

AgriKids Farm Safety Ambassador



Theme 2: Tractor & Machinery Safety

Level: 1st – 2nd Class

Objective

Learn about the various types of farm machinery and equipment that are commonly used on a farm and how the farmer must be responsible and safe when using tractors, quad bikes and Power Take Off, (P.T.O.), equipment.

Learning outcome topics

1. What kind of machines do farmers use
2. Where do they use them
3. Do you know the tractor blind spots – know the tractor blind spots
4. Learn the tractor safety checklist
5. Introduction to quad bikes
6. What are PTO's?

Tip: You can use the Farm Safety Workbook in conjunction with this discussion.

Topics

1. What machines the farmers use.

Ask the children to name different types of farm machinery and what they think each piece of machinery does. Do they know where on the farm they may be used? Use the below table as a prompt guide.

Write the answers on the board. If the following are mentioned underline them:

Tractors, Quad Bikes, Power Take Off (P.T.O.). If they are not mentioned, remind the children about them and add them to the list as we will be discussing them in greater detail below.

2. Where do we use these machines

Ask the children if the machinery they mention are:

1. Vehicles – ie. driven by the farmer
2. Machinery – ie. powered or pulled by a tractor
3. Where these vehicles or machines will be mostly used. Some might be used in more than one location.

If there are children with access to a farm this is a great opportunity for them to tell their classmates about life on their farm.

Also if you have a model farm in your classroom already set up, maybe some of the children have farm toys they could loan to help the other children learn more.

Farm Machinery

Tractors - vehicles

Used on farms to pull equipment such as ploughs, harrows, slurry agitators, etc.



Plough - fields

Digs up the earth to loosen the soil or before the farmer sows the next crop in their field



Trailers – various locations

Normally pulled by a tractor and used to carry a variety of products around the farm, such as grain and food crops.



Combine Harvester – Vehicles

Cuts and harvests grain and cereal crops.

**Slurry / Muck spreader- fields**

Spreads slurry across the farmer's fields

**Cultivator / Tillers- fields**

Used after ploughing to break down the soil and prepare it for sowing seed.

**Slurry agitator- farm yard**

A slurry agitator is used to mix (agitate) slurry which is kept in the slurry tank / pit.

**Mowers- fields**

Cuts grass when making hay, silage, haylage. Can also be used to keep fields tidy

**Topper- fields**

Used to keep fields tidy by cutting weeds and long grasses, rushes, etc.

**Sprayer- fields**

Sprays fertilisers or pesticides on crops to keep them healthy

**Diet Feeder- animal sheds**

A diet feeder weighs, mixes, and shares out animal feed. Mostly used for cattle feeding and in particular dairy cattle.

**Quad Bike – Vehicles**

4 wheel motorised bike used to drive across fields. They are only suitable for passengers and safety equipment must be worn.

**Hay Turner- fields**

When grass has been cut, the turner is used to turn the grass so it can dry in the sun and be baled for hay.

**Baler- fields**

Used to bale hay and straw. Bales can be round, small rectangle or larger rectangle.

**Sower- fields**

Used to sow crop seeds such as barley, oats and wheat

**Gator – Vehicle**

Gators are an off road vehicle used on farms and many industries where all-terrain ability and versatility is required. designed to help property owners haul material and travel across terrain ranging from smooth, to very rough.



3. Tractor Safety

How many brands of tractors can the children name? Here is a list to help the discussion.
Have we missed any?

- John Deere
- New Holland
- Massey Ferguson
- Deutz
- McCormick
- Fendt
- Claas
- Ford
- Case
- David Brown
- Landini
- Zetor
- Fiat
- Valtra
- International

Tractor Safety – Know the Blind spots

Visibility can be limited for farmers when sitting high up in tractors, combine harvesters, etc. Never play near a moving tractor or any other type of farm machinery as you may not be visible. Look at the picture below and note where the blind spots are located.

FRONT



BEHIND:



Are you old enough?

- Under 7 Years: you are not permitted in Ireland to be a passenger in a tractor.
(In the UK the minimum age is 13)
- 7+ years: The age you are permitted in Ireland to be a passenger in a tractor as long as there is a passenger seat and seat belt.
- 14 years: You may drive a tractor on the farm only and only after completing a safety training course.
- 16 years: You may drive a tractor on the road but only after you complete special training and acquire a license.

What to wear:

