



Dominican International School
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School Year	2025-2026
Subject	Computer Science
Grade Level	9
Teacher	Ms. Archie Racadio
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Course Description

Welcome to Computer Science 9 at Dominican International School. Computer Science Discoveries 9 is the first half of an introductory computer science course focusing on Innovation and Impact. Students in this course will take the second half in grade 10. The two parts of this course take a wide lens on computer science by covering topics such as programming, physical computing, and data. Students are empowered to create authentic artifacts and engage with CS as a medium for creativity, communication, problem-solving, and fun. This course uses Code.org's CS Discoveries Curriculum. For more details, please see the [2022-23 Curriculum Guide](#).

Content

The content covered in this year includes:

- Unit 1 - [Problem Solving and Computing](#)
- Unit 3 - [Interactive Animations and Games](#)

Objectives

Upon completion of unit 1, students should be able to:

- Learn how computers input, output, store, and process information to help humans solve problems.
- Design an application that helps solve a problem of your choosing.

Upon completion of unit 3, students should be able to:

- Build on your coding experience as you program animations, interactive art, and games in Game Lab.
- Design simple shapes and build up to more sophisticated sprite-based games, using the same programming concepts and the design process computer scientists use daily.
- Develop a personalized, interactive program.

Classroom Practices

The 6 Main Classroom Practices of CS Discoveries:

- Lead Learner
- Pair Programming
- Think-Pair-Share
- Authentic Choice
- Unplugged Activities
- Peer Feedback

Student Practices

Students in CS Discoveries work in a wide array of contexts, but these experiences are tied together by a core set of practices they develop throughout the course.

- Problem Solving
- Persistence
- Creativity
- Collaboration
- Communication

ESLRs D'TORCH (Truthful, Organized, Reflective, Courageous, and Helpful)

In CS classes, the categories of the D'TORCH most practiced and assessed are:

- Truthful – Students do their work and don't copy code without permission or credit. They are honest about results, not faking outputs or hiding errors. They give credit to sources and teammates, speak up when stuck or when they make a mistake, and solve problems the right way instead of using shortcuts to hide them, because truth builds trust – and trust makes better learners in Computer Science.
- Organized - Students utilize Google Classroom to edit, submit, and keep track of their assignments.
- Courageous – Students are willing to try new ideas in coding and problem-solving, even if they might make mistakes. They ask questions when they don't understand, share their work with the class, and accept feedback to improve. They take on challenges instead of avoiding them, because courage leads to growth – and growth makes better learners in Computer Science.
- Reflective - Students will regularly write activity reflections in their online journal.
- Helpful - Students are empowered to ask for and provide explanations and give examples to help classmates through particularly difficult problems.

Class Expectations

- Come to class on time and be prepared
- Have a positive attitude and be willing to learn.
- Respect yourself, others, and our school.
- Always complete your work and try your best.
- Actively participate, listen carefully, but don't speak out of turn.
- All assignments must be completed.

Homework and Quiz Rules

- All assignments must be turned in on the day they are due.
- 1 day late = Maximum of only 60%
- 2+ days late = Project-I & Only 60%
- If a student has been absent, it is his/her duty to find out what work is due and hand it in a day later.
- All assignments must be satisfactorily completed.
- If you are absent on the day of the quiz, you will only be able to get a maximum of 60%.

Classroom Rules

- All students are expected to follow the rules. Consequences will follow if rules are broken.
- Read and follow the standard school rules.
- Be on time and neatly dressed, in full school uniform.
- Speak in ENGLISH ONLY.
- Respect your teachers, fellow students, and their property.
- Keep your seating space and classroom clean and neat.
- No eating or drinking in the ICT Labs.
- Ask permission to leave the class.

Academic Dishonesty means employing a method or technique or engaging in conduct in an academic endeavor that contravenes the standards of ethical integrity expected at DIS. Academic dishonesty includes but is not limited to, the following:

1. Purposely incorporating the ideas, words of sentences, paragraphs, or parts thereof without appropriate acknowledgment and representing the product as one's own work; and
1. Representing another's intellectual work such as photographs, paintings, drawings, sculpture, or research or the like as one's own, including failure to attribute content to an AI.
2. Employing a tutor, making use of Artificial Intelligence without acknowledgement, getting a parent to write a paper or do an assignment, paying for an essay to be written by someone else and presented as the student's own work.
3. Committing any act that a reasonable person would conclude, when informed of the evidence, to be a dishonest means of obtaining or attempting to obtain credit for academic work.

