knowledge of a real world problem using digital tools
- 8.1.8.A.4 - Graph and calculate data within a spreadsheet and present a summary of the results
- 8.1.8.E.1 - Effectively use a variety of search tools and filters in professional public databases to find information to solve a real world problem
- 8.1.8.F.1 - Explore a local issue by using digital tools to collect and analyze data to identify a solution and make an informed decision
- 8.1.C- Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others

Interdisciplinary Standards (njcccs.org)

- Standard 8.2 Technology Education - All students will develop and understanding of the nature and impact of technology, engineering, technological design, and designed world as they relate to the individual, society, and the environment
- Standard 8.1 Computer Information Literacy - All students will use computer applications to gather and organize information and to solve problems
- Standard 9.1 21st Century Life & Career Skills - All students will demonstrate the creative, critical thinking, collaboration, and problem-solving skills needed to function successfully as both global citizens and workers in diverse ethnic and organizational cultures
- Standard 6.3 Active Citizenship in the 21st Century - All students will acquire the skills needed to be active, informed citizens who value diversity and promote cultural understanding by working collaboratively to address the challenges that are inherent in living in an interconnected world
- Standard 5.1 Science Practices A. - Use mathematical, physical, and computational tools to build conceptual-based or evidence-based models and to pose theories

Activities – include 21st Century Technologies:

- Project- Creating a Google Form which asks questions regarding one of the following Global Issues (i.e. Global warming, technology addiction, plastic in the ocean & food and water shortage)
- Project- Creating a Spreadsheet where students analyze the data from their google form

Enrichment Activities:

- Compare and Contrast Spreadsheet with other students project
- Creating a flyer regarding the Global Issue

Methods of Assessments/Evaluation:

- Grading Rubrics- each part of project
- Project questions

Resources/Including Online Resources

- Google
- Online Search Engines
- youtube
- Google Classroom
- Teacher Webpage

Course Name: Computers

Topic/Unit: Google Slides & Google Docs (compatible with Microsoft Powerpoint & Microsoft Word)

Approximate # Of Weeks: 8 Days for Unit

Essential Questions:

- How will you create a professional presentation using various features in Google Slides?
- How can you create a table with a custom number of tables and columns?
- How can you personalize a table to reflect a month?

Upon completion of this unit students will be able to:

- Create a Google Slides Presentation regarding a country of their choice.
- Research a specific countries attractions, activities, history, and fun facts.
- Gather data through research and insert into a Google Slides Presentation.
- Create a Simple Spreadsheet with multiple columns and rows
- Create a custom calendar for a month of their choice
- Plan a trip to the country of their choice and insert dates into the calendar which they create

Technology Common Core Standards

- 8.1.8.A.2 - Create a document (e.g. newsletter, reports, personalized learning plan, business letters or flyers) using one or more digital applications to be critiqued by professionals for usability

Interdisciplinary Standards (njcccs.org)

- Standard 8.1 Computer Information Literacy - All students will use computer applications to gather and organize information and to solve problems
- Standard 6.3 Active Citizenship in the 21st Century - All students will acquire the skills needed to be active, informed citizens who value diversity and promote cultural understanding by working collaboratively to address the challenges that are inherent in living in an interconnected world

Activities – include 21st Century Technologies:

- Project- Creating a Google Slides Presentation regarding a country. The presentation will include attractions, activities, history, and fun facts.
- Project- Creating a Calendar of a month of the student's choice where they will plan a 1 week vacation to the country and insert all parts of their vacation into the calendar.

Enrichment Activities:

- Compare and Contrast the cost of various activities that you would like to do in this country. This should be done on a Google Sheets Document.
- Extend the vacation to 2 weeks and incorporate more activities to the vacation.

