

“Horses and Humans: Shackleford Horses Unit”

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Content Areas: Science, ELA (3rd – 6th grade)

NCEssentialStandards:

Science: 4.L.1.2, 4.L.1.4, 5.L.2.2, 5.L.3.2

ELA: W.3.8, RI.3.7, L.3.6, RI.4.1., RI.4.4, RI.4.7, RI.5.1, RI.5.4

NGSS: 3-LS2, 3-LS4, 4-LS1, 5-ESS3

Materials:

- “Protecting Our Local Wild Horses” rack card (available from Cape Lookout National Seashore or the Rachel Carson Reserve)
- Chart paper for creating the Anchor Chart for Safely Viewing Wild Horses
- Digital access to or print copies of the Wonderopolis article “Why Do We Have Rules?”
<https://wonderopolis.org/wonder/why-do-we-have-rules>
- Several hula hoops or jump ropes

Activity Time: One 45-60 minute class period



Photo courtesy of Cape Lookout National Seashore

Essential Question and Objective(s): This unit asks students to investigate Cape Lookout National Seashore’s rules for viewing the wild horses of the Shackleford Banks.

By the unit’s end, students will be able to:

- Measure and use a 50-foot length of rope in different scenarios to learn to “eyeball” the safe distance when interacting with Shackleford Horses
- Analyze body language in different situations to conclude what a horse is trying to “tell” you, and
- Devise a plan to respond appropriately in each situation to ensure horse and human safety

ThinkingSkills:

- **Remembering** – Recalling or recognizing information ideas, and principles
- **Understanding** – Understand the main idea of material heard, viewed, or read. Interpret or summarize the ideas in own words.
- **Applying** – Apply an abstract idea in a concrete situation to solve a problem or relate it to a prior experience.

- **Analyzing** – Break down a concept or idea into parts and show the relationships among the parts.
- **Evaluating** – Make informed judgments about the value of ideas or materials. Use standards and criteria to support opinions and views.
- **Creating** – Bring together parts (elements, compounds) of knowledge to form a whole and build relationships for NEW situations.

Important Vocabulary and Terms with Definitions:

- Bachelor
- Barrier island
- Binoculars
- Blow
- Dominant
- Feral
- Foal
- Groan
- Harem
- Home range
- Lateral
- Mare
- Nicker
- Predator
- Prey
- Responsibilities
- Rights
- Snort
- Squeal
- Stallion
- Sternal
- Wild
- Whinny

Objectives:

Lesson 1: Horses Deserve Respect, Too

By the end of this activity, students will be able to:

- Explain the difference between the concepts of rules, rights, and responsibilities
- Recognize that protecting the rights of others is sometimes more important than fulfilling one's own wants or needs
- Recognize that being safe is sometimes more important than fulfilling one's own wants or needs
- Identify the rules for safe and respectful viewing of the Shackleford horses and explain why following Cape Lookout National Seashore's guidelines is a responsible and safe choice

Background:

Cape Lookout National Seashore in Eastern North Carolina covers 56 miles of pristine **barrier island** from Ocracoke Inlet to Beaufort Inlet (Cape Lookout National Seashore *Basic Information*, 2017). The park is composed of three islands: South Core Banks, which includes the Cape Lookout Lighthouse; North Core Banks, which includes the ghost town of Portsmouth; and Shackleford Banks, with its population of wild Banker horses (Cape Lookout National Seashore *Map*, 2017). Visit the Cape Lookout National Seashore site at www.nps.gov/caloc/planyourvisit/maps.htm for a map of the park.

On Shackleford Banks, park visitors can view Banker horses by taking a ferry from either the Beaufort waterfront on Front Street or the Harker's Island Visitor Center. Once on the island, visitors are welcome to scour the island to view and photograph the horses.

Shackleford's 120-130 wild horses are scattered over the approximately 9-mile long island. The herd is **feral**, meaning their ancestors were once domesticated, and **wild**, meaning the herd lives on its own without interference or help from people (Stuska, 2017). The National Park Service, with its horse management partner, the Foundation for Shackleford Horses, manages the herd size through contraception, removal, and adoption, but does not feed, water, or vaccinate the herd (Cape Lookout National Seashore *Mammals*, 2017).