Any act of academic dishonesty will result in an automatic zero on the entire assignment

Discipline

- Verbal warning
- Write-Up, entered into the discipline system, and then referral to the Discipline Office.
- Parent-Teacher conference as required.

Links, tools and references:

- <https://code.org/educate/csd>
- [Game Lab](#) — A browser-based JavaScript programming environment designed to create sprite-based drawings, animations, and games, with the ability to freely switch between programming in blocks or text

Schedule for Computer Science Discoveries 9 Innovation and Impact

First Quarter Tentative Course Content

Week/Date	Topic/Projects/Assessments
Week 1 (Aug 12 to 15)	Monday No School CSDU1L01: Intro to Problem Solving CSDU1L02: The Problem Solving Process
Week 2 (Aug 18 to 22)	CSDU1L03: Exploring Problem Solving CSDU1L04: What is a Computer?
Week 3 (Aug 25 to 29)	Q1 Quiz 1 CSDU1L05: Input and Output
Week 4 (Sept 1 to 5)	CSDU1L06: Processing CSDU1L07: Apps with Storage
Week 5 (Sept 8 to 12)	Monday No School CSDU1L08: Project - Propose an App Part 1- Define CSDU1L08: Project - Propose an App Part 2 - Try
Week 6 (Sept 15 to 19)	Q1 Quiz 2 CSDU1L08: Project - Propose an App Part 3 - Peer Review / Sharing & Gallery Walk
Week 7 (Sept 22 to 26)	CSDU3L01 Programming for a Purpose Q1 Final Exam (Unit 1)
Week 8 (Sept 29 to Oct 3)	No Classes

Second Quarter Tentative Course Content

Week/Date	Topic/Projects/Assessments
<i>Oct 6th Moon Festival, 7-9 Teachers Conference, October 10th Double 10 day</i>	
Week 1 (11) (October 13 to 17) <i>13- Second Quarter Begins</i>	CSDU3L02: Plotting Shapes CSDU3L03: Drawing in Game Lab
Week 2 (12) (October 20 to 24)	CSDU3L04: Shapes and Parameters Friday No School - 24 Oct Taiwan Retrocession Day
Week 3 (13) (October 27 to 31)	Q2 Quiz 1 CSDU3L05: Variables
Week 4 (14)	CSDU3L06: Random Numbers

(November 3 to 7)	CSDU3L07: Mini-Project - Robot Faces
Week 5 (15) (November 10 to 14)	CSDU3L08 - Sprites CSDU3L09: Sprite Properties
Week 6 (16) (November 17 to 21)	CSDU3L10: Text CSDU3L11: Create - Mini-Project: Captioned Scenes
Week 7 (17) (November 24 to 28)	Q2 Quiz 2 CSDU3L12: The Draw Loop
<i>Nov. 29 Invitation for All: The Jubilee Pilgrimage to Taipei (Saturday)</i>	
Week 8 (18) (December 1 to 5) <i>5- Christmas Fair Whole Day</i>	Q2 Final Exam Friday Christmas Fair Whole Day
Week 9 (18) (December 8 to 12) <i>11 and 12- Second Quarter Exam (half day)</i>	Monday No Classes - Foundation Day Mass, cake ceremony, and Class Party (half day) Thursday Major Final Exams half day Friday Major Final Exams half day
<i>December 13 Invitation for All: Advent Recollection @DIS (Saturday)</i>	
<i>December 15 to January 2 Christmas Break</i>	

Third Quarter Tentative Course Content

Week/Date	Topic/Projects/Assessments
<i>January 5- Record Day (No Classes for students)</i>	
Week 1 (19) (Jan 5 to 9)	Monday No Students Record Day Friday New Year Mass at 8:00 CSDU3L13: Sprite Movement CSDU3L14 Mini Project: Animation
Week 2 (20) (Jan 12 to 16)	CSDU3L15: Conditionals CSDU3L16: Keyboard Input
Week 3 (21) (Jan 19 to 23)	CSDU3L17: Mouse Input Q3 Quiz 1

