

Grade 10 CS Discoveries: Design & Data



Dominican International School Grade 10 Computer Science

Course Syllabus
School Year 2026–27



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Course Description

Welcome to **Grade 10 Computer Science: Design and Data** at Dominican International School. This course continues the Grade 9 computing pathway using selected units from Code.org's *AI Discoveries 2026* curriculum.

Students explore how computing can be used to understand people's needs, design useful applications, represent information, and make responsible decisions with data. Through collaborative design challenges and project-based learning, students create paper and digital prototypes, test their ideas with users, analyze data, and consider how computing systems affect individuals and society.

Curriculum Overview and Goals

Computing products are most effective when they respond to genuine human needs and use data responsibly. Throughout this course, students combine human-centered design, programming, data literacy, and critical thinking to develop and evaluate solutions to meaningful problems.

By the end of the course, students will be able to:

- Apply a user-centered design process to identify needs and develop appropriate solutions.
- Use empathy, observation, and research to understand users.
- Create, test, evaluate, and revise paper and digital prototypes.
- Use feedback and evidence to improve a product's usability and accessibility.
- Apply event-driven programming concepts to create interactive digital prototypes.
- Explain how text, numbers, images, and other information are represented digitally.
- Organize, interpret, analyze, and visualize data.
- Use data to answer questions, identify patterns, and support decisions.
- Evaluate the benefits and limitations of automated and data-driven decisions.
- Consider privacy, security, bias, and responsible data use.
- Communicate design decisions and present evidence supporting a proposed solution.

- Collaborate effectively while planning, developing, testing, and presenting computing projects.

Content

[Code.org: AI Discoveries 2026](#)

- **Unit 5: The Design Process**
- **Unit 6: Data and Society**

Unit 5 Objectives: The Design Process

Upon completing this unit, students will be able to:

- Explain how the design process is a form of problem-solving centered on users' needs.
- Use empathy, observation, interviews, and research to identify user needs.
- Evaluate how effectively different designs respond to identified needs.
- Develop user interfaces, screen flows, and paper and digital prototypes.
- Use App Lab's Design Mode and event-driven programming to create an interactive prototype.
- Gather, interpret, and respond to feedback from users.
- Identify bugs, distinguish bugs from requested features, and revise a prototype accordingly.
- Evaluate usability and accessibility when making design decisions.
- Explain the contributions of design, development, testing, marketing, and product-management roles.
- Present an application designed to address a meaningful personal, school, or community need.

Unit 6 Objectives: Data and Society

Upon completing this unit, students will be able to:

- Explain why data is important in solving problems and making decisions.
- Describe how computers represent text, numbers, images, and other information.
- Use binary and ASCII as examples of digital representation systems.
- Analyze the benefits, limitations, and tradeoffs of different data representations.
- Explain privacy and security concerns related to collecting, storing, and sharing data.
- Structure, clean, interpret, and visualize collections of data.
- Ask questions that can be answered using data and support conclusions with evidence.
- Explain how computers automate parts of the data problem-solving process.
- Evaluate how large datasets and machine-learning systems can produce predictions or recommendations.
- Consider how data quality, bias, privacy, and automated decisions affect individuals and society.
- Create and justify a recommendation based on data.

Submission Alignment with the TORCH Values

In this course, earning an exemplary level score of 9 or 10 out of 10 for example is about the learning process as much as the final product. You do not need to be perfect at everything every day, but an exemplary submission requires demonstrating consistent, aspirational effort in all of our school's TORCH values on any given assignment:

- **Truthful:** Your work is authentically yours, you provide evidence of the steps you took in your process and you are honest about your progress and where you are struggling.
- **Organized:** You manage your time effectively, bring required materials, and meet deadlines. You are proactive and make an extension request before the due date
- **Reflective:** You use the TEEL or another suitable method in your responses. When asked about your work you are able to verbally explain how you arrived at an answer, not just what the answer is.
- **Courageous:** You take intellectual risks, speak up in discussions, and aren't afraid to make mistakes during the learning process.
- **Helpful:** You actively support your peers and contribute to a positive, collaborative classroom environment.

