

Lesson 4.16: Careers in Housing, Interior Design, and Sustainability

Unit: Unit 4, Spaces We Live In (Environmental Design and Management) **Topic:** 4.4 Careers **Grade:** 6 to 8 (written at grade 7; see Differentiation for the grade 6 support and grade 8 stretch) **Days:** 1 class period of 40 minutes (day 114) **Room:** classroom or FACS lab

Standards

- NYS module line: NYS EDM 4. Career Pathways a) Explain roles and functions of individuals engaged in environment, housing, and interior design careers
- NYS module line: NYS EDM 4. Career Pathways b) Investigate education and training requirements and opportunities for career paths in environment, housing, and interior design fields
- NYS module line: NYS EDM 4. Career Pathways c) Assess personal employability skills for careers in environment, housing, architecture, and interior design and evaluate personal suitability for these careers
- NYS module line: NYS EDM 2. Environment and Interior Design e) Predict future housing design incorporating technology and demographic data
- CTE theme line: CTE CCO 2. Career Clusters a) Identify and use career resources to obtain information about careers and employment trends
- CTE theme line: CTE CCO 4. Career Plans b) Assess personal characteristics such as interests, abilities, and aptitudes in relation to characteristics associated with careers of interest
- CTE theme line: CTE CCO 1. The Work World d) Identify changes likely to occur in home, school, and community environments that will likely change work environments in the future
- NYS FACS Learning Standard 3 (Intermediate), Key Idea: Students will understand and be able to manage personal resources of talent, time, energy, and money and make effective decisions in order to balance their obligations to work, family, and self.; Performance Indicator: Students identify their own abilities and interests as possible guides to career choice.
- CDOS Standard 1 Career Development: Students will be knowledgeable about the world of work, explore career options, and relate personal skills, aptitudes, and abilities to future career decisions.
- National FCS 3.0: 11.1.1 Explain what people in housing and interior design careers do.
- National FCS 3.0: 1.2.1 Examine possible careers to find what each one requires and offers in knowledge, skills, attitudes, and openings.
- National FCS 3.0: 11.5.5 Predict where design in architecture, interiors, and furnishings is heading.

Note on EDM 2. e). This is the only lesson in Unit 4 that prints it, and it is taught in Step 4, not cited in passing. Step 4 gives two demographic facts and two technologies and asks every student to write one prediction about how homes will be designed, with a reason

that names one fact and one technology. The line sits in a careers lesson on purpose: CCO 1. d) is about changes to homes and communities that change the work, which is the same sentence read from the other end. CDOS 3a Thinking Skills also fits Step 4; CDOS 1 is cited above because the rest of the period is career development.

Enduring understanding and essential question

Big idea: Every room you have been in this unit was designed, built, wired, plumbed, inspected, sold, managed, and kept green by somebody who gets paid for it. Many of those jobs start in a high school CTE shop, not a college lecture hall. **Essential question:** Which of the people who made your client's room could you be?

Objectives

By the end of this lesson, students will be able to:

1. (Low) Given the career cards, match thirteen housing, design, and sustainability careers to what each person does on a real project.
2. (Mid) For three careers, compare the education or training path, a typical day, and the pay range, and sort each path as college degree, apprenticeship or trade school, or license after experience.
3. (High) Rate their own fit for two careers on the “would I like this” self-check, using evidence from what they did in Project 04, and defend one rating in writing.

Vocabulary

Tier 2 (general academic): career, license, certification, apprenticeship, trade Tier 3 (FACS): architect, interior designer, contractor, HVAC (heating, ventilation, and air conditioning), home inspector, energy auditor, property manager, sustainability consultant, CTE (career and technical education). See Vocabulary 04.md for Turkish, Portuguese, and Spanish.

