

A Hundred Bales of Hay

Grade Level: K-3

Approximate Length of Activity: One class period

Objective

Teacher

1. Discuss the process of making hay.
2. Integrate a math activity using a hundreds chart.

Students

1. Explore haymaking in math, language arts and science.
2. Review math facts and examine patterns, using a hundreds chart.

Michigan Content Standards: (Math) N.ME.00.05; N.ME.00.02; N.MR.00.09; N.MR.00.07; N.ME.01.01; N.ME.01.03; N.ME.01.04; N.ME.01.08; N.FL.02.06; N.MR.02.09; N.ME.03.21; N.FL.03.06

Background

Before there were cars, trucks and farm equipment, it was workhorses that provided transportation and helped with work on the farm and other industries. Hay was the fuel that made the horses go. Farmers needed huge quantities of hay for their cattle and their sheep. Horses used in mining, lumbering, and road building industries, and those used for hauling and personal transportation in urban areas, needed fodder too. Farmers put up hay for their own use, and sold it in local markets, or baled it and shipped it to markets further away.

Haymaking involved cutting, gathering, drying and storing grasses or legumes, like alfalfa or clover. Hay was best made during late June, July and August.

First the hay was cut with a scythe or a mower. Then sun and wind dried the hay as it lay in the field. When the moisture content was low enough, the hay was raked up and stored in sacks in the field or loaded on a hay rack or elevator (conveyor) and hauled to the yard. Here, it could be stored in stacks or in the mow (loft) of a barn. The loose hay would continue to dry in the mow and was fed out by pitching it down to the animals below.

Most haymaking was done by family members, male and female, working with neighbors and casual help. Hired men usually got the heavy work, such as pitching hay or building stacks. Women and older children often did the raking and drove the teams of horses. Smaller children brought lunches and cold drinks to the hayfield.

Farmers today still need hay to feed their animals, but now machinery does much of the work. Most hay is now baled in huge round bales, usually by just one person. Most round balers produce bales weighing 600-2000 pounds. The bales are either left in the field until they are used or moved to a covered storage area.



The conditions for growing hay are plenty of rain, and then hot dry weather for harvest.

Many people confuse hay with straw. Straw has yellow/brown stems and hay is green and leafy. The square bales often sold in the fall for Halloween decorations are actually bales of straw. Straw is the stubble that is left after the grains from plants like wheat, oats and rye are threshed from the plant. It is most commonly used in animal bedding, as mulch for gardens and, in some cases, even in the walls of houses.

Materials Needed

- Copies of "A Hundred Bales of Hay" worksheets
- Assortment of small objects: wheat cereal, animal crackers, small crackers, pennies

Activity Outline

1. Hand out copies of the hundreds chart (worksheet A) and an assortment of small objects for covering the squares on the hundreds chart-square wheat cereal (to represent hay bales), animal crackers (to represent animals that eat hay), small crackers, pennies, raisins, etc.
 - Have students follow directions as you read them from the "Hundreds Activities Page."
 - Adjust instructions as necessary for the objects you have provided. Students may work in pairs or individually.
 - As an alternative, students may cut the pictures on the picture page and use them on the hundreds chart to follow your directions.
3. Provide each student with a copy of the picture page (worksheet B)
 - Discuss the pictures.
 - Have students examine the pictures page and look for patterns.
4. Have students make their own patterns, using the pictures.
5. In the fall, bales of straw are available as Halloween decorations. Bring a straw bale to class, and discuss with your students the difference between hay and straw. (Straw is the stubble left over after the harvest of wheat or other grain crops. Straw is commonly used for animal bedding and sometimes even for construction of homes. Hay has nutritional value and is used for animal feed.) Ask students to describe and draw the shape of a straw bale. Is the bale two dimensional or three dimensional? Have students measure the dimensions and find the area. Ask them how they would find the volume. Have students estimate the weight for the bale and then develop a strategy for weighing it.
6. Laminate the hundreds chart and pictures, and place magnets on the backs to make a guided center activity.

Discussion Questions

1. What is the difference between hay and straw?
2. What is hay used for?
3. Does hay have any nutritional value?

Related Activities

1. Activities related to language arts
 - Read and discuss background.
 - Hand out the “Reading Page” and have students answer the discussion questions in complete sentences.
 - In light of what they have learned about hay, have students explain the meanings of these three old sayings:
 - “You’ve got to make hay while the sun shines.”
 - “It’s like trying to find a needle in a haystack.”
 - “It’s time to hit the hay.”

These statements are examples of figurative language. Have students identify each as:

Simile (a comparison that uses like or as).

Metaphor (an implied comparison).

Hyperbole(an exaggeration for effect).

Personification(a description that represents a thing as a person).

Can students think of other sayings that refer to hay?

