DAMANI DIGITAL LEARNING

```
if (curious) {
  create();
  connect();
}
```



GRADES 6-8 · COMPLETE PROGRAM

Code, Create, Connect

Start Here Guide

Middle School Computer Science with Free Google Tools

3 years · 12 units · 84 lessons · 12 projects · free Google tools

damanidigitallearning.com

Aligned to CSTA K-12 CS Standards · ISTE Standards for Students · Maryland K-12 Computer Science Standards

Welcome, Teacher!

Code, Create, Connect is a complete, three-year middle school computer science program that runs almost entirely on free Google tools. There is nothing to install and no software to buy. If your students have a Google account and a browser, you are ready to teach.

Students do not just learn where the buttons are. They think like computer scientists: they collect and analyze data, design for real users, protect information, write algorithms and real code, and finish Grade 8 by building their own app and website for their community.

What's Inside

Item	What it is
Start Here Guide	This book: program overview, 3-year scope and sequence, full standards alignment, setup and grading.
Teacher Guides (Grades 6, 7, 8)	28 scripted lessons and 4 unit projects per grade, with talking points, answer keys and rubrics.
Student Activity Books (Grades 6, 7, 8)	A page for every lesson with goals, vocabulary, activities, step checklists, exit tickets and project planners.
Google-ready templates	Spreadsheets with original data sets, document and slide templates. Upload to Drive and they open in Google Sheets, Docs and Slides.
Covers and Classroom headers	Ready-made images for your Google Classroom and binders.

Why Free Google Tools?

- [ ] Equity: every student can use them at school and at home on any device.
- [ ] Real-world skills: the same tools are used in high school, college and the workplace.
- [ ] Collaboration built in: sharing, comments, version history and live co-editing.
- [ ] Real computer science: spreadsheets teach logic and data; Forms teach branching; Apps Script is real JavaScript; Glide turns a Google Sheet into a real phone app.

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Three-Year Scope and Sequence

Quarter	Grade 6: Digital Foundations	Grade 7: Data, Design and Logic	Grade 8: Innovate and Impact
Q1 Weeks 1-9	**My Digital World** Drive, Docs, Google Account Project: Digital Citizen Starter Kit	**Networks and Cyber Safety** Slides, Docs, Drive sharing Project: Cyber Safety Campaign	**Data, Bits and Society** Sheets, Docs, Slides Project: Data Ethics Explainer
Q2 Weeks 10-18	**Documents That Communicate** Google Docs Project: Club Guide Publishing Project	**Spreadsheet Logic** Google Sheets Project: Plan the Ultimate Field Day	**Data Storytelling** Google Sheets + Forms Project: Riverton City Council Data Story
Q3 Weeks 19-27	**Data Detectives** Google Sheets + Forms Project: Data Detective Report	**Design for People** Docs, Slides, Drawings Project: Shark Tank Product Pitch	**Code With Apps Script** Google Apps Script + Sheets Project: Classroom Helper Tool
Q4 Weeks 28-36	**Algorithms and Code** Blockly Games + Slides Project: Choose-Your-Path Story Game	**Logic and Programming** Blockly Games, Forms, Drawings Project: Branching Quiz App	**Capstone: Build an App and a Website** Glide + Google Sheets + Google Sites Project: App + Website Capstone Showcase

How the strands grow

Strand	Grade 6	Grade 7	Grade 8
Computing Systems	Parts of a computer, troubleshooting	User-centered device design	Sensors and data collection
Networks and Cybersecurity	Passwords, digital footprint	Packets, protocols, phishing, encryption	Privacy, data brokers, how the web works
Data and Analysis	Forms surveys, formulas, COUNTIF, charts	IF logic, budgets, SUMIF, validation	Binary, pivot tables, lookups, dashboards
Algorithms and Programming	Blockly sequences, loops, conditionals, linked Slides	Pseudocode, flowcharts, variables, nested loops, Forms branching	JavaScript in Apps Script, Glide phone app
Impacts of Computing	Citations, accessibility, footprint	Media literacy, cyberbullying, design for people	Bias, AI, careers, tech for good

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GRADE 6 · UNIT 1 · LESSON 3 · WEEK 3

Google Drive: Your Digital Locker

Google Drive | 45-50 minutes | Teacher

LEARNING GOAL I can create folders, name files clearly and find my work quickly.