Homework and Quiz Rules

- All assignments must be turned in on the day they are due unless there is a valid reason.
- 1 day late = Maximum of only 80%
- 2+ days late = Project-I & Maximum of 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 satisfactorily be completed or Project I will be assigned.
- 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 Honesty (Plagiarism)

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 and trigger disciplinary actions.

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>
- <https://www.w3schools.com/>
- [Maker Toolkit](#) — A collection of commands that extends App Lab's capabilities to allow students to easily program the Circuit Playground and many other physical computing devices directly from App Lab
- [Circuit Playground](#) — Adafruit's new low-cost Arduino-based microcontroller featuring multiple integrated sensors and output devices

Schedule for Computer Science Discoveries, Design, Data and Physical Computing

1st QUARTER – TENTATIVE COURSE CONTENT

Week & Date	Topics / Projects / Assessments
Week 1 Aug 10 - 14	Monday Class Preparation ~ Student Holiday Tuesday Morning Assembly Unit 5 - The Design Process Lesson 1 Designing With Empathy Friday Opening Mass & Assumption of Our Lady 8:00
Week 2 Aug 17 - 21	Lesson 2 Understanding Your User Lesson 3 User Centered Design - Define and Prepare
Week 3 Aug 24 - 28	Lesson 4 User Centered Design - Try and Reflect Lesson 5 User Interfaces
Week 4 Aug 31 - Sep 4	Q1 Quiz 1 Lesson 6 Feedback and Testing
Week 5 Sep 7 - 11	Lesson 7 Identifying User Needs Lesson 8 Project - Paper Prototype
Week 6 Sep 14 - 18	Q1 Quiz 2 Lesson 9 Designing Apps for Good
Week 7 Sep 21 - 25	T-W-Th Pre-Exam Days Q1 Final Exam Friday Moon Festival ~ Public Holiday
Week 8 Sep 28 - Oct 2	Monday Confucius' Birthday ~ Public Holiday Thursday Major Exams Day 1 Friday Major Exams Day 2
Week 9 Oct 5 - 9	Monday Record Day ~ Student Holiday T-W-Th Teachers Conference ~ Student Holiday Friday Double 10 Day ~ Public Holiday

2nd QUARTER – TENTATIVE COURSE CONTENT

Week & Date	Topics / Projects / Assessments
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Week 1 (10) Oct 12 - 16	Lesson 10 Market Research Lesson 11 Exploring UI Elements
Week 2 (11) Oct 19 - 23	Lesson 12 Build a Paper Prototype Lesson 13 Prototype Testing
Week 3 (12) Oct 26 - 30	Monday Retrocession Day ~ Public Holiday Lesson 14 Design Mode in App Lab
Week 4 (13) Nov 2 - 6	Lesson 15 Build a Digital Prototype Q2 Quiz 1
Week 5 (14) Nov 9 - 13	Lesson 16 Events in App Lab Lesson 17 Linking Prototype Screens
Week 6 (15) Nov 16 - 20	Lesson 18 Testing the App Q2 Quiz 2
Week 7 (16) Nov 23 - 27	T-W-Th Pre-Exam Days Lesson 19 Bugs and Features
Week 8 (17) Nov 30 - Dec 4	Q2 Final Exam
Week 9 (18) Dec 7 - Dec 11	Monday TBD Tuesday Foundation Day Mass 9:00, Cutting of the Cake Ceremony, Christmas Fair, (Whole day) Wednesday TBD Thursday Major Final Exams half day Friday Major Final Exams half day
Dec 14 to Jan 1 Christmas Break	

3rd QUARTER – TENTATIVE COURSE CONTENT

Week & Date	Topics / Projects / Assessments
Week 1 (19) Jan 4 - Jan 8	Monday Record Day ~ Student Holiday Lesson 20 Updating Your Prototype Friday New Year Mass at 8:00

