

The Bedford & Monroe Daylighting Laboratory

A Culturally Responsive, Five-Day Smart Streets Unit (AP CSP Unit 3 Algorithm, Lesson 16 Simulations)

Day 1 of 5 - Reading the Corner: Daylighting, Its Mitigations, and the NYC Data Behind It

Teacher: Mr. R Calungsod	Date: _____
Class Type: AP Computer Science Principles/ Unit 3, Lesson 16 SIMULATIONS - “Smart Streets” (CS3) unit	Grade: 9 - 12 (written for APCSP Unit 3; scaffolds included for mixed levels)
Time Frame: 45 minutes (Day 1 of a 5-day / one-week unit)	

Lesson Overview
Unit/Overarching Focus of Lesson: - Week-long “Brooklyn Intersection Laboratory” unit built around the Bedford Avenue & Monroe Street daylighting simulation. - Day 1 lays the vocabulary and evidence foundation the rest of the week depends on.
Objectives/Aims: Students will demonstrate understanding/learning by being able to: 1. define “daylighting” and distinguish no daylighting / sign-only daylighting / hardened daylighting in their own words; 2. trace at least two real NYC data or policy sources that motivate daylighting; 3. practice the evidence-confidence habit (verified / estimated / unknown / prior literature) that the simulation itself uses — the same habit they will see live inside the app on Day 3.
Aligned Standards: 1. NGSS HS-ETS1-1 & HS-ETS1-3 (define/evaluate an engineering problem and its criteria/trade-offs); 2. CCSS.MATH.CONTENT.HSS-IC.B.6 (evaluate reports based on data); 3. ISTE 1.3 Knowledge Constructor; 4. NYSED Culturally Responsive-Sustaining Education (CR-SE) Framework — Welcoming & Affirming Environment, High Expectations & Rigorous Instruction.
Key Vocabulary and Concepts: - daylighting; - sight triangle / visibility triangle; - curb extension (neckdown); - sign-only daylighting; hardened daylighting; - floating parking; - Vision Zero; - before/after study; - pedestrian exposure; - the app’s own evidence tags—observed, recreated analysis, estimated input, simulated, prior literature, unknown.
Materials & Resources: 1. Projector/screen; 2. student devices with internet; 3. Day 1 worksheet + answer key (attached); 4. printed/visual glossary cards; 5. a map or satellite view of Bedford Avenue & Monroe Street, Bedford-Stuyvesant, Brooklyn.

Safety Practices:

Standard classroom device/internet-use policy. No personal information is collected or typed into any website today. (This previews a theme for Day 2: the app itself collects no names, emails, or accounts — see README.md, “Anonymous local session ID.”)

Differentiation Suggestions:

1. Provide a multilingual glossary handout (translate the Day 1 vocabulary list into the languages spoken at home in your class).
2. Give ELL students sentence starters for the Do Now and Part D reflection.
3. Pre-teach “sight triangle” and “curb extension” with a simple hand-drawn icon, not just text.
4. Pair a stronger reader with a student who benefits from support for the Part C research hunt.

Cultural context: (within which the lesson will be grounded, and specific ideas/practices to be included in the lesson):

This entire unit studies one real, named corner in Bedford-Stuyvesant, Brooklyn — Bedford Avenue & Monroe Street — directly outside Bedford Academy High School and the Bedford YMCA. Open the unit by asking students to name a corner near their own home, school, or a family member’s block that felt hard to see around, and treat that lived experience as real evidence, on par with the government data they will look up next. Bedford-Stuyvesant is a historically Black neighborhood; frame today’s NYC Vision Zero discussion honestly: safety investment has not always reached every neighborhood at the same pace, and students are being asked to act as civic investigators auditing whether their own corners have received attention like this one has. Invite students with Brooklyn/Bed-Stuy family ties to share what they already know about the area — that local knowledge is a valid complement to the cited sources, not a replacement for the Do Now sketching activity.

Prior Knowledge:

Basic percentages/statistics; reading a simple street map. No coding or prior daylighting knowledge assumed.

Prior Lesson:

None — Day 1 of 5.

Followup Lesson:

Day 2 — Introducing Claude and using AI responsibly.

Lesson Overview/ Abstract:

Students are introduced to “daylighting” — removing obstructions near a crosswalk so drivers and pedestrians can see each other — and the three configurations used all week: no daylighting, sign-only daylighting, and hardened daylighting. Through a guided, source-cited research activity using real NYC government and open-data pages, students trace the policy/data trail behind daylighting, then practice labeling claims verified / estimated / unknown — the exact evidence system they will watch the simulation use for itself on Day 3.

Lesson Activities		
Time	Activities	Rationale
4 min	Do Now (Warm-Up + Debrief): 1. Project a blank intersection outline. “Sketch (stick figures OK) a corner near your home, school, or a family member’s block where it was hard to see a car or a person crossing. 2. Ask: What was blocking the view?”	Beginning with a familiar corner makes the engineering problem concrete before technical language is introduced. The sketch and partner talk activate students’ lived knowledge of their neighborhoods, lower the barrier to participation, and surface the

	3. 60-second sketch → 60-second turn-and-talk → 2 volunteers share and the teacher charts the obstructions named (parked cars, trucks, hedges, fences) on the board — these will map onto today’s vocabulary. Action/Materials: • Blank intersection outline handout or projected image • Chart paper/board	exact obstructions that daylighting is designed to address. Charting their observations creates a student-generated bridge to the vocabulary and local evidence used throughout the week.
8 min	Mini-Lecture: 1. Direct instruction: define daylighting and the sight/visibility triangle using a simple NACTO-style diagram; 2. Contrast sign-only (paint + regulatory sign only) against hardened (a physical object — planter, granite block, delineator, or curb extension — that a car cannot physically occupy). 3. Name Vision Zero as NYC’s safety policy umbrella. 4. Model intellectual honesty: instead of asserting a law name or a statistic from memory, tell students “we are going to go verify the exact policy and data together, right now” — this previews Part C and mirrors how the app itself labels every fact with a source. Action/Materials: • Projector • NACTO Urban Street Design Guide diagram (see Bibliography)	The brief direct instruction gives the class a shared and precise vocabulary after students have first described the problem in everyday language. A visual sight triangle reduces the abstraction of visibility, while the explicit contrast among no daylighting, sign-only, and hardened treatments prepares students to interpret the simulation accurately. Modeling source verification establishes that technical claims must be checked rather than accepted from memory or authority.
8 min	CS3 Smart Streets Connection (“Class Activity”): Whole-class guided web research, teacher thinking aloud while projecting: open NYC DOT’s current-projects page and the January 2025 “Daylighting and Street Safety” report together; model finding a fact, quoting it in your own words, and recording the source URL + today’s retrieval date on the shared worksheet (Part C, Q1). Websites to use: nyc.gov/html/dot/html/about/current-projects.shtml; nyc.gov/html/dot/downloads/pdf/daylighting-and-street-safety.pdf; data.cityofnewyork.us (“Motor Vehicle Collisions — Crashes,” dataset h9gi-nx95); schools.nyc.gov/Schools/K595 (Bedford Academy HS, on the same block as this week’s intersection).	A teacher think-aloud makes an otherwise invisible research process observable: locating an authoritative source, paraphrasing a supported claim, recording the URL and retrieval date, and assigning an evidence-confidence label. Using NYC DOT, NYC Open Data, and the local school page anchors the inquiry in the actual Bedford and Gates context. This guided practice supplies the method students will need for the independent source hunt and the app’s Evidence Drawer.