Materials and setup

- Handout 04.16 - Housing and Design Careers Cards.md: thirteen career cards (one set per table of four), the Project Chain sheet (one per student), and the “would I like this” self-check (one per student)
- The class's finished models on the shelf, and one client card held up for the hook
- Slides: Slides 04.16 - Careers in Housing Interior Design and Sustainability
- Optional: a guest for ten minutes (a contractor, electrician, real estate agent, or the school's facilities manager) *[Sal: the state's illustrative activity for this module compares research to a guest speaker; if you get a guest, have students write two questions the day before]*
- Setup notes: cut the card sets the day before. Print the pay ranges as they are on the cards and say in class that they are marked *[update]; the numbers move every year. [Sal: pull the current median from the Bureau of Labor Statistics Occupational Outlook Handbook (bls.gov/ooh) before you teach this; the cards say where each number came from.]*

Pre-assessment

The do now (name three people who would work on the Okafor room) shows what students already know about who does what in housing. Expect “builder” and “designer”; the lesson is the other eleven.

Do now and hook (Time: 4 min)

On the board: “Grandpa Okafor’s room is going to be built for real: a wider door, a new outlet by the bed, a fresh coat of paint, and a walk-in shower next door. Name three different people, by job, who would work on it.” One minute. Take answers on the board in a column.

Hook: “I counted thirteen. Some of them make more than the architect. Some of them started at sixteen in a high school shop class. By the end of today you will know which one you would be.”

Procedure

Step	Teacher will	Students will	Time
1. Direct instruction: the project chain	Slides 2 to 6. Walk the Okafor room from idea to move-in as a chain of people: the architect draws it and stamps it; the interior designer plans the room and the finishes; the contractor runs the job and hires the trades; the electrician wires the outlet and the switch at wheelchair height; the plumber moves the shower; the HVAC technician sizes the heat and air; the home inspector checks it against the code; the energy auditor tests where the house leaks heat; the sustainability	Follow on the Project Chain sheet, writing each job next to its step.	9 min

	consultant picks the low-VOC paint and the LED lighting plan for the whole project; the landscape designer fixes the ramp and the path outside; the furniture maker builds the bed at the right height; the real estate agent sells the house someday and the property manager runs it if it becomes a rental. Say the three paths: a college degree (architect, landscape architect, most interior designers), an apprenticeship or trade school after high school CTE (electrician, plumber, HVAC, many contractors and furniture makers), and a license earned after a course and experience (real estate agent, home inspector, energy auditor). Say it plainly: many of these start in a high school CTE program and pay you while you learn.		
2. Learning activity: the career card sort	Slide 7. Tables get the thirteen cards. First sort: by path (degree,	Sort twice. Fill the three-career comparison.	11 min

	apprenticeship or trade, license after experience). Second sort: by where the person works most (an office, a job site, a client's home, all three). Then each student picks three cards and fills the comparison table on the Project Chain sheet: what they do, a day in the life, the path, the pay range.		
3. The self-check	Slide 8. Hand out the "would I like this" self-check: ten statements (I liked measuring and drawing the plan; I liked building the model; I liked the budget; I liked pitching to the client; I like being outside; I like fixing things; I like working with my hands; I like working alone; I like working with people; I want to be in charge of the job). Each maps to careers on the card. Students rate each statement 1 to 4 and add up by career. Then choose two careers and write a fit rating with one piece of evidence from Project 04 ("I rated electrician a 3	Rate. Total. Choose two careers. Write the rating and the evidence.	8 min

	because I liked building the model but I did not like the path measuring”).		
4. Where housing is going, then the bridge	First 4 minutes, slide 12. Two demographic facts, said plainly and with the source on the slide: the share of people in the United States aged 65 and over is rising and is projected to keep rising, and the average household has fewer people in it than it did fifty years ago. Two technologies already in houses being built now: sensors and controls (a thermostat that learns the schedule, leak sensors under a sink, cameras and door locks on a phone) and heat pumps with better insulation, which change what a mechanical room needs; plus modular building, where rooms are built in a factory and trucked in. Then the question every student answers: “Pick one fact and one technology. What will a house being designed in 2045 have that	Write one prediction on Part 4 of the Project Chain sheet: one demographic fact, one technology, one thing the 2045 house has, one thing it does not need. Three read aloud. Then share or listen, and write one CTE program name on the self-check.	6 min