Week 2 (20) Jan 11 - Jan 15	Lesson 21 Project - App Presentation Unit 6 - Data and Society Lesson 1 Representation Matters
Week 3 (21) Jan 18 - Jan 22	Lesson 2 Patterns and Representation Lesson 3 ASCII and Binary Representation
Week 4 (22) Jan 25 - Jan 29	Lesson 4 Representing Images Q3 Quiz 1
Week 5 (23) Feb 1 - Feb 5	Lesson 5 Representing Numbers Thursday Little New Year's Eve ~ Public Holiday Friday Lunar New Year ~ Public Holiday
February 8 to 12 Chinese New Year Holiday	
Week 6 (24) Feb 15 - Feb 19	Lesson 6 Combining Representations Lesson 7 Keeping Data Secret
Week 7 (25) Feb 22 - Feb 26	22-26 IOWA Assessments Lesson 8 Project - Create a Representation Q3 Quiz 2
Week 8 (26) Mar 1 - Mar 5	Monday Memorial Day ~ Public Holiday T-W-Th Pre-Exam Days Lesson 9 Problem Solving With Data
Week 9 (27) Mar 8 - Mar 12	Lesson 10 Structuring Data Lesson 11 Interpreting Data
Week 10 (28) Mar 15 - Mar 19	Q3 Final Exam
Week 11 (29) Mar 22- Mar 26	Tuesday Major Final Exams half day Wednesday Major Final Exams half day Thurs - Fri Easter Break (Spring Break) ~ Public Holiday
March 25 to April 2 Easter & Spring Break	

4th QUARTER – TENTATIVE COURSE CONTENT

Week & Date	Topics / Projects / Assessments
Week 1 (30) Apr 5 - Apr 9	Monday Tomb Sweeping Day ~ Public Holiday Tuesday Children's Day ~ Public Holiday Lesson 12 Making Decisions with Data
Week 2 (31) Apr 12 - Apr 16	Lesson 13 Automating Data Decisions Q4 Quiz 1
Week 3 (32) Apr 19 - Apr 23	19 - 23 AP Mock Exams Lesson 14 Problem Solving with Big Data Lesson 15 Data and Machine Learning
Week 4 (33) Apr 26 - Apr 30	T-W-Th Pre-Exam Days Lesson 16 Project - Make a Recommendation Part 1 Q4 Quiz 2 Friday Labor Day ~ Public Holiday
Week 5 (34) May 3 - May 7	Lesson 16 Project - Make a Recommendation Part Q4 Final Exam
Week 6 (35) May 10 - May 14	3 - 14 AP Exams Wednesday Major Final Exams Undergraduates half day Thursday Major Final Exams Undergraduates half day Friday Record Day ~ Student Holiday
Week 7 (36) May 17 - May 21	Monday Gr. 12 Recollection (Morning) Monday Baccalaureate Mass (Afternoon, Schoolwide) Wednesday House Sports Day Thursday High School Field Trip Friday House Culminating Activity All Week Student Clearance Days & Special Events
Week 8 (37) May 24 - May 28	Monday Middle & High School Sports Day Monday LS Field Trip Tuesday Kindergarten Graduation/Gr. 5 Promotion Wednesday Gr. 8 Graduation and Gr. 12 Graduation Thursday Pre-Kindergarten & Gr. 1 - 4, 6 & 7, 9-11 Recognition Friday Last Day of School for Students

The end ~ Have a great summer 😊

High School Computer Science Sequence 2026–2027

The table below outlines the High School Computer Science pathways available at DIST.

Classes are 40 minutes long, and most students should be able to complete the core lesson activities during class. Students who need additional practice, review, or support may occasionally require about 15-25 minutes outside class to satisfactorily complete the activities.

Students who wish to develop deeper mastery may choose to spend more time on enrichment activities included within or added to the lessons. These activities are not required for the course grade, but they provide valuable opportunities for additional practice, self-assessment, and further exploration.

A student's effort and engagement will strongly influence their growth in computer science. Although completing enrichment activities does not automatically result in a higher grade, it can help students build stronger skills, greater confidence, and a deeper understanding of the course content.

