Unit 3: Start, Teach, Check

Production, Cost, and Perfect Competition | Planning companion

Use this guide to plan the commercial Unit 3 sequence and locate the next explanation in the included materials. The complete lesson files and answer keys are supplied with the paid unit; this is a planning companion, not the student packet.

Open the right files

1. Open the lesson plan and answer key before the corresponding handout and deck. Keep the key separate from the student copy.

2. Use _deck.pdf for the fixed-layout projection copy or _deck_EDITABLE.pptx to change presentation text. Use _handout.pdf for students, _key.pdf for model responses, and _plan.pdf for the lesson outline.

3. Start with U3L01 unless a recent explanation or worked example shows that the earlier ideas are secure. The lesson map follows the included order; later graph work depends on the cost concepts.

4. Read each problem's own numbers and assumptions. An illustrative graph, a warm-up, and a practice table can use different values.

Use an answer to choose the next step

1. Ask for a calculation, graph label, or economic reason before opening the key.

2. If the answer is incomplete, use the specific return-to reference in the map. Have the learner revise the reasoning, then check another part of the included problem.

3. Use your judgment about what needs another lesson segment. These prompts are teaching checks, not a validated mastery score or an official AP scoring rubric.

Read the map

The map points to the unit's existing handouts and answer keys. Page numbers mean PDF pages. The selected first-pass parts are stopping points; unfinished work carries forward.

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Fit the lesson to the meeting

Planning examples | Keep attempted work, feedback, and revision

The source plans include a Do Now, notes, model reading, practice, and an exit check. Their listed activity blocks require about 50-55 minutes before any additional transitions. The 45-minute example therefore selects practice parts and carries unfinished work forward.

Ten lessons do not imply ten class meetings. In particular, U3L07-U3L10 combine paired graphs, short-run and long-run reasoning, or separate scenarios. Keep those stages distinct even if they span meetings.

45-minute first pass

Min	Stage and action
5	**Notice and predict:** Use the included Do Now; hear one reason.
8	**Select the needed notes:** Focus on terms required for today's check.
10	**Read the model:** Label axes and connect one curve or change to its meaning.
15	**Attempt selected practice:** Use the first-pass parts listed in the lesson map.
5	**Check and revise:** Use the included exit ticket or the map's check.
2	**Transition:** Record the unfinished part and next step.

Total: 45 minutes.

90-minute block example

Min	Stage and action
5	**Retrieve:** Return to the prior check or included Do Now.
10	**Build the concept:** Use notes needed for the current problem.
15	**Read and sketch the model:** Explain labels before drawing shifts or areas.
20	**Attempt the first practice parts:** Require calculations and reasons.
5	**Pause and compare:** Compare approaches; identify one disagreement.
15	**Revise and continue:** Use the key to diagnose, then complete the next scenario.
10	**Complete or extend:** Finish remaining parts or explain a changed assumption.
5	**Check independently:** Use an exit response with a short explanation.
5	**Transition:** Record the next teaching move.

Total: 90 minutes.

A block means 90 minutes only in this example. For another bell schedule, preserve the attempt, check, and revision stages and adjust the allocation. A longer block is not an instruction to rush two lessons.

Lesson route and concept checks

U3L01 to U3L05 | Use with the complete Unit 3 lesson files

U3L01 | Production and marginal product

Focus: Separate total output, extra output, and output per worker.

First 45-minute pass: Bagel Bay FRQ (a)-(b); carry (c)-(d) forward if needed.

Look for the concept: Notice whether the response uses total output, the gain from one more worker, or output per worker. Ask the learner to name the measure before explaining diminishing returns.

Return to: Handout p3 table and key p3; for the warm-up, key p1.

U3L02 | Total and average costs

Focus: Choose a total-cost numerator before dividing by output.

First 45-minute pass: Maple Leaf FRQ (a)-(b); revisit spreading fixed cost and the flour-price change in (c)-(d).