	yours does not, and what will it not need any more?" Take three predictions out loud and push each one to name its fact and its technology, not a gadget. Say the career link in one sentence: every prediction on the board is somebody's job in ten years, which is why the electrician card and the energy auditor card are on the table. Last 2 minutes, slide 13: four students say a career and their evidence, then the bridge, the CTE programs at <i>[Sal: the local BOCES or your school's high school partner or feeder district]</i> that lead to these trades, and that a student who can draw a plan to scale, price a room, and pitch it has already done the first week of every one of these jobs.		
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Questions to ask

Monitor understanding:

- Who wires the outlet? Who checks that it was wired right? Are those the same person?
- Which three careers on the cards do not need a four-year degree? What do they need instead?
- What is an apprenticeship?

Deepen learning:

- The electrician's median pay on the card is higher than the interior designer's. Why do you think that surprises people?
- An energy auditor did not exist as a job fifty years ago. Which job on these cards might not exist in fifty years, and which new one might?
- Which part of Project 04 did you like most? Which card has the most of that?

Check for understanding

Clipboard check during Step 2: for each table, "path sort correct" (the key is on the teacher page of the handout) and for each student, "three careers compared with a path named." A student whose comparison has "college" for the electrician gets the apprenticeship question at Step 3.

Closure (Time: 2 min)

Exit line on the self-check, torn off: "The career I fit best is ___ because in the project I . ***The path to it is .***" Two read aloud. Sort by path; if most of a class chose the degree path only, open Lesson 4.17's review with the trades bridge again.

Differentiation and supports

- ELL: each career card has a picture line (a hard hat, a drafting pen, a wrench, a thermostat, a key) and a one-sentence job description in plain English at the top; the self-check statements have icons; Part 4 has two sentence frames, "By 2045 a house will have ___ because " ***and "A house will not need*** any more"; the words job, build, fix, draw, sell, check in Turkish, Portuguese, and Spanish on the cards (see Vocabulary 04.md); the exit line can be written in the home language.
- IEP and 504 (general): sort with a partner; compare two careers instead of three; the self-check can be read aloud by a partner and answered with a highlighter; extended time: the comparison table can finish as the do now of Lesson 4.17.
- Grade 6 support: first sort only (by path), and one career in the comparison table. On Part 4, the fact and the technology are circled from the two choices on the slide rather than recalled, so the writing is only the prediction sentence.
- Grade 8 stretch: for one career, find the current median pay and the projected job growth on [bls.gov/ooh](https://www.bls.gov/ooh) (if a device is available) and correct the card's *[update]* number; write two questions for a guest speaker that research alone could not answer, as the state's illustrative activity asks. On Part 4, name which of the thirteen careers gains work from their prediction and which loses it, and say why.
- UDL checkpoint used: multiple means of engagement (the self-check ties every career to what the student already did in the project) and multiple means of representation (a chain diagram, physical cards, and a table).
- No-kitchen or no-machine alternative: not a lab; no alternative needed.

Assessment

Objective	Standards met	Learning task	Assessment
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			(formative or summative; tool)
1. Match thirteen careers to what each does	EDM 4. a); National FCS 11.1.1	Project Chain sheet, Step 1; card sort, Step 2	Formative; clipboard check; summative on the Unit 4 Test careers items
2. Compare three careers by path, day, and pay	EDM 4. b); CCO 2. a); CDOS 1	Comparison table, Step 2	Formative; table scored complete, partial, or missing for daily work
3. Rate own fit with evidence	EDM 4. c); CCO 4. b); Std 3 PI E; National FCS 1.2.1	Self-check, Step 3; exit line	Formative; the exit line goes in the FACS folder for the Unit 7 career plan

Homework

None. Optional: ask an adult at home what the last person who came to fix or build something in your home did for a living, and how they learned it.