Week 4 (22) (Jan 26 to 30)	CSDU6L18 Project: Interactive Card Part 1 CSDU6L18 Project: Interactive Card Part 2
Week 5 (23) (Feb 2 to 6)	CSDU6L19: Velocity CSDU3L20: Collision Detection
Week 6 (24) (Feb 9 to 13)	? 13 Chinese New Year Celebration CSDU3L21: Mini-Project Plan and Feedback - Side Scroller - Project Guide CSDU3L21: Mini-Project Create and Reflect - Side Scroller
<i>February 16-20 Chinese New Year Holiday</i>	
Week 7 (25) (Feb 23 to 26)	Monday Morning No Classes IOWA Tuesday First Two Periods No classes IOWA Q3 Quiz 2 Friday Memorial Day Holiday (no classes)
Week 8 (26) (Mar 2 to 6)	CSDU3L23: Collisions Part 1 Final Exam
Week 9 (27) (Mar 9 to 13)	CSDU3L23: Collisions Part 2 Friday Third Quarter Exam (half day)

Fourth Quarter Tentative Course Content

Week/Date	Topic/Projects/Assessments
Week 1 (28) (Mar 16 to 20)	Monday Third Quarter Exam (half day) CSDU3L24: Mini-Project Flyer Game CSDU3L25: Functions
Week 2 (29) (Mar 23 to 27)	CSDU3L26: The Game Design Process Part 1 CSDU3L26: The Game Design Process Part 2
<i>March 30 to April 6 Easter/Spring Break</i>	
Week 3 (30) (Apr 7 to 10)	Monday No School Spring Break Q4 Quiz 1 CSDU3L27: Using the Game Design Process
Week 4 (31) (Apr 13 to 17)	CSDU3L28: Part 1 Plan ~ Project - Design a Game
Week 5 (32) (Apr 20 to 24) 20-24 AP Mock Exams	CSDU3L28: Project - Code - Design a Game Try CSDU3L28: Project - Code - Design a Game Peer Review

Week 6 (33) (Apr 27 to 30) 27-30 Senior Project Presentations 28-30 Pre-Exam Days	Q4 Quiz 2 CSDU3L28: Project - Code - Design a Game Present
Week 7 (34) (May 4 to 8) 4-14 Final Exams (K, Gr. 5, 8, & 12 Only) 4-15 AP Exams	Monday No School Labor Day Q4 Final Exam
Week 8 (35) (May 11 to 15)	Wednesday Major Exams Day 1 Half Day Thursday Major Exams Day 2 Half Day Friday No Students Record Day 1
Week 9 (35) (May 18 to 22)	Special Events
Week 10 (36) (May 25 to 29)	Special Events

“Kindling the Light of Faith, Hope, and Love: The Legacy of St. Dominic de Guzmán”

High School CS Curriculum				
Type	Classes (45m)	HW (45m)	Grade, Curriculum and Description	
Subject CS	2	2	G09 CS Discoveries	G10 CS Discoveries
			Code.org Discoveries Unit 1 Problem Solving and Computing Unit 3 Animations and Games	Unit 4 - The Design Process Unit 6: Physical Computing
			G11 CS Principles	G12 CS Principles
			Code.org CS Principles Unit 1 - Digital Information Unit 5: Data Unit 8: Cybersecurity and Global Impacts Unit 7 (CSD): AI and Machine Learning	Unit 5 Building Apps Unit 4 Big Data and Privacy Unit 6 Making Data-backed Apps
AP	6	6	G11 APCS A JAVA CSAwesome	G12 APCS Principles CS50AP
			The course introduces students to computer science with fundamental topics that include problem solving, design strategies and methodologies, organization of data (data structures), approaches to processing data (algorithms), analysis of potential solutions, and the ethical and social implications of computing.	This course offers a multidisciplinary approach to teaching the underlying principles of computation. The course introduces students to computer science with fundamental topics that include problem solving, design strategies and methodologies, organization of data (data structures), approaches to processing data (algorithms), analysis of potential solutions, and the ethical and social implications of computing.

High School CS Curriculum Overview

Our computer science curriculum is designed to provide a comprehensive and flexible learning experience from grades 9 through 12, catering to both potential CS majors and students seeking a well-rounded CS education.

