

Lesson 7.10: Build the Pitch and Prototype

Unit: Unit 7, Launch: Career Readiness and FACS Shark Tank (capstone; draws on Individual Growth and Life Readiness) **Topic:** 7.2 FACS Shark Tank **Grade:** 6 to 8 (written at grade 7; see Differentiation for the grade 6 support and grade 8 stretch) **Days:** 2 class periods of 40 minutes (days 177 and 178 of the year in the 13-period calendar; days 178 and 179 if the unit runs fourteen periods) **Room:** FACS lab preferred, because the prototypes use the year's own tools: the sewing stations, the kitchen for a food sample, poster space, rulers and graph paper for a floor plan. A plain classroom works; see the alternatives in Differentiation.

Standards

- NYS module line: NYS IGLR 2. Goal Setting d) Design, implement, and evaluate a plan to attain a desired goal
- NYS module line: NYS IGLR 5. Career Pathways b) Examine the skills needed to become an entrepreneur
- NYS module line: NYS IGLR 3. Employability b) Show understanding of interpersonal dynamics
- CTE theme line: CTE PSI 2. Design Process (Proactive) a) f. Developing and constructing a prototype or model of the selected design
- CTE theme line: CTE PSI 2. Design Process (Proactive) a) g. Testing and evaluating the prototype and model against the design criteria and constraints
- CTE theme line: CTE CIR 3. Workplace Communication f) Demonstrate effective communication skills in a group setting to accomplish a task
- 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 are able to budget their time and money.
- CDOS Standard 3a Universal Foundation Skills: Managing Resources. Students understand the material, human, and financial resources needed to accomplish tasks and activities.
- National FCS 3.0: 2.1.1 Use time management, organization, and step-by-step process skills to rank tasks and reach goals.
- National FCS 3.0: 1.2.4 Work productively on teams at school, at work, and in the community, including with people different from yourself.

Enduring understanding and essential question

Big idea: An idea somebody can hold is worth more than an idea somebody has to imagine. Build the thing, even roughly, and the questions get better. **Essential question:** What can we actually hand a judge on Friday, and does it prove what we said it would?

Objectives

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

1. (Low) Given the five-panel template, produce a deck or poster with all five panels filled: the problem, the solution, the customer, the numbers, the ask.
2. (Mid) Build a prototype or sample of their product or service using a skill from this course, and explain in one sentence which unit's skill it uses.
3. (High) Rehearse the 60-second pitch against a timer, evaluate another team's pitch and panels using the class Lands and Kills criteria and Rubric 07, and revise at least two things in response with the change named in writing.

Vocabulary

Tier 2 (general academic): panel, prototype, rehearse, revise, criteria Tier 3 (FACS): prototype, deck, pitch, ask, margin, break-even, brand. See Vocabulary 07.md.

Materials and setup

- Handout 07.10 - Five-Panel Deck Template and Peer Review.md, two per student (one is the panel planner, one is the peer review sheet)
- Poster board or trifold card, one per team, or five sheets of letter paper taped in a row.
[Sal: one poster board per team at about \$1.00 is the only real consumable in this unit. Ten teams is about \$10.00 to \$12.00. Budget it.]
- Markers, rulers, scissors, glue sticks, tape, one tray per team
- Prototype materials, drawn from what the room already has: scrap fabric, thread, needles, and the sewing stations from Unit 5; graph paper and rulers from Unit 4; index cards for menus and price lists; cardboard and a box cutter used only by the teacher; food samples only with the Unit 1 allergen procedure and only if the idea is a food product
- Team folders: the signed numbers page from Lesson 7.8, the interview sheets, the Lesson 7.9 draft sheet, and the Lands and Kills list
- Rubric 07 - Career Readiness and Shark Tank.md, in every student's hand on Day 2
- Timers, one per team
- Slides: Slides 07.10 - Build the Pitch and Prototype (Day 1 and Day 2 labeled)
- Setup notes: lay out the material trays before the bell so the first ten minutes of Day 1 are not a supply line. Post the build clock on the board for both days as four blocks of ten minutes so teams can see time passing. If the year is running the one-period version of Lesson 7.8, the **Numbers Clinic** in Day 1 Step 1 below is required, not optional. Allergy check: required if any team is making a food sample. Read the Unit 1 procedure, post the allergen card, and no sample is tasted on a build day; samples are tasted on pitch day only, by the judges, with the card read aloud first.