	Action/Materials: • Student devices • Projector • Websites listed	
20 min	Hands-On (“Independent Work”): Partners complete the Day 1 Worksheet: 1. Part A vocabulary match; 2. Part B — label three text-described curb scenes as none / sign-only / hardened and justify in one sentence (these mirror exactly what students will see rendered in the app on Day 3); 3. Part C — guided NYC-data research scavenger hunt, citing source + retrieval date + confidence tag for each answer (mark “unknown” rather than guessing — that is a correct, full-credit answer); 4. Part D — short reflection connecting back to the Do Now sketch. Action/Materials: - Day 1 worksheet (attached) - Day 1 worksheet (Answer Key) - Student devices	The partner worksheet moves students through a deliberate progression from recognizing terms, to classifying street treatments, to evaluating real sources, and finally to applying the idea to a personally known corner. Partner work supports students through demanding web text without removing individual reasoning. Treating “unknown” as a valid evidence label rewards intellectual honesty and prevents guessing, a core norm for interpreting simulation results later in the unit.
5 min	Group Debrief & Reflection + Exit Ticket: 1. 2–3 pairs share one researched fact and its source. T 2. Teacher spot-checks that the citation actually supports the claim. Close with the Day 1 Exit Ticket (last ~2–3 minutes). Action/Materials: Day 1 Exit Ticket (attached)	Sharing a researched fact requires students to make their evidence public and gives the teacher an immediate opportunity to test whether the cited source actually supports the claim. Hearing several examples helps the class distinguish a plausible statement from a verified one. The exit ticket captures each student's independent understanding so misconceptions about daylighting types or source confidence can be addressed before the responsible-AI work on Day 2.

Lesson Assessments	
Follow-Up Assignment:	None formally assigned outside class — today’s worksheet is the artifact carried into Day 2–Day 4.
Additional Accommodations for Students:	Extended time; read-aloud option for Part C sources; sentence frames for Parts A/D; multilingual glossary; reduced item count (e.g., 2 of 4 Part C questions) for students who need it.
Methods of Assessment:	Worksheet completion/accuracy (especially: does the citation actually support the claim?); exit ticket; participation in the Do Now and debrief shares.

Day 2 of 5 — Introducing Claude and Using AI Responsibly

Teacher: Mr. RJ Calungsod	Date: _____
Class Type: Class Type: AP Computer Science Principles/ Unit 3, Lesson 16 SIMULATIONS — “Smart Streets” (CS3) unit	Grade: 9–12 (written for APCSP Unit 3; scaffolds included for mixed levels)
Time Frame: 45 minutes (Day 2 of a 5-day / one-week unit)	

Lesson Overview

Unit/ Overarching Focus of Lesson:

Same Brooklyn Intersection Laboratory unit. Day 2 pauses the daylighting content to build the AI-literacy habits students will use for the rest of the week (and beyond), before they touch the simulation itself on Day 3.

Objectives/Aims:

Students will demonstrate understanding/learning by being able to:

1. explain, in their own words, what a conversational AI assistant like Claude is and is not (e.g., it predicts likely text from patterns — it is not a guaranteed-true search engine, and it can “hallucinate,” confidently stating something wrong);
2. apply three responsible-AI habits — verify, disclose, protect privacy;
3. explain, using this project’s own documented design choice, why an academic write-up might deliberately avoid an external generative-AI call in favor of fixed templates and computed statistics.

Aligned Standards:

1. [ISTE 1.2 Digital Citizen](#) (manage digital footprint, aware of data collection); I
2. [ISTE 1.3 Knowledge Constructor](#) (evaluate accuracy/credibility of digital resources);
3. [NYSED CR-SE Framework](#) — Inclusive Curriculum & Assessment.

Key Vocabulary and Concepts:

- Large Language Model (LLM);
- prompt; hallucination;
- verification;
- AI-use disclosure;
- human-in-the-loop;
- deterministic vs. generative output.

Materials & Resources:

1. Supervised/approved classroom access to Claude (claude.ai) per school AI-use policy;
2. Day 2 worksheet + answer key;
3. [Printed AI-use agreement reflecting your school’s policy](#). (Sample provided)

Safety Practices:

- No personal information (yours or anyone else’s — name, address, photo, family details) is ever typed into an AI chat.
- Teacher-supervised accounts only, following your school’s Acceptable Use Policy.
- Model this using the app’s own privacy design as an example: per README.md, the simulation itself collects no names, emails, or accounts — only an anonymous local session ID stored in the student’s own browser.

Differentiation Suggestions:

1. Provide written sentence starters for prompting (“Explain ____ like I’m in 9th grade,” “Give me 3 reasons ____”).
2. Offer oral dictation of prompts for students who need it.
3. Pair a short demo video with the live demo so directions exist in more than one format.
4. Do not assume every student has used a chatbot before — the Do Now is designed to surface (not assume) prior experience.

Cultural context: (within which the lesson will be grounded, and specific ideas/practices to be included in the lesson):

AI tools reflect the data and people who built and trained them, which means they can carry the same blind spots and biases as the wider world — including about specific neighborhoods. Have students test whether Claude recognizes their own block, a family member’s neighborhood, or Bedford Academy High School and Bedford-Stuyvesant, and reflect honestly on any gaps or generic answers they notice. Connect student data privacy explicitly to respect: for communities that have experienced heavier surveillance historically, “we don’t need your real name or photo to do this work” is a meaningful, not just procedural, promise.

Prior Knowledge:

Day 1 vocabulary; basic typing/keyboard use.

Prior Lesson:

Day 1 — Daylighting definitions and NYC data.

Followup Lesson:

Day 3 — Experimenting with the app.

Lesson Overview/ Abstract:

Students get a first supervised, hands-on conversation with Claude, practice writing a clear prompt, and learn three responsible-AI habits (verify, disclose, protect privacy) they will use for the rest of the unit. They then compare a generative AI answer against the simulation’s own documented, non-AI approach to its official write-up, to build a concrete sense of generative vs. deterministic output.

Lesson Activities

Time	Activities	Rationale
4 min	<i>Do Now (Warm-Up + Debrief):</i> 1. “Have you ever used an AI chatbot or voice assistant (Siri, Alexa, a game character, ChatGPT, Claude)? 2. Write 2 sentences: what did you ask, and what did you get back?” 3. Quick show-of-hands poll, then 2–3 volunteers share — this surfaces real prior experience instead of assuming none. <i>Action/Materials:</i> - Board/chart paper for the poll tally	Students enter with very different levels of experience and confidence with AI, so the lesson begins by making that variation visible rather than assuming a common starting point. Recalling a real interaction activates prior knowledge and gives the teacher examples to reference during instruction. The low-stakes poll also separates familiarity with an AI tool from the deeper question of whether its output is accurate, private, and appropriate to use.
8 min	<i>Mini-Lecture:</i> 1. Direct instruction: what Claude is (predicts likely next text from patterns, can explain/summarize/brainstorm) and is not (not an	Students need conceptual and ethical guardrails before they begin prompting. The mini-lesson gives them a usable mental model of Claude as a language model that can

	all-knowing search engine, can “hallucinate” — state something wrong with full confidence). - Introduce the 3 class rules: - Verify anything factual against a real source before using it; - Disclose when/how you used AI in your own work; - Never share personal information — yours or anyone else’s — in a chat. Action/Materials: - Projector	produce helpful but fallible text, then converts that limitation into three concrete habits: verify, disclose, and protect privacy. Teaching these rules immediately before tool use reduces uncritical trust and makes responsible use part of the academic task rather than an afterthought.
8 min	CS3 Smart Streets Connection (“Class Activity”): - Teacher models one live, supervised prompt to Claude: “Explain daylighting at intersections simply.” - The class fact-checks the response side-by-side against yesterday’s sourced Day 1 worksheet — modeling verification in action. - Then discuss: this project’s own task.md explicitly requires that its official analysis write-up use fixed templates and computed statistics instead of an external generative-AI call — the human-written draft lives in report.html (the “Research & proposal” link in the app). - Ask: why would a team make that choice for an academic report? Action/Materials: - claude.ai (supervised account) or other AI platforms - Day 1 worksheets from yesterday - The app’s “Research & proposal” link / report.html	Fact-checking Claude against the sourced Day 1 work turns verification from an abstract warning into a visible classroom routine. Students can observe that a fluent answer still requires evidence. Comparing that generative response with the project’s fixed-template, computed-statistics report also connects AI literacy to an authentic design decision: when reproducibility and traceability matter, a deterministic method may be more appropriate than newly generated prose.
20 min	Hands-On (“Class Activity”): - In pairs, with supervised AI access, students complete the Day 2 Worksheet. - Write and run 2 of their own prompts about daylighting/street safety - Summarize each response in their own words (not pasted) - Then pick ONE factual claim from a response and verify it against a real outside source, marking it verified / contradicted / unable-to-verify with the source URL — the same evidence-tagging habit from Day 1.	The paired task provides controlled practice with the complete responsible-AI cycle: write a purposeful prompt, interpret rather than copy the response, isolate one factual claim, and verify it with an outside source. Checking one claim keeps the cognitive demand manageable while reinforcing Day 1’s evidence tags. The written AI-use disclosure creates an accountability artifact students will carry into their Day 4 experiment and Day 5 presentation.

