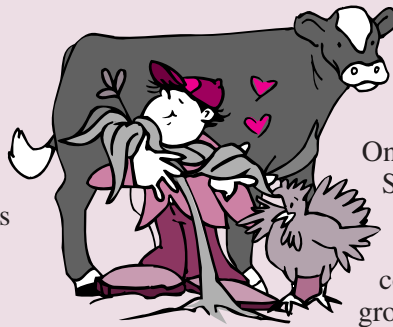


Plants

They're the only living things that make their own food. They are also the source of food for every other living thing. Plants become our medicines, fibers, paper products, cosmetics, spices and building materials. We burn plants for fuels. That includes wood as well as the fossil fuels that came from plants eons ago. We eat plants — roots, leaves, stems and fruits. Everything else we eat also eats plants! Finally, we depend on plants for the oxygen we breathe. Without plants, we would not survive.



Animals

Only about one-fifth of the land in the United States is suitable for growing crops. The rest has poor soil, too little rainfall, or rocky, rough surfaces that machinery can't cover. Forests cover millions of acres. Even though we can't grow food crops on these lands, livestock can often graze there. As livestock eat grass, they turn it into food and fiber people can use. Animals provide the eggs, milk, fish, burgers, steaks, chops and roasts that give us protein. They produce the wool and leather people use for clothes, shoes and baseball gloves. Animal fats are important in soaps, cleaners, cosmetics, paints, plastics and much more. Animals add greatly to our lives.

Think & Discuss

More than half the world's population depends on rice for a daily meal. Another one-third eats wheat in some form every day. One-fourth uses corn and corn products every day. Soybeans are another major crop for both people and animals. More than three-fourths of U.S. farm animals are fed corn and soybeans on a regular basis.

What have you eaten or used today that came from rice, wheat, corn or soybeans?

Corn... America's Gold

The kernel is the seed from which the corn plant grows.

Look at the kernel drawing. Read the definition of each part below, then label the drawing.



Corn fields are fields of energy

Energy from the sun is absorbed by the green leaves.

Through photosynthesis, the plant converts the sun's energy to sugars (food) for the plant. Oxygen is released for people and animals to breathe. The plant produces seeds (kernels) that contain energy that people and animals can use.

Germ: Contains miniature plant that can grow into a new corn plant next year. The germ also holds most of the oil.

Endosperm. White, starchy "insides" that fill most of the kernel.

Hull: Hard outer covering.

A - maize - ing! That's **corn!**

How does field corn get from the land to those who use it?
Check it out:

Production

Corn seeds are planted each year in the spring. The plants grow all summer in areas with 100-140 frost-free days. Corn is planted in rows at about 24,000 to 36,000 seeds per acre. By fall, the ears of corn are ready to harvest. Our combination of climate and good soil makes Minnesota one of the top five corn-growing states.



Photo Courtesy University of Minnesota Agricultural Experiment Station

Harvesting: Most farmers use huge combines to harvest their corn. A combine removes the ears from the stalks and the kernels from the cobs. Kernels travel from the field by wagon or truck to storage bins. Stalks and leaves (residue) are left in the field to catch snow and prevent erosion.



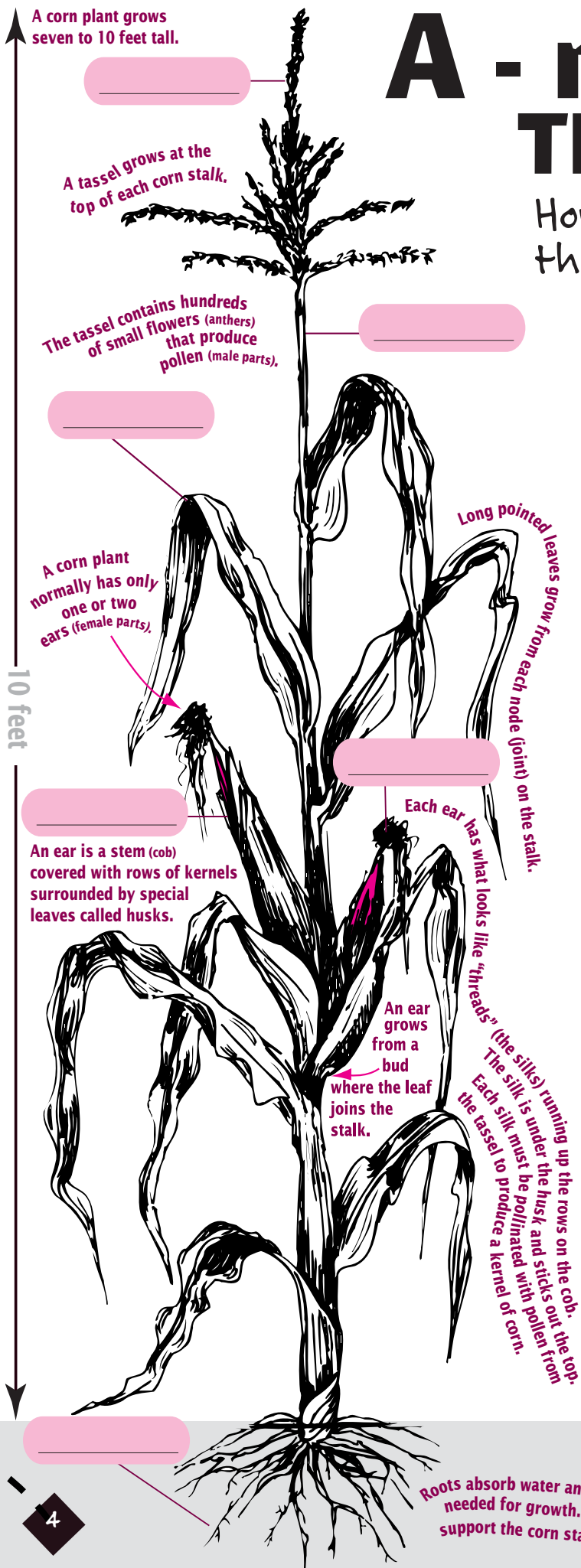
Photo Courtesy University of Minnesota Agricultural Experiment Station