Pre-assessment

Walk the room in the first three minutes of Day 1 with the four gates in mind, and mark each team on a class list: does the team have **(a)** a signed numbers page, **(b)** three recorded customer interviews, **(c)** a six-part pitch draft, **(d)** a one-sentence answer to “what are you physically handing a judge.” A team missing (a) goes to the Numbers Clinic. A team missing (d) gets the stuck-team protocol in Step 2. This three-minute scan decides how the whole two days are spent, so do it before releasing anybody to a material tray.

Do now and hook, Day 1 (Time: 4 min)

On the board: “List every single thing your team has to finish before Friday. Then put a star next to the one that will take the longest.”

Debrief: take four teams’ starred items. Then the hook, said with the build clock on the board: “You have eighty minutes of class time left before you pitch. That is it. Eighty minutes. Your starred item gets the first thirty of them.”

Procedure, Day 1: build

Step	Teacher will	Students will	Time
1. Numbers Clinic, and the five panels	If Lesson 7.8 ran one period: run the Numbers Clinic for the whole class, 15 minutes, which is Lesson 7.8 Day 2 Steps 2 and 3 compressed: teams compute their own unit cost, price, margin, break-even, and the one-month projection with a defended unit number, CFO signs, teacher initials. If Lesson 7.8 ran two periods: skip the clinic and spend these 15 minutes on the five panels plus 15 more minutes of build time in Step 2. Either way, show the five panels on the slide and read	Complete the numbers page if it is not done. Then plan the five panels on the planner sheet in pencil before touching the poster: what text, what image, who draws it.	15 min

	what goes on each: 1 the problem (one sentence and one image), 2 the solution (what you make, and one thing that makes it different), 3 the customer (the five specifics and one quote from a real interview), 4 the numbers (unit cost, price, margin, break-even in units, one-month projection), 5 the ask (what you want, in one sentence, with a number). Say the rule: the numbers panel has to be readable from ten feet.		
2. Build block A: panels	Release to trays. Walk with the stuck-team protocol in hand (below). Enforce one rule: nothing goes on the poster that is not on the planner sheet. Sign each planner sheet as you pass, which stops a team from drawing for twenty minutes with no plan.	Build panels 1 to 3. CMO leads layout, CFO drafts panel 4's numbers large and legible, CEO writes panel 5.	11 min
3. Build block B: the prototype	Move to prototype work. Name the rule out loud: the prototype has to use a skill from this year, and the team has to say	Build the prototype or the sample. Write the one-sentence unit connection on the back of the planner sheet.	10 min

	which unit. Give the six examples on the slide so no team stalls: a sewn sample or a mended item (Unit 5), a plated dish or a printed costed menu (Units 1 and 6), a scale floor plan or a room layout on graph paper (Unit 4), a budget or price sheet built like the ClassroomStreet reports (Unit 2), a childcare or family activity kit card (Unit 3), a hand-drawn two-screen sketch of an app or web page (Unit 7). Circulate with the tools that need a teacher: the box cutter, the iron, the sewing machine.		
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Day 1: do now 4 plus 15 plus 11 plus 10 is 40, with the closure folded in at the end of Step 3 as a one-line status report from each team: what is done, what is left.

Do now and hook, Day 2 (Time: 2 min)

On the board: “Your pitch is tomorrow. Write the one question you hope nobody asks you.”

Debrief: take four. Write them on the board under the heading “**Questions we are not ready for.**” Then the hook: “Somebody on that panel is going to ask one of these. The last forty minutes you have is for making sure the answer exists.”