2-CS-03 (Computing Systems) Systematically identify and fix problems with computing devices and their components.

ISTE 1.1 Empowered Learner, 1.3 Knowledge Constructor
Maryland Computing Systems (MD K-12 CS Standards, grades 6-8)

Key Vocabulary
- cloud
- folder
- file name
- upload
- search

Warm-Up 5 min

Show a messy photo of a locker. Ask: How long would it take to find your homework in here?

Mini-Lesson: Teach and Model 10 min

1. Explain the cloud: your files live on Google's computers, so you can open them on any device after you sign in.
2. Model the class naming rule: Class_Period_LastName_Assignment (for example CS_P3_Ellis_DeviceSort).
3. Show New > Folder, color-coding folders, moving files and the Drive search bar.

Student Work Time 25 min

Students follow these steps on their Student Activity Book page.

1. Create a folder called 'Computer Science' with four subfolders: Unit 1, Unit 2, Unit 3, Unit 4.
2. Give each folder a different color.
3. Create a new Google Doc, rename it using the class naming rule and move it into Unit 1.
4. Use Drive search to find the file by typing only part of its name.
5. Star your most important folder.

Exit Ticket 5 min

Why is 'Untitled document' a bad file name? Write a better one.

Support (scaffold)
Post a screenshot of the finished folder setup so students can match it.

Extend (challenge)
Explore Drive's 'Recent' and 'Starred' views and explain when each one is useful.

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Name _____ Class _____ Date _____

UNIT 1 · LESSON 3 · GOOGLE DRIVE

Google Drive: Your Digital Locker

TODAY'S GOAL I can create folders, name files clearly and find my work quickly.

cloud	folder	file name	upload	search

Think About It

How long would it take to find your homework in here?

My Steps (check each one off)

- [ ] Create a folder called 'Computer Science' with four subfolders: Unit 1, Unit 2, Unit 3, Unit 4.
- [ ] Give each folder a different color.
- [ ] Create a new Google Doc, rename it using the class naming rule and move it into Unit 1.
- [ ] Use Drive search to find the file by typing only part of its name.
- [ ] Star your most important folder.

Exit Ticket

Why is 'Untitled document' a bad file name? Write a better one.

LEVEL UP Explore Drive's 'Recent' and 'Starred' views and explain when each one is useful.

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GRADE 8 · UNIT 4 · LESSON 5 · WEEK 32

Build the App With Glide

Glide + Google Sheets | 45-50 minutes | Teacher

LEARNING GOAL I can turn my Google Sheet into a working phone app with screens, a form and simple logic, and open it on my phone.

2-AP-11 (Algorithms and Programming) Create clearly named variables that represent different data types and perform operations on their values.
2-AP-12 (Algorithms and Programming) Design and iteratively develop programs that combine control structures, including nested loops and compound conditionals.
2-AP-13 (Algorithms and Programming) Decompose problems and subproblems into parts to facilitate the design, implementation and review of programs.

ISTE 1.4 Innovative Designer, 1.5 Computational Thinker
Maryland Algorithms and Programming (MD K-12 CS Standards, grades 6-8)

Key Vocabulary
- no-code
- screen
- component
- column type
- condition

Warm-Up 5 min

Ask: What is the smallest version of your app that would still be useful?

Mini-Lesson: Teach and Model 10 min

1. Teacher note: Glide has a free plan. Check Glide's current age and account rules and your district's approval before class; you can build one class app on a teacher account if needed. Backup: Google AppSheet (free for building and testing).
2. Model: sign in at glideapps.com with Google, choose New app, and pick your Google Sheet as the data source. Explore the Data editor, Layout screens and the live phone preview.
3. Show how to set column types, add a list or card screen, a form button for adding data and a visibility condition so the app makes decisions. Then Publish, and send it to a phone with the share link, QR code or text option.

Student Work Time 25 min

Students follow these steps on their Student Activity Book page.

1. Hold a 2-minute team stand-up: what I did, what I'll do, what's blocking me.
2. Create your app in Glide from your Sheet and fix each column's type.
3. Build at least two screens and one form for adding data.
4. Add one condition (for example, show a 'Full' badge when sign-ups reach a limit).
5. Publish the app, open it on a phone (scan the QR code or text yourself the link) and add it to the home screen.

Exit Ticket 5 min

Name one screen and one condition in your app and explain what each does for the user.

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