URBAN SEEDS LEARNING

Family Program Guide

Architecture & Design Education for Curious Kids

TK — High School | Virtual & In-Person | Whittier, CA

Welcome to Urban Seeds Learning

Urban Seeds Learning is an architecture and urban design education company for curious kids from TK through high school. We believe that every child who has ever looked at a building and wondered why it looks the way it does — who built it, and what it means — deserves an education that takes that question seriously.

Our programs are built around a simple idea:

See your city. Love your city. Change your city.

We teach children to observe, understand, and imagine the built world around them — through hands-on building projects, observational drawing, urban exploration, and real design challenges. Architecture is not just for architects. It belongs to every kid.

What Makes Urban Seeds Different

- Curriculum designed specifically for architecture and urban design — nothing generic
- Every grade band has a complete 34-week curriculum with real projects and capstone presentations
- Field trips twice each year — local destinations chosen for each grade level
- Virtual and in-person options so families anywhere can participate
- Small groups — intentional, focused learning
- Instructors with backgrounds in education, architecture, and design

Our Programs

Virtual Programs

All virtual programs are taught live over Zoom in small groups. Students interact with instructors in real time, complete hands-on projects at home, and share their work with classmates.

Intro Classes — One-Time Sessions

Perfect for families new to Urban Seeds. A single 45-minute class introducing architecture and design through age-appropriate activities. No commitment required — just show up and build.

Weekly Groups — Ongoing Enrichment

Students meet once per week for ongoing instruction. Groups follow the 34-week curriculum and build skills progressively throughout the year. Families can join at any point in the year.

Virtual Camps — Multi-Day Deep Dives

Themed camps run over multiple consecutive days during school breaks. Each camp is a focused experience with a final project or presentation.

TK–2 Circle Time

Three days per week, students join a short read-aloud and hands-on activity session featuring architecture and design picture books. Exclusively available through urbanseedslearning.com — not on Outschool.

Elementary Book Club

Once per week, students in grades 1–5 explore architecture and urban design through literature — picture books, nonfiction, and illustrated stories. Exclusively available through urbanseedslearning.com.

In-Person Programs (Launching Summer 2027)

- Summer Camps — 5-day camps, 8am–1pm, themed by grade band
- Friday Build Club — Free weekly drop-in build challenge, currently at Sorensen Park in Whittier
- Seasonal Events — Chipboard painting days, pumpkin painting, beach design days, and more

Pricing

Book directly through urbanseedslearning.com for slightly lower pricing on most programs. Outschool is a great place to discover Urban Seeds if you're new to us.

PROGRAM	OUTSCHOOL	BOOK DIRECT (urbanseedslearning.com)
Intro Class (one-time, 45 min)	$15/student	$15/student
Weekly Group (1x/week, ongoing)	$25/student/session	$20–22/student/session
TK–2 Circle Time (3x/week)	Not available	$10/session
Elementary Book Club (1x/week)	Not available	$12/session
TK–2 Virtual Camp (3 days, 30 min/day)	$45/student	$40/student
3–5 Virtual Camp (4 days, 45 min/day)	$55/student	$50/student
MS Architecture Camp (5 days, 55 min/day)	$75/student	$70/student
MS Cardboard Build Camp (5 days, 55 min/day)	$80/student	$75/student

Activity kits and course kits available separately — see urbanseedslearning.com/kits for current pricing.

Field Trips

Every grade band takes two local field trips each year — one in Semester 1 (around Week 7) and one in Semester 2 (around Week 24). Field trips are built directly into the curriculum and connect to what students are studying in that unit.

GRADE BAND	SEMESTER 1 FIELD TRIP (Week 7)	SEMESTER 2 FIELD TRIP (Week 24)
TK–2nd GradeLittle Architects	Local fire station, library, or city hallKids sketch the building and meet the helpers inside	Local botanical garden, nature center, or community gardenKids observe how nature and buildings coexist
3rd–5th GradeYoung Architects	Pasadena City Hall or local civic buildingStudents analyze how architecture communicates power	Descanso Gardens or LA ArboretumStudents document environmental systems in a designed landscape
Middle SchoolUrban Thinkers	Pasadena City Hall + Old Town PasadenaStudents analyze civic architecture and how design communicates power	Descanso Gardens + LA Arboretum or Huntington Library GardensStudents document environmental systems in designed landscapes
High SchoolDesign Studio	Downtown LA — City Hall, Grand Central Market, Pershing Square, Grand ParkPhotographic and analytical documentation	Hollyhock House, Griffith Observatory, or Lovell Health HouseStudents study landmark architecture and climate-resilient design

Field trips are included in program enrollment. Transportation is the responsibility of each family. Full trip details including address, parking, and packing lists are sent in advance.

TK–2nd Grade | Little Architects

About This Program

Little Architects is our TK–2nd grade program — designed for the youngest curious builders in your family. Students explore their neighborhoods, learn to see buildings as more than background, and start asking the questions that architects ask: Why does this look the way it does? Who made it? What does it mean?

Everything in this program is hands-on, age-appropriate, and joyful. We draw, build, sculpt, and explore. Students complete two major capstone projects across the year — a Neighborhood Map in Semester 1 and a City Improvement Proposal in Semester 2 — and share their work with families at an end-of-semester celebration.

URBAN SEEDS LEARNING — TK–2nd Grade

Year 1: Our World & Our City | 34-Week Curriculum Timeline | All Subjects

English & Math — Blue • History — Amber • Science — Teal • Photo/Draw Prompt — Purple • ★ Field Trip / Capstone

WK	UNIT / THEME	ENGLISH	MATH	HISTORY	SCIENCE	PHOTO / DRAW PROMPT	MINI PROJECT / JOURNAL
UNIT 1 — What Is My Neighborhood? | Weeks 1–4 | Theme: What makes a neighborhood?							
1	Unit 1 What Is My Neighborhood?	▸ Concept: What is a neighborhood? Read-aloud: The Little House Writing: draw and label your home Vocabulary: neighborhood, home, family, street	▸ Concept: Counting in context Count homes on a photograph Activity: count windows and doors in classroom	▸ Concept: Where we live — communities Discussion: what is a community? Activity: draw your community on a map	▸ Concept: Observe the built world Scientific observation — use your senses Activity: describe your classroom using 5 senses	LOOK: Stand outside. Draw what you see in your neighborhood. REFLECT: What do you notice?	Journal: draw your home and the homes around it. Label 3 things you see.
2	Unit 1 What Is My Neighborhood?	▸ Skill: Storytelling Read-aloud: A House Is a House for Me Writing: what makes YOUR house a home? Letter focus: H (home), S (street)	▸ Skill: Number sense 1–10 Count neighborhood features in photos Activity: more/fewer — compare two photographs	▸ Content: Types of homes around the world Match home type to country on simple map Discussion: why do homes look different?	▸ Content: Materials in my home Identify wood, brick, glass, concrete Activity: sort building material samples by feel	LOOK: Find something in your neighborhood that tells you someone cares for it — a garden, a painted door, a clean step. REFLECT: How does it make you feel?	Mini project begins: My Neighborhood Book — 1 page per week through Unit 1
3	Unit 1 What Is My Neighborhood?	▸ Skill: Describing words Read-aloud: Last Stop on Market Street Writing: describe your street using 3 describing words Vocabulary: cozy, busy, quiet, colorful	▸ Skill: Shapes in buildings Identify circles, squares, triangles, rectangles in photos Activity: draw a house using only shapes	▸ Content: What is a community helper? Match helper to building — fire station, school, library Activity: draw your favorite community helper	▸ Content: Living things in my neighborhood Plants, birds, insects near your home Activity: draw one plant and one animal you see outside	LOOK: Find a community helper's building in your neighborhood. Draw it. REFLECT: Who uses this building and why?	Journal entry: draw and label 3 community helpers. Which building does each one work in?
4	Unit 1 What Is My Neighborhood?	▸ Skill: Beginning, middle, end Retell The Little House in 3 sentences Writing: My Neighborhood Story — beginning, middle, end	▸ Skill: Counting to 20 My Neighborhood Number Book — one numeral per page shown as a building feature Count features in a neighborhood photograph	▸ Content: Then and now Compare a neighborhood photo from long ago to today Discussion: what changed? What stayed the same?	▸ Content: What do buildings need? Foundation, walls, roof — functions of each Activity: build a simple structure from blocks and test it	LOOK: Find something old in your neighborhood — a building, a tree, a sign. Draw it. REFLECT: How long do you think it has been here?	My Neighborhood Book due — 4 illustrated pages. Share with a partner.
UNIT 2 — Who Takes Care of Our City? | Weeks 5–8 | Theme: How do people help each other in a city?							
5	Unit 2 Who Takes Care Of Our City?	▸ Concept: Community helpers and their spaces Read-aloud: Whose Tools Are These? Writing: who helps in my city? Draw and label Vocabulary: builder, helper, tool, repair	▸ Concept: Introduction to measurement Measure objects using nonstandard units (blocks, hands) Activity: measure the classroom door 3 ways	▸ Concept: Civic spaces Library, fire station, school, park, city hall Activity: match civic building to its purpose	▸ Concept: Shelter science How does a roof protect us? Activity: test which material keeps a paper doll dry	LOOK: Find a building in your neighborhood that helps the community. Draw it. REFLECT: Who works inside and what do they do?	Journal: sketch a building that helps your community. Label what it does and who goes there.

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6	Unit 2 Who Takes Care Of Our City?	▸ Skill: Labels and captions Read-aloud: Iggy Peck Architect Writing: label a diagram of a school building Vocabulary: entrance, hallway, classroom, office	▸ Skill: Measuring length Measure classroom objects using a ruler Activity: measure 5 things in your home — record in a table	▸ Content: Who built your city? Construction workers, architects, engineers Discussion: what would happen if no one maintained our city?	▸ Content: Strong shapes in buildings Why triangles are strong — simple test Activity: build a square frame and triangle frame from sticks. Push on each.	LOOK: Find someone doing work in your neighborhood — repairing, building, cleaning, planting. Draw what you see. REFLECT: What would your neighborhood look like without this work?	Mini project: Community Helper Map — draw your neighborhood and mark where 4 helpers work
7	Unit 2 Who Takes Care Of Our City?	▸ Skill: Writing instructions Read-aloud: How a House Is Built Writing: write 3 steps for building something Vocabulary: first, next, then, finally	▸ Skill: Data collection Survey: what is your favorite community building? Activity: make a picture graph of class results	▸ Content: Civic responsibility Voting, rules, taking care of shared spaces Socratic: what rules make a neighborhood work?	▸ Content: Urban ecology — who else lives in our city? Birds, squirrels, insects in the built environment Activity: count living things in one outdoor observation	LOOK: Find something in your neighborhood that needs to be fixed or improved. Draw it. REFLECT: Who should fix it and how would you ask them to?	★ FIELD TRIP WEEK — local fire station, library, or city hall. Draw prompt: NOTICE / COLLECT / FEEL
8	Unit 2 Who Takes Care Of Our City?	▸ Skill: Thank-you writing Write a thank-you letter to a community helper Share letters aloud Vocabulary: appreciate, important, community	▸ Skill: Graph reading Read and interpret picture graphs Activity: answer questions about class survey results	▸ Content: Monuments and memorials How cities remember people Discussion: who should be remembered in a city? Who decides?	▸ Content: Simple machines in buildings Ramps, pulleys, levers — how builders use them Activity: identify simple machines in school building	LOOK: Find something in your neighborhood that honors or remembers someone. Draw it. REFLECT: Who is being remembered and why?	Unit 2 reflection: draw your favorite community helper at work. Write 2 sentences about why their job matters.
UNIT 3 — Working & Making in Our City | Weeks 9–12 | Theme: How do people work together to make things happen?							
9	Unit 3 Working & Making	▸ Concept: Goods and services Read-aloud: Market Day Writing: what does your family buy? Where? Vocabulary: buy, sell, market, store, trade	▸ Concept: Counting money Intro to coins — penny, nickel, dime, quarter Activity: price items at a pretend market	▸ Concept: Long ago — how people traded Barter systems before money Activity: classroom barter activity — trade objects	▸ Concept: Where does food come from? Farm to table — simple food system Activity: plant a seed in a cup — observe over 4 weeks	LOOK: Find a place where people buy or sell things in your neighborhood. Draw it. REFLECT: What do they sell? Who comes here?	Journal: draw your neighborhood market or store. Label 5 things you could buy there.
10	Unit 3 Working & Making	▸ Skill: Informational writing Read non-fiction: how bread is made Writing: how is something made? Pick an object and explain Vocabulary: materials, steps, workers	▸ Skill: Adding and subtracting to 20 Shopping math — how much does it cost? Activity: add up items in a pretend shopping trip	▸ Content: Farming communities How farms became towns and towns became cities Primary source: photograph of a farm town Discussion: why did people move to cities?	▸ Content: Plants need to grow Sunlight, water, soil — observe seed cups Lab: compare two cups — one with light, one without	LOOK: Find a building in your neighborhood that used to be something different — a store that became apartments, a factory that became a restaurant. Draw it. REFLECT: What changed?	Mini project: How It's Made — pick one object (bread, a pencil, a t-shirt) and draw each step of how it's made
11	Unit 3 Working & Making	▸ Skill: Sequence writing Write the steps to make your favorite food Vocabulary: first, next, then, after that, finally	▸ Skill: Word problems Money math in context — buying, selling, making change Activity: run a class store — buy and sell items	▸ Content: Factories and workers What is a factory? What do workers do? Discussion: is it fair that some people do hard work for little pay?	▸ Content: Light and plants Why do plants grow toward the light? Lab: measure and record seed cup growth — make a simple bar graph	LOOK: Find an empty store or building in your neighborhood. Draw it. REFLECT: What do you think it used to be? What would you put there?	Journal: if you ran a store in your neighborhood, what would you sell and why would people need it?