	5. Finish with a 2-sentence AI-use disclosure statement to attach to their Day 4–5 project. Action/Materials: - claude.ai (supervised account) or other AI platforms - Day 2 worksheet (attached) - Day 2 worksheet (Answer Key)	
5 min	Group Debrief & Reflection + Exit Ticket: 1–2 pairs share their verified-or-contradicted example. Close with the Day 2 Exit Ticket. Action/Materials: Day 2 Exit Ticket (attached)	Publicly discussing a verified, contradicted, or unresolved claim normalizes the idea that the value of the exercise lies in the checking process, not in making the AI appear correct. The debrief allows students to compare verification strategies and exposes common errors such as citing a page that does not support the claim. The exit ticket lets the teacher determine whether students are ready to use digital tools and evidence responsibly on Day 3.

Lesson Assessments	
Follow-Up Assignment: Keep the AI-use disclosure statement — it gets attached to the Day 4–5 project.	
Additional Accommodations for Students: Oral/dictated prompts; extended time; a pre-written “starter prompt” for students who freeze on Part B; partner support for the verification step.	
Methods of Assessment: Worksheet completion, with credit given for a correctly followed verification process (not for whether Claude happened to be right); exit ticket; disclosure-statement quality.	

Day 3 of 5 — First Look: Running the Bedford & Gates Simulation

Teacher: Mr. RJ Calungsod	Date: _____
Class Type: Class Type: AP Computer Science Principles/ Unit 3, Lesson 16 SIMULATIONS — “Smart Streets” (CS3) unit	Grade: 9–12 (written for APCSP Unit 3; scaffolds included for mixed levels)
Time Frame: 45 minutes (Day 3 of a 5-day / one-week unit)	

Lesson Overview	
Unit/ Overarching Focus of Lesson: Same Brooklyn Intersection Laboratory unit. Day 3 is students’ first hands-on time inside the actual running application at https://rcalungsod.github.io/Daylighting-SIM/	
Objectives/Aims: Students will demonstrate understanding/learning by being able to: 1. navigate the app’s real controls (treatment dropdown, hardened-subtype dropdown, camera presets, seed field); 2. run and reset a scenario on a fixed seed; 3. identify exactly what changes — and what stays identical — between no daylighting / sign-only / hardened; 4. read and interpret the app’s six real on-screen metrics.	
Aligned Standards: - NGSS HS-ETS1-3 (evaluate a solution using systematic, evidence-based methods); - CCSS Mathematical Practice 4 (model with mathematics); - ISTE 1.5 Computational Thinker.	
Key Vocabulary and Concepts: - Treatment vs. control; - random seed; - time-to-collision (TTC); - post-encroachment time (PET); - blocked-sightline time; - leading pedestrian interval (LPI); - camera preset; - the “What changed?” panel; - evidence drawer.	
Materials & Resources: Laptops/Chromebooks that can reach the running app ; Day 3 worksheet + answer key ; Projector for the whole-class walkthrough.	
Safety Practices: Standard computer-lab/device policy. Note for students: the app itself collects no personal data — only an anonymous local session ID (ties back to Day 2’s privacy discussion).	
Differentiation Suggestions: 1. Pair a stronger reader with a student who benefits from support. 2. Provide an annotated screenshot legend naming every button/panel (translated to students’ home languages where possible). 3. Allow condensed Hands-On questions (e.g., 3 of 5 parts) for students who need more time on fewer items rather than rushing through all of them.	

Cultural context: (within which the lesson will be grounded, and specific ideas/practices to be included in the lesson):

Reaffirm: this is not a generic textbook intersection — it is a real, named corner in Bedford-Stuyvesant, outside Bedford Academy High School and the Bedford YMCA, rebuilt from real sources (OpenStreetMap, MTA Bus Time, NYC Open Data, NYC DOT project pages — all listed in the app’s own Evidence Drawer). Ask students what it means that their class is among the first to formally analyze this exact corner with data. Invite students with Brooklyn or Bed-Stuy connections to add what they already know; treat that as a valid complement to the cited sources, not something to be “corrected” by the app.

Prior Knowledge: Day 1 vocabulary (daylighting types); Day 2’s verification habit.

Prior Lesson:

Day 2 — Introducing Claude and AI use.

Followup Lesson:

Day 4 — Designing your own experiment.

Lesson Overview/ Abstract: Students get real hands-on time in the simulation: first a shared teacher walkthrough of the controls (mini-lesson), then a guided partner exploration holding the seed and sliders fixed while only toggling the treatment (class debrief), then independent exploration of camera views, the Evidence Drawer, and the same-seed three-treatment comparison (independent work), recording real observed output on a structured worksheet.

Lesson Activities

Time	Activities	Rationale
4 min	Do Now (Warm-Up + Debrief): Project a paused screenshot of the app’s default isometric view. “Predict: if we remove the parked vehicle closest to the corner, what do you think happens to a driver’s view of a pedestrian stepping into the crosswalk?” 2-minute silent prediction, then quick share-out debrief. Action/Materials: • Projector • Screenshot of the app’s default view	The visual prediction reactivates Day 1’s sight-triangle concept and asks students to form a causal hypothesis before seeing simulation output. Focusing on one parked vehicle keeps the prompt accessible while directing attention to the mechanism daylighting is intended to change: visibility between road users. Students can later compare this initial prediction with the app’s camera views and blocked-sightline metric, creating a reason to investigate rather than merely explore.
8 min	Mini-Lecture: 1. Whole-class walkthrough on the projector of the real interface: the Brooklyn-intersection dropdown; 2. The Daylighting treatment dropdown (none / sign-only / hardened) 3. The Hardened subtype dropdown (Planter + delineators / Curb extension / Granite blocks / Bike rack + delineators) 4. The metrics readout (vehicles/pedestrians on scene, modeled conflicts, min. time-to-collision, min. post-encroachment time, yielding events, blocked-sightline time)	A guided interface tour reduces extraneous cognitive load so students can focus on experimental reasoning instead of searching for controls. Naming the treatments, metrics, camera views, seed, and “What changed?” panel establishes a common map of the tool before independent use. Explicitly identifying Bedford and Gates as the only verified location also prevents students from mistaking queued candidate corners for validated simulation models.

	5. The 4 camera-preset buttons (Isometric, Overhead plan, Driver-eye, Pedestrian-eye); and the “What changed?” panel. Action/Materials: - Projector - The running app	
8 min	CS3 Smart Streets Connection (Class activity): In pairs, students open the app on their own device and follow along step-by-step: set the Random seed field to the app’s own default, 20260724, leave every slider at default (Vehicle volume 450 veh/h, Pedestrian volume 280 ped/h, Approach speed 20 mph, Leading pedestrian interval 0 s), then switch Daylighting treatment none → sign-only → hardened one at a time, pausing after each to read the “What changed?” text aloud and record what happens to the metrics. Action/Materials: - Student devices running the app	Holding the seed and all sliders constant while changing only the treatment creates students' first controlled comparison. This design makes differences easier to attribute to daylighting rather than to changed traffic conditions or random events. Reading the “What changed?” explanation aloud links the visual interface to the metrics and supports technical language development, while partner work gives students a safe setting in which to correct navigation errors.
20 min	Hands-On (“Independent Work”): Independently or with a partner, students: 1. Try all 4 camera presets and note what each reveals that the others don’t; 2. Check “Show dimension lines & sight triangle” and describe what appears; 3. Scroll to the Evidence Drawer and record 2 of its 15 real sourced cards, each with its confidence/retrieval note; 4. Click “Run comparison” (default: 5 simulated minutes per treatment) and copy the resulting 3-row table; 5. Answer 2 reflection questions, including one about what the “no-parking compliance” checkbox actually changes. Action/Materials: - Day 3 worksheet (attached) - Day 3 Worksheet (Answer Key) - Student devices running the app	The independent tasks deliberately examine the simulation from several forms of evidence. Camera presets build spatial perspective; the sight-triangle overlay makes the geometry visible; the Evidence Drawer connects modeled behavior to sourced and qualified claims; and the comparison table turns a moving scene into data students can analyze. Investigating the compliance checkbox further shows that simulation results depend on explicit assumptions, not only on what the animation appears to show.
5 min	Group Debrief & Reflection + Exit Ticket: 1. 2–3 students share one metric that surprised them and why. 2. Close with the Day 3 Exit Ticket.	Asking students to explain a surprising metric moves the debrief beyond reporting a number and toward reasoning about why the model produced it. Comparing observations helps