The herd has divided itself into **harems**, which include at least one **dominant stallion** with his associated **mares** and **foals**. Each harem has a **home range** and will typically stay in that home range. Home ranges can overlap with those of other harems, especially near watering holes, so interaction between harems does occur and can lead to some interesting, and sometimes potentially dangerous, situations. On the island, there are also **bachelor** stallions (stallions without harems) who will loosely band together while grazing (Stuska, 2017).

Due to the wild nature of the herd and the potential for conflict between stallions of neighboring harems or bachelor bands, the park has set forth guidelines for interacting with the horses. These guidelines, meant to protect both park horses and visitors as well as maintain the wild nature of the herd, are as follows:

- Maintain a minimum distance of 50 feet from the horses at all time. When approaching a horse, keep alert. If a horse stops what it is doing and stares directly at you, this is your cue to stop exactly where you are. If the horse starts to move away from you, this means you are already too close to the horse and should back up to a safer distance.
- Bring **binoculars** and a camera with a telephoto lens so you can closely study and photograph the horses but can do so without disturbing the horses or endangering yourself.
- Dogs may visit the island with you but it is a federal law that you **MUST** always hold your dog

on a leash (of no more than 6 feet) to protect both your dog and the horses (Cape Lookout National Seashore *Preserve & Protect*, 2010-2011 ed.).

Getting Ready: Prior to beginning this lesson, collect or prepare the following materials:

- Access the Wonderopolis article, *Why Do We Have Rules?* at <https://wonderopolis.org/wonder/why-do-we-have-rules> You may choose to project the article on an interactive board, have students access it on their 1:1 computers, or make printed copies for each student.
- Obtain copies of the rack card, “Protect our Local Wild Horses.” These are available at the park by visiting, or by writing Cape Lookout National Seashore, 1800 Island Drive Harkers Island, NC 28531 or calling (252) 728-2250; or Rachel Carson Reserve, 2370 Lennoxville Road, Beaufort, NC 28516, or calling (252) 220-0779. You should have enough copies for each student or pair of students to have one.
- Get several hula hoops or jump ropes for the personal space activity.

Procedure:

Elicit: Why do we have rules?

- Ask students to consider the following question: *Why do we have rules?* Post the question on the board and allow students time to brainstorm the reasons for rules.

Engage: *What would life be like without rules?*

- Now ask students to consider what life would be like without rules. Give them a scenario and ask them to do a quick sketch or skit showing what that situation would be like without rules.
 - For example, imagine being in the cafeteria with no adults around to enforce the rules. If kids decided to disregard cafeteria rules, what would the cafeteria look and sound like? Ask students to describe the feelings they might have in this scenario. Some may say it would be fun, but hopefully, some students will realize that a lack of rules can also be chaotic, scary, and even unsafe.
 - You may also want students to apply this same idea to situations in the outside world. What would driving be like with no rules? What would society be like if everyone did exactly what he or she wanted?
- Read the Wonderopolis article *Why do we have rules?* and use the information from the article to complete a list of reasons why we have rules. In students’ lists of reasons, make sure students mention the fact that many rules are meant to keep themselves and others safe.
- Finally, make sure students understand that one of our **rights** as human beings is to be safe. Because all human beings have the right to be safe, it becomes everyone’s **responsibility** to follow the rules. If needed, spend some time defining and explaining rights (i.e., something that everyone should have access to. For example, our Constitution has a Bill of Rights that gives everyone the same rights and freedoms) and responsibilities (i.e., something that we are obligated to do).
- Now ask students to consider one final question: *Do animals have rights, too? Are their rights just as important as our rights?* Most students will answer this with a resounding “yes.” If students answer “no,” make sure they provide a rationale for their answer.

Activity 1: The Idea of Personal Space

Engage:

- Hand out the rack card, "Protecting Our Local Wild Horses." Read Side 1 of the card aloud to/with the students, but do not spend a lot of time discussing the rack card just yet, as you will focus on each important part one at a time.
- Reread the line, "*Horses have personal space bubbles like we do.*" Ask students what they think personal space and personal space bubbles are. Ask if they have ever had anyone talk to them about personal space or had anyone say they are invading their personal space. Elicit student responses as time allows.