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12	Unit 3 Working & Making	▸ Skill: Opinion writing Writing: what business does your neighborhood need most? Share and discuss — class vote	▸ Skill: Bar graphs Survey class: what business should go in the empty store? Make a bar graph of results	▸ Content: Workers and fairness Simple intro to labor rights — everyone deserves safe work Socratic: should everyone be paid the same?	▸ Content: Soil and roots How roots anchor a plant and take in water Lab: carefully pull up a plant and observe the root system	LOOK: Photograph or draw the main street near your home. Try to capture the whole picture — busy and quiet. REFLECT: What does this street tell you about who lives nearby?	Unit 3 reflection: draw the business you would open in your neighborhood. Write 3 sentences about why it would help people.
UNIT 4 — How Things Get to Us | Weeks 13–16 | Theme: How does our city work behind the scenes?							
13	Unit 4 How Things Get to Us	▸ Concept: Hidden systems Read-aloud: Water Is Water Writing: where does our water come from? Draw the journey Vocabulary: pipe, pump, reservoir, system	▸ Concept: Measurement — length and distance Measure distances on a simple classroom map Activity: how far is the water fountain from your desk?	▸ Concept: Ancient aqueducts How Rome brought water to cities Activity: trace a water route on a simple map	▸ Concept: States of matter — water Solid, liquid, gas in the water cycle Lab: observe ice melting — where does the water go?	LOOK: Find water infrastructure in your neighborhood — a pipe, a fire hydrant, a drain, a water tower. Draw it. REFLECT: Where does the water come from and where does it go?	Journal: trace the journey of water from a cloud to your glass. Draw each step.
14	Unit 4 How Things Get to Us	▸ Skill: Procedural text Read: how electricity gets to your home (simple version) Writing: explain one home system to a younger child	▸ Skill: Reading maps and grids Simple neighborhood map — identify locations using coordinates Activity: treasure map — find locations using a grid	▸ Content: Roads and travel How roads connect cities — then and now Primary source: historical photograph of a road being built	▸ Content: Electrical circuits — very simple Intro: what makes a light turn on? Lab: build a simple circuit with a battery and bulb	LOOK: Find something in your neighborhood that most people walk past without noticing — a utility box, a manhole cover, a cable. Draw it up close. REFLECT: What does it do?	Mini project: Infrastructure Scavenger Hunt — find and draw 5 types of hidden city infrastructure near your home
15	Unit 4 How Things Get to Us	▸ Skill: Compare two texts Read two books about transportation — one old, one new Writing: how has getting around cities changed?	▸ Skill: Using a scale Read distances on a simple city map Activity: calculate how long a walk would take at 1 mile per hour	▸ Content: How goods get to stores Trucks, trains, ships, planes — supply chain for kids Activity: trace where your lunch came from	▸ Content: Gravity and ramps How do heavy things move through a city? Lab: roll objects down ramps at different angles — measure distance	LOOK: Find where a road, railway, or large street cuts through your neighborhood. Draw the edge where the road meets homes or businesses. REFLECT: Who built this and who benefits from it?	★ SEMESTER 1 CAPSTONE BEGINS — My Neighborhood Map. Students begin collecting drawings, measurements, and observations for their illustrated neighborhood map.
16	Unit 4 / Capstone Infrastructure / Capstone Work	▸ Capstone writing Write labels and sentences for map annotations Peer review — does my writing explain what I drew?	▸ Capstone math Count, measure, and record 4 things on your map Add labels showing measurements or quantities	▸ Capstone history Identify one thing on your map that has been there a long time Write one sentence about its history	▸ Capstone science Add one labeled science observation to your map Note: a plant, an animal, a weather feature	Draw prompt paused — use drawing time to add details to your neighborhood map.	★ CAPSTONE WORK WEEK — My Neighborhood Map due end of Week 16. Gallery walk presentation Week 17.
17	**★ GALLERY WALK & SEMESTER 1 CELEBRATION — Students present Neighborhood Maps. Families invited. Portfolio review and celebration of learning.**						
UNIT 5 — Our Cultural Community | Weeks 18–21 | Theme: What makes our neighborhood uniquely ours?							

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18	Unit 5 Our Cultural Community	▸ Concept: Culture and community Read-aloud: Alma and How She Got Her Name Writing: what is your cultural background? Draw and label Vocabulary: culture, tradition, heritage, celebrate	▸ Concept: Patterns and repeating units Find cultural patterns — fabric, tile, architecture Activity: create a repeating pattern using shapes	▸ Concept: Ancient cultures and their cities Egypt, Greece, Aztec — how culture shaped their cities Activity: draw one building from a culture you find fascinating	▸ Concept: Human impact on environment How communities have shaped their natural world Activity: identify 3 ways humans changed the land near school	LOOK: Find a place that feels special to your cultural community — a restaurant, a place of worship, a mural, a park. Draw it. REFLECT: What does this place mean to the people who love it?	Journal: draw a place in your neighborhood that belongs to your cultural community. Write 2 sentences about what makes it special.
19	Unit 5 Our Cultural Community	▸ Skill: Personal narrative Read: excerpt from The House on Mango Street (adapted) Writing: write about one place that is special to you	▸ Skill: Fractions intro Fair sharing — split a shape into equal parts Activity: divide a neighborhood map into equal zones	▸ Content: Immigrant communities and neighborhoods How communities create their own spaces in a new city Discussion: what did your family bring from somewhere else?	▸ Content: Water in living things Why do plants and people need water? Lab: measure water a plant absorbs in one week	LOOK: Find a sign, a storefront, or a community notice in a language other than English. Draw it. REFLECT: What does the presence of this language tell you about who lives here?	Mini project: Cultural Treasure Map — draw 3 places in your neighborhood that belong to 3 different cultural communities. Label each one.
20	Unit 5 Our Cultural Community	▸ Skill: Descriptive writing Look at a mural or public artwork Writing: describe what you see — colors, shapes, story, feeling	▸ Skill: Data and fairness Discussion: do all neighborhoods have the same parks and playgrounds? Activity: compare 2 parks using photographs — what is different?	▸ Content: Art as community expression Murals, festivals, food — how communities tell their story Socratic: who gets to decide what public art looks like?	▸ Content: Air and living things Why do plants and people need clean air? Lab: observe how a plant responds when its leaves are covered	LOOK: Find a mural or piece of public art in your neighborhood. Draw it. REFLECT: What story is it telling? Who made it?	Journal: if you could add a mural to your neighborhood, what would it show and where would you put it?
21	Unit 5 Our Cultural Community	▸ Skill: Sharing and publishing Share cultural treasure maps with class Create a class 'Our Neighborhood Cultures' book — one page per student	▸ Skill: Reading data displays Interpret simple charts about neighborhood demographics Activity: what does this data tell us about who lives here?	▸ Content: Protecting cultural places What happens when neighborhoods change? Discussion: what would be lost if your favorite cultural place was torn down?	▸ Content: Living things and their needs All living things need food, water, air, shelter Lab: set up a terrarium — closed ecosystem	LOOK: Find evidence of a cultural community that is changing or disappearing from your neighborhood. Draw what you see. REFLECT: What will be missed?	Cultural Treasure Map due. Class culture book complete. Share celebration.
UNIT 6 — Nature in Our City | Weeks 22–25 | Theme: How does nature live alongside us?							
22	Unit 6 Nature in Our City	▸ Concept: Cities and nature Read-aloud: The Lorax Writing: what would your city look like with more trees? Vocabulary: environment, habitat, urban, nature	▸ Concept: Measurement — area How much space does a tree need? Activity: measure and calculate the area of your yard or playground	▸ Concept: Environmental history — simple What was here before the city? Activity: look at a historical land map — what was on your block 100 years ago?	▸ Concept: Climate science intro What is weather? What is climate? Lab: record weather observations for one week — temperature, clouds, precipitation	LOOK: Find a place in your neighborhood where nature is thriving. Draw it. REFLECT: What helped nature survive here?	Journal: draw your neighborhood with 10 more trees. How does it look different?
23	Unit 6 Nature in Our City	▸ Skill: Persuasive writing Writing: convince your city to plant more trees	▸ Skill: Geometry — perimeter Measure the perimeter of a playground or garden	▸ Content: Environmental justice intro	▸ Content: Sustainable design — green roofs and gardens	LOOK: Find a community garden, a planted median, or a green space in your neighborhood.	Mini project: Nature Audit — find and draw 5 examples of nature in your neighborhood. Rate

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		Share letters — class vote on the most convincing	Activity: design a new school garden within a set perimeter	Why do some neighborhoods have more parks and trees? Discussion: is it fair that some kids have better parks?	How buildings can help nature Lab: observe terrarium — record changes each week	Draw it. REFLECT: Who takes care of this green space and why?	the health of each (thriving, okay, struggling).
24	Unit 6 Nature in Our City	▸ Skill: Compare and contrast Compare two neighborhood parks — one with lots of nature, one with very little Writing: what makes a park feel alive?	▸ Skill: Fractions and data What fraction of your neighborhood is green space? Activity: use a simple neighborhood map to estimate green vs. built area	▸ Content: Conservation and restoration People who protect nature — John Muir, Wangari Maathai Discussion: can one person make a difference for the environment?	▸ Content: Animal habitats in cities Birds, insects, squirrels — how animals adapt to city life Lab: observe one animal in your neighborhood for 10 minutes — record behavior	LOOK: Find a space in your neighborhood that has been improved by someone who cared — a planted area, a cleaned-up lot, a new garden. Draw it. REFLECT: What did this person do and what inspired them?	★ FIELD TRIP WEEK — local botanical garden, nature center, or community garden. Draw prompt: NOTICE / COLLECT / FEEL
25	Unit 6 Nature in Our City	▸ Skill: Reflection writing Return to The Lorax — reread the ending Writing: what does this story mean for YOUR neighborhood?	▸ Skill: Data synthesis Combine nature audit data into a class chart Activity: which type of nature is most common near our school?	▸ Content: Rewilding and urban restoration Cities choosing to bring nature back Socratic: should cities be required to have a minimum amount of green space?	▸ Content: Engineering and nature How do engineers design with nature in mind? Lab: design a simple shade structure — which material works best?	LOOK: Return to a place you drew earlier in the year. Find it again and draw it again. REFLECT: What is different now — in the place, in the season, or in how you see it?	Nature Audit due. Reflection writing shared in class.
UNIT 7 — Stories Our City Tells | Weeks 26–29 | Theme: How does our city communicate with us?							
26	Unit 7 Stories Our City Tells	▸ Concept: Signs and symbols Read-aloud: Signs in Our World Writing: what signs do you see every day? What do they mean? Vocabulary: symbol, sign, message, communicate	▸ Concept: Geometry — shapes and symbols Identify shapes in road signs and city symbols Activity: design a new sign for your school using shapes	▸ Concept: How cities have communicated throughout history Town criers, newspapers, public notices Activity: write a 'town crier' announcement for your class	▸ Concept: Sound and communication How does sound travel? How do cities use sound? Lab: test how sound travels through different materials	LOOK: Find two very different signs in your neighborhood — different colors, different words, different feelings. Draw both. REFLECT: Who is each sign talking to?	Journal: design a sign for your neighborhood that tells people something important about it.
27	Unit 7 Stories Our City Tells	▸ Skill: Reading images Analyze a neighborhood mural as a story Writing: what is this mural saying? Who is the audience? Vocabulary: message, audience, purpose	▸ Skill: Data communication How do we show information visually? Activity: create a simple infographic about your neighborhood	▸ Content: Art as protest and power How communities have used art to speak up Discussion: have you ever seen art that tried to change something?	▸ Content: Light and shadows How does light change how we see buildings? Lab: trace shadows of classroom objects at different times of day	LOOK: Find graffiti or unofficial art in your neighborhood. Draw it. REFLECT: What is the message and why did someone choose this spot?	Mini project: City Communication Scrapbook — collect and label 6 examples of visual communication from your neighborhood
28	Unit 7 Stories Our City Tells	▸ Skill: Writing for different audiences Write the same announcement twice — for kids and for adults	▸ Skill: Fractions and data Survey: what type of sign is most common in our neighborhood? Make a pie chart of results	▸ Content: Photography and documenting communities How photographs tell the story of a place	▸ Content: Electricity and light in cities How do cities use electricity for communication?	LOOK: Find a place in your neighborhood where the community has spoken up — a petition, a notice, a sign of protest. Draw it.	Journal: if you could put one message in public space in your neighborhood, what would you say, where would you

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		Vocabulary: formal, informal, audience, tone		Socratic: can a photograph be unfair to a community?	Lab: explore how a flashlight works — trace the circuit	REFLECT: What are they trying to change?	put it, and what form would it take?
29	Unit 7 Stories Our City Tells	▸ Skill: Persuasive writing Unit 7 project: write a letter to your city asking for one improvement to your neighborhood Share letters aloud	▸ Skill: Data presentation Present City Communication Scrapbook data to class Activity: compare results — what type of communication dominates our neighborhood?	▸ Content: Architecture as communication What does your school building say about what we value? Socratic: should all buildings be beautiful? Who decides what beautiful means?	▸ Content: Science synthesis How do all the science systems we've studied connect? Activity: create a web connecting weather, plants, animals, buildings, and people	LOOK: Find something in your neighborhood that most people misread — something that looks one way but means another. Draw it. REFLECT: What would someone need to know to understand it correctly?	Letters to the city due. Communication Scrapbook due.
UNIT 8 — Making Our City Better | Weeks 30–34 | Theme: How can WE help design a better neighborhood?							
30	Unit 8 Making Our City Better	▸ Concept: Design thinking Read-aloud: What Do You Do With a Problem? Writing: what is one problem in your neighborhood you want to solve? Vocabulary: problem, solution, design, improve	▸ Concept: Measurement synthesis Measure your proposed solution — how big would it be? Activity: sketch and label your idea with measurements	▸ Concept: How cities have improved themselves Urban renewal — lessons learned Discussion: what makes a city improvement actually work for everyone?	▸ Concept: Engineering design Define the problem, brainstorm solutions, choose the best one Activity: design a better playground for your school	LOOK: Find a space in your neighborhood that feels like a missed opportunity — underused, neglected, or boring. Draw it as it is. REFLECT: What one change would make the biggest difference?	★ SEMESTER 2 CAPSTONE BEGINS — My City Improvement Proposal. Partners chosen. Problem identified. Research begins.
31	Unit 8 Making Our City Better	▸ Skill: Research and notes Find information about your proposed improvement Writing: take notes — what do other cities do about this problem?	▸ Skill: Mathematical argument Use numbers to support your proposal Activity: calculate how many people your improvement would help	▸ Content: Community-led design When communities design their own spaces Primary source: photograph of a community garden built by residents	▸ Content: Engineering — prototyping Build a small model of your proposed improvement Lab: test your model — does it do what you wanted?	Draw prompt: document your improvement site across two visits this week. Draw existing conditions, evidence of need, and any positive features worth keeping.	Capstone work: Site analysis complete. Proposal outline due end of week.
32	Unit 8 Making Our City Better	▸ Skill: Proposal writing Scaffold draft your written proposal —	▸ Skill: Data visualization Create a simple chart or diagram	▸ Content: Design justice	▸ Content: Engineering optimization	Draw prompt: document your design process — draw your sketches,	Written proposal draft due. Model building in progress. Peer

WK	UNIT / THEME	ENGLISH	MATH	HISTORY	SCIENCE	PHOTO / DRAW PROMPT	MINI PROJECT / JOURNAL
		what is the problem, what is your solution, why will it work? Peer review — feedback partners	showing why your improvement is needed Activity: present your data to a partner	Who should help design our neighborhoods? Socratic: should kids have a say in how their neighborhood looks?	Improve your model based on testing Lab: rebuild and retest — what changed?	your model, your team at work. The process is part of the story.	review between partners.
33	Unit 8 Making Our City Better	▸ Skill: Presentation preparation Practice presenting your proposal out loud Vocabulary: present, explain, because, evidence	▸ Skill: Final math check Verify all measurements and calculations in proposal Practice explaining your numbers to an audience	▸ Content: Final historical connection How does your proposal respond to something that happened in your neighborhood's history? Write 2 sentences connecting past and present	▸ Content: Final science connection What does science say about your proposal? Write 2 sentences explaining the science behind your solution	Final draw prompt: go to your neighborhood one more time. Find something you can see now that you couldn't see at the start of the year. REFLECT: What changed in how you see your city?	★ CAPSTONE PRESENTATIONS PREP — all students rehearse. Guests confirmed for Week 34.
34	★ YEAR-END CELEBRATION — City Improvement Proposal Presentations. Guests invited: families, community members. Students present as designers and problem-solvers. Portfolios on display.						

