Module 6: Agri-Systems Across the City-Rural Gradient

Think Pair Share: Climate-Start Smart Strategy Initiative

Red Notes

Lesson B
Grouping: Pairs or individuals
Time: 25-30 minutes

Materials:

- Pitch worksheet (with prompts for Name, Innovation, Zone, Smart Features, Why Support It)
- Climate-Smart Strategy Fact Sheet
- Optional: poster paper or slide template for visuals
- Optional: timer or phone for practice

Objective:

Students will design and pitch that uses a Climate-Smart strategy that recycles cafeteria waste and rainwater to grow leafy greens for school lunches.
By the end of this activity, students will be able to:

- Explain how waste and water can be repurposed in a closed-loop food system.
- Tailor a sustainability idea to a specific zone (urban, peri-urban, rural).
- Use evidence and reasoning to persuade an audience.
- Practice concise public speaking and systems thinking.

Instructions:

1. Step 1 – Choose a Strategy
    a. Look at the Climate-Smart Strategy Fact Sheet.
    b. Pick one strategy (e.g., compost-heated greenhouse tunnels, shared greenhouse clusters).
2. Step 2 – Adapt It Locally
    a. Imagine how it could work at your chosen site.
    b. Ask yourself: How does this strategy help us grow more food with fewer resources?
3. Step 3 – Fill Out Your Pitch Worksheet
    a. Answer each section:
        i. Catchy Name – Give your innovation a short, memorable name.
        ii. Your Innovation – What technique are you using?
        iii. Where It Belongs – Why is peri-urban the best fit?
        iv. What Makes It Smart – Include at least 1–2 metrics.
        v. Why It Deserves Support – Convince the audience why your idea should be funded.
        vi. Optional: Draw a diagram showing your system or feedback loop.
4. Step 4 – Practice & Present
    a. Practice a 2-minute pitch with your partner or alone.
    b. Present your idea to the class as if speaking to a school board, city council, or funder.
    c. Focus on how it saves resources and increases food production.
5. Step 5 – Reflect
    a. What part of your pitch was strongest?
    b. Did your classmates respond more to sustainability (water/waste/food miles) or to cost/feasibility?
    c. How would you improve your idea next time?

Your Task:
Create a pitch for a Climate-Smart strategy that uses cafeteria waste and captures roof runoff to grow leafy greens for school lunches. You will decide which zone strategies is best suited for your location, and create a plan and pitch for that strategy.

Climate-Smart Strategy Fact Sheet:
Here's a zone-based fact sheet with brief summaries of key strategies covered in the module. You can copy this into a student handout or digital doc.

Urban Zone Strategies
1. Rooftop Sack Gardens
- Use minimal soil in vertical planters
- Capture roof runoff or condensate for irrigation
- Great for leafy greens and herbs
- Savings: ~40% less water use

2. Shipping Container Farms
- LED-lit hydroponics in insulated units
- Controlled environment ideal for schools or dense zones
- High capital cost, very low food miles
- Trade-off: High energy input for lighting

Peri-Urban Zone Strategies
1. Compost-Heated Greenhouse Tunnels
- Use city food waste to create compost heat
- Tunnels retain heat, ideal for berries and greens
- Paired with stormwater-fed irrigation
- Savings: 20% less energy use; diverts waste

2. Shared Greenhouse Clusters
- Groups of small growers share compost piles, water infrastructure
- Reduces overhead; encourages local circular economy
- Trade-off: Coordination + initial investment needed

Rural Zone Strategies
1. Wind-Powered Drip Irrigation
- Wind turbine drives a variable-frequency pump
- Water is stored and distributed with precise timing
- Savings: ~25–30% water efficiency gain

2. Biochar Return Systems
- Orchard prunings converted to biochar → improves soil water retention
- Can be paired with drip irrigation for closed loop
- Bonus: Reduces fertilizer runoff

Use these resources for the Activity Options that will help you learn more below!

Scenario: Your school is in a Peri-urban area and you are tasked with looking for a way to make food more accessible. You will then propose this pitch to your Mayor (teacher).

Title: Rooftop Loop Garden

Give your innovation a short, catchy name

(e.g., “Urban Loop Farm”, “Berry Bioheat Hub”, “WindWise Citrus”)

1. Your Innovation

What is your proposed technique?

(e.g., rooftop sack garden using cafeteria compost, peri-urban greenhouse using compost heat, rural citrus farm with solar-pumped irrigation)

Rooftop sack planters irrigated with captured roof runoff and fertilized with cafeteria compost to grow leafy greens on site.

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2. Where It Belongs

Which zone is this best suited for, and why?

Urban | Peri-Urban | Rural

Reference key zone characteristics (e.g., space, waste access, labor model)

Urban zone — space is tight but eaters are close; rooftop sacks use minimal soil/space and fit dense campuses

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3. What Makes It Smart

How does it reduce water/energy use or reuse waste?

Mention at least one sustainability metric or closed-loop feature

(e.g., 40% water savings, cuts food miles by 75%)

- ~40% less water than typical setups (urban sack-garden example).
- Food miles ≈ 0 (grown where it’s eaten).
- Waste diverted from cafeteria → compost → planters.

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4. Why It Deserves Support

Convince the “funder” (city, school, council) why this idea should be adopted

Think about: low cost, social benefit, climate resilience, food access

Low-cost, visible closed loop (waste → compost → food), hands-on learning, and resilient greens supply for lunches.

Optional Diagram or Image (Slide Only)

Include a simple layout of the system, feedback loop, or location context

Roof runoff → barrel → wicking sacks • Cafeteria scraps → compost → sacks → cafeteria.

Reflection:
What data point made your argument most convincing? Did your audience respond more to sustainability (water/waste/f miles) or cost/feasibility?

The data point that made my argument strongest was the 40% water savings. It showed that the garden idea doesn't just sound cool, but actually makes a real difference. My audience also liked how the system was cheap and easy to set up, which made it feel possible to do at school. Overall, I think people cared most about the mix of saving water and keeping costs low, since that made the project seem both helpful and realistic.

Skills You'll Use:

- Public speaking
- Evidence-based reasoning
- Systems advocacy

Example: "We propose a sack garden atop [Your School] using cafeteria compost and roof-runoff barrels. In similar urban setups, sack gardens use ~40% less water and cut food miles to zero. Nutrients loop from waste to plate, giving students fresh greens on site with minimal inputs."