Subject CS Sequence	
Grade 9 CS AI & Computing	Grade 10 CS Discoveries: Design & Data
CodeAI: AI Discoveries (AID) Unit 1 - Thinking Critically About AI Unit 2 - AI and Machine Learning Unit 4b - Interactive Animations and Games	CodeAI: AI Discoveries (AID) Unit 5 - The Design Process Unit 6 - Data and Society Unit 7a - Creating Apps with Devices (Circuit Playground)
G11 CS Exploring AI Foundations	G12 CS Building AI Foundations
CodeAI: AI Foundations Unit 1: Problem Solving with AI Unit 2: AI and the Systems That Power It Unit 5: Insights from Data and AI	CodeAI: AI Foundations Unit 6: AI-Generated Design Unit 7: AI and Algorithmic Decisions Unit 8: Building Data-Driven Systems with AI

AP CS Sequence	
G11 APCS A JAVA	G12 APCS Principles

AP CS Sequence

[CSAwesome](#)

AP Computer Science A is an introductory college-level computer science course. Students cultivate their understanding of coding through analyzing, writing, and testing code as they explore concepts like modularity, variables, and control structures.

Unit 1: Using Objects and Methods

Unit 2: Selection and Iteration

Unit 3: Class Creation

Unit 4: Data Collections

Unit 5: Review & AP Exam Preparation

[CS50AP , CS50Python, CodeAI: AI Foundations \(AIF\)](#)

AP Computer Science Principles introduces students to the breadth of the field of computer science. In this course, students will learn to design and evaluate solutions and to apply computer science to solve problems through the development of algorithms and programs.

Unit 1: The impact of Computing

Unit 2: Programming in Python

Unit 3: Create Task

Unit 4: SQL and Data Science

Unit 5: Application Development

Unit 6: The Fabric of the Internet and AI

Unit 7: Cybersecurity, AI-Powered Threats and Defenses

Unit 8: Final Project

Unit 9: Review & AP Exam Preparation

High School CS Curriculum Overview

CS50AP as the AP CS Capstone

For students in the AP CS Pathway, CS50AP serves as the Grade 12 capstone following AP Computer Science A in Grade 11. It builds on students' Java programming experience while broadening their understanding of computer science through Python, databases, web development, cybersecurity, artificial intelligence, and the social impact of computing.

Beginning in 2026–2027, C was removed from the AP Computer Science Principles course. This provides more time for other parts of the curriculum and allows students to begin with Python at a higher level of abstraction. Students can therefore spend more time designing, building, and refining realistic applications rather than managing lower-level programming details.

Practical Application through Service Learning

Students in both the Subject CS Pathway and AP CS Pathway are encouraged to apply their knowledge through the school's Service Learning program.

The High School Computer Science department collaborates with Service Learning staff to help students identify opportunities to:

- Apply computer science skills in authentic community contexts
- Develop solutions for real users and needs

- Gain practical experience beyond the classroom
- Strengthen collaboration, communication, and project-management skills
- Understand how technology can be used to address real-world challenges

These experiences complement classroom learning and provide meaningful opportunities for students to demonstrate the practical value of their computer science knowledge.

Curriculum Review and Development

The High School Computer Science curriculum is reviewed regularly to ensure that it remains current, appropriately challenging, and responsive to student needs, academic expectations, and changes in technology.

Curriculum Evaluation

Potential additions and revisions are evaluated through classroom trials, student outcomes, teacher reflection, and stakeholder feedback. Previous trials have included CS50 SQL and Carnegie Mellon University college-level programming materials.

These evaluations showed that the existing AP CS Pathway provides substantial breadth, depth, and academic rigor while maintaining flexibility to adapt to evolving technologies and student interests. This supports a focused curriculum that allows students sufficient time to develop, apply, and reflect on the skills necessary for further study, future careers, and real-world problem solving.

Stakeholder Feedback

Feedback is encouraged from students, parents, teachers, administrators, and industry professionals. This helps ensure that the curriculum remains aligned with academic standards, university pathways, and practical applications of computer science.

Adaptive Planning and Collaboration

The curriculum continues to evolve in response to new technologies, student interests, and stakeholder input. Collaboration with the Service Learning program provides a practical way to connect classroom learning with industry-related skills and community engagement without unnecessarily adding further course content.

Through ongoing evaluation and collaboration, the High School Computer Science program aims to remain coherent, relevant, and sustainable while preparing students for further study, future careers, and responsible participation in a technology-rich society.