3rd–5th Grade | Young Architects

About This Program

Young Architects takes everything students learned in Little Architects and goes deeper. This is where architecture meets history, economics, and social justice. Students read novels, analyze data, sketch buildings, and learn to ask harder questions: Who has power in this city? Whose story is being told? What would a fairer neighborhood look like?

Students complete two major capstone projects — a Neighborhood Math & Science Map in Semester 1 and a City Systems Redesign Proposal (group project) in Semester 2. Both are presented publicly to families.

URBAN SEEDS LEARNING — 3rd–5th Grade

Year 1: Cities, Systems & Change | 34-Week Curriculum Timeline | All Subjects

English & Math — Blue • History — Amber • Science — Teal • Photo Prompt — Purple • ★ Field Trip / Capstone

WK	UNIT / THEME	ENGLISH	MATH	HISTORY	SCIENCE	PHOTO / DRAW PROMPT	MINI PROJECT / JOURNAL
UNIT 1 — What Makes a City Work? | Weeks 1–4 | Theme: What are the systems that hold a city together?							
1	Unit 1 What Makes a City Work?	▸ Concept: Cities as systems Read: intro to urban systems — nonfiction Writing: observation paragraph — describe your block from a designer's eye Vocabulary: system, urban, infrastructure, design	▸ Concept: Ratios and proportional reasoning Intro — what is a ratio? Activity: measure your classroom and calculate its ratio of length to width	▸ Concept: Ancient cities — Mesopotamia First cities — Ur, Babylon, Çatalhöyük Discussion: why did people first gather into cities?	▸ Concept: Urban ecology intro Cities as ecosystems — what lives here besides people? Activity: biodiversity count — how many species can you find near school?	LOOK: Stand where you can see as much of your neighborhood as possible. Photograph or sketch what you see. REFLECT: What systems are holding this neighborhood together?	Journal: sketch your block from memory. What did you notice you didn't know before?
2	Unit 1 What Makes a City Work?	▸ Skill: Close reading Novice novel: The City of Ember Ch. 1–3 Writing: how do the people of Ember depend on their city's systems?	▸ Skill: Unit conversion and scale City-scale measurement — convert feet to miles Activity: calculate how long it would take to walk across your city	▸ Content: Nile River civilizations Geography shapes cities — flood, farm, build Primary source: ancient Egyptian city illustration	▸ Content: Built environment as ecology What systems does a city share with a forest? Activity: create a diagram connecting city systems to natural systems	LOOK: Find one detail in your neighborhood that tells you something about the people who live there. Sketch or photograph it. REFLECT: What does this detail say about your community's values?	Mini project begins: City Systems Journal — one illustrated entry per week through Unit 1
3	Unit 1 What Makes a City Work?	▸ Skill: Literary analysis The City of Ember Ch. 4–7	▸ Skill: Proportional reasoning Scaling up and down — draw your	▸ Content: Ancient Greece — polis and agora Public space	▸ Concept: NGSS engineering design intro Identify a problem,	LOOK: Find a public space in your neighborhood — park, plaza,	Journal entry: compare your neighborhood's public space to the

WK	UNIT / THEME	ENGLISH	MATH	HISTORY	SCIENCE	PHOTO / DRAW PROMPT	MINI PROJECT / JOURNAL
		Discussion: what happens when a city's systems break down?	block to scale Activity: create a scaled floor plan of your classroom	and democracy Socratic: what is public space for? Who gets to use it?	propose a solution, test it Activity: redesign one feature of your school to work better	corner, bench. Sketch it. REFLECT: Who designed this? Who uses it and who avoids it?	Greek agora. What is the same? What is missing?
4	Unit 1 What Makes a City Work?	▸ Skill: Paragraph structure The City of Ember Ch. 8–10 Writing: how does Ember's design control its people?	▸ Skill: Functions — input/output City-scale numbers — population, resources, waste Activity: calculate how much water your school uses per day	▸ Content: Ancient Rome — civic architecture Forum, aqueducts, grid streets Primary source: Roman city plan — what do you notice?	▸ Content: Urban food webs Producers, consumers, decomposers in city ecosystems Lab: set up a simple worm composting system	LOOK: Find something in your city that communicates scale — something designed to impress through size. Sketch it. REFLECT: What is this trying to say about the city?	City Systems Journal — 4 entries due. Mini project complete.
UNIT 2 — Power & Decision Making | Weeks 5–8 | Theme: Who decides how cities are built?							
5	Unit 2 Power & Decision Making	▸ Concept: How power shapes space The City of Ember Ch. 11–14 Writing: who holds power in Ember? How do we know from the architecture?	▸ Concept: Percent applications City budget — what does your city spend money on? Activity: calculate percentages of a city budget pie chart	▸ Concept: Government in ancient civilizations Pharaohs, city-states, emperors — who decided how cities were built? Discussion: who decides in your city today?	▸ Concept: Rock types and soil science How geology shapes where cities form Lab: soil texture test — which soil holds water best?	LOOK: Find a government or institutional building in your city. Sketch its exterior. REFLECT: Does it feel welcoming or intimidating? Who was it designed to impress?	Journal: sketch the building. Label 3 design choices that communicate power or authority.
6	Unit 2 Power & Decision Making	▸ Skill: Text structure — cause and effect Paired nonfiction:	▸ Skill: Percent change Population growth data — which	▸ Content: Medieval governance Castles, cathedrals, town	▸ Content: Impervious surfaces and water Why does pavement	LOOK: Find evidence of who holds power in your neighborhoo	Mini project: Power Map — annotated map identifying 5 power

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		how city halls are designed vs. how public housing is designed Writing: how does the design of a building reflect who it was built for?	cities are growing fastest? Problem set: compare city populations across decades	squares — architecture of control Primary source: medieval city illustration — analyze where power is located	cause flooding? Lab: compare water absorption — grass vs. pavement vs. gravel	d — whose name is on buildings, whose stories are in murals. Sketch or photograph it. REFLECT: Whose story is being told in your public spaces?	structures visible in your neighborhood
7	Unit 2 Power & Decision Making	▸ Skill: Claim and evidence The City of Ember — finish novel Writing: is Ember's society just or unjust? Use 3 pieces of evidence	▸ Skill: Graphing linear data City population growth over time Activity: graph your city's population from 1900–2020 — what patterns do you see?	▸ Content: Colonialism and city planning How empires redesigned conquered cities Socratic: who benefits from colonial city planning? Who loses?	▸ Content: Green space science — urban heat island Why are cities hotter than the countryside? Lab: measure temperature — shade vs. sun vs. pavement	LOOK: Find something in your neighborhood built by or for a community that no longer dominates the area. Sketch it. REFLECT: What does this tell you about who used to be here?	★ FIELD TRIP WEEK — Pasadena City Hall or local civic building. Photo prompt: NOTICE / COLLECT / FEEL
8	Unit 2 Power & Decision Making	▸ Skill: Essay structure Unit 2 essay: how does architecture communicate authority? Peer review — feedback on claim, evidence, conclusion	▸ Skill: Bivariate data intro Scatter plots — city data relationships Problem set: does a city with more green space have a lower heat index?	▸ Content: Modern civic architecture City hall, courthouses, libraries — what message do they send? Socratic: should government buildings be beautiful?	▸ Content: Biodiversity in urban ecosystems What lives in a city — and what doesn't survive? Lab: biodiversity count comparison — two different neighborhood types	LOOK: Return to the civic building from Week 5. Sketch one detail you missed the first time. REFLECT: What changed in how you see it now?	Unit 2 essay due. Power Map due.
UNIT 3 — Economy & Our Neighborhood | Weeks 9–12 | Theme: How does money shape where we live?							

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9	Unit 3 Economy & Our Neighborhood	▸ Concept: How economy shapes neighborhoods New novel: Seedfolks (Ch. 1–4) Writing: what does your neighborhood's economy look like?	▸ Concept: Ratios in economic context Per capita resource calculations Activity: calculate park space per person by zip code — compare two zip codes	▸ Concept: Trade routes and ancient economy Silk Road, Phoenician traders Map activity: trace a trade route that eventually reaches your city	▸ Concept: Urban ecosystems — energy flow How energy moves through a city food web Lab: map a food web connecting local farms to city stores to tables	LOOK: Find a place where people work or sell things in your neighborhood. Sketch it. REFLECT: What economic system does this business reflect?	Journal: what does your neighborhood's economy look like? What businesses are here? What is missing?
10	Unit 3 Economy & Our Neighborhood	▸ Skill: Analyzing nonfiction Reading: urban redlining history — how economic policy shaped neighborhoods Writing: how did a decision made long ago affect your neighborhood today?	▸ Skill: Unit rates in context Comparing resources across zip codes Problem set: per capita income vs. green space vs. school quality — what patterns emerge?	▸ Content: Industrial Revolution cities Factory cities — workers, housing, pollution Primary source: factory town photograph, 1890s — what do you notice?	▸ Content: Environmental justice intro Why pollution clusters in low-income neighborhoods Lab: compare soil samples from two different neighborhood types	LOOK: Find a building in your neighborhood that used to be something else — factory, warehouse, theater. Sketch it. REFLECT: What economic shift caused this building to change?	Mini project begins: Neighborhood Economy Report — map and categorize 10 businesses within walking distance of home
11	Unit 3 Economy & Our Neighborhood	▸ Skill: Compare and contrast Seedfolks Ch. 5–8 Writing: compare two characters' relationship to their neighborhood's economy	▸ Skill: Systems of equations intro Modeling resource allocation — city budget constraint Activity: your city has $100. How do you allocate it	▸ Content: Labor movements Unions, workers' rights, how workers shaped cities Socratic: do workers have the right to live in the city they serve?	▸ Content: Water cycle and watersheds How stormwater moves through cities Lab: water absorption — permeable vs.	LOOK: Find an empty storefront or abandoned building in your neighborhood. Sketch it. REFLECT: What economic force do you think	Journal: what businesses are missing from your neighborhood? What would change if they existed?

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			across 5 services?		impermeable surfaces	emptied this space?	
12	Unit 3 Economy & Our Neighborhood	▸ Skill: Synthesis writing Seedfolks — finish novel Unit 3 essay: who does the economy of your neighborhood serve?	▸ Skill: Statistical sampling Random sampling methods Problem set: sample a block to estimate business types citywide	▸ Content: Post-WWII suburbanization White flight, disinvestment, freeway construction through communities Discussion: how did the highway reshape your city's economy?	▸ Content: Chemistry of building materials Concrete, steel, glass — how cities are made Lab: material strength test — which material holds the most weight?	LOOK: Sketch your neighborhood's main commercial street — try to capture both the thriving and the struggling side by side. REFLECT: What does the health of this street tell you about who is being served?	Neighborhood Economy Report due. Unit 3 essay draft due. Peer review.
UNIT 4 — City Infrastructure | Weeks 13–16 | Theme: How do hidden systems keep cities alive?							
13	Unit 4 City Infrastructure	▸ Concept: Hidden systems of the city Reading: how cities deliver water, power, waste removal Writing: describe a system you depend on but never see	▸ Concept: Geometry — area and perimeter Calculating building footprints from maps Activity: calculate the area of your school campus	▸ Concept: Ancient infrastructure Roman aqueducts, roads, sewers — what Rome made possible Discussion: what would change if you had no running water for one week?	▸ Concept: Forces in structures Compression, tension, load-bearing basics Activity: build a paper bridge — test how much weight it holds	LOOK: Find one piece of infrastructure most people walk past without noticing. Sketch it up close. REFLECT: Who built this, when, and who is it for?	Journal: trace one resource — water, electricity, or trash — from your home back to its source. Draw the route.
14	Unit 4 City Infrastructure	▸ Skill: Technical reading Reading: how a water treatment plant works Writing: explain a	▸ Skill: Scale drawings Reading architectural drawings Activity: draw your bedroom to scale using	▸ Content: Industrial infrastructure Railways, canals, telegraphs — how infrastructure built nations	▸ Content: Urban heat island — deep dive Measuring and mapping temperature inequity across a city	LOOK: Find infrastructure that is neglected or in poor condition in your neighborhood.	Mini project: Infrastructure Audit — photograph or sketch 6 types of infrastructure within one mile of

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		complex system to a younger student — no jargon allowed	graph paper	Primary source: transcontinental railroad photograph	Lab: heat mapping — compare surface temperatures across 5 different materials	Sketch it. REFLECT: What does its condition tell you about how your city values this area?	home. Rate the condition of each.
15	Unit 4 City Infrastructure	▸ Skill: Argumentative writing Reading: freeway construction through neighborhoods Writing: argue for or against a specific infrastructure project in your city	▸ Skill: Pythagorean theorem intro Distance and structural math Problem set: calculate distances and heights using real maps	▸ Content: Freeways and urban renewal How infrastructure displaced communities of color Socratic: who bears the cost of infrastructure? Who gets the benefits?	▸ Content: Sustainable infrastructure Green roofs, permeable pavement, solar panels in cities Lab: seed germination — growing plants in different urban soil types	LOOK: Find where a freeway, rail line, or major road cuts through a neighborhood. Sketch the edge where infrastructure meets community. REFLECT: Who was displaced to build this? Who benefits today?	★ SEMESTER 1 CAPSTONE BEGINS — Neighborhood Math & Science Map. Students begin collecting data, measurements, and observations.
16	Unit 4 / Capstone Infrastructure / Capstone Work	▸ Capstone writing workshop Draft map annotations — written explanations of what you observed Peer review of draft annotations	▸ Capstone math work Calculate 4–6 measurements from real neighborhood data Apply ratios, percents, geometry to map	▸ Capstone history connection Identify one historical decision visible in your map Write a short historical explanation for that annotation	▸ Capstone science work Add one labeled science diagram to your map Document one environmental condition with data	Draw prompt paused — use observation time for additional neighborhood documentation for capstone map.	★ CAPSTONE WORK WEEK — Neighborhood Map due end of Week 16. Gallery walk presentation Week 17.
17	**★ GALLERY WALK & SEMESTER 1 CELEBRATION — Students present Neighborhood Math & Science Maps. Families invited. Portfolio review and celebration.**						
UNIT 5 — Culture & Identity in Place | Weeks 18–21 | Theme: How do people leave their mark on a city?							
18	Unit 5 Culture & Identity	▸ Concept: How culture leaves traces in cities	▸ Concept: Statistics — mean, median,	▸ Concept: Ancient cultures and their cities	▸ Concept: Human impact on ecosystems	LOOK: Find a place that tells you something	Journal: what cultural community has most

WK	UNIT / THEME	ENGLISH	MATH	HISTORY	SCIENCE	PHOTO / DRAW PROMPT	MINI PROJECT / JOURNAL
		New novel: The House on Mango Street (selected vignettes) Writing: describe one cultural marker in your neighborhood	mode Collect and analyze demographic data for your zip code Activity: what do these numbers tell us about who lives here?	How religion, art, and trade shaped city form across civilizations Discussion: what does a culture's city say about its values?	Pollution, habitat loss, invasive species in cities Lab: identify invasive vs. native plants near school	about the cultural identity of the people who live there — mural, place of worship, cultural center. Sketch it. REFLECT: What community shaped this space?	shaped your neighborhood? What physical traces did they leave?
19	Unit 5 Culture & Identity	▸ Skill: Voice in writing The House on Mango Street — Esperanza's voice Writing: write a vignette about one place in your neighborhood in your own voice	▸ Skill: Comparing populations Random sampling and variability Problem set: compare demographic data across two zip codes — what patterns emerge?	▸ Content: Islamic Golden Age cities Baghdad, Córdoba — centers of culture and knowledge Primary source: medieval Islamic city map — what does the layout tell you?	▸ Content: Water quality and city health Stormwater, flooding, combined sewer systems Lab: simple water quality test — pH and turbidity of local water samples	LOOK: Find signage, a storefront, or a community notice in a language other than English. Sketch it. REFLECT: What does the presence of this language tell you about who lives here?	Mini project: Cultural Layers Map — identify 3 different cultural communities whose presence is visible in your neighborhood. Document with sketches and one paragraph each.
20	Unit 5 Culture & Identity	▸ Skill: Analyzing imagery and symbolism Reading: murals as texts — how public art argues Writing: close analysis of one piece of public art in your neighborhoo	▸ Skill: Data ethics Who collected this data and why does it matter? Discussion: what does census data leave out?	▸ Content: The Harlem Renaissance Culture as resistance — art, music, literature reshaping identity Socratic: can culture change a neighborhood?	▸ Content: Urban heat island — equity dimension Temperature data by neighborhood income level Lab: heat mapping — compare temperatures in two different	LOOK: Find evidence of a cultural community that is disappearing from your neighborhood. Sketch it. REFLECT: What will be lost when this community is no longer	Journal: write about a place in your neighborhood that belongs to your cultural community. What would you do to protect it?