Curriculum Progression and Options

1. Grades 9-10: CS Discoveries

- Foundational for all students
- Covers problem-solving, animations, games, and the design process
- Introduces physical computing concepts

2. Grades 11-12: Flexible Pathways

a) Minor Subject Track: CS Principles

- Ideal for non-CS majors or those seeking a science AP credit
- Builds on CS Discoveries with more advanced topics
- Explores digital information, the Internet, data analysis, cybersecurity, and machine learning
- Provides a well-rounded CS experience without the intensity of the AP track

b) AP Track for Prospective CS Majors

- Grade 11: APCS A JAVA
 - Introduces fundamental CS topics with a focus on Java programming
 - Covers problem-solving, design strategies, data organization, and algorithmic approaches
- Grade 12: CS50AP (AP Computer Science Principles)
 - Culminating course offering a multidisciplinary approach to computation
 - Prepares students for college-level CS and the AP exam

Curriculum Flexibility and Benefits

1. Options for Various Academic Paths:

- Students not planning to major in CS can take CS Principles in grades 11 and 12 as a minor subject, fulfilling science AP credit requirements while gaining valuable CS knowledge.
- Those considering a CS major in college can opt for the more intensive AP track.

2. Well-Rounded CS Experience:

- The CS Principles track ensures students gain a comprehensive understanding of CS concepts without the rigorous demands of AP courses.
- Ideal for students interested in CS as a complementary skill to their primary academic focus.

3. Preparation for CS Majors:

- The AP track provides in-depth preparation for students planning to pursue CS in college.
- APCS A JAVA and CS50AP offer college-level content and prepare students for advanced studies.

4. Flexibility to Change Paths:

- Students can reassess their interests and switch tracks between grades 10 and 11 if their academic goals change.

CS50AP as the Capstone for AP Track

For students on the AP track, CS50AP serves as a rigorous capstone, building upon APCS A JAVA and previous coursework. Its comprehensive nature makes it an ideal final course, covering advanced topics and preparing students for college-level CS studies.

Practical Application

To complement both curriculum tracks, we encourage all CS students to apply their skills through our Service Learning program. The HS CS department collaborates with this program to help students identify opportunities where they can use their computer science knowledge in real-world contexts, enhancing their learning experience regardless of their chosen track.

Curriculum Development and Stakeholder Feedback

At our school, we are committed to continuously evaluating and improving our CS curriculum to ensure it meets the needs of our students and prepares them for future academic and career challenges. Our approach includes:

1. Curriculum Trials and Evaluation:

- We regularly explore potential additions to our curriculum. For example, in previous years, we conducted trials of CS50 SQL and CMU's College Level Programming courses.
- These trials helped us assess the value and fit of new courses within our existing framework.

2. Rigorous Assessment:

- Through these trials, we found that even with highly capable and enthusiastic students, our current AP track, culminating in CS50AP, already provides sufficient content, topics, and rigor.
- This reinforced our confidence in the comprehensive nature of our existing curriculum.

3. Stakeholder Engagement:

- We actively seek and encourage feedback from all stakeholders, including students, parents, administrators, and industry professionals.
- This collaborative approach ensures our curriculum remains relevant and aligned with both academic standards and real-world needs.

4. Adaptive Planning:

- Based on stakeholder input, we continually refine our approach to practical skill application.
- For instance, after extensive consultation, we determined that integrating industry-related skills and community engagement through our existing Service Learning program was the most effective approach.

5. Ongoing Collaboration:

- The High School CS department works closely with the Service Learning program to help students identify opportunities to apply their CS skills in meaningful ways.

Our commitment to curriculum development and stakeholder feedback ensures that our CS program remains dynamic, relevant, and responsive to the evolving needs of our students and the broader community.

Practical Application through Service Learning

Building on our stakeholder feedback, we are focusing future efforts towards encouraging students to make use of our existing Service Learning program. This approach allows students to:

- Apply their CS skills in real-world contexts within the community
- Gain valuable experience that complements their classroom learning
- Develop a deeper understanding of how CS can be used to address real-world challenges

As this initiative evolves, the HS CS department continues to work closely with the Service Learning program to identify and create opportunities that allow students to maximize the practical application of their CS skills.