	Action/Materials: - Day 3 Exit Ticket (attached)	reveal whether differences came from treatment, settings, or misread controls. The exit ticket provides individual evidence that students can navigate the app and distinguish observed simulation output from a justified conclusion before they design their own experiment on Day 4.
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Lesson Assessments	
Follow-Up Assignment: Bring your completed Run-comparison table to Day 4 — you will design your own experiment starting from it.	
Additional Accommodations for Students: Extended time; annotated UI legend; condensed Hands-On item count; partner support for reading the Evidence Drawer cards.	
Methods of Assessment: Worksheet accuracy (do the recorded metrics/text actually match what the app showed?); exit ticket; participation in the guided We-Do walkthrough.	

Day 4 of 5 — Designing and Running Your Own Experiment

Teacher: Mr. RJ Calungsod	Date: _____
Class Type: AP Computer Science Principles/ Unit 3, Lesson 16 SIMULATIONS — “Smart Streets” (CS3) unit	Grade: 9–12 (written for APCSP Unit 3; scaffolds included for mixed levels)
Time Frame: 45 minutes (Day 4 of a 5-day / one-week unit)	

Lesson Overview	
Unit/ Overarching Focus of Lesson: Same Brooklyn Intersection Laboratory unit. Day 4 moves students from observing teacher-run scenarios to designing and running their own controlled experiment inside the app.	
Objectives/Aims: Students will demonstrate understanding/learning by being able to: 1. design a controlled experiment — one independent variable changed, everything else (including the random seed) held constant; 2. operate the full experiment panel to build a custom scenario; 3. record real run output as evidence and write a conclusion that compares it to a prediction; 4. (extension) identify what verified data a new Brooklyn corner would need before it could safely join the catalog.	
Aligned Standards: 1. NGSS HS-ETS1-2 & HS-ETS1-3 (break a problem into sub-problems; evaluate a solution systematically); 2. CCSS.MATH.CONTENT.HSS-IC.B.6 (evaluate reports based on data); ISTE 1.4 Innovative Designer.	
Key Vocabulary and Concepts: - Independent variable; - controlled variable; - hardened subtype; - no-parking compliance; - comparison run; - catalog / candidate location; - verified vs. unverified record.	
Materials & Resources: - Laptops/Chromebooks running the app; - Day 4 Experiment Design Sheet + extension handout; - printed excerpt of real candidate-corner names (from data/intersection-candidates.json); rubric.	
Safety Practices: Standard computer-lab/device policy.	
Differentiation Suggestions: 1. Offer a partially filled-in Experiment Design Sheet (some fields pre-completed) for students who need scaffolding, alongside the fully blank version for students ready to design independently. 2. Allow groups of 3 for students who benefit from more peer support.	
Cultural context: (within which the lesson will be grounded, and specific ideas/practices to be included in the lesson): For the extension track, let students CHOOSE (do not assign) a candidate Brooklyn corner that is personally meaningful — near home, a relative’s block, a bus stop they use — rather than assigning	

one at random. This mirrors how real NYC community boards get a say in which corners DOT studies next, and gives students real ownership over which part of their own community gets investigated.

Prior Knowledge: Day 3 app navigation; Day 1 daylighting-type vocabulary.

Prior Lesson: Day 3 — First look at the [app](#).

Followup Lesson: Day 5 — Presentations and class solutions.

Lesson Overview/ Abstract:

Holding the random seed constant, students change exactly one variable at a time — treatment, volumes, speed, or the compliance checkbox — predicting the effect first, then running the real app and recording actual output. Extension groups additionally evaluate a real, not-yet-verified Brooklyn corner and name what evidence it would need before earning a spot in the catalog, directly modeling the audit process used to build the tool itself.

Lesson Activities

Time	Activities	Rationale
4 min	Do Now (Warm-Up + Debrief): “In your own words, what is one thing you must keep the SAME between two runs for a comparison to be fair?” - Pair-share, then cold-call 2 students — connect to yesterday’s “same seed” idea. Action/Materials: None	Retrieving the idea of a fair comparison at the start of class connects Day 3’s same-seed exploration to formal experimental design. The pair-share requires every student to name a controlled variable before the teacher formalizes the concept and quickly exposes the misconception that changing several settings produces stronger evidence. This short diagnostic determines how much scaffolding students will need during independent design.
8 min	Mini-Lecture: - Teacher models a full experiment live, using the app’s real Run-comparison feature: question — “Does changing only the treatment (seed 20260724, all sliders at default) change blocked-sightline time?”; - Independent variable — treatment; controlled — seed, vehicle volume, pedestrian volume, approach speed, LPI, compliance checkbox (left unchecked); prediction — hardened will be lowest; - Result — the real captured table (No daylighting / Sign-only: 300.0 s blocked-sightline; Hardened: 0.0 s, all three otherwise identical: 43 trips, 4 conflicts, 1.92 s TTC, 0.45 s PET, 9 yielding, queue 7);	The worked example makes the entire reasoning chain visible: question, independent variable, controls, prediction, result, conclusion, and limitation. Using the unexpected tie between no daylighting and sign-only is instructionally valuable because it shows that evidence may challenge an intuitive ranking and therefore must be interpreted, not forced to fit a prediction. Naming the single-seed limitation also models appropriately cautious claims.

	4. Conclusion — prediction partly confirmed, but sign-only tied “none” instead of falling in between, because compliance was not assumed; 5. Limitation — this is a single run at one seed, not yet repeated for uncertainty. Action/Materials: - Projector - The app’s Run comparison feature	
8 min	CS3 Smart Streets Connection (“Class Activity”): 1. Whole class designs a second experiment together live: “If we now CHECK ‘Assume no-parking compliance (sign-only)’ and re-run the same comparison, what do you predict happens to sign-only’s blocked-sightline time?” 2. The teacher scribes the class’s prediction on the board, then the class actually runs it together and reads the real result — an authentic discovery, not a pre-known answer. Action/Materials: - Projector - The app’s Run comparison feature - Board for the prediction	Designing the second experiment as a class provides one more scaffold before independent work while shifting some decision-making from the teacher to students. Changing only the compliance assumption isolates its effect and helps students recognize that a checkbox represents a model assumption with consequences. Recording a prediction before running the comparison protects against hindsight reasoning and makes the result an authentic test of an idea.
20 min	Hands-On (“Independent Work ”): Students complete the Day 4 Experiment Design Sheet: - a testable question; - the one variable they will change; - at least 4 variables held constant, including the seed; - a prediction, written BEFORE running; - real Run 1 (and, if time allows, Run 2) results copied from the app; - a 2–3 sentence conclusion comparing prediction to result plus one named limitation. Extension groups additionally complete the “New Brooklyn Corner: What Would It Take?” handout for one real candidate corner they choose. Action/Materials: - Day 4 Experiment Design Sheet (attached) - Extension handout (attached) - Student devices running the app	The design sheet requires students to transfer the modeled process into their own investigation and preserves the order of sound inquiry: ask, control, predict, run, record, conclude, and qualify. Writing the prediction first and naming a limitation discourage result-driven claims. The extension applies the same evidence standard to a personally meaningful Brooklyn corner without pretending that an unverified candidate is ready for simulation, linking technical rigor with civic ownership.
5 min	Group Debrief & Reflection + Exit Ticket: 2 groups share their questions and results. Close with the Day 4 Exit Ticket.	Having groups state both their question and result allows classmates and the teacher to check whether the conclusion

	Action/Materials: - Day 4 Exit Ticket (attached)	follows from a fair test, not merely whether the run was completed. Differences among experiments preview the comparison and replication work of Day 5. The exit ticket captures individual understanding of variables, controls, and limitations and helps the teacher identify which students need support before presenting their findings.
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Lesson Assessments	
Follow-Up Assignment:	Bring your Experiment Design Sheet to Day 5 — it is the basis for your presentation.
Additional Accommodations for Students:	Partially pre-filled Experiment Design Sheet; groups of 3; extended time; teacher-provided starter question for students who freeze on step 1.
Methods of Assessment:	Experiment Design Sheet rubric (see Answer Key): exactly one IV changed, ≥4 controls listed including seed, prediction written before results, results accurately copied, conclusion compares prediction to result and names a limitation.

