6th, 7th, & 8th GRADE

DUAL-USE DESIGN CHALLENGE

SOLAR + FARMING: CAN WE DESIGN A SOLUTION FOR BOTH?

The Challenge

In many rural areas, farmers and communities **face a tough decision**—should land be used for farming or for solar energy? Some believe that installing solar panels **takes away land needed to grow food**, while others argue that solar farms **provide solar energy and extra income for farmers**. But what if **both could exist together**?

Your challenge is to **define the problem clearly, identify what makes a successful solution**, and **consider the challenges** (constraints) that might limit your design. Your goal is to develop a **set of design criteria and constraints** that could help farmers and engineers create a **working dual-use solar farm**!

Grounding Phenomenon

Some farms have **successfully integrated solar panels and agriculture** in a way that benefits both food production and energy generation! For example:

- **Agrivoltaics:** Farmers grow shade-tolerant crops, under or between raised solar panels.
- **Grazing and Pollinators:** Sheep and cattle graze under panels, keeping grass low, while beekeepers place hives nearby for honey production.
- **Soil Conservation:** Some farms plant native grasses or flowers under panels to improve soil health and attract pollinators.

However, not every farm can do this the same way—so we need **a set of guidelines** to make sure designs work in different locations.

Essential Questions

- What **makes a good dual-use solar farm**?
- What are the **needs of farmers, communities, and energy companies**, and how can they all benefit?
- What scientific principles should we consider? (e.g., **plant growth, solar energy, animal behavior, soil health**)
- What **challenges (constraints)** might limit our design? (e.g., cost, weather, land size, plant shading, community concerns)

Your Task

- **Define the problem clearly**—why is this an issue, and why do we need a solution?
- **Identify key criteria**—what must a successful dual-use solar farm include?
- **Determine constraints**—what challenges or limits might make the design difficult?
- **Communicate your findings!** Present your criteria and constraints in a way that could help farmers and/or engineers design a real-world solution.

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Helpful Tips

- Think about how **plants, animals, and energy production** interact on the same land.
- Research different **dual-use solar farms**—what makes them work?
- Consider the **perspectives of different groups**—farmers, energy companies, and communities.
- Engineers **must balance many factors** in real-world designs—your job is to **create a clear roadmap for success**!

This challenge is open to all types of students—whether in classrooms, STEM clubs, FFA chapters, homeschool programs, or independent projects. With grade-specific categories and tailored guidance, students of all ages can participate at a level that fits their abilities as an individual or on a team.

Your ideas could help shape the future of agriculture + solar integrations! Are you up for the challenge?

Submit your project at https://solarfarmsummit.com/student-design-challenge

Website | Resources | Form

Competing entries due April 30, 2026

THE FUTURE IS BRIGHT

A Collaboration Between

SOLAR FARM SUMMIT

The Solar Farm Summit is America's agrivoltaics conference and farming + solar exhibition, bringing together experts, farmers, researchers, and innovators to explore the future of agriculture and energy. Finalists in the Dual-Use Design Challenge will have the opportunity to showcase their projects at the 2026 Solar Farming Student Fair Showcase, win cash prizes, and receive public recognition as well as direct introduction to industry leaders and professionals on the cutting edge of agrivoltaics during the industry's most collaborative and constructive event.

InSPIRE

The InSPIRE project (**In**novative **S**olar **P**ractices **I**ntegrated with **R**ural **E**conomies and **E**cosystems) is the nation's longest running and largest agrivoltaics research initiative. InSPIRE explores how solar energy can be co-developed with agriculture and native landscapes, conducting field research, providing data-driven insights, and convening experts across disciplines. By advancing our understanding of agrivoltaics and other dual-use solutions, InSPIRE supports the scaling of solar projects that benefit both landowners and ecosystems.

*If you would like to join us at the **2026 Solar Farming Student Fair Showcase**, please reach out to admin@solarfarmsummit.com.*