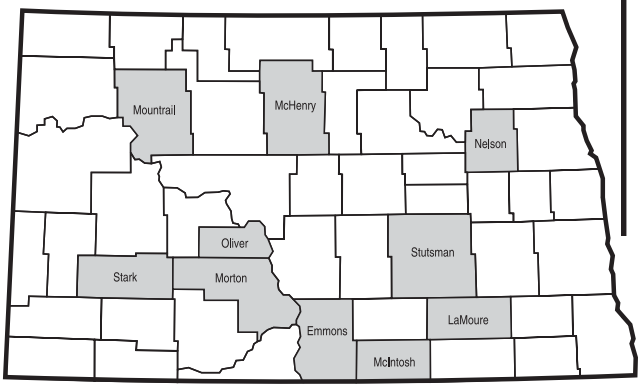
Answers to North Dakota's Dairy Cows



Idea: Have students design their own Holstein patterns. Provide each student with a cow outline, and have them put their names on the back. Using black paint and a sponge or their thumb, have students create a Holstein pattern on the cow outline. Once the cow paintings are dry, have students examine their cows and look for distinguishing patterns, such as a tic-tac-toe board or Big Dipper. Have students think of a name for their cow based on the pattern they identify. Have them write the name of the cow on the back of the paper. Hang all the cows around the room and see if students can identify their own cow by using her name to remember her pattern.

From the *National Dairy Council*

Career Corner

Idea: Brainstorm with students other careers related to the dairy industry, or have students list all the careers they can think of related to dairy production, processing, distribution and consumption. Each student could select and explore one career area.

Idea: Have students bring Nutrition Facts labels from dairy products, and review them together.

Dairy Processing

Answers to How Much Milk Does It Take?

From the *National Dairy Council*

Idea: Make a Polymer – The first plastics were made from natural sources such as milk, trees and plants. Plastics are made through a process called polymerization. In this process, molecules called monomers combine with each other to form larger molecules called polymers. These unique man-made polymer chains give plastics their special characteristics.

Materials:

1 cup milk
2 tablespoons white vinegar

Instructions:

Warm milk in a pan. Stir in vinegar. A white rubbery material forms. Take this out, wash it under the tap and shape it into objects such as marbles. Leave it for a few days, and the material will harden.

Discuss:

Explain to the students how the vinegar and milk react to coagulate casein. Protein molecules in the milk, which are so long they can bend, join to make the casein rubbery. As the material dries, the casein molecules shrink, making it hard.

Adapted from *Cycling Back to Nature with Biodegradable Polymers, National 4-H Council*

Idea: Study the science of milk and dairy processing by making curds and whey. See the directions at www.strausmilk.com under Kid and Adult Projects or at http://schmidling.netfirms.com/making.htm.