Day 5 of 5 — Presentations, Comparison, and Class Solutions

Teacher: Mr. RJ Calungsod	Date: _____
Class Type: AP Computer Science Principles/ Unit 3, Lesson 16 SIMULATIONS — “Smart Streets” (CS3) unit	Grade: 9–12 (written for APCSP Unit 3; scaffolds included for mixed levels)
Time Frame: 45 minutes (Day 5 of a 5-day / one-week unit)	

Lesson Overview	
Unit/ Overarching Focus of Lesson: Closing day of the Brooklyn Intersection Laboratory unit: students present their Day 4 experiments, compare results, and co-build one evidence-based class recommendation.	
Objectives/Aims: Students will demonstrate understanding/learning by being able to: (1) present their Day 4 experiment findings clearly with evidence; (2) compare their results to at least one classmate to identify patterns or disagreements across different parameter choices; (3) co-construct a class list of evidence-based mitigation recommendations for Bedford Avenue & Monroe Street.	
Aligned Standards: 1. CCSS.ELA-LITERACY.SL.9-10.4 (present findings/evidence clearly, with sound reasoning); 2. NGSS HS-ETS1-3; 3. ISTE 1.6 Creative Communicator; 4. ISTE 1.7 Global Collaborator.	
Key Vocabulary and Concepts: Evidence-based recommendation; trade-off; consensus; peer feedback; replication (getting a similar result with a different seed/parameters).	
Materials & Resources: Students’ Day 4 Experiment Design Sheets; presentation timer; chart paper or a shared doc for the class “Solutions Board”; peer-feedback slips; rubric.	
Safety Practices: Standard classroom presentation norms (respectful audience behavior).	
Differentiation Suggestions: 1. Offer presentation formats beyond standing-and-speaking (a short-recorded video, a poster walk, or small-group table talk) for students with presentation anxiety. 2. Provide a sentence-frame handout for peer feedback (“I noticed...”, “I wonder...”, “One question I have is...”).	
Cultural context: (within which the lesson will be grounded, and specific ideas/practices to be included in the lesson): Frame the closing “Class Solutions” list explicitly as a community recommendation memo — the same genre real NYC community boards and DOT public workshops produce. Discuss how young people’s data-based voice could actually be shared with real stakeholders (school administration, the local community board, elected officials), reinforcing that Bedford Avenue & Monroe Street is a real place in their own borough where this work could matter, not only an assignment.	
Prior Knowledge: Day 4 experiment results.	

Prior Lesson: Day 4 — Designing your own experiment.	Followup Lesson: None — unit closes; optionally connects to a civics/community-board follow-up unit.
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Lesson Overview/ Abstract:

Students present their individually designed experiments in short, structured talks, compare results against classmates who changed different variables or used different seeds, and the class synthesizes everything into one evidence-based memo of recommended mitigations for Bedford Avenue & Monroe Street — explicitly separating what the simulation showed from what remains uncertain, closing the loop on the week’s evidence-literacy theme.

Lesson Activities		
Time	Activities	Rationale
4 min	Do Now (Warm-Up + Debrief): “Re-read your Day 4 conclusion sentence. In one sentence, what is the strongest piece of evidence for your claim?” Quick pair-share, then debrief to prime students for presenting. Action/Materials: - Day 4 Experiment Design Sheets	Selecting the strongest piece of evidence forces students to move from a broad conclusion to a defensible claim-evidence relationship. The one-sentence limit promotes precision, while the pair-share serves as a low-risk rehearsal before public speaking. This opening also gives students time to notice weak or missing evidence in their Day 4 work and revise what they plan to emphasize during the presentation.
8 min	Mini-Lecture: Teacher models a ~90-second example presentation aloud, using the same real Day 4 exemplar (treatment as the IV, the 300.0 s / 300.0 s / 0.0 s blocked-sightline result): question → held constant → what changed → result → conclusion → one limitation. This shows the expected structure and length before students present. Action/Materials: - Projector	The teacher model removes ambiguity about both the structure and expected length of the presentation. Organizing the example as question, controls, change, result, conclusion, and limitation mirrors scientific communication and shows that a result is not complete without context. The 90-second format demonstrates how to be concise without omitting the experimental controls or overstating what one simulation run can prove.
8 min	CS3 Smart Streets Connection (“We do”): Two student volunteers present as a whole-class model round while the rest of the class fills out peer-feedback slips together, guided by the teacher — reinforcing the week’s evidence tags (simulated vs. prior literature vs. still uncertain) as they listen. Action/Materials: - Peer-feedback slips (attached)	The volunteer round creates a shared rehearsal in which the class can practice listening and giving feedback before working independently. Completing feedback together calibrates expectations and makes the rubric more equitable for students who are less familiar with academic presentation norms. Revisiting the evidence tags helps listeners separate simulated findings, prior research, and

		remaining uncertainty when evaluating a claim.
20 min	Hands-On (Independent Work): Small-group rotation (poster/table walk, 3–4 minutes per round): each student presents their 60–90 second findings to 2–3 different peer groups, collects one peer-feedback slip per round, and jots one similarity or difference noticed compared to a peer’s experiment. Action/Materials: - Day 5 presentation cue cards (attached) - Peer-feedback slips (attached) - Timer	Small-group rotations maximize the number of students who can speak and receive feedback within the available time while reducing the pressure of one long whole-class presentation. Repeating the explanation for several audiences strengthens students' command of their reasoning. The required comparison note shifts the task from isolated reporting to cross-experiment synthesis, helping students notice replication, disagreement, parameter effects, and trade-offs.
5 min	Group Debrief & Reflection + Exit Ticket: Whole class reconvenes; teacher facilitates building the “Class Solutions” board — students nominate mitigation ideas backed by cited evidence from the week (their own runs, Day 1 research, or the app’s own prior-literature card), and the teacher records disagreements too, not just consensus. Close with the Day 5 (whole-week) Exit Ticket. Action/Materials: - Chart paper / shared doc - Day 5 Exit Ticket (attached)	The final discussion synthesizes individual simulation runs with Day 1 research and the app’s qualified evidence into a public-facing recommendation, completing the unit’s movement from local observation to civic action. Recording disagreements prevents false consensus and keeps uncertainty visible. The whole-week exit ticket provides individual evidence of whether students can recommend a mitigation while distinguishing what the model showed from what still requires real-world study.

Lesson Assessments	
Follow-Up Assignment:	Optional: send the class’s “Solutions Board” memo to school administration or the local community board as a real piece of student civic work.
Additional Accommodations for Students:	Alternative presentation formats (recorded video, poster walk, small-group table talk); sentence-frame handout for peer feedback; extended rotation time.
Methods of Assessment:	Presentation rubric (below); quality/specificity of peer-feedback slips given; contribution to the Class Solutions board discussion.

Day 1 Worksheet — Reading the Corner: Vocabulary & NYC Data Trail

Name: _____ Partner: _____ Date: _____

Part A — Vocabulary Match

Draw a line (or write the matching letter) connecting each term to its definition.

Term	Your Definition (in your own words)
1. Daylighting	
2. Sight triangle (visibility triangle)	
3. Curb extension (neckdown)	
4. Sign-only daylighting	
5. Hardened daylighting	
6. Floating parking	
7. Vision Zero	
8. Verified / estimated / unknown	

Part B — Label the Corner

Read each description of a real curb approach. Label it **none / sign-only / hardened daylighting**, then justify your answer in one sentence.

(You will see these exact three configurations rendered in 3D on Day 3.)