WK	UNIT / THEME	ENGLISH	MATH	HISTORY	SCIENCE	PHOTO / DRAW PROMPT	MINI PROJECT / JOURNAL
		d			neighborhood types	visible here?	
21	Unit 5 Culture & Identity	▸ Skill: Research writing Reading: oral history as evidence Unit 5 essay: how has your neighborhood's cultural identity changed over time?	▸ Skill: Measures of center and variability Interpret neighborhood data sets Problem set: analyze income, green space, and health data for your zip code	▸ Content: Immigration and city neighborhoods Little Italys, Chinatowns, barrios — how immigrant communities build place Discussion: what protects a cultural neighborhood from displacement?	▸ Content: Urban environmental justice Science behind why pollution clusters near low-income communities Lab: air quality observation — traffic count near school vs. quiet residential street	LOOK: Sketch one block of your neighborhood that tells the story of who has lived there across time — old and new layered together. REFLECT: What story is this block telling about change?	Unit 5 essay due. Cultural Layers Map due.
UNIT 6 — Environmental Systems | Weeks 22–25 | Theme: How do cities affect the natural world — and vice versa?							
22	Unit 6 Environmental Systems	▸ Concept: Cities as environmental actors Reading: the science of urban greening Writing: what would your neighborhood look like with 20% more trees?	▸ Concept: Equations and city planning constraints Variables and expressions in context Activity: model a park redesign using equations — how many benches fit if each needs 6 feet of space?	▸ Concept: Environmental history Industrial pollution, conservation movement, early environmental laws Discussion: why did cities become so polluted and what changed?	▸ Concept: Climate science Urban heat, emissions, land use change Lab: build a terrarium — observe a closed ecosystem over 4 weeks	LOOK: Photograph or sketch two contrasting environmental conditions in your neighborhood — one where nature is thriving, one where it has been crowded out. REFLECT: What would need to change physically to improve the worse of these two spaces?	Journal: what is the single most important environmental problem in your neighborhood? What is causing it and who has the power to fix it?
23	Unit 6 Environment	▸ Skill: Evidence-ba	▸ Skill: Two-step	▸ Content: Environment	▸ Content: Sustainable	LOOK: Find evidence of	Mini project: Environment

WK	UNIT / THEME	ENGLISH	MATH	HISTORY	SCIENCE	PHOTO / DRAW PROMPT	MINI PROJECT / JOURNAL
	al Systems	sed argument Reading: urban greening case studies Writing: propose one environment al improvement for your neighborhoo d with evidence	equations Solving zoning and planning problems Problem set: calculate how many trees fit on a city block given spacing and sight-line requirements	al justice movement César Chávez, Robert Bullard — connecting race, poverty, and pollution Primary source: environment al justice map of Los Angeles	design science Green roofs, permeable pavement, urban forests — the science behind each Lab: observe terrarium — record moisture, plant growth, decompositio n	environment al resistance or community care — a community garden, a tree planting, a clean-up effort. Sketch it. REFLECT: Who is doing this work and what would happen if they stopped?	al Justice Brief — one-page written analysis of one environment al condition in your neighborhoo d. What is it, who is affected, what should change?
24	Unit 6 Environment al Systems	▸ Skill: Counterargu ment Reading: opponents of urban greening — cost, displacement , greenwashin g Writing: address the strongest counterargu ment to your environment al proposal	▸ Skill: Multi-step equations Calculate energy savings from building improvement s Problem set: how much money would your school save with solar panels?	▸ Content: Climate change and cities How cities contribute to and are affected by climate change Socratic: who is most responsible for solving urban climate problems?	▸ Content: Energy transfer and insulation How buildings gain and lose heat — the physics Lab: insulation test — which material keeps a cup of water coolest for longest?	LOOK: Find a space improved by community environment al action — a restored area, a new park, a planted median. Sketch it alongside something nearby that still needs attention. REFLECT: What made the improvement possible?	★ FIELD TRIP WEEK — Descanso Gardens or LA Arboretum. Photo prompt: NOTICE / COLLECT / FEEL
25	Unit 6 Environment al Systems	▸ Skill: Revision Return to Unit 5 essay or Unit 6 proposal Full revision cycle — reorganize, strengthen	▸ Skill: Exponential patterns intro Energy consumption and population growth data Problem set: project your	▸ Content: Rewilding and urban restoration Cities choosing to restore natural systems — the LA River,	▸ Content: NGSS engineering design synthesis Define the problem, design a solution, test, optimize	LOOK: Revisit a place you sketched earlier in the year. Return to the same spot and sketch it again.	Environment al Justice Brief due. Revised essay due.

WK	UNIT / THEME	ENGLISH	MATH	HISTORY	SCIENCE	PHOTO / DRAW PROMPT	MINI PROJECT / JOURNAL
		evidence, refine voice	city's tree canopy if planting continues at current rate	urban wetlands Discussion: what would Los Angeles look like if the river were fully restored?	Lab: design and test a simple shade structure for a hot surface	REFLECT: What changed — in the place, in the season, or in how you see it?	
UNIT 7 — Communication & Community Voice | Weeks 26–29 | Theme: How do cities speak — and who gets to be heard?							
26	Unit 7 Communication & Community Voice	▸ Concept: How cities communicate visually Reading: semiotics — signs and meaning in public space Writing: analyze one advertisement or sign in your neighborhood as a text	▸ Concept: Probability and prediction City planning scenarios — what are the odds? Activity: probability of rain on your city's outdoor event days	▸ Concept: The printing press and urban communication How information spread changed cities — and who had access to information Discussion: what happened to cities when everyone could read?	▸ Concept: Earth science and sustainability How cities reduce their environmental footprint Lab: DNA extraction from strawberries — connect to urban food systems	LOOK: Sketch two examples of visual communication in your neighborhood that feel very different — different audiences, different tones. REFLECT: Whose voices dominate the visual landscape? Whose are missing?	Journal: design a sign, mural concept, or public message for your neighborhood. What would you say and to whom?
27	Unit 7 Communication & Community Voice	▸ Skill: Multimodal analysis Reading: murals as political speech Writing: how does public art argue? Analyze one mural as an argument	▸ Skill: Sampling and prediction Bivariate data — relationships between city variables Problem set: analyze relationship between billboard density and neighborhood income	▸ Content: Propaganda and urban space How governments have used architecture and media to control populations Primary source: propaganda poster alongside a photograph of	▸ Content: Smart city technology Data, sensors, surveillance in the built environment Discussion: who benefits when cities become smart? Who loses privacy?	LOOK: Find graffiti or unofficial visual communication in your neighborhood. Sketch it. REFLECT: What is being said, by whom, and why did they choose this surface?	Mini project: Public Communication Audit — document and categorize 8 examples of visual communication in your neighborhood. Who is speaking to whom?

WK	UNIT / THEME	ENGLISH	MATH	HISTORY	SCIENCE	PHOTO / DRAW PROMPT	MINI PROJECT / JOURNAL
				propaganda architecture			
28	Unit 7 Communication & Community Voice	▸ Skill: Writing for audience Reading: community newsletter vs. city press release on the same event Writing: rewrite a city announcement for a different audience	▸ Skill: Functions synthesis Applying linear and nonlinear models to real city data Activity: model how a community issue spreads through social media	▸ Content: Civil rights media strategy How activists used photography, TV, and media to change public opinion Socratic: is social media the new public square?	▸ Content: Renewable energy systems Solar, wind, geothermal in urban environments Lab: solar energy experiment — measure temperature change in light vs. shade	LOOK: Find a place where someone has communicated a need or grievance in public space — a protest sign, a community notice, a vigil. Sketch it. REFLECT: Is this form of communication working? Who is listening?	Journal: if you could put one message in public space in your neighborhood, what would it say, where would it go, and what form would it take?
29	Unit 7 Communication & Community Voice	▸ Skill: Op-ed writing Reading: op-eds about urban design Unit 7 op-ed: argue for one change in your neighborhood's public communication landscape	▸ Skill: Communicating with data Turn your neighborhood data into a one-page infographic Activity: present findings honestly to a non-technical audience	▸ Content: Architecture as communication How buildings send messages about who belongs — and who doesn't Discussion: what does your school building communicate to students?	▸ Content: Future cities synthesis Smart city, sustainable city, just city — what does the science say is possible? Lab: student-designed investigation — propose and test one hypothesis about their neighborhood	LOOK: Sketch something in your neighborhood that you think most people misread — something that looks one way but means another. REFLECT: What would someone need to know to read this correctly?	Unit 7 op-ed due. Public Communication Audit due.
UNIT 8 — Designing Solutions | Weeks 30–34 | Theme: How do we make our city better?							
30	Unit 8 Designing Solutions	▸ Concept: Design thinking in	▸ Concept: Data modeling —	▸ Concept: Urban renewal —	▸ Concept: Engineering design	LOOK: Find a space in your	★ SEMESTER 2

WK	UNIT / THEME	ENGLISH	MATH	HISTORY	SCIENCE	PHOTO / DRAW PROMPT	MINI PROJECT / JOURNAL
		cities Reading: adaptive reuse case studies — buildings repurposed for new uses Writing: what does it mean to design for the public good?	future cities Project trends using functions Activity: plot 50 years of city population data and project forward 20 years	lessons learned What happened when cities tried to redesign themselves Discussion: who gets to decide when a neighborhood needs to change?	synthesis Apply all science content to propose real community solutions Lab: design a prototype solution to one environmental problem near school	neighborhood that feels like a missed opportunity — underused, neglected, or poorly designed. Sketch it as it is AND sketch what you imagine it could become. REFLECT: What one change would have the most impact?	CAPSTONE BEGINS — City Systems Redesign Proposal (group project). Groups form. Problem sites identified. Research begins.
31	Unit 8 Designing Solutions	▸ Skill: Research and synthesis Reading: community-led design case studies Writing: capstone research notes — background on your group's site	▸ Skill: Mathematical modeling Use equations and data to support a design argument Capstone work: quantify the problem your group is solving with real data	▸ Content: Community organizing and design When communities design their own spaces — Watts, Detroit, South LA Primary source: community planning document from a real neighborhood	▸ Content: NGSS capstone — defining the problem Scientific investigation of one real site condition Capstone lab: collect environmental data from your group's site	Draw prompt: document your group's redesign site across two visits. Sketch existing conditions, evidence of need, and positive features worth keeping.	Capstone work: Site Analysis complete. Group roles assigned. Proposal outline due end of week.
32	Unit 8 Designing Solutions	▸ Skill: Proposal writing Reading: sample community design proposals Writing: draft your group's	▸ Skill: Data visualization Create clear data displays for a public audience Capstone work: build data exhibits supporting	▸ Content: Design justice Who should be at the table when cities are designed? Socratic: is it possible to	▸ Content: Engineering optimization Refine and improve — test solutions against criteria and constraints Capstone	Draw prompt: document your design process — sketch drafts, maps, team discussions. The process	Written proposal draft due. Data visualization draft due. Peer review between groups.

WK	UNIT / THEME	ENGLISH	MATH	HISTORY	SCIENCE	PHOTO / DRAW PROMPT	MINI PROJECT / JOURNAL
		written proposal narrative	your proposal	design a city that works for everyone?	science: draft scientific recommendation for your site	is part of the story.	
33	Unit 8 Designing Solutions	▸ Skill: Presentation writing Prepare verbal presentation of your proposal Rehearsal with critique language — be ready to defend every decision	▸ Skill: Final math review Verify all calculations in proposal Check: does your data actually support your claim?	▸ Content: Final historical connection How does your proposal respond to or learn from a historical decision? Write: what history are you responding to?	▸ Content: Final science recommendation Complete scientific analysis of your site Write: what does the science require your design to address?	Final sketch: go to your neighborhood one more time. Find something you can notice now that you couldn't see at the start of this year. REFLECT: What changed in how you see your city?	★ CAPSTONE PRESENTATIONS PREP — All groups rehearse full presentation. Guests confirmed for Week 34.
34	**★ YEAR-END CELEBRATION — City Systems Redesign Proposal Presentations. Guests invited: architects, planners, community members, families. Students present as designers. Portfolios on display.**						

Middle School | Urban Thinkers

About This Program

Urban Thinkers is designed for middle school students who are ready to move beyond what cities look like and start asking why they work the way they do — and for whom. This program treats students as serious thinkers. They read primary sources, analyze data, debate policy, and design real solutions to real problems in their communities.

Topics include urban economics, environmental justice, infrastructure, cultural displacement, climate change, and community design. Students complete two major research and design projects per year, presented publicly at semester celebrations.

