



Project-Based Learning:

BUILD A DAIRY FARM

Objective: Students will think critically and creatively, apply knowledge about dairy farming practices and sustainability to create a dairy farm.

Students: Individually or in groups of 2.

Timeframe: Begin after lesson 1 and complete at or by the end of the unit. Allow 30 minutes or more to complete this project. Continue the project throughout the unit by allowing students to add or make modifications as they learn more.

Materials: Choose one of the options below:

1. **Draw a poster** using pencil, pens, markers, etc. to illustrate a dairy farm.
2. **Create a diorama or replica** using craft supplies and materials. Use cardboard, wood, or styrofoam as the base. Then, build the dairy components with various items. Examples:
 - Cardboard
 - Wood
 - Styrofoam
 - Popsicle sticks
 - Pipe cleaners
3. **Design a digital farm** using Google Slides, Canva, or another platform.

Directions: Use your critical thinking, creativity, current understanding and additional findings from research or activities, to build a dairy farm.

Requirements: Include all of the following items in your dairy farm. Label the items using a key or legend. Describe the features within each item.

- Wash pen
- Milking parlor
- Maternity pen
- Cow pen
- Commodity barn
- Silage pit
- Manure lagoon

One sustainability practice. Examples: methane digester, water recyclers, or solar energy. In 1-2 paragraphs, explain your sustainability practice implemented at your dairy and how it benefits the dairy and the environment.

Presentation: Be prepared to present your dairy farm in under 5 minutes to the class. Be sure to highlight the requirements including one sustainability practice.

Example Rubric (25 points total)

Criteria	Excellent (5)	Proficient (4)	Adequate (3)	Needs Improvement (2)	Inadequate (1)
Completeness	All required items are accurately included on the dairy farm with clear labels and a key.	All required items are included on the dairy farm with mostly clear labels and a key.	Most required items are included on the dairy farm with some clarity in labels and a key.	Some required items are missing, unclearly labeled, or missing a key.	Many required items are missing or inaccurately labeled, and there is no key.
Accuracy	All items on the dairy farm are accurately located and labeled.	Most items on the dairy farm are accurately located and labeled.	Some items on the dairy farm are inaccurately located or labeled.	Many items on the dairy farm are inaccurately located or labeled.	Most items on the dairy farm are inaccurately located or labeled.
Clarity	Well-organized, easy to read, and provides a clear visual representation of dairy farm layout.	Organized and mostly easy to read, providing a reasonable visual representation.	Somewhat disorganized and not entirely easy to read, affecting the visual representation.	Disorganized, challenging to read, and lacks a clear visual representation.	Extremely disorganized, unreadable, and does not represent the dairy farm layout effectively.
Creativity	Shows a lot of creativity in design and presentation, making it engaging and visually appealing.	Shows some creativity in design and presentation, making it reasonably engaging and visually appealing.	Shows creativity in design and presentation, it is less engaging and visually appealing.	Needs more creativity in design and presentation, it is less engaging and visually appealing.	Lacks creativity in design and presentation, visually unappealing, dull.
Sustainability Practice	One sustainability practice is shared, including benefits to the dairy and environment.	One sustainability practice is shared, including some benefits to the dairy or environment.	One sustainability practice is shared but minimum benefits are included.	One sustainability practice is shared, but benefits not included.	There are no sustainability practices.