Scene 1: A delivery van is parked with its back bumper right up against the crosswalk. There is no paint, sign, or object marking the corner. → _____

Why? _____

Scene 2: The curb near the corner is painted red/yellow, with a “No Parking — Standing Anytime” sign, but the space is empty pavement — nothing would stop a car from parking there if the driver ignored the sign. → _____

Why? _____

Scene 3: A raised planter box and two delineator posts sit in the curb-clear zone near the corner; a car physically cannot pull into that space. → _____

Why? _____

Part C — NYC Data Trail (guided research — cite your sources!)

Directions: For each question, write your answer, the exact source URL you used, and today's date. If you cannot verify something after a real search, write "unknown" and what you tried — that is a correct, full-credit answer in this class. We do not guess and call it a fact.

Question	Your Answer	Source URL	Retrieved (date)
Q1. Find NYC DOT's official daylighting-related project page. In your own words, what does DOT say daylighting is for?			
Q2. Name the NYC Open Data dataset (and its ID code) that records citywide reported traffic crashes.			
Q3. Locate NYC DOT's "Daylighting and Street Safety" report. What year was it published, and name one finding, in your own words (not copy-pasted)?			
Q4. Find Bedford Avenue & Monroe Street on a real map. What high school sits on the same block of Bedford Avenue?			

Part D — Reflection

1. Look back at your Do Now sketch. Which of today's three daylighting types (none / sign-only / hardened) would have most changed what you drew? Explain in 2–3 sentences.

Day 1 Worksheet — Answer Key

Name: _____ Partner: _____ Date: _____

Part A — Vocabulary Match (accept any accurate paraphrase)

1. Daylighting — removing visual obstructions (parked cars, clutter) near a crosswalk so drivers and pedestrians can see each other before crossing.
2. Sight triangle — the open area near a corner that a driver and a pedestrian both need clear to see each other in time to react.
3. Curb extension (neckdown) — a physical widening of the sidewalk into the parking lane near the corner; shortens crossing distance and tightens the turn.
4. Sign-only daylighting — paint and/or a regulatory sign mark a no-parking clear zone, with no physical object stopping a car from parking there anyway.
5. Hardened daylighting — a physical object (planter, granite block, delineator, bike rack, or curb extension) makes it physically impossible to park in the clear zone.
6. Floating parking — a parking lane placed between the curb and a protected bike lane, so the bike lane runs along the sidewalk side.
7. Vision Zero — NYC’s policy goal of eliminating traffic deaths and severe injuries.
8. Verified / estimated / unknown — the project’s own confidence-labeling system: verified = confirmed by a cited source; estimated = a reasoned guess where no source exists; unknown = honestly not yet confirmed.

Part B — Label the Corner

Scene 1 → No daylighting (parking reaches the corner; nothing marks or blocks the clear zone).

Scene 2 → Sign-only daylighting (the zone is legally marked with paint/signage only — nothing physical stops a violation).

Scene 3 → Hardened daylighting (a physical object makes parking there impossible, regardless of driver compliance). Accept any justification that correctly distinguishes “legal marking only” from “physically blocked.”

Part C — NYC Data Trail

These answers legitimately vary by retrieval date — do not mark an answer wrong solely because it differs from a memorized number. Grade whether the student’s citation actually supports their claim (real URL, correct domain, accurate paraphrase, today’s date recorded).

Suggested starting points if students get stuck: Q1 — nyc.gov/html/dot/html/about/current-projects.shtml; DOT frames daylighting as improving sightlines between drivers and pedestrians at intersections. Q2 — NYC Open Data, “Motor Vehicle Collisions — Crashes,” ID h9gi-nx95. Q3 — “Daylighting and Street Safety: An Analysis,” NYC DOT, January 2025 (nyc.gov/html/dot/downloads/pdf/daylighting-and-street-safety.pdf); accept any accurate, in-their-own-words finding the student actually located in the PDF. Q4 — Bedford Academy High School, 1119 Bedford Avenue (schools.nyc.gov/Schools/K595).

Part D — Reflection

Open-ended; grade for completion and a clear connection back to the Do Now sketch, not for a “correct” answer.

Day 1 Exit Ticket (2–3 minutes)

Name: _____

Date: _____

1. In one sentence, what is the difference between sign-only and hardened daylighting?

2. Name one real NYC data source you used today and one thing you learned from it.

Day 2 Worksheet - Prompting Responsibly: My First Conversation with AI

Name: _____ Partner: _____ Date: _____

Part A — The 3 Rules (fill in the blank)

1. _____ anything factual against a real source before using it.
2. _____ when and how you used AI in your own work.
3. Never share your or anyone else's _____ in a chat.

Part B — Prompt 1

Write a prompt asking Claude to explain daylighting or street safety for a specific audience (example: "Explain daylighting at intersections to a 5th grader"). Record your prompt and a short summary of the response IN YOUR OWN WORDS (do not paste the whole response).

My prompt:

Part C — Prompt 2

Write a second, different prompt related to daylighting/street safety. Record your prompt and a short summary of the response in your own words.

My prompt:

Part D — Verify One Claim

Pick ONE factual claim from either response above. Check it against a real outside source (Day 1's list is a good place to start). Circle one: VERIFIED / CONTRADICTED / UNABLE TO VERIFY.

Claim:

Source I checked it against (URL): _____

Part E — My AI-Use Disclosure Statement

Write 2 sentences describing how (if at all) you used AI to help with your Day 4–5 project. Attach this to that project later this week.

Day 2 Worksheet — Answer Key

Name: _____ Partner: _____ Date: _____

Part A — The 3 Rules

1. Verify 2. Disclose 3. Personal information (name, address, photo, family details, etc.)

Parts B–E — Process-graded

There is no single “correct” Claude response to grade against. Give full credit when: the prompt is clear and on-topic; the response is genuinely summarized in the student’s own words (not pasted verbatim); the verification step (Part D) names a real external source and reaches a clear, honest verdict — “contradicted” or “unable to verify” deserve exactly as much credit as “verified,” since the point is the process, not getting a “yes.” Part E should be specific enough to actually describe what the student did (or plans to do) with AI assistance, not a generic sentence.

Day 2 Exit Ticket (2–3 minutes)

Name: _____ Date: _____

1. What is one thing Claude might get wrong, and how would you check it?

2. Why might this project's own website choose to generate its official report using fixed templates and math instead of asking an AI to write it?

RESPONSIBLE AI USE AGREEMENT

Schoolwide Draft | 2026-2027 School Year

"Academic Empowerment is the Birthright of Every Child"

Student name: _____	Grade: _____ Advisory: _____
Teacher / adviser: _____	Course / program: _____

PURPOSE

Bedford Academy uses artificial intelligence to strengthen learning, creativity, and problem-solving - not to replace a student's thinking. This agreement applies to generative AI and AI-enabled tools used for schoolwork. The teacher's directions for each assignment control.

1. The Four Assignment AI Levels

Teachers will identify the level allowed for an assignment. If no level is stated, ask before using AI-generated material in work you will submit. Personal study use must still follow privacy, safety, age, and school-tool rules.

LEVEL	WHAT THE LEVEL MEANS
AI-0 INDEPENDENT	No generative AI for planning, solving, writing, coding, translating, or revising. Complete the work independently. Teacher-authorized IEP, Section 504, ENL/MLL, and accessibility supports remain available.
AI-1 COACH	AI may explain a concept, create practice questions, brainstorm possibilities, or give feedback. AI-generated text, code, images, calculations, or answers may not appear in the submitted work.
AI-2 ASSISTANT	The teacher permits specific help such as outlining, revising, debugging, translation, image creation, or data analysis. Use only the permitted functions; verify, revise, and disclose the assistance.
AI-3 INTEGRATED	AI is intentionally part of the task. Document the tool, prompts, relevant outputs, verification, revisions, limitations, and bias analysis. Be ready to explain every final choice.

2. The Panther Standard: Think - Check - Own - Disclose - Protect

Think first. Make an honest initial attempt and use AI only within the assigned level.

Check everything. Verify facts, mathematics, code, quotations, citations, and images with credible sources or direct testing. AI output is not evidence.

Own the final work. Revise in your own judgment and be able to explain or reproduce the reasoning, process, and result.

Disclose honestly. Name permitted AI assistance using the statement on page 2 and keep drafts, prompts, outputs, notes, and version history if requested.