Year 1 Theme: Systems & Cities

The 8 Units

- Unit 1 — What Is a City? (Weeks 1–4)
- Unit 2 — Government & Power (Weeks 5–8)
- Unit 3 — Economy & Labor (Weeks 9–12)
- Unit 4 — Infrastructure (Weeks 13–16)
- Unit 5 — Culture & Identity (Weeks 18–21)
- Unit 6 — Environmental Systems (Weeks 22–25)
- Unit 7 — Communication & Media (Weeks 26–29)
- Unit 8 — Designing Better City Systems (Weeks 30–34)

34-Week Curriculum Timeline • All Subjects • Grades 6–8

English & Math (Block 1) • History & Science (Block 2) • Weekly Photo Prompt & Between-Session Projects

English & Math — Blue	History — Amber	Science — Green	Photo Prompt — Purple	★ Field Trip / Capstone	▸ *marks the week's key concept or skill*

WK	UNIT / THEME	ENGLISH	MATH	HISTORY	SCIENCE	PHOTO PROMPT	MINI PROJECT / JOURNAL
Unit 1 — What Is a City?							
1	Unit 1 What Is a City?	▸ **Concept: What makes a city?** Reading: intro to urban form Writing: observation paragraph — describe your block	▸ **Concept: Ratios & measurement** Intro to units of measurement Activity: measure classroom space	▸ **Concept: Ancient Mesopotamia** First cities — Ur, Babylon Discussion: why did people first gather?	▸ **Concept: Urban ecology intro** Scientific method overview Lab: map and measure outdoor space	LOOK: Stand where you can see as much of your neighborhood as possible. Photograph what you see. REFLECT: What shared resource organized this part of your city?	Journal: sketch your block from memory. What did you notice you didn't know before?
2	Unit 1 What Is a City?	▸ **Skill: Close reading** Novel intro: The Giver Ch. 1–4 Writing: What does Jonas's community value?	▸ **Skill: Unit conversion** Ratios in context — city scale Problem set: convert block measurements	▸ **Content: Nile River civilizations** Geography shapes cities Primary source: ancient city map	▸ **Content: Built environment as science** Forces that shape space Activity: identify systems in classroom	LOOK: Find one detail in your neighborhood that tells you something about who lives there. REFLECT: What does this detail say about your community's values?	Mini project begins: City Observation Journal — one entry per week through Unit 1
3	Unit 1 What Is a City?	▸ **Skill: Literary analysis** The Giver Ch. 5–8 Discussion: how does Sameness control the built environment?	▸ **Skill: Proportional reasoning** Scaling up and down Activity: draw your block to scale	▸ **Content: Ancient Greece — the agora** Public space and democracy Discussion: what is public space for?	▸ **Concept: NGSS engineering design** Identify a problem, propose a solution Activity: redesign one school space	LOOK: Find a public space in your neighborhood — a park, plaza, corner, or bench. Photograph it. REFLECT: Who is this space for? Who uses it and who avoids it?	Journal entry: compare your neighborhood's public space to the Greek agora. What is the same? What is missing?
4	Unit 1 What Is a City?	▸ **Skill: Paragraph structure** The Giver Ch. 9–12 Writing: How does Jonas's city control belonging?	▸ **Skill: Input/output functions** Scientific notation — city scale numbers Problem set: city infrastructure numbers	▸ **Content: Ancient Rome — civic architecture** Forum, aqueducts, grid streets Primary source: Roman city plan	▸ **Content: Urban ecology systems** Food webs in city environments Lab: identify producers & consumers near school	LOOK: Find something in your city that communicates scale — something designed to impress through size. Photograph it. REFLECT: What is this trying to say about the city that built it?	City Observation Journal — final entry. Mini project due: 4-entry illustrated journal of your neighborhood as a city system.
Unit 2 — Government & Power							
5	Unit 2 Government & Power	▸ **Concept: How power shapes space** The Giver Ch. 13–16	▸ **Concept: Percent applications** City budget allocations	▸ **Concept: Government in ancient civilizations** Pharaohs, city-states, emperors	▸ **Concept: Rock types & soil** How geology shapes where cities form	LOOK: Find a government or institutional building in your city. Photograph its exterior.	Journal: sketch the government building you photographed. Label three design choices that communicate power.

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		Writing: How does architecture communicate authority?	Activity: calculate land use percentages	Discussion: who decides how cities are built?	Activity: soil texture test	REFLECT: Does it feel welcoming or intimidating? Who was it designed to impress?	
6	Unit 2 Government & Power	▸ **Skill: Text structure** The Giver Ch. 17–20 Paired nonfiction: how city halls are designed	▸ **Skill: Percent change** Population growth data Problem set: compare city populations across eras	▸ **Content: Medieval governance** Castles, cathedrals, town squares Primary source: medieval city illustration	▸ **Content: Impervious surfaces** Urban land use science Lab: measure water absorption — grass vs. pavement	LOOK: Find evidence of who holds power in your neighborhood — whose name is on buildings, whose image is in murals. Photograph it. REFLECT: Whose story is being told in your public spaces?	Mini project: Power Map — annotated map identifying 5 power structures visible in your neighborhood (government, church, commerce, police, schools)
7	Unit 2 Government & Power	▸ **Skill: Claim & evidence** The Giver Ch. 21–23 Writing: argue — is Jonas's society just or unjust?	▸ **Skill: Graphing linear data** City population growth graphs Activity: graph your city's population 1900–2020	▸ **Content: Colonialism & city planning** How empires redesigned conquered cities Discussion: who benefits from colonial city planning?	▸ **Content: Green space science** Urban heat island — first introduction Lab: measure temperature — shade vs. sun vs. pavement	LOOK: Find something in your neighborhood that was built by or for a community that no longer dominates the area. Photograph it. REFLECT: What does this building or space tell you about who used to be here?	★ FIELD TRIP WEEK — Pasadena City Hall (anchor). Extend: Old Town Pasadena, Vroman's Bookstore. Photo prompt: NOTICE / COLLECT / FEEL
8	Unit 2 Government & Power	▸ **Skill: Essay structure** The Giver — finish novel Writing: Unit 2 essay — how does architecture enforce power?	▸ **Skill: Bivariate data intro** Scatter plots — city data Problem set: population vs. green space correlation	▸ **Content: Modern civic architecture** City hall, courthouses, libraries Socratic: should government buildings be beautiful?	▸ **Content: Biodiversity in cities** Urban ecosystems — what survives and why Lab: biodiversity count — plants & insects near school	LOOK: Return to the government building from Week 5. Photograph one detail you missed the first time. REFLECT: What changed in how you see it now?	Unit 2 essay due. Peer review in class. Revise for portfolio.
Unit 3 — Economy & Labor							
9	Unit 3 Economy & Labor	▸ **Concept: How economy shapes neighborhoods** New novel intro: paired nonfiction texts on urban economy Writing: what does your neighborhood's economy look like?	▸ **Concept: Ratios & proportional reasoning** Per capita resource calculations Activity: calculate park space per person by zip code	▸ **Concept: Trade routes & ancient economy** Silk Road, Phoenician trade networks Map activity: trace a trade route to your city	▸ **Concept: Urban ecosystems — food webs** Producers, consumers in city environments Lab: heart rate & urban health investigation	LOOK: Find a place where people work or sell things in your neighborhood. Photograph it. CONNECT: What economic system does this business reflect?	Journal: interview a local business owner or vendor (in person or by observation only). What does their space tell you about how they work?
10	Unit 3 Economy & Labor	▸ **Skill: Analyzing nonfiction** Reading: urban redlining history Discussion: how did economic policy shape your neighborhood?	▸ **Skill: Unit rates in context** Comparing resources across zip codes Problem set: per capita income vs. green space vs. school quality	▸ **Content: Industrial Revolution** Factory cities — workers, housing, pollution Primary source: factory town photograph 1890s	▸ **Content: Environmental justice intro** Why pollution clusters in low-income neighborhoods Lab: soil sample comparison — park vs. industrial area	LOOK: Find a building in your neighborhood that used to be something else — a factory, a warehouse, a theater. Photograph it. REFLECT: What economic shift caused this building to change purpose?	Mini project begins: Neighborhood Economy Report — map and categorize 10 businesses within walking distance of home

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11	Unit 3 Economy & Labor	▸ **Skill: Compare & contrast** Reading: two neighborhoods, different economies Writing: compare two commercial streets in your city	▸ **Skill: Systems of equations** Modeling resource allocation Activity: solve a city budget constraint problem	▸ **Content: Labor movements** Unions, workers' rights, how workers shaped cities Socratic: do workers have the right to shape where they live?	▸ **Content: Water cycle & watersheds** How stormwater moves through cities Lab: water absorption — permeable vs. impermeable surfaces	LOOK: Find an empty storefront or abandoned building in your neighborhood. Photograph it. REFLECT: What economic force do you think emptied this space? What would the community most benefit from here?	Journal: what businesses are missing from your neighborhood? What would change if they existed?
12	Unit 3 Economy & Labor	▸ **Skill: Synthesis writing** Reading: gentrification and displacement Writing: Unit 3 essay — who does the economy of your neighborhood serve?	▸ **Skill: Statistical sampling** Random sampling methods Problem set: sample a neighborhood block to estimate business types citywide	▸ **Content: Post-WWII suburbanization** White flight, disinvestment, freeway construction Discussion: how did the highway system reshape urban economies?	▸ **Content: Chemistry of building materials** Concrete, steel, glass — how cities are made Lab: material strength test — which materials hold weight best?	LOOK: Photograph your neighborhood's main commercial street. Try to capture the full picture — thriving and struggling side by side. REFLECT: What does the health of this street tell you about who is being served?	Neighborhood Economy Report due. Unit 3 essay draft due. Peer review.
Unit 4 — Infrastructure							
13	Unit 4 Infrastructure	▸ **Concept: Hidden systems of the city** Reading: how cities deliver water, power, waste removal Writing: describe a system you depend on but never see	▸ **Concept: Geometry — area & perimeter** Calculating building footprints Activity: calculate area of school campus from a map	▸ **Concept: Ancient infrastructure** Roman aqueducts, roads, sewers Discussion: what did Rome's infrastructure make possible?	▸ **Concept: Forces in structures** Compression, tension, load-bearing Activity: build a paper bridge — test how much weight it holds	LOOK: Find one piece of infrastructure most people walk past without noticing. Photograph it up close. REFLECT: Who built this, when, and who is it for? Is it well maintained?	Journal: trace one resource — water, electricity, or trash — from your home back to its source. Draw the route.
14	Unit 4 Infrastructure	▸ **Skill: Technical reading** Reading: how a water treatment plant works Writing: explain a complex system to a 3rd grader	▸ **Skill: Scale drawings** Reading architectural drawings Activity: draw your bedroom to scale using graph paper	▸ **Content: Industrial infrastructure** Railways, canals, telegraphs — how infrastructure built nations Primary source: transcontinental railroad photograph	▸ **Content: Urban heat island — deep dive** Measuring and mapping temperature inequity Lab: heat mapping — surface temps across 5 materials	LOOK: Find infrastructure that has been neglected or is in poor repair in your neighborhood. Photograph it. REFLECT: What does its condition tell you about how your city values this area?	Mini project: Infrastructure Audit — photograph and categorize 6 types of infrastructure within one mile of home. Rate condition of each.
15	Unit 4 Infrastructure	▸ **Skill: Argumentative writing** Reading: freeway construction through neighborhoods Writing: argue for or against a specific infrastructure project	▸ **Skill: Pythagorean theorem** Distance and structural math Problem set: calculate distances and heights using real maps	▸ **Content: Freeways & urban renewal** How infrastructure displaced communities of color Socratic: who bears the cost of infrastructure?	▸ **Content: Sustainable infrastructure** Green roofs, permeable pavement, solar Lab: seed germination — green infrastructure in action	LOOK: Find where a freeway, rail line, or major road cuts through a neighborhood. Photograph the edge where infrastructure meets community. REFLECT: Who was displaced to build this? Who benefits from it today?	★ SEMESTER 1 CAPSTONE BEGINS — Neighborhood Math & Science Map (individual). Students begin collecting data, measurements, and observations for their annotated neighborhood map.

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Unit 4 / Capstone — Infrastructure / Capstone Work							
16	Unit 4 / Capstone Infrastructure / Capstone Work	▸ **Capstone writing workshop** Drafting map annotations — written explanations Peer review of draft annotations	▸ **Capstone math work** Calculate 4–8 measurements from real neighborhood data Apply unit ratios, percents, geometry, functions to map	▸ **Capstone history connection** Identify one historical decision visible in your map Write a short historical explanation for your annotation	▸ **Capstone science work** Add one labeled science diagram to map Document one environmental condition with data	Photo prompt paused — use photo time for additional neighborhood documentation for capstone map. Collect measurements, temperatures, observations for map data.	★ CAPSTONE WORK WEEK — Neighborhood Math & Science Map. Due end of Week 16. Gallery walk presentation Week 17.
17	**Flex Week — Gallery Walk & Semester 1 Celebration** *No new content this week. Students present Semester 1 capstone maps in a gallery walk. Families may be invited. Portfolio review, reflection, and celebration.*						
Unit 5 — Culture & Identity							
18	Unit 5 Culture & Identity	▸ **Concept: How culture leaves traces in cities** New novel: short story collection or paired essays on place Writing: describe a cultural marker in your neighborhood	▸ **Concept: Statistics — mean, median, mode** Reading & interpreting data displays Activity: collect and analyze demographic data for your zip code	▸ **Concept: Ancient cultures & their cities** How religion, art, and trade shaped city form Discussion: what does a culture's city say about its values?	▸ **Concept: Human impact on ecosystems** Pollution, habitat loss, biodiversity loss Lab: identify invasive vs. native plants near school	LOOK: Find a place that tells you something about the cultural identity of the people who live there — a mural, a place of worship, a cultural center. Photograph it. REFLECT: What cultural community shaped this space and how long have they been here?	Journal: what cultural community has most shaped your neighborhood? What physical traces did they leave?
19	Unit 5 Culture & Identity	▸ **Skill: Voice in writing** Reading: Sandra Cisneros — House on Mango Street excerpt Writing: write a vignette about one place in your neighborhood	▸ **Skill: Comparing populations** Random sampling & variability Problem set: compare demographic data across two zip codes	▸ **Content: Islamic Golden Age cities** Baghdad, Cordoba — centers of culture and knowledge Primary source: medieval Islamic city map	▸ **Content: Water cycle & city watersheds** Stormwater, flooding, combined sewer systems Lab: water quality testing — pH and turbidity	LOOK: Find signage, a storefront, or a community notice in a language other than English. Photograph it. REFLECT: What does the presence of this language tell you about who lives here and who the neighborhood is for?	Mini project: Cultural Layers Map — identify 3 different cultural communities whose presence is visible in your neighborhood. Document with photos and one paragraph each.
20	Unit 5 Culture & Identity	▸ **Skill: Analyzing imagery and symbolism** Reading: murals as text Writing: close analysis of a public artwork in your neighborhood	▸ **Skill: Data ethics** Who collected this data and why does it matter? Discussion: what does census data leave out?	▸ **Content: The Harlem Renaissance** Culture as resistance — art, music, literature reshaping identity Socratic: can culture change a neighborhood?	▸ **Content: Urban heat island — equity dimension** Temperature data by neighborhood income level Lab: heat mapping — compare two different areas	LOOK: Find evidence of a cultural community that is disappearing from your neighborhood — a business closing, a building being converted, a sign fading. Photograph it. REFLECT: What will be lost when this community is no longer visible here?	Journal: write about a place in your neighborhood that belongs to your cultural community. What would you do to protect it?