Explore:

- Lay the hula hoops or jump ropes out to represent personal space bubbles. Choose a student to stand inside each hula hoop or jump rope and say "These are your personal space bubbles. Each person has a personal space bubble around them even if he can't see it. Our personal space bubbles are the space around our bodies and we don't really like people to enter this space without permission."
- At this point, you may want to simulate someone invading the students' personal space by calling on students to step closer and closer and finally into the bubble of another student. Ask the students inside the bubble to describe what it felt like to have someone else get too close.
- Then discuss how the size of one's personal space bubble can change depending on the situation. Discuss how it might feel different when a parent or best friend gets into your personal space bubble than when someone you don't particularly like or know gets inside your personal space. Ask students to consider what size their personal space bubble might be when strangers are around or when they feel unsafe in a situation.

Explain:

- Finally, talk about the idea that wild horses have much larger personal space bubbles. Focus on the fact that Shackleford horses are wild, meaning they aren't used to interactions with human beings; we are strangers to them. It may also be useful at this point to discuss **predator/prey** relationships. Horses consider humans to be predators and will instinctively tend to flee if human beings get too close or enter their personal space bubble, so it is no wonder a horse's space bubble is much larger than ours. (McFarland, 2012)

Elaborate:

- Turn to Side 2 of the rack card and read the first three paragraphs. Discuss with students the rules that Cape Lookout National Seashore has created to protect the horses' personal space:
 - Watch from at least 50 feet away (we will explore this further in the second lesson).
 - If a horse stops what it is doing to stare at you, it means you are too close, even if you are farther away than 50 feet. Remind students once again that personal space can change. When a horse stops and stares at you, it's telling you it feels uncomfortable. At this point, you should *not* move closer and should probably even back up.
 - If a horse moves away from you, you are already too close and SHOULD back up. The horse is telling you it absolutely feels unsafe. Remind students once again that the horse is prey and perceives human beings as predators; its instinct is to flee or move away from unsafe situations. By backing up, we are respecting the horse's personal space bubble and allowing it to feel safe.

- Finally, remind students that these rules are focused on safety, both for the horses and for themselves. By getting too close to a wild horse, they could be charged, kicked, or bitten. Remind them that even foals can be dangerous because horses are capable of aggressive attacks within a few hours of birth, especially if they feel threatened, trapped, or cornered (Waring, 2002, p. 258).
- Read the rest of the rules on the Rack card and discuss how these rules were also safety rules.
 - Keep your dog on a leash. Like humans, dogs are predators and horses can become fearful around a dog. A horse who feels threatened by your dog can hurt or even kill your dog.
 - Don't feed the horses human food or leave your food where horses can get to it. This is a good time to discuss the fact that horses are herbivores (meaning they eat only grass and other vegetation) while human beings are omnivores (meaning we eat both plants and meat). Human food can harm horses because their digestive systems are very delicate; they can die from a seemingly simple condition, such as a bad case of gas. Also, remind students that park rules require them to pack out whatever they bring in, so if they bring in food, they *MUST* take back out that food or any garbage left over after eating.

Evaluate:

- As a class, create an Anchor Chart for *Safely Viewing Wild Horses* that focuses on all the rules discussed in class and in the rack card. Place this Anchor Chart where students can refer to it during the rest of the unit.

Extend:

- Teach students how to use binoculars to safely view wild horses.
- Have students practice mindful looking. If visiting the horses in person, have each student choose one horse to closely observe through binoculars and draw and color a picture of the horse. If not visiting, display pictures of different Shackelford horses and have students closely observe these pictures. Included on the next page is a blackline master of a horse that you can hand out to students during this activity. Instruct students to pay close attention to different colorations, such as a mane that is darker or lighter as well as face or body markings (such as brands).
 - After students draw and color their horse, give a lesson on the different ways that the park identifies horses.
 - Colors:
 - Bay: Reddish-brown with a darker mane and tail
 - Black: Black with a black mane and tail
 - Chestnut: Red with mostly red mane and tail; if the mane and tail is almost white, it's call "flaxen"
 - Dark Bay: Dark brown with darker mane and tail; can look seal brown or black
 - Seal Brown: Dark brown with dark brown/black mane and tail; usually has lighter brown at the muzzle or flanks; from a distance the horse might look dark bay or brown
 - Face Markings:
 - Blaze: White all the way down the face

