

No Foot, No Horse

Objective

Students will read about about horse shoes and write descriptive paragraphs about their own shoes. Students will classify a pile of shoes and perform other mathematical operations with shoes.

Background

Every athlete needs a good pair of shoes. The type of shoe an athlete wears depends on the sport he or she plays. Basketball players wear rubber-soled sneakers to give them traction on the wooden basketball court. Golfers wear shoes with small spikes on the sole to give them traction on wet or slippery golf courses. Bowlers wear shoes with slick soles that reduce friction and allow them to glide during their approach to the lane.

The same is true for equine athletes—horses. The type of shoe a horse needs depends on the sport in which it will be involved.

Horseshoes are available in a wide variety of materials and styles, developed for different types of horses and the work they do. Common materials are steel, aluminum and plastic. Some specialized shoes are made from magnesium, titanium or copper.

A horse needs new shoes every six to eight weeks. Trimming and shoeing is a regular and very important part of caring for a horse. The person who puts shoes on a horse is called a farrier. A standard horseshoe is made of steel and has a groove in which the farrier inserts nails to hold the shoe to the hoof. (Don't worry! It doesn't hurt the horse at all. It's just like getting your fingernails trimmed.) Most horseshoes have spaces for eight nails.

The horseshoe probably was introduced to Western culture by the Greeks in the 4th Century. Horses in the wild do not have shoes, but domestic horses need shoes for several reasons. The hoof is made of horn, much as the human fingernail, and grows hard, tough and flexible only with optimal nutrition. Horses in the wild eat live grasses, weeds and shrubs, which are high in nutrients such as beta carotene. Cultivated feeds lose a high proportion of their carotene within hours of harvesting and so do not provide this vital ingredient to the horse.

In nature, the horse walks and grazes continuously over a wide variety of surfaces, which keeps its feet worn smooth, even and hard, like a callus. In domestication, the horse doesn't cover as much ground on a daily basis, so the hooves harden much less and are more vulnerable to injury.

In addition, the added weight of a human, pack load, cart or wagon traces can cause a horse's hooves to wear more quickly than those of wild horses.

Horseshoes are also used to enhance the horse's performance in athletic competitions, just as an athlete wears particular shoes for his or her particular event. The shape, weight, and thickness of a horseshoe can significantly affect the horse's gait. Farriers trained in hot shoeing can make custom shoes

Oklahoma C3 Standards

GRADE 2

Physical Education—
1.1,2,3; 2.13; 3.1; 5.1,2,3;
6.1; 7.1,2

COMMON CORE

Language Arts—
2.L.1,2,3,4,5,6; 2.RI.4,10;
2.RF.4; 2.SL.1,3,4,6;
2.W.2,7

Math Practice—

MP.1,2,3,4,6,7

Math Content—

2.MD.1,5,9,10; 2.OA.4

GRADE 3

Physical Education—2.1;
3.2,3; 5.1,2,3

COMMON CORE

Language Arts—3.RI.1,2,4;
3.RF.4; 3.L.3,4,5;
3.W.1,2,3,4,10;
3.SL.1,2,3,4,5,6

Math Practice—

MP.1,2,3,4,6,7

Math Content—

3.MD.2,3,4,5;
3.OA.1,2,3,7,9; 3.NBT.3

GRADE 4

Physical Science—1.2; 2.1
Physical Education—1.5;
5.1,2; 6.1; 7.1,3

COMMON CORE

Language Arts—4.RF.4;
4.RI.1,10; 4.W.1,2,3,9;
4.L.1,2,3

Math Practice—

MP.1,2,3,4,6,7

Math Content—4.OA.1,5,9;
4.MD.1,2,7; 4.NBT.5,6

Materials

students' shoes

man-sized boots

coffee cans

Research Question

The horseshoe is recognized as a symbol of good luck. How did this belief originate?

to help horses with bone or muscle problems in their legs.

Language Arts

1. Read and discuss background information.
 - If possible bring a horseshoe to class for students to see.
 - Brainstorm adjectives to describe the horseshoe.
2. Hand out Student Worksheet A, and complete it as a class, in groups or individually.
3. Students will examine their own shoes and brainstorm the kinds of activities for which they would be appropriate.
4. Take one shoe from each student.
 - Label shoes with stick-on numbers.
 - Each student will write a description of his/her own shoe, using Student Worksheet B.
 - Label the descriptions with letters (no names).
 - Hand out Student Worksheet C.
 - Students will work in teams to match the shoes with the descriptive paragraphs.
 - Compare the results and let teams discuss the reasons for their decisions.
 - Reveal the correct answers.
5. Lead a discussion about what would happen to our feet if we did not wear shoes.