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21	Unit 5 Culture & Identity	▸ **Skill: Research writing** Reading: oral history as evidence Writing: Unit 5 essay — how has your neighborhood's cultural identity changed over time?	▸ **Skill: Measures of center & variability** Interpreting neighborhood data sets Problem set: analyze income, green space, and health data for your zip code	▸ **Content: Immigration & city neighborhoods** Little Italys, Chinatowns, barrios — how immigrant communities build place Discussion: what protects a cultural neighborhood from displacement?	▸ **Content: Urban environmental justice** Science behind why pollution clusters near low-income communities Lab: air quality observation — traffic count near school vs. residential street	LOOK: Photograph one block of your neighborhood that tells the story of who has lived there across time. Look for old and new layered together. REFLECT: What story is this block telling about change?	Unit 5 essay due. Cultural Layers Map due.
Unit 6 — Environmental Systems							
22	Unit 6 Environmental Systems	▸ **Concept: Cities as environmental actors** Reading: the science of urban greening Writing: what would your neighborhood look like with 20% more trees?	▸ **Concept: Equations & city planning constraints** Variables and expressions in context Activity: model a park redesign using equations	▸ **Concept: Environmental history** Industrial pollution, conservation movement, EPA founding Discussion: why did cities become so polluted and what changed?	▸ **Concept: Climate science intro** Urban heat, emissions, land use Lab: terrarium build — closed ecosystem in a bottle	LOOK: Photograph two contrasting environmental conditions in your neighborhood — one place where nature is thriving, one where it has been crowded out. REFLECT: What would need to physically change to improve the worse of these two spaces?	Journal: what is the single most important environmental problem in your neighborhood? What is causing it and who has the power to fix it?
23	Unit 6 Environmental Systems	▸ **Skill: Evidence-based argument** Reading: urban greening case studies Writing: propose one environmental improvement for your neighborhood with evidence	▸ **Skill: Two-step equations** Solving zoning and planning problems Problem set: calculate how many trees fit on a city block given spacing requirements	▸ **Content: Environmental justice movement** Cesar Chavez, Robert Bullard — connecting race and environment Primary source: environmental justice map of LA	▸ **Content: Sustainable design science** Green roofs, permeable pavement, urban forests — the science Lab: observe terrarium changes — record moisture, plant growth, decomposition	LOOK: Find evidence of environmental resistance or community care in your neighborhood — a community garden, a tree planting, a clean-up effort. Photograph it. REFLECT: Who is doing this work and what would happen to the neighborhood if they stopped?	Mini project: Environmental Justice Brief — one-page written analysis of one environmental condition in your neighborhood. What is it, who is affected, what should change?
24	Unit 6 Environmental Systems	▸ **Skill: Counterargument** Reading: opponents of urban greening (cost, gentrification) Writing: address the strongest counterargument to your environmental proposal	▸ **Skill: Multi-step equations** Rearranging and applying formulas Problem set: calculate energy savings from building improvements	▸ **Content: Climate change & cities** How cities contribute to and are affected by climate change Socratic: who is most responsible for fixing urban climate problems?	▸ **Content: Energy transfer & insulation** How buildings gain and lose heat — the physics Lab: insulation test — which material keeps a cup of water coolest?	LOOK: Find a space that has been improved by community environmental action — a restored area, a new park, a planted median. Photograph it alongside something nearby that still needs attention. REFLECT: What made the improvement possible and why hasn't the same happened next door?	★ FIELD TRIP WEEK — Descanso Gardens (anchor). Extend: LA Arboretum, Huntington Library Gardens. Photo prompt: NOTICE / COLLECT / FEEL
25	Unit 6 Environmental Systems	▸ **Skill: Revision** Return to Unit 5 essay or Unit 6 writing	▸ **Skill: Exponential patterns intro** Energy consumption &	▸ **Content: Rewilding & urban restoration** Cities choosing to restore natural systems	▸ **Content: NGSS engineering design synthesis**	LOOK: Revisit a photo you took earlier in the year. Go back to the same spot and photograph it again.	Environmental Justice Brief due. Revised essay due.

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		Full revision cycle — reorganize, strengthen evidence, refine voice	population growth data Problem set: project your city's tree canopy if planting continues at current rate	Discussion: what would Los Angeles look like if the river were restored?	Define the problem, design a solution, test, optimize Lab: design and test a simple shade structure for a hot surface	REFLECT: What changed — in the place, in the season, or in how you see it?	
Unit 7 — Communication & Media							
26	Unit 7 Communication & Media	▸ **Concept: How cities communicate visually** Reading: semiotics — signs and meaning Writing: analyze one advertisement or sign in your neighborhood as a text	▸ **Concept: Probability & prediction** City planning scenarios — what are the odds? Activity: probability of rain on your city's outdoor event days	▸ **Concept: The printing press & urban communication** How information spread changed cities Discussion: what happened to cities when everyone could read?	▸ **Concept: Earth science & sustainability** How cities reduce their environmental footprint Lab: DNA extraction from strawberries — connect to urban food systems	LOOK: Photograph two examples of visual communication in your neighborhood that feel very different — different audiences, different tones, different purposes. REFLECT: Whose voices dominate the visual landscape? Whose are missing?	Journal: design a sign, mural concept, or public message for your neighborhood. What would you say and to whom?
27	Unit 7 Communication & Media	▸ **Skill: Multimodal analysis** Reading: murals as political speech Writing: how does public art argue? Analyze one mural as an argument	▸ **Skill: Sampling & prediction** Bivariate data — relationships between city variables Problem set: analyze relationship between billboard density and neighborhood income	▸ **Content: Propaganda & urban space** How governments have used architecture and media to control populations Primary source: Soviet constructivist poster + Nazi architecture	▸ **Content: Smart city technology** Data, sensors, surveillance in the built environment Discussion: who benefits when cities become smart?	LOOK: Find graffiti or unofficial visual communication in your neighborhood. Photograph it. REFLECT: What is being said, by whom, and why did they choose this surface in this location?	Mini project: Public Communication Audit — document and categorize 8 examples of visual communication in your neighborhood. Who is speaking to whom?
28	Unit 7 Communication & Media	▸ **Skill: Writing for audience** Reading: community newsletter vs. city press release on same event Writing: rewrite a city announcement for a different audience	▸ **Skill: Functions synthesis** Applying linear and nonlinear models to real city data Activity: model social media spread of a community issue	▸ **Content: Civil rights media strategy** How activists used media to change public opinion Socratic: is social media the new public square?	▸ **Content: Renewable energy systems** Solar, wind, geothermal in urban environments Lab: solar energy experiment — measure temperature change in light vs. shade	LOOK: Find a place where someone has communicated a community need or grievance in public space — a protest sign, a community notice board, a vigil site. Photograph it. REFLECT: Is this form of communication working? Who is listening?	Journal: if you could put one message in public space in your neighborhood, what would it say, where would it go, and what form would it take?
29	Unit 7 Communication & Media	▸ **Skill: Persuasive writing** Reading: op-eds about urban design Writing: Unit 7 op-ed — argue for one change in	▸ **Skill: Communicating with data** How to present findings honestly to a non-technical audience	▸ **Content: Architecture as communication** How buildings send messages about who belongs	▸ **Content: Future cities synthesis** Smart city, sustainable city, just city — what does the science say is possible?	LOOK: Photograph something in your neighborhood that you think most people misread or misunderstand. Something that looks one way but means another. REFLECT: What would someone need to know to read this correctly?	Unit 7 op-ed due. Public Communication Audit due.

WK	UNIT / THEME	ENGLISH	MATH	HISTORY	SCIENCE	PHOTO PROMPT	MINI PROJECT / JOURNAL
		your neighborhood's public communication landscape	Activity: turn your neighborhood data into a one-page infographic	Discussion: what does your school building communicate?	Lab: student-designed investigation — propose and test one hypothesis about their neighborhood		
Unit 8 — Designing Better City Systems							
30	Unit 8 Designing Better City Systems	▸ **Concept: Design thinking in cities** Reading: adaptive reuse case studies Writing: what does it mean to design for the public good?	▸ **Concept: Data modeling — future cities** Projecting trends using functions Activity: plot 50 years of city population data and project forward 20 years	▸ **Concept: Urban renewal — lessons learned** What happened when cities tried to redesign themselves Discussion: who gets to decide when a neighborhood needs to change?	▸ **Concept: Engineering design synthesis** Applying all science content to propose real community solutions Lab: design a prototype solution to one environmental problem near school	LOOK: Find a space in your neighborhood that feels like a missed opportunity — underused, neglected, or poorly designed. Photograph it as it is. Then photograph one detail that hints at what it could become. REFLECT: What one change would have the most impact?	★ SEMESTER 2 CAPSTONE BEGINS — City Systems Redesign Proposal (group project). Groups form. Problem sites identified. Research begins.
31	Unit 8 Designing Better City Systems	▸ **Skill: Research & synthesis** Reading: community-led design case studies Writing: capstone research notes — background on your group's site	▸ **Skill: Mathematical modeling** Using equations and data to support a design argument Capstone work: quantify the problem your group is solving with real data	▸ **Content: Community organizing & design** When communities design their own spaces Primary source: Watts community planning document 1965	▸ **Content: NGSS capstone — defining the problem** Scientific investigation of one real site condition Capstone lab: collect environmental data from your group's site	Photo prompt: document your group's redesign site across two visits this week. Photograph existing conditions, evidence of need, and any positive features worth keeping. These photos will be used in your final Redesign Proposal presentation.	Capstone work: Site Analysis complete. Group roles assigned. Proposal outline due end of week.
32	Unit 8 Designing Better City Systems	▸ **Skill: Proposal writing** Reading: sample community design proposals Writing: draft your group's written proposal narrative	▸ **Skill: Data visualization** Creating clear data displays for a public audience Capstone work: build data exhibits supporting your proposal	▸ **Content: Design justice** Who should be at the table when cities are designed? Socratic: is it possible to design a city that works for everyone?	▸ **Content: Engineering optimization** Refine and improve — testing solutions against criteria Capstone science: draft scientific recommendation for your site	Photo prompt: document your design process this week — photograph sketches, maps, materials, team discussions. The process is part of the story. Build your photo evidence portfolio for the final presentation.	Capstone work: written proposal draft due. Data visualization draft due. Peer review between groups.
33	Unit 8 Designing Better City Systems	▸ **Skill: Presentation writing** Prepare verbal presentation of proposal Rehearse with critique language — be ready to defend every decision	▸ **Skill: Final math review** Verify all calculations in proposal Each grade level checks their specific math contributions	▸ **Content: Final historical connection** Connect your redesign to a historical precedent Write: how does our proposal learn from history?	▸ **Content: Final science recommendation** Complete scientific analysis of site conditions Write: what does the science require our design to address?	Final photo post: photograph your neighborhood one more time. Find something you noticed that you never would have seen at the start of this year. REFLECT: What changed in how you see your city?	★ CAPSTONE PRESENTATIONS PREP — All groups rehearse full presentation. Teacher provides final feedback. Guests confirmed for Week 34 presentation event.

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34	Capstone Presentations City Systems Redesign Proposals	Present written proposal — read aloud narrative section Respond to audience questions using evidence Reflect in writing: what would you change about your proposal if you had more time?	Present all data visualizations and mathematical evidence Walk audience through calculations Explain what the numbers say about the problem and the solution	Present historical section — what history are you responding to? Accept critique from guest respondents Reflect: what did history teach your design team?	Present scientific recommendation — what does the evidence require? Accept scientific critique Reflect: what would you investigate further if this were a real project?	Final Pinterest board review — students browse their own year of photos Choose 3 photos that best represent their growth as an observer Write one paragraph: how did this city change for me this year?	★ YEAR-END CELEBRATION — City Systems Redesign Proposal presentations. Guests invited: architects, planners, community members, parents. Students present as designers. Portfolios on display.

High School | Design Studio

About This Program

Design Studio is our most advanced program — built for high school students who want to think, write, and design at a serious level. Students read landmark urban theory (Jane Jacobs, Robert Rothstein, Matthew Desmond), analyze the political economy of cities, and develop the technical drawing and design skills of architecture students.

This is also our most intensive writing program. Students write analytical essays, policy briefs, research papers, and a major public-facing capstone proposal — all grounded in the physical reality of their own neighborhoods.

Year 1 Theme: Urban Systems, Justice & Design

The 8 Units

- Unit 1 — Reading the City (Weeks 1–4)
- Unit 2 — Power, Space & Architecture (Weeks 5–8)
- Unit 3 — Urban Economics & Equity (Weeks 9–12)
- Unit 4 — Infrastructure & Systems (Weeks 13–16)
- Unit 5 — Culture, Identity & Place (Weeks 18–21)
- Unit 6 — Environmental Justice & Climate (Weeks 22–25)
- Unit 7 — Media, Narrative & Urban Voice (Weeks 26–29)
- Unit 8 — Design Justice & Community Planning (Weeks 30–34)

URBAN SEEDS LEARNING — High School

Year 1: Urban Systems, Justice & Design | 34-Week Curriculum Timeline | All Subjects

English & Math — Blue • History — Amber • Science — Teal • Photo Prompt — Purple • ★ Field Trip / Capstone