Kernels may be dried and stored on the farm or may go to nearby elevators. Corn must be dried to prevent mold and spoilage.



Photo Courtesy University of Minnesota Agricultural Experiment Station

Farmers who raise livestock may make animal feed from their field corn. They grind and mix their corn with other grains to feed the animals.



Label the parts of this corn plant.

Word Bank: Ear, Leaves, Roots, Silk, Stalk, Tassel

Processing

A lot of corn grown on farms is sold to elevators and processing plants. At processing plants the corn may be soaked, softened, pressed, dried, ground, cooked, mixed or sometimes flaked. Processing steps depend on what the corn will be used for. There are more than 3,500 different uses for corn—and new ones are developed every day.



Ethanol processing
Al-Corn Clean Fuel,
Claremont, MN

Photo Courtesy Agri News

Washing corn fibers
for blanket making



Photo Courtesy
Agri News

Marketing & Distribution

High fructose corn
syrup ready for delivery
to a food or beverage
manufacturer

Photo Courtesy
Cargill



Processed and packaged corn products are distributed to us through stores, co-ops, gas stations, animal food dealers, and more. Here are just a few of the products that use corn. Do some of them surprise you? Color the corn products you use.

Consuming (People Using)



Did you know....
English colonists served
popcorn with cream
and sugar for
breakfast?

Packing peanuts made from cornstarch are 100%
biodegradable and dissolve in water!

Photos Courtesy Cargill

Corn makes a Difference

1. It's Earth-friendly

Next time your family pulls into a gas station, look for ethanol signs on the pumps. Ethanol is a liquid fuel that can be blended with gasoline. It's made from many different things but in the U.S. we make most of our ethanol from corn. Ethanol burns cleaner than gasoline, helping keep our air cleaner. It is renewable and it stretches the supply of gasoline so we don't have to buy so much crude oil from other countries. Next time you drive past a field of corn, see it as a field of energy!

Useful Products

Corn-based products are replacing petroleum products all the time. Look at the drawing on page five and name some! Unlike their petroleum-based cousins, corn-based products are renewable. When we need more products we can grow more corn. Corn products are biodegradable too. They dissolve in water and break down naturally when tossed in a compost heap. Every time we substitute a natural resource like corn for our dwindling supplies of oil and petroleum, it's a good thing. We help our farmers earn money, too.



Photo Courtesy Minnesota Corn Growers Association.

2. It's Food for People

Corn is in everything from baby food to peanut butter, marshmallows to vinegar, soap to cooking oil. Every major non-diet soft drink uses corn syrup as a sweetener. Can you list 20 things in your cupboard that contain corn?



Compare lists with your classmates!

3. It's Food for Animals

Your pork chops or roast chicken were likely raised on corn. In many developed countries, more corn is used for animal feed than for human food.



Photos Courtesy University of Minnesota Agricultural Experiment Station

Let Corn Keep you Warm

Heating with Corn

Shelled field corn isn't just animal food anymore. Some folks are buying it by the bushel for their stoves! There are several companies using new technology to build stoves and furnaces that use dry corn kernels and corn residue as fuel.



Photo Courtesy Agricultural Utilization Research Institute

Sleeping with Corn

Two Minnesota companies have teamed up to make blankets from corn. Cargill came up with a way to make corn into plastic and then change that to fiber. Faribault Woolen Mills uses this fiber to make toasty corn blankets!



Photos Courtesy Agri News



From One Bushel of Corn...

A typical bushel of corn weighs 56 pounds and contains approximately **72,800** kernels.

A **Bushel** is a unit to measure grain such as corn. One bushel equals 1.25 cubic feet. One bushel of corn produces enough corn syrup to sweeten **324** cans of cola!

Corn starch is used to make diapers, biodegradable plastics and batteries. Other biodegradable corn products include milk jugs, golf tees, flatware and plates.