Methods of Assessments/Evaluation:

- Grading Rubrics- each part of project
- Project questions

Resources/Including Online Resources

- Google
- Online Search Engines
- youtube
- Google Classroom
- Teacher Webpage

Course Name: Computers

Topic/Unit: Scratch

Approximate # Of Weeks: 10 Days for Unit

Essential Questions:

- How will you create a simulation about your life using coding on the Scratch site?
- How will you add detail to your simulation by incorporating your interests, family, and what you want to do when you grow up?
- How will you create code for specific sprites using scratch?
- How will you incorporate various backdrops, sounds, & costume changes using Scratch coding?

Upon completion of this unit students will be able to:

- Create a simulation using coding on the scratch.mit.edu website.
- Add coding for various sprites and have the coding run simultaneously.
- Use a search engine to upload a custom backdrop to the scratch simulation.

Technology Common Core Standards

- 8.1- All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge
- 8.1.C- Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others

Interdisciplinary Standards (njcccs.org)

- Standard 8.2 Technology Education - All students will develop and understanding of the nature and impact of technology, engineering, technological design, and designed world as they relate to the individual, society, and the environment
- Standard 9.3 Career Awareness, Exploration, and Preparation - All students will apply knowledge about and engage in the process of career awareness, exploration, and preparation in order to navigate the globally competitive work environment of the information age

Activities – include 21st Century Technologies:

- Project- Creating a Simulation using Scratch

Enrichment Activities:

- Create an additional Scratch assignment regarding the global issue they researched in Unit #1
- explore another coding site such as studio.code.org and compare and contrast coding tools

Methods of Assessments/Evaluation:

- Grading Rubrics- each part of project
- Project questions

Resources/Including Online Resources

- Google
- Online Search Engines
- youtube
- Scratch
- Google Classroom
- Teacher Webpage

Course Name: Computers

Topic/Unit: Google Slides Cyber Bullying Presentation (compatible with Microsoft Powerpoint)

Approximate # Of Weeks: 3 Days for Unit

Essential Questions:

- How will you find a creditable source to use for your presentation?
- How will you accurately portray the severity of cyberbullying?
- How will you publish information regarding a local or global issue?
- How will you use a variety of search tools to find information to solve a real world problem?
- How can you create a professional look to the presentation regarding cyber bullying?

Upon completion of this unit students will be able to:

- Gather data through research and create a Google Slides presentation regarding Cyber bullying
- Add Borders, shading and varied fonts to enhance the presentation
- Discuss the severity of cyber bullying and how it can effect children/adolescents
- Find creditable sources using a search engine such as Google

Technology Common Core Standards

- 8.1.8.D.1 - Understand and model appropriate online behaviors related to cyber safety, cyber bullying , cyber security, and cyber ethics including appropriate use of social media
- 8.1.8.D.3 - Demonstrate an understanding of fair use and Creative Commons to intellectual property
- 8.1.8.D.2 - Demonstrate the application of appropriate citations to digital content
- 8.1.8.D.5 - Understand appropriate uses for social media and the negative consequences of misuse

Interdisciplinary Standards (njcccs.org)

- Standard 8.2 Technology Education - All students will develop and understanding of the nature and impact of technology, engineering, technological design, and designed world as they relate to the individual, society, and the environment

- Standard 8.1 Computer Information Literacy - All students will use computer applications to gather and organize information and to solve problems
- Standard 6.3 Active Citizenship in the 21st Century - All students will acquire the skills needed to be active, informed citizens who value diversity and promote cultural understanding by working collaboratively to address the challenges that are inherent in living in an interconnected world
- Standard 9.1 21st Century Life & Career Skills - All students will demonstrate the creative, critical thinking, collaboration, and problem-solving skills needed to function successfully as both global citizens and workers in diverse ethnic and organizational cultures

Activities – include 21st Century Technologies:

- Project- Creating a Google Slides Presentation where students present the severity of cyber bullying

Enrichment Activities:

- Create a Flyer for the cyber bullying hotline that includes cyber bullying facts

Methods of Assessments/Evaluation:

- Grading Rubrics- each part of project

Resources/Including Online Resources

- Google
- Online Search Engines
- youtube
- Google Classroom
- Teacher Webpage