WK	UNIT / THEME	ENGLISH	MATH	HISTORY	SCIENCE	PHOTO / DRAW PROMPT	MINI PROJECT / JOURNAL
UNIT 1 — Reading the City | Weeks 1–4 | Theme: How do architects and designers see the urban environment?							
1	Unit 1 Reading the City	▸ Concept: Urban observation as a discipline Read: The Death and Life of Great American Cities — Introduction (Jacobs) Writing: observation essay — describe your block as a systems analyst would Vocabulary: urban fabric, typology, density, grain, scale	▸ Concept: Ratio, scale, and proportion in design Architect's scale ruler — drawing at 1:100, 1:50, 1:200 Activity: draw your bedroom floor plan at 1:50 scale	▸ Concept: The pre-urban landscape What existed before cities — geography, ecology, Indigenous land use Primary source: historical land use map of Los Angeles Discussion: whose relationship to this land is not recorded?	▸ Concept: Urban ecology — cities as ecosystems Nitrogen cycle, carbon cycle, water cycle in the built environment Lab: map one complete ecological cycle through your school block	LOOK: Stand at an intersection in your neighborhood. Photograph all four corners. CONNECT: What does each corner tell you about this neighborhood's history, economy, and culture? REFLECT: What would Jane Jacobs notice that most people miss?	Design journal begins. Week 1 entry: annotated sketch of your block — label architectural typologies, land uses, and one ecological observation.
2	Unit 1 Reading the City	▸ Skill: Analytical writing Jacobs continued — 'The Uses of Sidewalks: Safety' Writing: apply Jacobs's theory of eyes on the street to a specific block in your neighborhood Vocabulary: mixed use, density, street life, safety	▸ Skill: Measurement and statistics Collect quantitative data about a city block Activity: measure setbacks, building heights, window-to-wall ratio on one building	▸ Content: Ancient urban planning Greek, Roman, Aztec, Chinese city grids — what organizing principle did each use? Comparative analysis: how does your city's grid compare?	▸ Content: Urban biodiversity science What species survive in cities and why? Lab: biodiversity survey — count and categorize living things on one city block	LOOK: Find a block that feels alive — busy, safe, diverse, interesting. Photograph it. Find a block that feels dead — empty, threatening, monotonous. Photograph it. REFLECT: Apply Jacobs's four conditions to explain the difference.	Journal: annotated photographs of both blocks with written analysis connecting to Jacobs.
3	Unit 1 Reading the City	▸ Skill: Research reading and annotation New text: The Color of Law — Chapter 1 (Rothstein) Writing: how did government policy create racially segregated neighborhoods? Annotate the text — identify claims, evidence, assumptions	▸ Skill: Proportional reasoning in urban context Calculate FAR (Floor Area Ratio) for buildings in your neighborhood Activity: compare FAR across 3 different neighborhood types	▸ Content: Medieval and Renaissance urbanism Cathedral cities, walled towns, merchant cities — what organized them? Primary source: Siena, Italy aerial view — analyze the spatial logic	▸ Content: Urban heat science Urban heat island effect — causes, measurement, consequences Lab: thermal mapping — measure surface temperatures at 6 locations in your neighborhood	LOOK: Find evidence of redlining's legacy in your neighborhood — a physical feature, a land use pattern, a demographic boundary. Photograph it. REFLECT: How do you know this is a legacy of policy rather than coincidence?	Journal: connect your block's physical form to one historical decision. Cite your source.
4	Unit 1 Reading the City	▸ Skill: Synthesis essay Synthesize Jacobs and Rothstein Writing: Unit 1 essay — how do physical form and policy together produce the neighborhoods we live in?	▸ Skill: Regression and correlation Analyze urban data sets — does tree canopy correlate with income?	▸ Content: Modernism and the City Le Corbusier's radiant city vs. Jacobs's mixed-use urbanism — the great 20th century debate	▸ Content: Urban ecology synthesis Connect all four weeks of ecology — how do policy, design, and ecology interact?	LOOK: Find a place in your neighborhood that reflects modernist planning principles — a superblock, a tower in a park, a pedestrian-hostile road. Photograph it.	Unit 1 essay due. Design journal Week 4 entry: annotated photograph with written analysis.

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			Activity: create a scatter plot using real neighborhood data	Socratic: which vision of the city was right?	Lab: design a study to test one hypothesis about ecological conditions in your neighborhood	REFLECT: What did the planners value? What did they not account for?	
UNIT 2 — Power, Space & Architecture | Weeks 5–8 | Theme: How does power shape the built environment?							
5	Unit 2 Power, Space & Architecture	▸ Concept: Architecture as power Read: excerpts from Invisible Cities (Calvino) + nonfiction on how buildings communicate authority Writing: how does the design of a government building communicate power?	▸ Concept: Geometry in architectural drawing Orthographic projection — plan, section, elevation Activity: draw a simple object in plan, section, and front elevation	▸ Concept: Imperial cities Rome, Constantinople, Beijing's Forbidden City — how did empires design capital cities? Discussion: what design choices signal that a city is the center of power?	▸ Concept: Geology and urban form How bedrock, topography, and soil determine where and how cities build Lab: soil compaction test — which soil could support a tall building?	LOOK: Find a government or institutional building in your city. Photograph it and sketch its facade. CONNECT: Identify 5 design decisions that communicate power, authority, or permanence. REFLECT: Who was this building designed to impress?	Journal: annotated facade drawing with written analysis of power communication in architecture.
6	Unit 2 Power, Space & Architecture	▸ Skill: Architectural criticism Read: Ada Louise Huxtable — selected architectural criticism Writing: write a short architectural critique of one building in your city	▸ Skill: Scale and proportion — 1-point perspective Draw a street in 1-point perspective Activity: use your neighborhood as the subject	▸ Content: Colonial urbanism How colonialism redesigned cities — Barcelona's grid in Buenos Aires, Haussmann's Paris, colonial grids in Africa and Asia Primary source: colonial city map — analyze what was erased	▸ Content: Impervious surfaces and stormwater Urban hydrology — how cities change water flow Lab: simulate a storm event — measure runoff from different surface types	LOOK: Find evidence of how power has shaped your neighborhood's physical form — a highway that cuts through, a civic building that dominates, a wall that separates. Photograph it. REFLECT: Who made this decision and who bore the consequences?	Mini project: Architectural Critique — 300-word critique of one building in your city. Analyze form, material, context, and meaning.
7	Unit 2 Power, Space & Architecture	▸ Skill: Argumentative essay Read: Robert Moses and the destruction of the Bronx Writing: was Robert Moses a visionary or a villain? Use specific architectural evidence	▸ Skill: 2-point perspective Draw a building corner in 2-point perspective Activity: photograph a building corner — use it as reference for your drawing	▸ Content: Resistance architecture Spaces designed to resist power — Underground Railroad safe houses, protest spaces, informal settlements Socratic: can architecture be an act of resistance?	▸ Content: Urban heat island — equity analysis Temperature data by neighborhood income — what does the pattern reveal? Lab: thermal mapping of two contrasting neighborhoods	LOOK: Find evidence of architectural resistance in your neighborhood — a community center that survived urban renewal, a mural on a building slated for demolition, an informal garden on an abandoned lot. Photograph it. REFLECT: What did it take to create or maintain this space?	★ FIELD TRIP WEEK — downtown Los Angeles: City Hall, Grand Central Market, Pershing Square, Grand Park. Photo prompt: POWER / RESISTANCE / PEOPLE
8	Unit 2 Power, Space & Architecture	▸ Skill: Essay refinement Revise and strengthen Unit 2 argumentative essay Peer review — feedback on evidence quality and architectural specificity	▸ Skill: Shadow and light in architectural drawing Add shadow and light to elevation drawings Activity: apply shadow theory to the building you drew in perspective	▸ Content: Contemporary civic architecture New civic buildings — what values do they express? Socratic: should all public buildings be accessible, beautiful, and sustainable — and who pays?	▸ Content: Biodiversity and urban green infrastructure Green corridors, wildlife crossings, pollinator paths Lab: design a green corridor connecting two fragments of habitat in your neighborhood	LOOK: Return to the government building from Week 5. Photograph one detail you missed the first time. REFLECT: What changed in how you see it?	Unit 2 essay final due. Architectural critique due.

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UNIT 3 — Urban Economics & Equity | Weeks 9–12 | Theme: How does money determine who gets what in a city?							
9	Unit 3 Urban Economics & Equity	▸ Concept: Political economy of cities Read: excerpts from Evicted (Desmond) — Chapter 1 Writing: how does housing cost shape where people can live?	▸ Concept: Statistics and economic data Gini coefficient — measuring income inequality Activity: calculate and compare Gini coefficients across 3 cities	▸ Concept: Mercantile cities How trade shaped Venice, Amsterdam, London — and who was excluded Discussion: who built the wealth of merchant cities and who benefited?	▸ Concept: Environmental justice science How pollution, heat, and flooding concentrate in low-income neighborhoods Lab: analyze environmental data for 3 zip codes with different income levels	LOOK: Photograph the most expensive and least expensive streets you can find within walking distance of each other in your city. REFLECT: What physical differences mark the boundary between them?	Journal: economic landscape analysis — annotated photographs with data comparing two contrasting neighborhoods.
10	Unit 3 Urban Economics & Equity	▸ Skill: Nonfiction analysis Evicted Ch. 2–4 Writing: analyze Desmond's use of data and personal narrative — why does he combine them?	▸ Skill: Linear regression Model the relationship between rent and proximity to transit Activity: create a scatter plot using real rent data from your city	▸ Content: Redlining and the creation of the racial wealth gap How mortgage policy created generational wealth — and denied it Primary source: HOLC redlining map of Los Angeles	▸ Content: Soil contamination and environmental racism How industrial land use concentrated environmental hazards in communities of color Lab: soil sample analysis — compare samples from industrial and residential areas	LOOK: Find a building in your neighborhood whose value has changed dramatically — a gentrified building, a formerly valuable building now abandoned. Photograph it. REFLECT: What economic force drove this change and who was affected?	Mini project: Redlining's Legacy — compare your neighborhood's HOLC grade from the 1930s to its current demographic and economic data. What patterns persist?
11	Unit 3 Urban Economics & Equity	▸ Skill: Research synthesis Evicted Ch. 5–7 + supplementary articles on housing policy Writing: argue for one housing policy change that would make your city more equitable	▸ Skill: Systems of equations Model competing interests in urban development — developer profit vs. community benefit Activity: solve a real estate development equity problem	▸ Content: Labor, housing, and the right to the city Housing rights movements — rent strikes, tenant organizing, public housing history Socratic: is housing a human right?	▸ Content: Water quality and environmental health Lead pipes, water access, and environmental health disparities Lab: water quality comparison — test samples from different neighborhood types	LOOK: Find an empty lot in your neighborhood. Photograph it and research who owns it and how long it has been vacant. REFLECT: Why is this land sitting unused while people lack housing nearby?	Journal: what would your city look like if housing were treated as a human right? Describe the physical changes you would see.
12	Unit 3 Urban Economics & Equity	▸ Skill: Policy brief Unit 3 policy brief: one housing or economic policy proposal — problem, evidence, solution, counterargument, conclusion Peer review	▸ Skill: Statistical analysis Analyze a large urban data set — find one pattern and argue for its significance Activity: use census data to support your policy brief claim	▸ Content: Gentrification — causes, consequences, debates Is gentrification inevitable? Can it be managed? Who benefits? Socratic: is it possible to improve a neighborhood without displacing the people who live there?	▸ Content: Sustainable materials and circular economy How cities can reduce waste through design Lab: material life cycle analysis — trace one building material from extraction to demolition	LOOK: Photograph your neighborhood's main commercial corridor. Document it systematically — one photograph every 5 minutes for 30 minutes. REFLECT: Who is this street for and who is it changing for?	Policy brief due. Redlining's Legacy project due.
UNIT 4 — Infrastructure & Systems | Weeks 13–16 | Theme: How do the invisible systems of cities work — and who controls them?							
13	Unit 4 Infrastructure & Systems	▸ Concept: Infrastructure as politics Read: The Big Necessity (George) — excerpts on global sanitation Writing: infrastructure is never neutral — who	▸ Concept: Mathematical modeling of systems Linear and exponential models for infrastructure capacity	▸ Concept: Ancient hydraulic engineering Roman aqueducts, Mesopotamian irrigation, Aztec chinampas Primary source: Roman aqueduct engineering	▸ Concept: Forces and structural systems Compression, tension, torsion, shear in real structures	LOOK: Find the most significant piece of infrastructure in your neighborhood. Photograph it from multiple angles.	Design journal: infrastructure documentation — annotated photographs of 4 infrastructure types with research notes.

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		decides where it goes and who it serves?	Activity: model your city's water system using flow equations	drawing — how does it work?	Lab: build and test structural models — identify failure modes	CONNECT: Research when it was built, by whom, and for whom. REFLECT: Does it still serve the community it was designed for?	
14	Unit 4 Infrastructure & Systems	▸ Skill: Technical writing Read: urban infrastructure failure case studies — Flint, Puerto Rico, New Orleans Writing: analyze one infrastructure failure — what went wrong politically, not just technically?	▸ Skill: Scale and technical drawing Draw a building section at 1:50 scale showing structural systems Activity: identify the structural system in your school building and draw it	▸ Content: Industrial infrastructure and its consequences Railways, freeways, power grids — who bore the cost of their construction? Primary source: photograph of freeway construction through a neighborhood, 1950s	▸ Content: Urban heat and infrastructure How infrastructure contributes to and can mitigate urban heat Lab: thermal imaging exercise — identify heat sources and sinks near school	LOOK: Find infrastructure that is in poor condition in your neighborhood. Photograph it and document its state of repair. CONNECT: Research the last time it was maintained. REFLECT: What does its condition reveal about political priorities?	Mini project: Infrastructure Justice Analysis — select one infrastructure system in your city. Document who it serves, who built it, who maintains it, and who bears its costs.
15	Unit 4 Infrastructure & Systems	▸ Skill: Argumentative research paper Building toward Unit 4 paper Research: one infrastructure policy debate in your city — where to site a new freeway, transit line, or facility Annotated bibliography due	▸ Skill: Pythagorean theorem and trigonometry in design Calculate structural dimensions using real engineering formulas Problem set: calculate the height of a building from shadow length and sun angle	▸ Content: Sustainable infrastructure systems Transit-oriented development, green infrastructure, distributed energy Socratic: what would a just infrastructure system look like in your city?	▸ Content: NGSS engineering design — systems level How engineers design for system redundancy and resilience Lab: design a resilient water delivery system for a hypothetical community	LOOK: Find where a major piece of infrastructure meets a community — a freeway on-ramp adjacent to homes, a substation next to a school. Photograph the interface. REFLECT: What design decisions created this proximity and who made them?	★ SEMESTER 1 CAPSTONE BEGINS — Urban Systems Analysis (individual). Students select one urban system in their neighborhood to analyze in depth.
16	Unit 4 / Capstone Infrastructure / Capstone Work	▸ Capstone writing Draft Urban Systems Analysis paper — introduction and first body section Peer review workshop — feedback on argument clarity and evidence quality	▸ Capstone math Develop quantitative evidence for your systems analysis Activity: create at least 2 original data visualizations	▸ Capstone history Trace the historical decisions that created your chosen system Write a 250-word historical section for your paper	▸ Capstone science Document one environmental condition related to your system Create an annotated diagram showing ecological implications	Photograph your chosen system thoroughly this week — document current conditions, users, impacts.	★ CAPSTONE WORK WEEK — Urban Systems Analysis paper first draft due end of Week 16. Peer review and presentation Week 17.
17	**★ GALLERY WALK & SEMESTER 1 CELEBRATION — Students present Urban Systems Analysis. Guests invited. Portfolio review, peer critique, and celebration.**						
UNIT 5 — Culture, Identity & Place | Weeks 18–21 | Theme: How do communities claim space and resist displacement?							
18	Unit 5 Culture, Identity & Place	▸ Concept: Cultural geography Read: excerpts from Landscapes of the Metropolis of Death (Kulka) Writing: how does physical space shape cultural identity — and vice versa?	▸ Concept: Data and demographic change GIS mapping basics — reading and interpreting demographic maps Activity: compare 5 demographic maps of your city — what stories do they tell together?	▸ Concept: Cultural landscapes across history Sacred sites, pilgrimage routes, cultural districts — how communities have marked space Discussion: what makes a place sacred? Who decides?	▸ Concept: Urban biodiversity and cultural ecology How different cultural communities have brought different plants and animals to cities Lab: document evidence of cultural ecology in your	LOOK: Find a place in your neighborhood where cultural identity is powerfully expressed in physical space. Photograph it from multiple perspectives. CONNECT: Research its history — who created it and when?	Journal: cultural landscape analysis — annotated photographs and research notes on one culturally significant place.