Procedure, Day 2: finish, rehearse, review

Step	Teacher will	Students will	Time
1. Build block C: finish	Set a hard stop: at minute 13 every poster is done and every prototype is done, finished or	Finish panels 4 and 5 and the prototype. Write the answer to one of the board’s “questions we are	13 min

	not. Announce the minute out loud twice. Walk with tape and a marker and fix the physical problems yourself (a panel falling off, an unreadable number) so teams are not spending their last minutes on logistics.	not ready for” on an index card and put it behind panel 5.	
2. Rehearsal against the timer	Give the rehearsal rule: three times through, standing, with the poster up, all three members speaking their own parts, timed every time, and the three times written on the draft sheet. Nobody rehearses sitting down. Circulate and say one thing per team, not three.	Rehearse three times, standing, timed. Write the three times. Mark the one part that runs long every time; that is the part to cut.	10 min
3. Peer review round	Pair team with team. Each team delivers the full pitch once to the other team with the poster up. The listening team scores the peer review sheet, which is Rubric 07 criteria 5 and 6 in student words plus the class Lands and Kills list from Lesson 7.9, and writes two things: one to keep and one to change, each naming something they saw or heard.	Deliver once to another team. Score the other team’s pitch and panels on the peer review sheet. Give one keep and one change with evidence.	10 min

	Then swap.		
4. Revise and hand in the folder	Give the revision instruction: make at least two changes from the peer review and write both on the bottom of the peer review sheet, in the form "we changed ___ because ___." Then collect the team folder: business brief, customer research, numbers page, and the planner sheet with the unit connection. Rubric 07 criteria 3, 4, and 5 are scored from this folder and the prototype tonight. The poster and the prototype stay in the room, on the counter, in running order.	Make two revisions and write both. Assemble and hand in the folder. Set the poster and prototype on the counter in the running order posted on the board.	5 min

Day 2: do now 2 plus 13 plus 10 plus 10 plus 5 is 40. **The block to protect is Step 3,** because the peer review is the only outside feedback a team gets before an adult panel sees them. If the period runs short, take the minute out of Step 4 by collecting the folders at the door instead of at the tables.

Stuck-team protocol

Use this in order. It takes four minutes and it works on nine teams out of ten.

1. **Read the problem sentence back to them, out loud, from their own filter sheet.** Half of stuck teams have drifted off their own problem and will hear it.
2. **Ask the physical question:** "What are you handing a judge on Friday? Point at it or describe it in one sentence." If they cannot, narrow it for them on the spot and write the narrowed version on their planner sheet: not an app but two hand-drawn screens; not a business but one item with a price tag; not a service but a printed card that says what you do, what it costs, and when you are available.

3. **Give them the smallest possible version and a ten-minute deadline.** “In ten minutes I want panel 1 and the prototype. Nothing else. Go.”
4. **Split the team.** If two members are arguing, give each of them a different panel and a physical distance, and reconvene them at the ten-minute mark. Roles exist for this: the CEO owns the clock, so hand the clock back to the CEO out loud.
5. **If the team is stuck because the idea genuinely does not work,** say so plainly and give them the fallback: run the pitch as an honest one that names what they found out. “We tested this and here is why it does not work at this price” is a real pitch, it scores at Meets on criterion 6, and it is the most grown-up thing a team can do. Do not let a team spend Friday pretending.

When a team finishes early

There is always one. In order:

1. **Rehearse two more times, standing, timed.** Most early finishers are early because they cut the rehearsal.
2. **Write three judge questions and the answers, on index cards behind panel 5.** Hand them the three the teacher would ask: “What is your margin?”, “Who already does this and why would somebody pick you?”, and “What is the first thing you would do with the money?”
3. **Make the prototype better in one named way,** not in general: a second size, a price tag, a label, a second menu item, a second floor plan option.
4. **Go help another team, as a consultant, not as a builder.** They may ask questions and read the rubric out loud to that team. They may not draw on that team’s poster. This is worth naming out loud as a real skill and it is on criterion 3’s Exceeds level.
5. **Grade 8 early finishers:** write the one-paragraph version of the pitch as a written brief, which is the accommodation document a teammate could read on pitch day if somebody is absent.

Questions to ask

Monitor understanding:

- Which panel is panel 4, and what four numbers are on it?
- Which unit’s skill is your prototype using? Say the unit number.
- What are your three rehearsal times? Which part runs long every time?
- Read me your ask. What is the number in it?

Deepen learning:

- Your poster says the price is \$6.00 and your interview quote says somebody would pay \$3.00. A judge is going to notice. What is your answer?
- Your prototype is a drawing. What would a judge be able to tell from a drawing that they could not tell from your words?
- You changed two things after the peer review. Which change cost you something, and was it worth it?

- Your team argued about the layout for ten minutes. Who owns that decision, and did you let them make it?
- If you had two more days, what is the one thing you would build?

