TEACHER'S GUIDE

Where Milk Comes From

LACTATION AND MILK PRODUCTION LESSON

Learning Target: Describe parts of a cow's udder with correct terminology.

Engagement Strategy: "Dairy Data"

Handout the **"Dairy Data" student page**. Have students fill in the blanks with their **best guesses for each** fact.

Read each fact about dairy cattle and milk out loud or write them up on the board. Have the class give their input and see who was closest. Use the Teacher's Guide to **provide the correct answers**.

Learning Activity: "Where Milk Comes From"

Before class, make several copies of the "Where Milk Comes From" student page. **Cut along the dashed lines** to make the udder puzzle pieces. Put the pieces for each puzzle in its own envelope (one per puzzle).

Have students find a partner and **give each pair an envelope**. Tell students that inside is the source of milk but **some assembly is required**.

Have students **put the udder pieces together** which will reveal the udder anatomy terms. You can even have them glue the pieces onto a blank sheet of paper.

Use the Teacher's Guide to **discuss each part of the udder** and what its purpose is. See if students can guess the average weight of a cow's udder (answer on the Teacher's Guide).

Some **questions to ask** include:

- *How many udders does a cow have? Answer:* ***one****.*
- *How many quarters does a cow's udder have? Answer:* ***four****. (the rear left can not be seen in the diagram)*
- *How many teats does each quarter have? Answer:* ***one****. One for each quarter, four total for the udder.*
- *Do milk veins carry milk? Answer:* ***No, they carry blood to produce milk.***

Culminating Activity: "Where does MY milk come from?"

We've already learned that milk travels less than two days on average from the farm to your grocery store. **Now you can see which dairy produced your milk.**

Have students bring in **clean, empty milk (or other dairy product) containers** from home and/or have several for the class to use.

Handout the **"Decoding Dairy" student page** and have students follow the directions. An example image is given for practice. Do example together so that everyone understands the process.

Have students **find the code on their container** or set up a series of containers around the room **for students to rotate through**.

An extra practice Decoding Dairy page is included if you have students **find the codes on more than one carton**.

A **talking point** can be how local dairies supply not just food but also jobs in our communities.

TEACHER'S GUIDE

Dairy Data

LACTATION AND MILK PRODUCTION

1. The average cow produces _____ glasses of milk each day, that's more than 2,300 gallons each year!. **90**

2. Milk has _____ essential nutrients for human health: calcium, potassium, phosphorus, protein, niacin, vitamin A, vitamin B 12, riboflavin and vitamin D. **9**

3. The average milk cow drinks _____ gallons of water each day. That's the equivalent of drinking one whole bathtub full of water. **30 to 50**

4. In as little as _____ days, milk travels from the farm to your grocery store. Milk is one of the original farm-to-table foods and it's one of the freshest products you can find at your local grocery store. **2**

5. All milk is free of antibiotics, whether the label states it or not. Test samples are collected on all milk before leaving the farm. All milk is tested at the plant before it is used. So there are _____ artificial hormones in milk. **0**

6. Despite its creamy texture, milk is actually _____% water. The rest of its volume comes from a vitamins, proteins, carbohydrates and fat. **85 - 95**

7. Nearly _____% of dairy farms in the US are still family owned and operated. **98**

8. Real whole milk has a clean and simple label with just _____ added ingredient: supplemental vitamin D. **1**

9. Eight Ounces of milk contains _____ grams of protein - that's 16% of the daily recommended value. **8**

10. The average American consumes almost _____ gallons of milk a year. **25**

NAME _____

Dairy Data

LACTATION AND MILK PRODUCTION

1. The average cow produces _____ glasses of milk each day, that's more than 2,300 gallons each year!. _____

2. Milk has _____ essential nutrients for human health: calcium, potassium, phosphorus, protein, niacin, vitamin A, vitamin B 12, riboflavin and vitamin D. _____

3. The average milk cow drinks _____ gallons of water each day. That's the equivalent of drinking one whole bathtub full of water. _____

4. In as little as _____ days, milk travels from the farm to your grocery store. Milk is one of the original farm-to-table foods and it's one of the freshest products you can find at your local grocery store. _____

5. All milk is free of antibiotics, whether the label states it or not. Test samples are collected on all milk before leaving the farm. All milk is tested at the plant before it is used. So there are _____ artificial hormones in milk. _____

6. Despite its creamy texture, milk is actually _____% water. The rest of its volume comes from a vitamins, proteins, carbohydrates and fat. _____