- Have students write a fictional journal or draw pictures depicting a day baling hay. Students may take the perspective of the hired hand, the older children, the parents or the younger children. (See background material and reading page.) Have students share their stories with the class.
2. Activities related to science
 - Investigate. Why would hay have to be dried before it could be stored? Take some freshly cut grass or other live vegetation and divide it into two parts. Place one part in a covered plastic container and spread the other half out to dry. Have students hypothesize what will happen to each section. In two or three days, check to see what has happened to both. Have students write their observations.

Book Resources

1. “Haystack” by Bonnie Geisert
2. “The Milk Makers” by Gail Gibbon
3. “The Wonderful Hay Tumble” by Kathleen McKinley Harris and Dick Gackenback
4. “Century Farm: One Hundred Years on a Family Farm” by Cris Peterson and Alvin Uptis
5. “One Hundred Hungry Ants” by Elinor J. Princzes, Bonnie McCain and Elinor Princzes

Acknowledgement: Adapted from “A Hundred Bales of Hay,” Oklahoma Agriculture in the Classroom.

A Hundred Bales of Hay

Reading Page

Before there were cars, trucks and farm equipment, it was workhorses that provided transportation and helped with work on the farm. Hay was the fuel that made the horses go. Farmers needed huge amounts of hay for their cattle and their sheep. Work horses needed hay, too. Farmers put up hay for their own use and sold the extra to people in town who needed it for their horses.

Haymaking involved cutting, gathering, drying and storing grasses or legumes, like alfalfa or clover. Hay was usually made during late June, July and August.

First the hay was cut with a scythe or a mower. Then the sun and wind dried the hay in the field. When the hay was dry enough, workers raked it up and made hay stacks in the field or hauled it to the barn. The farmer could feed the animals by pitching the hay to the animals below.

Everyone in the family helped with haymaking, male and female. The hired men usually got the heavy work, such as pitching hay or building stacks. Women and older children did the raking and drove the teams of horses. Smaller children brought lunches and cold drinks to the hayfield.

Farmers today still need hay to feed their animals, but machinery does more of the work.

Think About It...

Explain this statement: "Hay was the fuel that made the horses go."

This statement is an example of figurative language. Which is it? (Check one.)

simile (a comparison that uses like or as)

metaphor (an implied comparison)

hyperbole (an exaggeration for effect)

personification (a description that represents a thing as a person)

Hundreds Activities Page

Teacher Worksheet

Directions: Have students follow these instructions, using the hundreds chart and pictures on the following pages or square wheat cereal pieces, animal crackers and other manipulatives. (Adjust directions to fit the manipulatives you choose to use.)

1. Use your round hay bales to cover all the numbers with a 5 in them. How many round hay bales did you use? Remove the round hay bales covering these numbers- 5, 25, 57, 65, 75, etc. Now clear your charts, and use your square hay bales to cover all the numbers with a 5 in the ones place. How many square hay bales did you use? Leave the square hay bales on the chart and use your cows to cover all the numbers that have 5 in the tens place. How many cows did you use? What do you have on 55? Why? Repeat this activity, focusing on another number between 0 and 9.
2. Use your horses to cover the following numbers as I say them: 1, 12, 23, 34, 45, 65, 67, 78, 89, 100.
 - What kind of pattern do you see? (diagonal)
 - What is the smallest number you have covered? The largest?
 - Do you have 23 covered on your board? How do you know?
 - Which number is one more than 33? How do you know?
 - Which number is 10 more than 34? How do you know?
 - Put your finger on the horse covering 67. How did you find it? What number is one more than 67? Ten more than 67? One less than 67? 10 less than 67?
3. Use your sheep to cover the following numbers:
 - Cover the number which means one ten and four ones.
 - Cover the number which means no tens and seven ones.
 - Cover the number which means five tens and no ones.
 - Cover the number which has the same digit 8-in both the tens and the ones place.
4. Use any object or picture to cover all the numbers that end with the digit 6. How many squares did you cover? What is the smallest number you covered? The largest number? Say each number and then check it by looking under the picture. Discuss with each other any patterns you see in the column that starts with a 6 and ends with 96.
5. Choose any object or picture to cover the numbers that answer these number riddles.
 - I am thinking of a number with a 6 in the tens place and a 1 in the ones place. I am thinking of a number with a 1 in the tens place and a 6 in the ones place. Are the numbers the same? How do you know?
 - Cover the smallest two-digit number on your hundreds board.
 - Cover the largest two-digit number on your board.
 - Cover a three-digit number.
 - What number is larger than 2 tens and 3 ones, but smaller than 2 tens and 5 ones?
 - Cover the largest two-digit number with a 3 in the ones place.
 - Cover the smallest two-digit number with a 5 in the tens place.
 - Cover the two-digit number that has a 7 in the tens place and in the ones place.
 - Cover evens, odds, primes, composites, multiples of 2, 5, 10...

A Hundred Bales of Hay

Worksheet A

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

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Worksheet B

									
									
									
									
									
									
									
									
									
									