

Protecting Plants

Technology also helps farmers protect plants from bugs, diseases and weeds. Farmers usually try to use natural methods to control pests, but sometimes chemicals are required. The chemicals that rid plants of these pests are called pesticides. Match the specific chemical to how it protects plants. Discuss how the first part of the word describes what kind of plant pest the products protect plants against.

Fungicides – Protect plants from diseases

Herbicides – Protect plants from weeds

Insecticides – Protect plants from insects

Integrated Pest Management (IPM) emphasizes other tools to reduce plant pests. Pesticides are generally

considered after other options have been explored and only when economic thresholds have been exceeded. Other options include cultural control, such as selecting resistant varieties and rotating crops. IPM options also include biological control, such as introducing insects that feed on pest insects or insects that feed on weeds. These options are often less expensive for the farmer and protect the environment better than using pesticides.

Idea: Use the Project Food, Land & People lesson “Investigating Insects” to allow students to become entomologists by observing insects.

Animal Technology

Idea: Introduce the concept that animals are different from each other, just like people are different from one another. One cow may be tall, another short; one pig may be fat and another thin; one sheep may produce a lot of milk and another not as much.

As with plants, farmers learned a long time ago that their strongest, biggest, healthiest animals had the strongest, biggest and healthiest offspring, too. By carefully selecting the best male and female animals for breeding, they increased the number of healthier and stronger animals. These animals produced more milk, eggs or meat for people than weaker animals.

Better Livestock

One of farmers’ and ranchers’ new technologies is embryo transfer. They remove the embryos from a superior animal and place them in surrogate females, where pregnancy continues normally and the females give birth to offspring with the characteristics of the superior animal. Rather than one superior animal, the farmer ends up with several.

Answers to Embryo Transfer

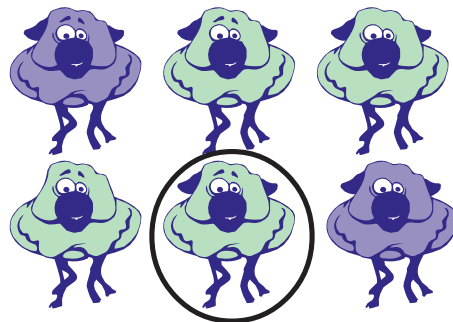
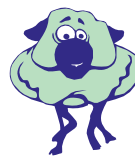
If a prize-winning cow produces one calf per year, how many calves will she have in 5 years? **5**

If 10 embryos from the prize-winning cow are transferred to 10 other cows each year, how many calves from the prize-winning cow will there be in 5 years? **50 calves from the surrogate mothers**

Idea: Talk about the many ways students and adults can practice food safety. How does technology help keep our food safe?

Answer to Cloning

Cloning is another new technology in animal science. Farmers aren’t using it yet, but scientists have cloned a sheep. A clone – an exact copy – grows not from a fertilized egg, but from a cell.



Answers to More Milk

If a cow produces 100 1-cup glasses of milk a day and giving her a hormone will increase her production 10%, how many glasses of milk will she produce? **100 + 10% = 110**

How many gallons of milk is that?

110 cups ÷ 16 cups/gallon = 6.875 gallons

A cow can produce milk for about 300 of the 365 days in a year, so how many cups of milk will she produce in one year?

110 cups/day X 300 days = 33,000 cups

How many gallons of milk is that?

33,000 cups ÷ 16 cups per gallon = 2,062.5 gallons