- Mealy nose: Light colored muzzle (not white marking)
- NWM: No white face markings
- Snip: White near the nostrils
- Star: White on forehead
- Strip: White marking below the forehead toward the nostrils
- Brands:
 - Brands/Horse Numbers: If branded, the horse will have its numbers and possibly letters on their left haunch, for example, 4W. The brands are not skin numbers, but are freeze brands, where the hair in the place where the brand was applied grows back white.
 - NB: The horse has no freeze brand on its left haunch.
- After teaching students these terms, have students use these terms to write up a description of their horse. For example, the park's description for 4W is *black, NWM, NB, short* (because he is very short for a stallion).

References and Sources for More Information:

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<http://www.horsechannel.com/horse-keeping/how-to-speak-horse.aspx>

National Park Service: Cape Lookout National Seashore. (2010-2011 ed.). *Preserve & Protect*. Retrieved

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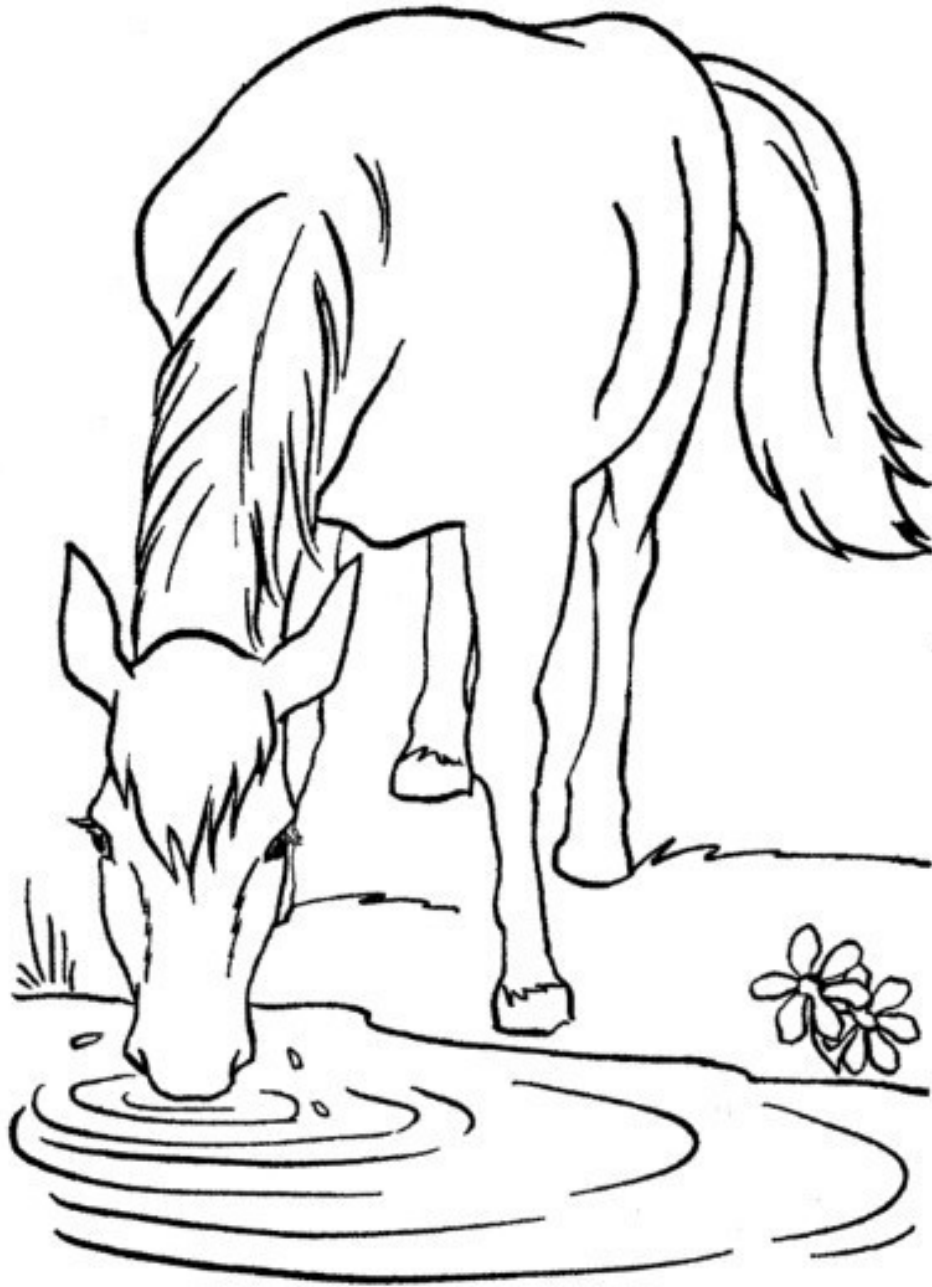
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Waring, G. (2003). *Horse Behavior Second Edition*. Norwich, NY: William Andrews Publishing.

