

Safety First!

- Remove keys from tractor. Keys should be kept in instructor's pocket and tractor should be in "park."
- Do not move tractor unless part of demonstration. Ensure participants are supervised and behind safety barrier.
- If PTO shield is removed as part of the demonstration, tell participants that shields should always be in place when operating machinery under normal conditions.
- If clothes are used in demonstration, remove all buttons, zippers, etc.
- Maintain a good safety zone between machinery and participants.

Introductions

- Tell them about yourself and any experiences you have had with PTOs.
- Ask questions – this will encourage the children to be more involved!
- For example:
 - Does anyone in your family use a PTO? What is a PTO?
 - Do you know anyone who has been injured by a PTO?
 - What happened to that person?

Take-Home Messages

- Explain what PTO stands for (Power Take Off).
- PTOs spin very fast. Explain the meaning of an RPM (1000 rpms = 1000 rotations per minute or 16 rotations per second). A 6 foot rope tossed over a spinning PTO will wrap around the shaft in less than one second!
- Typical injuries involving PTOs are amputations, severe cuts, multiple breaks, spine and neck injuries or complete body destruction. Spine and neck injuries are common if a person is rotated around the shaft. Discuss reaction times and that people cannot react fast enough to avoid injury/death.
- Importance of wearing tight-fitting clothes and covering or tying long hair back close to your head. Bootlaces, pant legs, torn coveralls, sweatshirts, and windbreakers are clothing items that can become caught and wrapped around a spinning PTO stub shaft. All it may take for a person to become entangled is one single thread, string from a hooded parka or strand of loose hair. As the items begin to wrap extremely fast around the power take off shaft they pull the subject directly into the PTO unit.
- Other unsafe practices include mounting, dismounting, reaching for control levers from the rear of the tractor, and stepping across the shaft instead of walking around the machinery. An extra rider while PTO powered machinery is operating is another dangerous situation. Never step over a revolving PTO even if guards are in place.
- Always shut off tractor when working on PTO.

- Make sure all PTO shields and guards are in place and explain the importance of this.
- Emphasize how important it is for young children to stay away from PTOs and for those old enough to work around PTOs to get the proper training and to ask questions. Know the Job, Know the Hazard, Know the Drill!

Interactive Activities

Reaction time demonstration

- Hold a six inch ruler above the participant's index finger and thumb. Tell participants to catch the ruler as you drop it. Talk about the reaction time required. Compare to the reaction time that would be needed to get away from the PTO.
- No one has a fast enough reaction time – you would be killed or hurt before you had a chance to react.
- For older participants (14 and up) – show what would happen to a dummy stuffed with newspaper that is caught in the PTO. Make a dummy using old or disposable coveralls and stuffing them with straw or newspaper.
- Remove any buttons or zippers first to prevent debris from flying out. Tie a nylon rope to the dummy (arm or leg) and to the exposed shaft of the PTO. Ensure students are a safe distance away from the demonstration and any flying debris. Engage the PTO to entangle the dummy.
- Shut the tractor off and talk about what happened to the dummy and what should have been done differently.

Notes