Math/Science

1. Take one shoe from each student and place them all in a pile.
 - Students will examine the pile of shoes and create classification categories.
 - Students will place the shoes in the appropriate categories and tally the amount in each group.
2. Students will use the shoes to develop mathematical patterns. (black, white, brown; lace, buckle, slip-on; etc.)
3. Student will each trace his/her own shoe and measure the outline, using standard and nonstandard measures.
4. Students will solve these math problems:
 - If a farrier puts eight nails in each of the horse's four shoes, how many nails are used to shoe a horse?
 - The farrier is putting shoes on six horses that are used as a team to pull a wagon. How many nails will be used to put shoes on the team of horses?
 - If a horse gets new shoes every eight weeks, how many nails will be used in a year?

Get Up and Move

1. Students will practice barrel racing, as follows:
 - Set up three coffee cans in a triangle for each rider.

- Students will pretend to ride horses around the cans in a cloverleaf pattern. Students may trot (hop), canter (skip) or gallop (run).
 - The rider must ride around at least three cans without turning one over.
 - Use a timer, and have someone record the times. The rider who finishes fastest wins.
2. Students will have a boot relay.
 - Students will put on man-sized boots, race to a certain spot with them on, race back and take them off for the next team member.
 3. Students play Bronco Tag.
 - All but two players pair up and scatter around a playing field that is at least 40 square feet.
 - Each pair becomes a bronco, with one player in front (the head), and the second in the back (the tail) with arms around the partner's waist.
 - The other two players become the runner and the chaser.
 - The chaser gives the runner a head start and then pursues him or her.
 - If a tag is made, the two exchange roles.
 - At any time, the runner may join a bronco by clasping the waist of the bronco's tail.
 - The tail thus becomes the new head, and the old head is displaced and becomes the new runner.
 - Broncos may buck and dodge to prevent the runner from joining them, but they may not push a runner away.

Extra Reading

- Carle, Eric, *The Artist Who Painted a Blue Horse*, Philomel, 2011.
- Gaff, Jackie, *I Wonder Why Horses Need Shoes: And Other Questions About Horses*, Houghton-Mifflin, 2002.
- Gibbons, Gail, *Horses*, Holiday House, 2003.
- Gruber, Beth, *Horse Sense (Pet's Point of View)*, Compass Point, 2004.
- McCully, Emily, *Wonder Horse: The True Story of the World's Smartest Horse*, Henry Holt & Co., 2010.
- Milbourne, Anne, *Horses and Ponies*, Usborne, 2004.
- Monahan, Erin, *Caring for Your Horse*, Capstone, 2008.
- Pitts, Zachary, *The Pebble First Guide to Horses*, Pebble, 2008.

Vocabulary

- carotene**—any of several orange or red pigments which occur in plants and in the fatty tissues of plant-eating animals and from which vitamin A is formed
- cultivated**—assisted the growth of by tilling or by labor and care
- domestic**—living with or under the care of human beings
- equine**—of, relating to, or resembling a horse or a closely related animal
- farrier**— a person who shoes horses
- gait**— a particular style of movement on foot
- hot shoeing**—another term for horseshoeing, used by most farriers
- wagon trace**—either of two straps, chains, or lines of a harness for attaching a draft animal to something (as a vehicle) to be drawn
- wild**—living in a state of nature and not under human control and care

Name _____

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A

Read the description of each kind of horseshoe at left, then read the description of each event. Decide which shoe would work best for each activity.

Aluminum Shoes

Much lighter than traditional steel shoes. They only weigh 2-3 ounces and allow for easier running because of lighter weight.

Traditional Steel Shoe

Weighs from 6-10 ounces and appropriate for low-intensity riding.

Polo Shoe

Has an inner rim on the bottom that is raised higher than the outside rim. This increases traction and allows for quick stops and turns at high speeds.

Sliding Plate Shoes

Long and U-shaped. There is no groove on the bottom of this shoe, so there is less traction. They are worn on the back feet only

Reining

In reining, the horse is judged on its ability to complete a pattern, including sliding stops. When the horse does a sliding stop it should glide smoothly across the ground with its back feet until it stops.

Which shoe is best for reining?

Barrel Racing

The horse and rider team that completes the clover leaf pattern around three barrels in the fastest time wins. The horse should be able to start and stop quickly.

Which shoe is best for barrel racing?

Horse Racing

The horse and rider race around the track and try to get to the finish line first. Speed is a must.

Which shoe is best for horse racing?

Trail Riding

Trail riding can take place down a wooded trail or in an open field. Trail riding is fun and leisurely.

Which shoe is best for trail riding?

Team _____

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C

Read the descriptive paragraphs about shoes. Write the letter of the paragraph next to the shoe you think it describes.