Protect people and data. Use approved tools responsibly; respect privacy, copyright, dignity, and the work of classmates and staff.

3. What Responsible Use Looks Like

ALWAYS	NOT PERMITTED
• Follow the teacher's AI level and the exact limits given. • Use only school/teacher-authorized tools and accounts; obey age requirements. • Review output for errors, stereotypes, missing perspectives, and unsafe advice. • Cite the real sources used to verify claims, then disclose AI assistance separately. • Ask before using AI when the instructions are unclear.	• Use AI on tests, quizzes, in-class writing, or AI-O work unless specifically authorized. • Submit AI output, a lightly paraphrased version, or another person's work as your own. • Invent or hide sources, quotations, data, experiments, reading, calculations, or code tests. • Use AI to impersonate, harass, discriminate, create deceptive media, or bypass school controls. • Upload private school material, assessment items, or another person's work without permission.

4. Privacy and Safety Are Non-Negotiable

Never enter personally identifiable information (PII) into an AI tool that has not completed NYCPS privacy review (ERMA). PII includes OSIS numbers, birth dates, addresses, phone numbers, passwords, grades/attendance, IEP/504, medical or discipline records, private messages, photos, voice recordings, or identifying information about others. Use a school-managed account when directed.

5. Required AI-Use Statement

Use this statement whenever AI assistance is permitted:

*"I used _____ on _____ to _____.
My prompts focused on _____. I verified the
output using _____ and revised
_____."*

If no AI was used, write: "I did not use generative AI for this assignment."

6. Review, Accountability, and Fair Process

Concerns will be reviewed using multiple forms of evidence: the student's explanation, drafts/version history, notes, sources, prompts, and ability to demonstrate the work. Automated AI-detection results are not conclusive by themselves. Responses follow existing grading, academic-integrity, and disciplinary policies and may include reteaching/revision, a grading consequence, family contact, or referral for repeated or serious misconduct. Authorized accommodations and student rights remain in effect.

7. Student and Family Acknowledgment

We have read and discussed this agreement. The student agrees to follow assignment directions, protect privacy, disclose permitted AI assistance, and accept responsibility for submitted work. Signing does not grant unrestricted AI use.

Student signature: _____	Date: _____
Parent/guardian signature: _____	Date: _____
Teacher/adviser signature: _____	Date: _____

School approval before schoolwide distribution:

Effective date _____

Approved/reviewed by _____

Next review _____

Policy alignment: NYCPS Guidance on Artificial Intelligence; NYCPS Internet Acceptable Use and Safety Policy; Chancellor's Regulation A-820; New York Education Law §2-d; FERPA. Current NYCPS policy controls if guidance changes or conflicts. [NYCPS AI Guidance](#)

Day 3 Worksheet - First Look: Running the Simulation

Name: _____ Partner: _____ Date: _____

Part A - Label the Interface

Match each real control to what it does. Write the letter of the correct description next to each control.

Word bank: (a) Switches between none / sign-only / hardened on the SAME geometry. (b) Chooses which of the 4 planter/granite/curb-extension/bike-rack designs is used for “hardened.” (c) Switches between Isometric, Overhead plan, Driver-eye, and Pedestrian-eye viewpoints. (d) Shows live numbers: vehicles/pedestrians on scene, conflicts, min. TTC, min. PET, yielding events, blocked-sightline time. (e) Explains, in plain text, exactly what geometry/behavior changed after you switched treatments. (f) Only lists “Bedford Avenue & Monroe Street” today — the other 20 Brooklyn corners are still an unverified research queue.

Control	Letter
1. Brooklyn intersection selector	
2. Daylighting treatment dropdown	
3. Hardened subtype dropdown	
4. Camera-preset buttons	
5. Metrics readout	
6. “What changed?” panel	

Part B — Guided Treatment Comparison (fixed seed 20260724, default sliders)

For each treatment, write one thing that changed at the corner and record the blocked-sightline time you observe.

Treatment	What’s in/near the sight triangle?	Blocked-sightline time
No daylighting		
Sign-only		
Hardened		

Part C — Camera Exploration

For each camera preset, write one thing that view shows best that the others don’t.

Camera preset	What this view shows best
Isometric	
Overhead plan	
Driver-eye	

Pedestrian-eye	
----------------	--

Part D — Evidence Drawer

Scroll to “Every source used to reconstruct this intersection.” Record 2 cards.

Source card title	What it tells you	Retrieved date

Part E — Run Comparison

Click “Run comparison” and copy the resulting table below (Vehicle trips, Conflicts, Min. TTC, Min. PET, Yielding events, Blocked-sightline time, Max queue).

Treatment	Trips	Conflicts	Min TTC	Min PET	Yield	Blocked-sightline	Max queue
No daylighting							
Sign-only							
Hardened							

Part F — Reflection

1. Which single change made the biggest difference in blocked-sightline time? Why, physically?
2. The “Assume no-parking compliance (sign-only)” checkbox starts unchecked. Based on your Part E table, what does that suggest about sign-only daylighting when drivers do NOT actually obey the sign?

Day 3 Worksheet - Answer Key

Name: _____ Partner: _____ Date: _____

Part A — Label the Interface

1 → f 2 → a 3 → b 4 → c 5 → d 6 → e

Part B — Guided Treatment Comparison

Expected pattern (a reference run at seed 20260724, default sliders, compliance box left unchecked, captured while preparing this unit, gave exactly this): No daylighting — a parked vehicle occupies the sight triangle; blocked-sightline time 300.0 s (blocked the entire run). Sign-only — paint/sign only, no physical barrier; blocked-sightline time also 300.0 s, IDENTICAL to no daylighting, because the compliance checkbox was left unchecked. Hardened — a planter + delineators physically occupy the zone; blocked-sightline time 0.0 s. Grade students on matching this PATTERN from their own run, not on reproducing these exact digits — a different seed or slider setting will shift the numbers.

Part C — Camera Exploration

Isometric — the overall 3-D layout and sense of scale. Overhead plan — the true lane geometry, crosswalk positions, and the bike lane, seen from directly above. Driver-eye — exactly what an approaching driver can and cannot see near the corner. Pedestrian-eye — exactly what someone waiting to cross can and cannot see of oncoming traffic. Accept reasonable equivalent phrasing.

Part D — Evidence Drawer

Any 2 of the app's real sourced cards are acceptable, e.g.: "Bedford OSM Way" (one-way, lanes = 2, cycleway:left = track — buffered, parking-protected); "B44 SBS Stop" (Stop 801163, Bedford Av/Gates Av); "Curb Regulations" (NYC Open Data query for the Bedford Ave and Gates Ave blocks); "Bedford Academy HS" (1119 Bedford Ave). Grade for whether the student accurately copied a real card, not for which card.

Part E — Run Comparison

Reference run (seed 20260724, default sliders, compliance box unchecked, 5 simulated minutes/treatment): No daylighting — 43 trips, 4 conflicts, 1.92 s min TTC, 0.45 s min PET, 9 yielding events, 300.0 s blocked-sightline, max queue 7. Sign-only — same as above except identical 300.0 s blocked-sightline (unchanged from "none"). Hardened — same trips/conflicts/TTC/PET/yielding/queue, but blocked-sightline 0.0 s. Students' own runs may differ slightly (this is a real simulation output, not a fixed answer key number) — grade the pattern: hardened should always drive blocked-sightline toward 0; sign-only alone should not, unless the compliance box is checked.

Part F — Reflection

1. Switching to hardened daylighting made the biggest difference, because it is the only treatment that physically prevents a vehicle from occupying the sight triangle — sign-only only asks nicely.
2. It suggests that paint and signage alone do not guarantee compliance: without assuming drivers obey the sign, sign-only daylighting performed no differently from no daylighting at all in this metric. This is a real, non-obvious finding straight from the simulation — not something we told the app to show.

Day 3 Exit Ticket (2 - 3 minutes)

Name: _____

Date: _____

1. Name one metric the app measures and explain in your own words what it tells you.

2. True or False, and explain: "The app is claiming that a van was definitely parked at this exact spot in real life."

Day 4 Worksheet — Experiment Design Sheet

Name: _____ Partner: _____ Date: _____

1. Research Question

What are you testing? Write it as a question.