Check for understanding

Three checks. **The four-gate scan** in the first three minutes of Day 1, which decides where the teacher stands all period. **The planner signature** in Day 1 Step 2: nothing goes on the poster until the teacher signs the planner sheet, which takes ten seconds per team and prevents twenty wasted minutes. **The timed rehearsal** in Day 2 Step 2: three recorded times on the draft sheet. A team whose three times are 92, 88, and 90 seconds has not cut anything and gets one instruction: “Cut the solution panel’s second sentence. Now. Then time it again.”

Closure (Day 1 folded into Step 3; Day 2 folded into Step 4)

Day 1: each team gives a one-line status report standing at their table: what is done, what is left. The teacher writes nothing; the teams hear each other and the ones who are behind know it. Day 2: as the folders come in, each team says its final rehearsal time out loud. Then one line from the teacher: “Tomorrow there are adults in this room who do not have to be here. They are coming because somebody told them eighth graders in this building built businesses. Be the reason that was true.”

Differentiation and supports

- ELL: a **picture panel template** is available for all five panels, where each panel is an image plus one sentence rather than a paragraph, and it is offered to any team, not assigned to one. The five panel headings and the pitch sentence frames are printed in Turkish, Portuguese, and Spanish on the planner sheet, from Vocabulary 07.md. The interview quote on panel 3 may stay in the customer’s original language with a one-line English translation next to it, which is more honest and more interesting than a translated quote. An ELL student may deliver a written part read aloud by a teammate, listed on the project sheet as an accommodation and not an exception.
- IEP and 504 (general): the five-panel planner arrives pre-labeled so the organizing is done; a team member may own one panel start to finish rather than moving between all five; the prototype may be a drawing, a photograph, or a written description at full credit, and the rubric’s criterion 5 descriptors say so; the rehearsal may happen in the hallway with the teacher instead of in the room; a student may write their pitch part on an index card and read it; extended build time at lunch on either day for any student who asks, with the room open; the box cutter, the iron, and the sewing machine are teacher-operated for every student, which removes the need to single anybody out.
- Grade 6 support: three panels instead of five (problem, solution, numbers), with the customer and the ask folded into the solution and numbers panels. Grade 6 teams rehearse twice and the target is 45 seconds. Grade 6 prototypes are drawings or paper mock-ups by default, and that is not a lesser version.

- Grade 8 stretch: a sixth panel, the competition, answering who already solves this and why somebody would pick them, which is Sal's competition activity folded in. Grade 8 teams also write the three judge questions with answers on index cards, and one team member fields all questions at the pitch so the follow-up is a named job.
- UDL checkpoints used: multiple means of action and expression (the prototype may be sewn, cooked, drawn, measured, written, or built, and every one of those routes uses a skill the course actually taught) and multiple means of engagement (the build clock is visible, the deadlines are announced out loud, and the peer review criteria are the ones the class wrote themselves in Lesson 7.9).
- No-machine and no-kitchen alternative: no prototype in this lesson requires the kitchen or the sewing machine. Any food idea can be a printed costed menu with a plated photograph or a drawing; any apparel idea can be a hand-sewn sample, a drawing with fabric swatches taped on, or a mended item brought from home. If the room has no lab at all, the prototype menu becomes: a labeled drawing, a paper mock-up, a scale floor plan on graph paper, a printed price sheet, a two-screen app sketch, or a written service card. State that on the project sheet so no team plans around equipment it will not get.
- No-presentation accommodation: today is rehearsal, not performance, and the peer review round is one team to one team, not to the class. A student who will not speak tomorrow writes their part and a teammate reads it; set that up today, in writing, on the planner sheet, so tomorrow is not a negotiation.