Connections

Guidance or the school counselor: the self-check feeds the NYS Career Plan that guidance keeps; share the exit lines. The local BOCES or your school's CTE partner: a five-minute video or a visit from a current CTE student in electrical, plumbing, or HVAC is worth more than the pay slide [*Sal: name the program*]. Unit 7 (careers and the resume) picks these cards back up.

Sources

- NYS Middle Level CTE FACS Content Module 04, Environmental Design and Management (nycetcenter.org, June 2018), lines 4. a), b), c) and the Career and Community Opportunities illustrative activity (research versus guest speaker). Copy in 02 Standards/NYS Module PDFs/.
- NYS Middle Level CTE FACS Content Module 04, Environmental Design and Management, line 2. e), which Step 4 teaches. Same file.
- NYS Middle Level CTE Theme Module, Career and Community Opportunities, lines 1. d), 2. a), and 4. b). Same folder.
- Demographic facts on slide 12: U.S. Census Bureau, population projections by age and the historical series on average household size (census.gov). Both are stated on the slide as a direction, not as a figure, so nothing on the slide goes stale. [*Sal: if you want the actual numbers on the slide instead of the direction, pull them from census.gov the week you teach it and print the year next to each, the same rule the Lesson 5.14 fact table uses.*]

- NYS Learning Standards for Health, Physical Education, and Family and Consumer Sciences (1996), Standard 3, Intermediate. Wording per 02 Standards/STANDARDS SOURCES - web research.md, section 2. *[Sal: confirm against the NYSED PDF.]*
- CDOS Standard 1, Intermediate, per 02 Standards/STANDARDS CROSSWALK.md, A.7.
- National Standards for Family and Consumer Sciences Education 3.0 (LEAD FCS Education, 2018), competencies 11.1.1 and 1.2.1, per 02 Standards/STANDARDS SOURCES - web research.md, sections 4.1 and 4.11.
- Pay ranges and education paths: U.S. Bureau of Labor Statistics, Occupational Outlook Handbook (bls.gov/ooh), entries for architects, interior designers, construction managers, electricians, plumbers, heating and air conditioning mechanics and installers, real estate brokers and sales agents, property managers, construction and building inspectors, landscape architects, woodworkers. Energy auditor and sustainability consultant figures are estimates from job listings; all are marked *[update]* on the cards.
- Sal's own materials:
education_teachingwork_design_through_the_decades_2026_04.docx and
education_teachingwork_sustainable_style_2026_04.docx (the designer and sustainability roles named in those packets).

Teacher notes

- If the period runs short, cut the second sort in Step 2 (by workplace) and take two shares instead of four. Do not cut the first four minutes of Step 4; that is where EDM 2. e) is taught and it is taught nowhere else in the unit.
- Step 4 is six minutes, not three, because the future-housing prediction lives in it. The three minutes came one at a time out of Steps 1, 2, and 3: Step 1 drops the slowest of the three path explanations to a single sentence, Step 2's second sort becomes a hand vote instead of a physical re-sort, and Step 3's totaling is done while the teacher reads the ten statements out loud instead of after. The period still runs 4 plus 9 plus 11 plus 8 plus 6 plus a 2-minute closure.
- On the prediction, block the gadget answer. "A robot that folds laundry" is not a prediction about housing design. Push with one question: "What has to change about the room for that to work?" A student who says the closet needs an outlet and a drain has made a design prediction.
- Common mistake: students hear "apprenticeship" as "not a real job." Say the pay out loud and say that an apprentice is paid from day one.
- Common mistake: the home inspector and the contractor get confused. The contractor builds; the inspector checks the builder and works for the buyer or the town, not the builder.
- *[Sal: your own path, business degree to MBA to Oracle to fitness to a classroom, is proof that a path bends. Two sentences on that at Step 4 will land.]*
- The self-check exit lines are worth keeping in the FACS folder; Unit 7's career plan lesson asks students to look back at them.