7. Nearly _____% of dairy farms in the US are still family owned and operated. _____

8. Real whole milk has a clean and simple label with just _____ added ingredient: supplemental vitamin D. _____

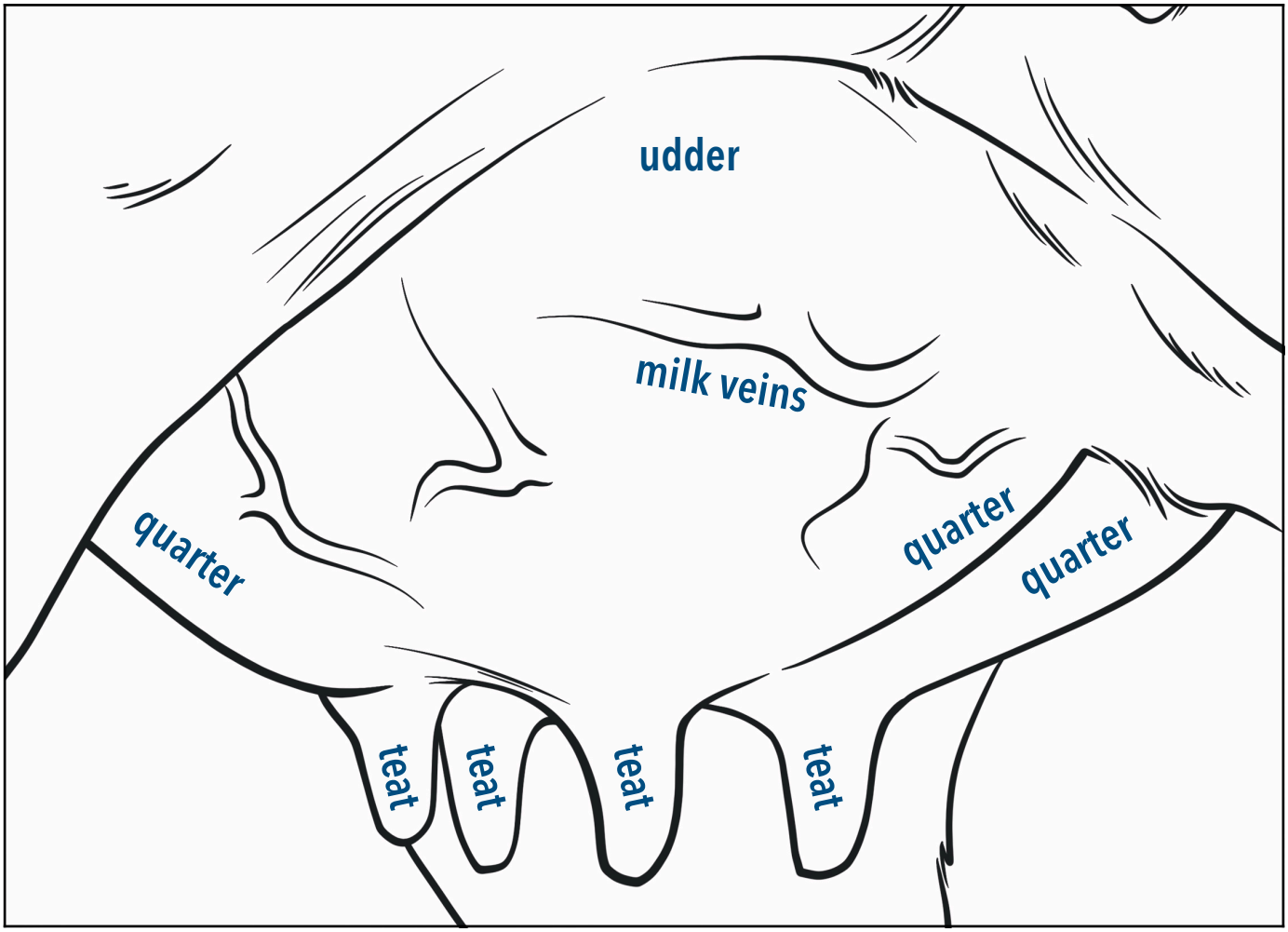
9. Eight Ounces of milk contains _____ grams of protein - that's 16% of the daily recommended value. _____

10. The average American consumes almost _____ gallons of milk a year. _____

TEACHER'S GUIDE

Where Milk Comes From

UDDER ANATOMY



udder: the mammary gland of the cow that is divided into four quarters - each an individual gland; it can weigh between 25 and 60 pounds not including milk!

quarter: term for the four separate glands that make up the udder - two on each side - divided by a groove that is the median suspensory ligament which supports the quarters

