



Illinois 4-H | Spark Ideas. Ignite Possibilities.

Tractors are essential to the success of agriculture. Through a tractor project members will gain skills and explore tractors, their uses, safety, operation, and maintenance. Do you practice tractor safety? Do you enjoy getting a motor to run? Is your farm completing the maintenance required to ensure your equipment lasts? Do you have a family heirloom that you would like to restore?



Exploring 4-H Tractor

Spark Activity: Build a Model Tractor

Gather basic supplies to build a model of a tractor: small food boxes (empty), construction paper, scissors, glue and/or tape, straws, pipe cleaners, modeling clay, cardstock, and markers / colored pencils or paint

Research tractors - past and present - and choose a tractor that interests you. Research the purpose of the tractor and the overall design and features. Using your supplies, build a model of your chosen tractor, including as many features as you can replicate. Does your tractor have tires or tracks (or is it an antique that has steel wheels)? Does your tractor have a cab? Is it equipped with auto-steer and computers? Does your tractor need a driver? Or is it autonomous? How big is the engine? What kind of work does your tractor do?

Challenge: design a new tractor that hasn't been invented yet and create a prototype (model) of your new tractor. Be able to describe what problem or situation your new tractor can help with.

Activity adapted from "A Tractor is a Machine" - National Ag in the Classroom



4-H Project Levels and Goals

Beginner

- Identify the parts of a tractor
- Learn basic tractor maintenance
- Demonstrate how to avoid machine hazards
- Understand tractor balance (weight distribution and height)

Intermediate

- Explain farm and tractor safety
- Identify different fuels and oil systems
- Understand engine cooling systems
- Learn basic mechanics and maintenance of an engine

Advanced

- Learn to safely connect PTO and hydraulics
- Understand chemical safety
- Increase skills in operational systems and equipment
- Repair or restore a tractor

Put Your Project Into Action

Show Your Skills

- Restore a tractor body
- Make a poster about using GPS with tractors
- Restore a tractor engine
- Compare tractors and different types and uses
- Create a poster on tractor safety
- Learn about PTO shafts- what they're used for and why they're dangerous - and share your findings
- Compare different types of fuels used by tractors
- Make a display of types of bolts and screws

Service and Leadership

- Do a talk about proper conveyor and auger safety
- Create social media posts for Farm Safety Week
- Demonstrate causes/prevention of tractor roll-overs
- Talk about safety features for roll-over protection
- Hold a local battery and oil recycling day
- Help a neighbor winterize their tractor
- Lead a tractor safety workshop for your 4-H club
- Help plan a farm safety field day for kids
- Set-up a tour of farms in your community to learn about different types of tractors
- Tour a tractor mechanic or manufacturing facility

Entrepreneurship

- Open a tractor repair or maintenance shop
- Open a tractor auto body and parts shop

Technology Connection

- Driverless (autonomous) tractors
- Robotics
- Computer programming
- Engineering

Connecting with a Mentor

- Job shadow a mechanic or other employee at your local implement dealer
- High school agriculture Instructor
- Local farmers

Events

- 4-H General Project Show
- 4-H Illinois State Fair (qualification required)
- 4-H or FFA Tractor Driving Contest
- Ag Safety Day



Careers for People Interested in Tractors

Agricultural Engineer
Electrical Engineer
Diesel Mechanic

Small Engine Mechanic
Body Shop Employee
Farmer

Start a Conversation

Can you guess why the treads on most tractor tires are set at an angle?

Tractors are built for the strength to do a job, but is it important that they have balance? How and why?

Want to learn more?

go.illinois.edu/4Htractor

Explore more at Illinois 4-H!

4-h.extension.illinois.edu



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