Farm Ecosystem Adventure

Materials Needed:

- Notebook or journal
- Pencils/Pens/Colored Pencils
- Magnifying glass (optional)
- Camera or phone for photos (optional)
- Access to internet/library for research (post-visit)
- Worksheets (to be created: Farm Ecosystem Observation Sheet, Food Web Creator)
- Materials for optional diorama (shoebox, craft supplies)

Lesson Activities:

Introduction (15 mins): What is an Ecosystem?

Start with a discussion: "What do you think of when you hear the word 'farm'? What lives there? What else is there besides living things?" Introduce the concept of an ecosystem: a community of living organisms (**biotic factors**) interacting with their non-living environment (**abiotic factors**). Ask: "How is a farm like an ecosystem? How might it be different from a wild ecosystem like a forest?" Briefly explain that farms are *managed* ecosystems, heavily influenced by humans, but still follow ecological principles.

Activity 1: Gearing Up for the Farm (Pre-Visit/Virtual Tour Prep - 20 mins)

Distribute the "Farm Ecosystem Observation Sheet". This sheet should have columns for: Biotic Factors (Plants, Animals, Fungi, Insects), Abiotic Factors (Sunlight, Water, Soil, Air, Temperature, Structures), and Interactions Observed (e.g., bee pollinating flower, cow eating grass, farmer watering plants).

- **If visiting a farm:** Discuss safety rules (stay with adult, gentle hands, wash hands). Discuss what to look for using the Observation Sheet. Briefly practice observing the backyard or a local park.
- **If doing a virtual farm tour (using online videos/websites):** Preview the tour together. Explain how to use the observation sheet while watching.

Activity 2: Farm Exploration (Farm Visit or Virtual Tour - 60-90 mins)

Engage all senses! Use the Observation Sheet to actively look for and record biotic and abiotic factors. Take photos or draw sketches. Look for signs of energy flow (who is eating what?). If possible (or through research), identify any sustainable practices used by the farm (e.g., composting, cover crops, crop rotation, water conservation, organic methods). Note these down.

Activity 3: Analyzing the Farm Ecosystem (Post-Visit/Tour - 30 mins)

Review the Observation Sheet together. Discuss the findings. Introduce the concept of a **food web** – how energy moves through an ecosystem. Use the "Food Web Creator" worksheet (or a blank page) to draw the connections observed. Ask the student to draw arrows showing the flow of energy (e.g., Sun -> Grass -> Cow -> Human; Sun -> Corn -> Chicken -> Human). Discuss: Where do humans fit? What provides the ultimate energy? (The Sun!)

Activity 4: Sustainability Spotlight (20 mins)

Discuss the sustainable practices noted. Why are these important? (e.g., Help the environment, keep soil healthy, conserve water, reduce pollution). Compare the farm ecosystem to a natural ecosystem again. How does human management change things? (Often less biodiversity, addition of things like fertilizers, selection for specific crops/animals).

Conclusion & Assessment (15 mins)

Wrap up with questions:

- "Tell me three things you learned about a farm as an ecosystem."
- "Explain the flow of energy in the food web you created."
- "Describe one sustainable farming practice and why it's helpful."

Review the observation sheet and food web diagram for understanding.**Optional Extension:** Create a diorama of the farm ecosystem, labeling biotic and abiotic parts and showing one food chain. Or, research a specific farm animal or crop and its role in the farm's ecosystem and food web.