2. Independent Variable

The ONE thing you will change between runs:

3. Controlled Variables (list at least 4 — including the seed)

4. Prediction (write this BEFORE you run anything)

5. Run 1 Results

Vehicles/peds	Conflicts	Min TTC	Min PET	Yielding	Blocked-sightline	Max queue

6. Run 2 Results (optional, if time allows)

Vehicles/peds	Conflicts	Min TTC	Min PET	Yielding	Blocked-sightline	Max queue

7. Conclusion (2–3 sentences: was your prediction supported? What is one limitation of this experiment?)

Day 4 Extension — New Brooklyn Corner: What Would It Take?

For groups ready for an extra challenge. Choose one real candidate corner below — these are genuinely queued in this project's own data/intersection-candidates.json, waiting on independent verification before they can be added to the app.

Name: _____ Partner: _____ Date: _____

Candidate corners to choose from (all real, from the project's own research queue):

- Ocean Avenue & Church Avenue
- Broadway & Monroe Street
- Atlantic Avenue & Bedford Avenue
- Lexington Avenue & Marcy Avenue
- Kingston Avenue & Empire Boulevard
- Brooklyn Avenue & Empire Boulevard
- Avenue J & Bedford Avenue

My chosen corner

What is currently UNKNOWN about this corner? (Think about the same categories Bedford & Gates needed — see the Evidence Drawer you explored on Day 3: legal lane directions and count, crosswalk/signal locations, bike-lane presence, curb/parking rules, any daylighting already there.) List at least 3.

3 real data sources you would check to move this corner from “unknown” to “verified”

One prediction: what daylighting treatment might help there, and why?

Day 4 Worksheet — Answer Key / Rubric

Name: _____ Partner: _____ Date: _____

Experiment Design Sheet — process-graded, no single correct answer

Full credit requires: (1) the question names exactly one thing being tested; (2) exactly ONE independent variable is identified; (3) at least 4 controlled variables are listed and the random seed is explicitly one of them; (4) the prediction is written in a way that shows it came before the results (not edited after); (5) Run 1 results are copied accurately from the student's own on-screen run — these will legitimately differ between students/groups and that is expected, not an error; (6) the conclusion explicitly compares the prediction to the actual result AND names at least one real limitation (e.g., “this was only one run at one seed,” or “we didn’t test repetitions, so we don’t know if this result would hold up”).

Modeled example from the Mini-Lecture (for reference, not to be copied): IV = treatment; controls = seed 20260724, 450 veh/h, 280 ped/h, 20 mph, 0 s LPI, compliance unchecked; result = blocked-sightline 300.0 s (none), 300.0 s (sign-only), 0.0 s (hardened), all other columns identical across treatments; conclusion = prediction partly supported — hardened clearly wins, but sign-only did not fall in between as hoped, because compliance was not assumed; limitation = single run, one seed, no repetitions yet.

Extension handout — process-graded

Full credit requires 3 genuinely distinct unknowns (not 3 rewordings of the same fact), 3 real, checkable data sources (NYC Open Data, OpenStreetMap/Overpass, MTA Bus Time, NYC DOT project pages, or the NYC Digital City Map all count), and a prediction that names a specific daylighting type and gives a reason connected to the unknowns listed above.

Day 4 Exit Ticket (2–3 minutes)

Name: _____

Date: _____

1. What is one variable you changed, and one variable you kept the same, in your experiment?

2. Why does keeping the seed the same matter for a fair comparison?

Day 5 Worksheet — Presentation Cue Card & Peer Feedback

Name: _____ Partner: _____ Date: _____

My Presentation Cue Card

Question: _____

Held constant: _____

What I changed: _____

Result: _____

Conclusion: _____

One limitation: _____

Peer Feedback Slip #1

Presenter's name: _____

I noticed... _____

I wonder... _____

One question I have is... _____

Peer Feedback Slip #2

Presenter's name: _____

I noticed... _____

I wonder... _____

One question I have is... _____

Peer Feedback Slip #3

Presenter's name: _____

I noticed... _____

I wonder... _____

One question I have is... _____

Class Solutions Board (fill in as a class)

Proposed mitigation	Evidence it's based on (whose run / which source)	Confidence: simulated / prior literature / still uncertain

Day 5 — Presentation Rubric (no single answer key; use to score presentations)

Name: _____ Partner: _____ Date: _____

Criterion	Exceeds	Meets	Approaching	Beginning
Clarity of question & method				
Use of evidence				
Peer engagement				
Reflection / limitations named				

Day 5 Exit Ticket (2–3 minutes)

Name: _____ Date: _____

1. What is one thing you would tell a City Council member about daylighting at Bedford Avenue & Monroe Street, based on evidence — not opinion — from this week?

2. What is one question you still have that this simulation could NOT answer?

Bibliography

1. Claude (Anthropic), used only through the school's supervised/approved account — <https://claude.ai>
2. NYC DOT, "Daylighting and Street Safety: An Analysis," January 2025 — <https://www.nyc.gov/html/dot/downloads/pdf/daylighting-and-street-safety.pdf>
3. NYC Open Data, "Motor Vehicle Collisions — Crashes" (dataset h9gi-nx95) — <https://data.cityofnewyork.us/Public-Safety/Motor-Vehicle-Collisions-Crashes/h9gi-nx95>
4. Anthropic's usage policies (verify current link before class) — <https://www.anthropic.com>
5. This project's own COMPLIANCE_MATRIX.md and AUDIT_AND_REBUILD_PLAN.md — evidence-tracking documents linked from the app's "This is an in-progress rebuild" banner.
6. NYC DOT current/ongoing street projects — <https://www.nyc.gov/html/dot/html/about/current-projects.shtml>
7. NYC DOT, "Daylighting and Street Safety: An Analysis," January 2025 — <https://www.nyc.gov/html/dot/downloads/pdf/daylighting-and-street-safety.pdf>
8. NYC Open Data, "Motor Vehicle Collisions — Crashes" (dataset h9gi-nx95) — <https://data.cityofnewyork.us/Public-Safety/Motor-Vehicle-Collisions-Crashes/h9gi-nx95>
9. NYC Public Schools — Bedford Academy High School (K595), 1119 Bedford Avenue — <https://www.schools.nyc.gov/Schools/K595>
10. NACTO Urban Street Design Guide (daylighting / curb extension reference diagrams) — <https://nacto.org/publication/urban-street-design-guide/>
11. NYC Digital City Map (official street lines/names) — <https://www.nyc.gov/content/planning/pages/resources/datasets/digital-city-map>
12. The simulation itself: index.html, run locally with `python3 -m http.server 8000` then <http://localhost:8000> (see README.md — no install/build/account needed).
13. OpenStreetMap — <https://www.openstreetmap.org> (map data © OpenStreetMap contributors, ODbL 1.0)
14. MTA Bus Time (B44/B44-SBS, B52 stops and routes) — <https://bustime.mta.info/>
15. NYC DOT, "Daylighting and Street Safety: An Analysis," January 2025 — <https://www.nyc.gov/html/dot/downloads/pdf/daylighting-and-street-safety.pdf>
16. NYC DOT, Bedford Avenue protected bicycle lane announcement (2024) — <https://www.nyc.gov/html/dot/html/pr2024/construction-bedford-bicycle-lane.shtml>
17. This project's own COMPLIANCE_MATRIX.md and AUDIT_AND_REBUILD_PLAN.md — evidence-tracking documents linked from the app's "This is an in-progress rebuild" banner.
18. The simulation itself: index.html, run locally with `python3 -m http.server 8000` then <http://localhost:8000> (see README.md — no install/build/account needed).
19. NYC DOT, "Daylighting and Street Safety: An Analysis," January 2025 — <https://www.nyc.gov/html/dot/downloads/pdf/daylighting-and-street-safety.pdf>
20. This project's own COMPLIANCE_MATRIX.md and AUDIT_AND_REBUILD_PLAN.md — evidence-tracking documents linked from the app's "This is an in-progress rebuild" banner.
21. NYC Open Data, "Motor Vehicle Collisions — Crashes" (dataset h9gi-nx95) — <https://data.cityofnewyork.us/Public-Safety/Motor-Vehicle-Collisions-Crashes/h9gi-nx95>