Seat belts – The Safety Zone

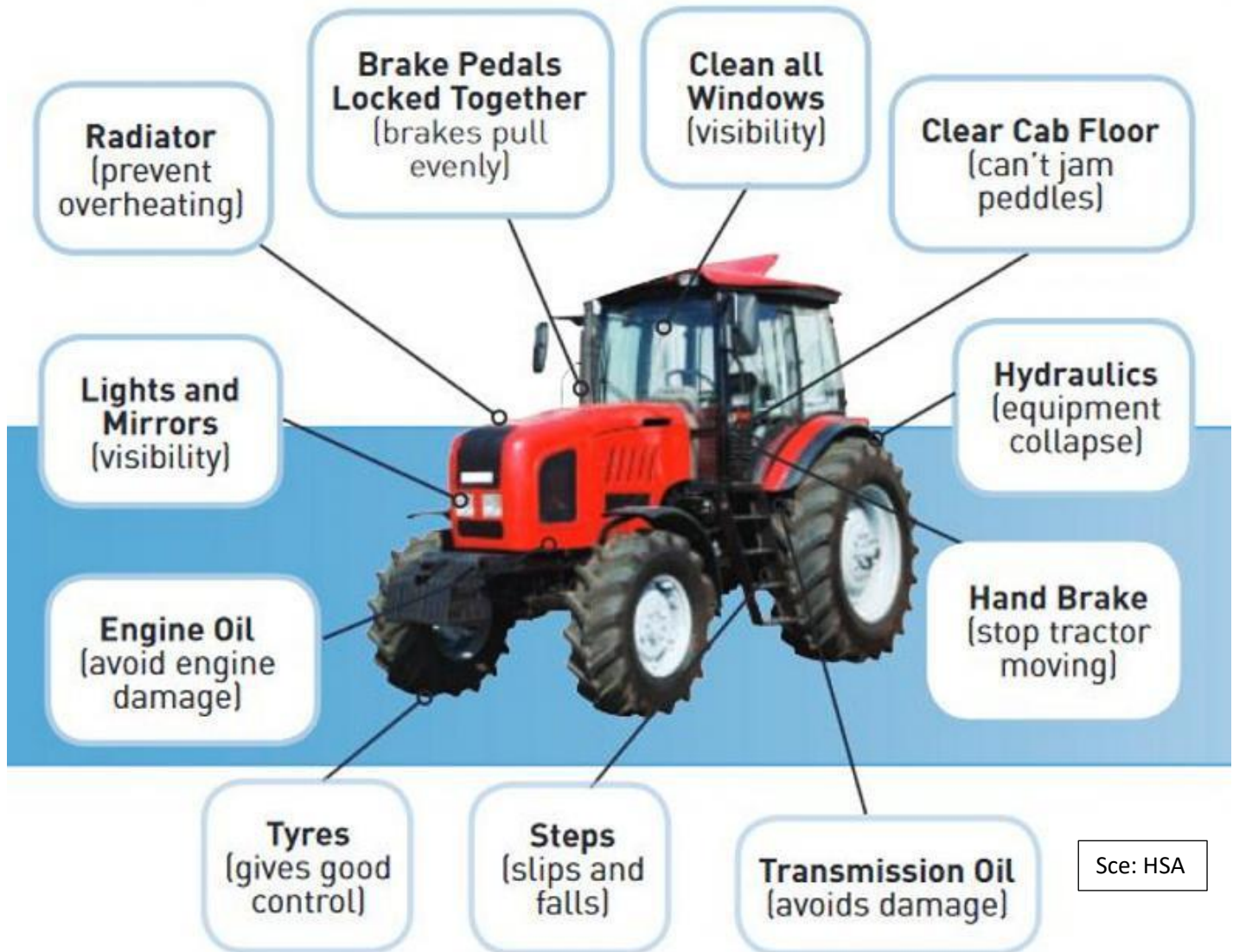
Most tractor cabs have Roll Over Protective Systems (ROPS) in place. These ROPS create a 'Safety Zone' inside the tractor cab. By wearing their seat belt farmers are kept inside the 'Safety Zone' and have greater protection from being thrown from the tractor cab in the event the tractor over turns.



All passengers should wear a seat belt to prevent them from falling from the tractor. Remind the children about why they wear a seat belt in a car?



4. Checklist – all farmers should check the following before using their tractor



- Engine oil – avoid engine damage;
- Tyres – good tyres give good control;
- Clear steps into the cab of mud to prevent slips and falls;
- Handbrake – prevent tractor rolling when on an incline;
- Hydraulics – to eliminate the risk of equipment collapse;
- Clear cab floor – to avoid the risk of pedals jamming;
- Clean all windows for good visibility;
- Brake pedals locked together to ensure that the brakes pull evenly;
- Check lights and mirrors for visibility;
- PTO protected – the PTO must have a guard and the shaft must be covered.

5. Quad Bikes

A quad bike is also known as an All-Terrain Vehicle (ATV). Farmers use quads on their farms when herding animals, checking stock in fields, transporting food and equipment and for general transport. When it comes to safety, we always say to: **Remember your ATV'S**

A – Age: Are you old enough to use a quad bike. To use quad bikes typical to farms, you must be 16+.

T – Training: Before using a quad, all farmers should be trained in how to operate the vehicle.

V – Visual Inspections. Like their tractor, farmers should check their quad is not damaged, has oil, lights, good tyres and fuel before using.

S – Safety equipment. Farmers must make sure they are wearing the correct clothing and PPE (Personal Protective Equipment). **See below:**

What PPE should be worn on a quad bike?

- Head protection, eg. a motorcycle or a horse riding helmet.
- Clothing which is strong and covers arms and legs
- Gloves for protection and to keep hands warm in cold weather & for good control of the ATV.
- Boots or wellingtons which are strong and have good grips
- Goggles to protect eyes from insects and branches
- High visibility clothing



Remember: No passengers should ever be on a quad bike. You can unbalance the quad and cause it to turnover

**6. Introduction to a - Power Take Off (PTO)**

Now ask the children if they know what PTO stands for.

The answer is: Power Take Off

The PTO transfers the power from a running tractor engine to power an implement attached to the tractor.
Eg. A slurry spreader, a mower or a hay turner.

As the PTO can rotate between 9 & 16 times per second farmers must be careful not to get entangled in the moving shaft.

Therefore all PTO's should be covered with a guard and safety chains.



An unguarded PTO can lead to Danger of entanglement



Follow up activities & projects

- Complete the activities in the workbook
- Try the Lesson Plan for this Theme.
- Check out our white board and PC games: Farm Yard Safety, Off to Work and Follow the Signs on agrikids.ie
- Download and fill in our 'Spot the Dangers' worksheets.
- Sign up for an AgriKids webinar
- Invite a farmer or farm representative such as IFA or Teagasc to show the children more about tractor safety.