Look for the concept: Check whether a total cost or a per-unit cost was requested. Ask which cost belongs in the numerator and what output belongs in the denominator.

Return to: Handout p3 cost data; key p4. Revisit the average-cost model on handout p3.

U3L03 | Marginal cost and average-cost curves

Focus: Connect the next unit's cost to the direction of the average.

First 45-minute pass: Tinker Toys FRQ (a)-(b); use (c)-(d) for the next comparison and explanation.

Look for the concept: Check whether the learner treats minimum marginal cost and minimum average cost as the same point. Ask how a new observation below an average changes that average.

Return to: Handout p3 FRQ and graph; key p3.

U3L04 | Long-run plant choice

Focus: Compare feasible plants at the same quantity.

First 45-minute pass: Northland FRQ (a)-(c); reserve (d) for explaining what data are missing at Q=900.

Look for the concept: Check whether the compared plant costs refer to the same output. Ask what additional information would be needed at a new output.

Return to: Handout p3 Northland prompt; key p3. Keep its numbers separate from the illustrative LRATC graph.

U3L05 | Economic profit and output choice

Focus: Include opportunity cost and distinguish a candidate output from a final production decision.

First 45-minute pass: Maya FRQ (a)-(c); use (d) as the follow-up opportunity-cost change.

Look for the concept: Check whether forgone alternatives are included in economic profit. For output choice, ask what must be compared after identifying a marginal condition.

Return to: Handout p3 Maya prompt and price-taking model; key p3.

Lesson route and concept checks

U3L06 to U3L10 | Use with the complete Unit 3 lesson files

U3L06 | Loss versus shutdown

Focus: Compare the loss from operating with the fixed cost still owed after shutdown.

First 45-minute pass: Use the supplied model to complete FRQ (b)-(d); finish a separate full sketch for (a) if time is short.

Look for the concept: If a loss is treated as an automatic shutdown signal, compare the loss from operating with the fixed cost still owed at zero output.

Free activity example: From the free Lesson 6 activity: operating loses $70; shutting down loses $105 in fixed cost. Compare both choices rather than treating any loss as a reason to stop.

Return to: Handout p3 FRQ and graph; key p3. Add the horizontal P=MR line at $8.

U3L07 | Entry and long-run adjustment

Focus: Carry market price across to the firm and separate market Q from firm q.

First 45-minute pass: Kale FRQ (a)-(b); carry entry and the increasing-cost contrast in (c)-(d) forward.

Look for the concept: Check that the market panel sets the price faced by the firm. Ask which quantities describe the whole market and which describe one firm.

Return to: Handout p3 paired graph and FRQ; key p3.

U3L08 | Surplus and efficiency

Focus: Use graph areas and carry the quantity units into dollar amounts.

First 45-minute pass: Kale FRQ (a)-(b); follow with total surplus and the efficiency conditions in (c)-(d).

Look for the concept: Check axis units before computing a surplus area. Ask which assumptions make the competitive benchmark appropriate.

Return to: Handout p3 FRQ and surplus graph; key p3.

U3L09 | Demand shifts and a separate tax

Focus: Complete one scenario before resetting the baseline for another.

First 45-minute pass: Apple FRQ (a)-(b); continue (c)-(d), then start the separate constant-cost tax case in (e).

Look for the concept: Check which baseline and cost assumption apply before each shift. Keep the industry-wide tax separate from the earlier demand change.

Return to: Handout p3 assumptions and part (e); key p4. Use a fresh pair of graphs for the tax.

U3L10 | Temporary exit and a separate subsidy

Focus: Track which firms are affected and which baseline applies.

First 45-minute pass: Egg FRQ (a)-(c); start the separate subsidy case (d)-(e) in a later segment or meeting.

Look for the concept: Check whether the surviving firm is affected by the initial shock. Reset to the stated original equilibrium before treating the subsidy as a separate case.

Return to: Handout p3 scenario and key p3. Keep the outbreak and subsidy on different graph pairs.