Assessment

Objective	Standards met	Learning task	Assessment (formative or summative; tool)
1. Produce a five-panel deck or poster with all five panels filled	PSI 2. a) f.; CDOS 3a Managing Resources	Day 1 Steps 1 and 2; Day 2 Step 1	Summative in part; the panels are read on Rubric 07 criterion 3 (from the folder) and criterion 6 (on pitch day). Formative via the planner signature
2. Build a prototype or sample using a skill from this course	PSI 2. a) f.; IGLR 5. b); National FCS 2.1.1	Day 1 Step 3	Summative. Rubric 07 criterion 5 (the prototype or sample), scored from the object plus the one-sentence unit connection. Scored at the end of Day 2 and confirmed on

			pitch day
3. Rehearse, evaluate another team, and revise two things with reasons	PSI 2. a) g.; CIR 3. f); IGLR 2. d); IGLR 3. b); Std 3 PI C; National FCS 1.2.4	Day 2 Steps 2, 3, and 4	Formative for the reviewing team (peer review sheet scored complete, partial, or missing) and summative for the reviewed team: the two written revisions are the evidence that separates Meets from Approaching on criterion 6

Rubric 07 criteria 3 and 4 are scored from the folder collected at the end of Day 2. Criterion 5 is scored from the prototype at the same time. Criterion 6 is scored live in Lesson 7.11. Tell students that on Day 1, not Day 2.

Homework

None required, and none should be needed. Optional: rehearse once at home, out loud, standing. Any student who wants to finish a prototype at home may, and the room is open at lunch both days.

Connections

Inside the building: the art teacher for panel layout and legibility from ten feet, which is a real design constraint and a two-minute lesson; the technology teacher for the prototype question; the math teacher for panel 4, where the numbers have to be right and readable. FACS gives all three a product with a real audience on a real date; they give FACS forty minutes of expertise the FACS teacher does not have. Community: confirm the Lesson 7.11 panel today, not tomorrow. Send the running order and the judge sheet by email tonight.

Sources

- NYS Middle Level CTE FACS Content Module 01, Individual Growth and Life Readiness, lines 2. d), 3. b), and 5. b).
- NYS Middle Level CTE Theme Module 05, Problem Solving and Innovation, lines 2. a) f. and 2. a) g.; Theme Module 02, Communication and Interpersonal Relationships, line 3. f).
- NYS Learning Standards for FACS (1996), Standard 3, Intermediate. NYS CDOS Standard 3a, Managing Resources. Wording per 02 Standards/STANDARDS SOURCES - web research.md. *[Sal: confirm against the NYSED PDFs.]*
- National Standards for FCS Education 3.0 (LEAD FCS Education, 2018), competencies 2.1.1 and 1.2.4.

- Sal's own materials: his Brentwood business packets "Shark Tank Showdown" (the five-slide deck structure: problem, solution, market, financial projections, investment ask) and "Design Thinking Challenge" and "Competition Check" (the prototype and competitor work). The five panels here are his five slides with "market" replaced by "the customer," because this course has real customer interviews behind it and a middle school team cannot size a market honestly. The prototype rule (it must use a skill from this course, and the team names which unit) is what makes this a FACS capstone.
- The Problem Solving and Innovation illustrative activity in the state's Individual Growth and Life Readiness module has students "make prototype food, textile, or human services products," which is the state's own list and it is the prototype menu here.

Teacher notes

- The four-gate scan in the first three minutes of Day 1 is the most important thing the teacher does in this lesson. Do it before anybody touches a marker. Teams that are behind on the numbers will happily spend two days coloring.
- The planner signature stops the single biggest waste in a build day: a team drawing beautifully with no plan. Ten seconds per team.
- Announce the build clock out loud at every ten-minute mark on both days. "Thirty minutes left." Teams do not track time and the CEO role does not yet do it reliably.
- Rehearsal standing, with the poster up, or it does not count. A team that rehearses sitting down while looking at a paper has not rehearsed.
- The peer review round is worth more than any teacher feedback on Day 2, because the criteria are the class's own Lands and Kills list. Do not replace it with a teacher walk-through.
- Protect the prototype from becoming the whole project. A beautiful object with no numbers scores badly, and the reverse is also true. Say the four-gate list out loud when a team disappears into craft work.
- The stuck-team protocol's step 5 matters more than it looks. Every year one idea genuinely fails when the numbers come in. Telling that team that an honest "here is why this does not work" is a real pitch, and scoring it at Meets, is the difference between a student learning something and a student learning to fake it.
- *[Sal: your room's consumables here are one poster board per team and the scrap bin from Unit 5. Add poster board to the unit budget in the unit plan. Everything else is already in the room from the other six units, which is worth pointing out to a principal: the capstone costs about twelve dollars.]*
- Set the posters on the counter in running order at the end of Day 2. On pitch day you do not want ten teams carrying posters around a room with adults in it.