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					neighborhood — plants, animals, land uses	REFLECT: Is it threatened? By what?	
19	Unit 5 Culture, Identity & Place	▸ Skill: Personal and academic writing Read: Gloria Anzaldúa — Borderlands/La Frontera (excerpts) Writing: write a hybrid essay combining personal memory of a place with academic analysis of its cultural significance	▸ Skill: Statistical inference Demographic data analysis — draw defensible conclusions from sample data Activity: analyze cultural shift in a neighborhood using census data from 3 time periods	▸ Content: Cultural neighborhoods and displacement Koreatown, East LA, Little Tokyo — histories of cultural space in Los Angeles Primary source: interview excerpt with a longtime community resident	▸ Content: Air quality and respiratory health How air quality varies by neighborhood and why Lab: air quality monitoring — PM2.5 measurement near a busy road vs. a park	LOOK: Find a cultural institution — a restaurant, a place of worship, a cultural organization — that has survived pressure to leave. Photograph it. REFLECT: What strategies did this institution use to stay?	Mini project: Oral History Documentation — interview one community member (with permission) about one place in the neighborhood. Transcribe and annotate the key quotes.
20	Unit 5 Culture, Identity & Place	▸ Skill: Research and synthesis Read: Right to the City (Lefebvre) — key passages Writing: apply Lefebvre's right to the city concept to one struggle in your neighborhood	▸ Skill: Modeling cultural change Build a model of how a neighborhood changes over 50 years using demographic data Activity: create a timeline visualization	▸ Content: Anti-displacement strategies Community land trusts, cultural districts, heritage protection — how cities can protect cultural space Socratic: whose culture gets protected and whose is sacrificed?	▸ Content: Noise pollution and community health How noise affects health — and why it concentrates in low-income neighborhoods Lab: decibel measurement across 5 neighborhood locations	LOOK: Find evidence of cultural displacement in your neighborhood — a business that closed, a sign in a language that is disappearing, a building repurposed from cultural to commercial use. Photograph it. REFLECT: What was lost and who mourns it?	Journal: apply the right to the city to one specific displacement story in your neighborhood. What would justice look like here?
21	Unit 5 Culture, Identity & Place	▸ Skill: Research paper Unit 5 research paper: how is one cultural community in your city claiming space, resisting displacement, or negotiating its identity in the built environment? Draft due	▸ Skill: Data presentation Present your demographic analysis from the past 3 weeks Activity: create a data story — combine maps, charts, and text to tell a neighborhood's demographic history	▸ Content: Architecture and identity politics Who designs buildings for communities of color? Who should? Socratic: does a community have the right to design its own spaces?	▸ Content: Urban ecology and environmental justice synthesis How biodiversity, air quality, heat, and noise intersect with race and income Lab: neighborhood environmental justice score — calculate a composite score for your zip code	LOOK: Photograph one block of your neighborhood that tells the full story of cultural change — loss, persistence, and resistance all visible simultaneously. REFLECT: How would you tell this block's story?	Unit 5 research paper draft due. Oral History Documentation due.
UNIT 6 — Environmental Justice & Climate | Weeks 22–25 | Theme: How do cities cause and respond to climate change — and who bears the burden?							
22	Unit 6 Environmental Justice & Climate	▸ Concept: Cities and the climate crisis Read: A Field Guide to Climate Anxiety (Ray) — Chapter 1 Writing: what is your city's relationship to climate change — as cause and as victim?	▸ Concept: Exponential growth and environmental models Model carbon emissions, temperature rise, sea level change Activity: project LA's average temperature in 2050 under different emissions scenarios	▸ Concept: Environmental history — from conservation to climate Sierra Club to Green New Deal — the evolution of environmental politics Primary source: Rachel Carson — Silent Spring excerpt	▸ Concept: Climate science — urban emissions How cities contribute to greenhouse gas emissions — buildings, transportation, waste Lab: calculate your school's carbon footprint	LOOK: Find physical evidence of climate change in your neighborhood — a dead tree, a flood-damaged sidewalk, extreme heat infrastructure. Photograph it. REFLECT: How long has this been here? Is it getting worse?	Journal: climate vulnerability analysis — what are the 3 greatest climate risks to your specific neighborhood?

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23	Unit 6 Environmental Justice & Climate	▸ Skill: Scientific argumentation Read: Naomi Klein — This Changes Everything (selected passages) Writing: argue for a specific climate policy change in your city — use scientific evidence	▸ Skill: Statistical analysis of climate data Analyze temperature, precipitation, and extreme weather trends Activity: create a data visualization showing climate change in Los Angeles	▸ Content: Environmental justice and climate burden Why climate change hits low-income communities and communities of color hardest Primary source: environmental justice map of LA — where does heat concentrate?	▸ Content: Sustainable design systems Passive house, LEED, living building — what does truly sustainable architecture look like? Lab: insulation and energy test — calculate thermal performance of different wall assemblies	LOOK: Find evidence of environmental injustice in your neighborhood — proximity to a highway, an industrial facility, a heat island with no shade. Photograph and document it with data. REFLECT: Who made the decision that put this here?	Mini project: Environmental Justice Brief — 2-page analysis of one environmental injustice in your city. Problem, evidence, affected community, solution, and opposition.
24	Unit 6 Environmental Justice & Climate	▸ Skill: Policy analysis Read: California climate policy documents — AB 32, SB 375 Writing: analyze one California climate policy — what does it achieve and for whom?	▸ Skill: Engineering optimization Calculate energy efficiency improvements — what is the ROI of building upgrades? Activity: design a net-zero energy retrofit for your school building	▸ Content: Climate adaptation and cities Sea walls, green infrastructure, managed retreat — how cities are adapting Socratic: can cities adapt to climate change without addressing the inequities that created the crisis?	▸ Content: Renewable energy in the built environment Solar, geothermal, wind at the building and district scale Lab: solar potential analysis — calculate solar potential of your school roof	LOOK: Find a space in your neighborhood where climate adaptation is visible — a shade structure, a green roof, a permeable surface, a community cooling center. Photograph it. REFLECT: Who has access to this adaptation measure and who doesn't?	★ FIELD TRIP WEEK — Griffith Park, LA River, or coastal area showing climate impact. Photo prompt: VULNERABILITY / RESILIENCE / JUSTICE
25	Unit 6 Environmental Justice & Climate	▸ Skill: Research synthesis and revision Return to Unit 6 policy analysis or climate argument Full revision cycle — sharpen argument, strengthen evidence, refine academic voice	▸ Skill: Modeling climate futures Project environmental conditions under two scenarios: business as usual vs. aggressive action Activity: create a visual showing your neighborhood in 2050 under each scenario	▸ Content: Climate solutions at the city scale C40 Cities, urban climate commitments, what cities can actually do Socratic: is it ethical to ask individuals to change behavior when corporations cause the majority of emissions?	▸ Content: Engineering for resilience How engineers design for a changing climate Lab: design a climate-resilient bus stop for your neighborhood — sketch, calculate, justify	LOOK: Return to a place you photographed earlier in the year. Photograph it again. REFLECT: What changed — in the place, in the season, or in your understanding of what you're looking at?	Environmental Justice Brief due. Revised climate policy analysis due.
UNIT 7 — Media, Narrative & Urban Voice | Weeks 26–29 | Theme: Who tells the story of cities — and who gets to speak?							
26	Unit 7 Media, Narrative & Urban Voice	▸ Concept: Urban narrative and media Read: Invisible Man (Ellison) — selected passages on urban experience Writing: who tells the story of your neighborhood and from whose perspective?	▸ Concept: Data and narrative How the same data can tell different stories depending on framing Activity: take the same neighborhood data and write two opposing op-eds	▸ Concept: Photography and documentation How photographers have documented cities — Dorothea Lange, Gordon Parks, Sebastião Salgado Discussion: what ethical responsibilities does a photographer have to their subject?	▸ Concept: Technology and urban data Smart cities, surveillance capitalism, data privacy Lab: map the surveillance infrastructure in your school neighborhood — cameras, license plate readers, sensors	LOOK: Photograph your neighborhood as if you were creating a documentary about it — choose your subjects, your angles, your light deliberately. REFLECT: What story are you telling and what story are you leaving out?	Journal: media analysis — compare how two different media outlets have covered the same issue in your neighborhood. Annotate the differences.
27	Unit 7 Media, Narrative & Urban Voice	▸ Skill: Media analysis Read: selected essays on urban journalism and community media Writing: critique one media representation of your neighborhood — what	▸ Skill: Statistical communication How to present data to persuade without misleading Activity: create two data visualizations of the same	▸ Content: Architecture criticism and public discourse How architectural critics shape public understanding of cities	▸ Content: Urban technology and environmental monitoring How sensors, satellites, and open data are changing what we know about cities	LOOK: Find graffiti or unsanctioned public art in your neighborhood. Photograph it. CONNECT: Research the artist if possible — who are	Mini project: Community Media Audit — document and analyze 8 examples of how your neighborhood is represented in media, both official and unofficial.

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		does it get right and wrong?	data — one honest, one manipulative. Discuss the difference.	Primary source: Jane Jacobs' newspaper columns from the 1950s	Lab: use publicly available air quality or temperature data to map your neighborhood's environmental conditions	they and what is their message? REFLECT: What does this say that official channels won't?	
28	Unit 7 Media, Narrative & Urban Voice	▸ Skill: Public writing Read: community journalism examples Writing: write a 500-word profile of a place in your neighborhood for a general audience	▸ Skill: Probability and risk communication How to communicate uncertainty — how much does risk reporting shape public perception? Activity: analyze media coverage of a city risk (earthquake, flood, crime) for statistical accuracy	▸ Content: Community media and counter-narrative Zines, podcasts, community radio, murals as journalism Socratic: is community media more trustworthy than mainstream media? What are its limitations?	▸ Content: Renewable energy and urban narrative How cities communicate their sustainability commitments — greenwashing vs. genuine transformation Lab: audit your school's energy use — does it match the institution's sustainability claims?	LOOK: Find a place in your neighborhood where community members have created their own media — a mural with a political message, a community bulletin board, a community-made sign. Photograph it. REFLECT: Is this form of communication reaching its intended audience?	Journal: write the story of your neighborhood from the perspective of someone who has lived there for 50 years. What would they include that no journalist would?
29	Unit 7 Media, Narrative & Urban Voice	▸ Skill: Op-ed and public essay Unit 7 public essay: argue for how your neighborhood should be represented — in media, in policy documents, in public art Share publicly if possible	▸ Skill: Data storytelling synthesis Combine all data collected this year into one coherent data story about your neighborhood Activity: design the structure and argument of your capstone presentation	▸ Content: Architecture and narrative How buildings tell stories — what stories does your school building tell? Socratic: whose story should architecture tell — the powerful or the people?	▸ Content: Future of cities — science synthesis What does climate science, ecology, and engineering say is possible for cities in 2050? Lab: student-designed future cities scenario — speculative but evidence-based	LOOK: Photograph something in your neighborhood that you now see completely differently than you did at the start of the year. REFLECT: What changed in how you read this place? What changed your mind?	Public essay due. Community Media Audit due.
UNIT 8 — Design Justice & Community Planning | Weeks 30–34 | Theme: How do we design cities that work for everyone?							
30	Unit 8 Design Justice & Community Planning	▸ Concept: Design justice Read: Design Justice (Costanza-Chock) — Chapter 1 Writing: what does it mean to design with a community rather than for a community?	▸ Concept: Mathematical modeling for design decisions Cost-benefit analysis, trade-off modeling Activity: model the costs and benefits of three different approaches to a community design problem	▸ Concept: Community planning history Model Cities, Community Action Program, participatory design movements of the 1960s-70s Discussion: what happened to community planning after the 1970s and why?	▸ Concept: Engineering for social impact How engineers and designers are addressing justice through their work Lab: design a solution to one physical problem in your school — follow a community co-design process	LOOK: Find a space in your neighborhood that was clearly designed without community input. Photograph it. CONNECT: Research who designed it and what process they used. REFLECT: What would this space look like if the community had been at the table?	★ SEMESTER 2 CAPSTONE BEGINS — Community Design Proposal (group project). Groups form around shared sites. Stakeholder analysis begins.
31	Unit 8 Design Justice & Community Planning	▸ Skill: Research and stakeholder analysis Identify all affected stakeholders for your site Writing: stakeholder analysis — who is affected, what do they need, whose voices are missing?	▸ Skill: Mathematical modeling for proposals Quantify the problem your group is addressing with real data Capstone work: build a data case for your proposal	▸ Content: Participatory design methods Charrettes, community workshops, photovoice — how communities participate in design Primary source: documentation from a real community design process	▸ Content: Environmental impact assessment How designers analyze environmental consequences of proposals Capstone lab: conduct a simple environmental impact assessment of your proposed site	Photograph prompt: document your site thoroughly — photograph existing conditions, evidence of need, community assets worth preserving, and anything that surprises you.	Capstone: Site analysis complete. Stakeholder analysis complete. Proposal outline due.

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32	Unit 8 Design Justice & Community Planning	▸ Skill: Technical proposal writing Read: sample community design proposals Writing: draft your group's proposal narrative — problem, vision, design response, community benefit	▸ Skill: Data visualization for public audiences Create clear, honest, compelling data displays for a community audience Capstone work: build 3 data exhibits supporting your proposal	▸ Content: Zoning, land use policy, and design How zoning codes shape what can be built — and how communities can change them Socratic: should communities have veto power over development in their neighborhood?	▸ Content: Life cycle analysis in design How designers calculate the full environmental cost of a building Capstone science: draft an environmental brief for your proposed site	Photograph prompt: document your design process — meetings, sketches, models, community conversations. The process of co-design is as important as the outcome.	Proposal narrative draft due. Data visualization draft due. Group peer review.
33	Unit 8 Design Justice & Community Planning	▸ Skill: Presentation and verbal defense Prepare full verbal presentation of proposal — argument, evidence, community benefit, trade-offs Rehearsal with critique from other groups	▸ Skill: Final mathematical verification Verify all data, calculations, and projections in proposal Check: does your evidence actually support your claim?	▸ Content: Final historical connection What historical injustice does your proposal address or risk repeating? Write: a 300-word historical accountability statement	▸ Content: Final environmental assessment Complete environmental analysis of your proposal Write: what does the science require this design to address?	Final photograph: go to your neighborhood one more time. Find something you can notice now that was invisible to you in September. REFLECT: What does this mean for how you will move through cities for the rest of your life?	★ CAPSTONE PRESENTATIONS PREP — All groups rehearse. Guest respondents confirmed. Portfolios assembled.
34	**★ YEAR-END CELEBRATION — Community Design Proposal Presentations. Guest respondents: architects, planners, community organizers, policy makers. Students present as designers and advocates. Year-long portfolios on display.**						

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