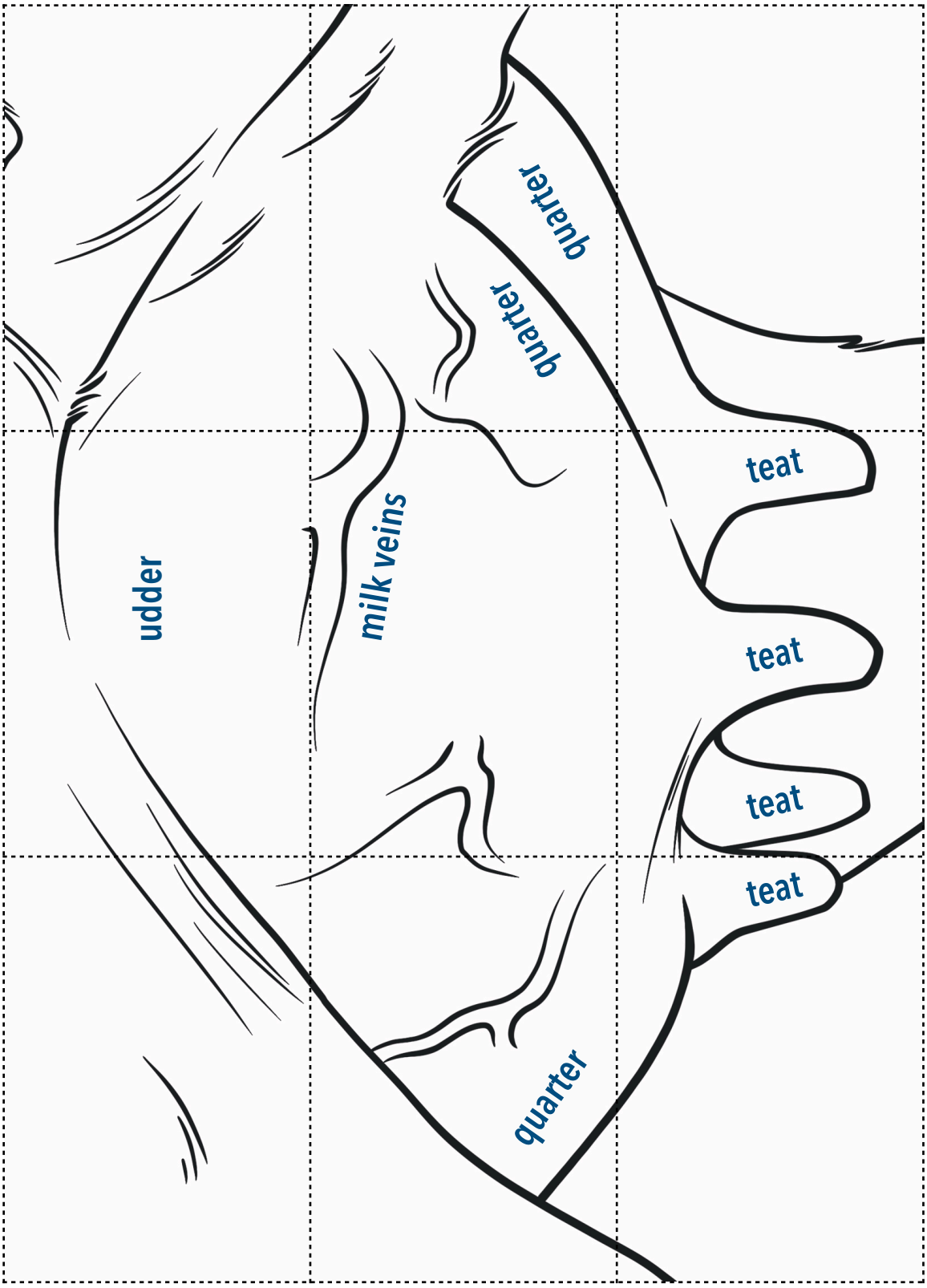
teats: where milk exits the udder; a cow has four teats (one for each quarter)

milk veins: large veins that are visible under the skin on the belly of the cow that take blood from the udder to the heart; all cows have them but they are most easily seen on dairy cattle

NAME _____

Where Milk Comes From

UDDER ANATOMY



NAME _____

Decoding Dairy

TRACING YOUR MILK TO THE SOURCE

Instructions:

1. To **find the source** of your dairy product, look for the **code on the container**.
2. Codes are usually **printed near the top of the container or on lids**. Sometimes they're printed right on the label. They are almost always **located near the expiration date**.
3. The first part of the code will always be **two numbers (between 01 and 56)**. Codes never start with letters. (If there are letters, like PLT, there will be a space before the code starts.)
4. The **second part of the code** (after the first two numbers) can be one to five digits long, can contain numbers or letters and **may include a dash**.
5. Codes **never have colons**, so if you see one of these : , keep looking!
6. Go to the website: **WhereIsMyMilkFrom.com**
7. **Input your code.** Find out where your milk or milk product was produced and see what else they make there.
8. Still can't find it? Well, not *all* products have codes, so if what you see printed on your container doesn't follow any of the previous rules, you may be out of luck. But try another container or milk product.

Use the example in the image to practice.

Example:

Type of Dairy Product: _____

Printed Code: _____

Where My Milk is From: _____

Now let's use your own container.

My Dairy Code:

Type of Dairy Product: _____

Printed Code: _____

Where My Milk is From: _____

Types of Dairy Products Produced There: _____

_____

NAME _____

Decoding Dairy

TRACING YOUR MILK TO THE SOURCE

Container #_____

Type of Dairy Product: _____

Printed Code: _____

Where My Milk is From: _____

Types of Dairy Products Produced There: _____

_____

Container #_____

Type of Dairy Product: _____

Printed Code: _____

Where My Milk is From: _____

Types of Dairy Products Produced There: _____

_____

Container #_____

Type of Dairy Product: _____

Printed Code: _____

Where My Milk is From: _____

Types of Dairy Products Produced There: _____

_____