Wonderopolis. (n.d.). *Wonder of the Day #1714: Why Do We Have Rules?* Retrieved from

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Curriculum 3: Horses and Humans

Lesson 2: How Far is Far Enough?

Content Areas: Science and Math

NC Essential Standards:

Science: 4.L.1.2, 4.L.1.4, 5.L.2.2, 5.L.3.2 Math: 2.MD.1, 2.MD.2, 2.MD.3

Common Core: CCSS.MATH.PRACTICE.MP5 **NGSS:** 3-LS2, 3-LS4, 4-LS1, 5-ESS3

Materials:

- Digital access or print copies of the article “Wild Horse Watching Provides Great Photo Opportunities,” available at www.nps.gov/california/learn/nature/upload/2010-Wild-Horse-Watching-Provides-Great-Photo-Opportunities.pdf (National Park Service, 2010-11)
- “Protecting Our Local Wild Horses” rack card (used in Lesson 1)
- School bus parked in a large parking lot with little traffic or 4 cones set up to simulate a bus of approximately 50 feet in length
- Mathematical tools for measuring length (ruler, sewing tape ruler, yard or meter stick, measuring tape)
- String or rope that can be cut to approximately 50 feet and is thick enough and bright enough to be visible from a distance
- Large areas within the school or outside that can be used to measure distance with the string or rope.
Some of these areas should include obstacles, such as tables, chairs, bookshelves, playground equipment, natural small hills, or drainage ditches
- “How Far is Far Enough?” PowerPoint
- Anchor Chart for Safely Viewing Wild Horses from previous lesson
- Paper, pencils, scissors

Activity Time: One 45-60 minute class period

Objectives:

By the end of this activity, students will be able to:

- Determine which math tool is needed to measure the length of a bus (approximately 50 feet) and explain why they chose that tool
- Use the appropriate tool to correctly measure the length of a bus (approximately 50 feet)
- Use their measurement to cut a length of string/rope that is the length of a bus (approximately 50 feet)
- Use that length of rope in different scenarios to learn to “eyeball” the 50-foot minimum when interacting with Shackleford horses

Background:

In Lesson 1, students examined the rules set forth by Cape Lookout National Seashore to keep both visitors and the Shackleford horses safe. One of the safety rules was to maintain a safe distance when observing the horses, that distance being about 50 feet, or the length of a large school bus.

This activity will explore the 50-foot minimum rule to enable students to gauge (or “eyeball”) what 50 feet looks and feels like, even with obstacles present between themselves and the horses. That way, they are better able to maintain the appropriate distance and safely view and enjoy Shackleford Banks horses.

Getting Ready: Prior to beginning this lesson, collect or prepare the following materials:

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- Collect several Mathematical tools for measuring length (ruler, sewing tape ruler, yard or meter stick, measuring tape). You will need several yard sticks or measuring tapes to do the actual measuring, enough so each group has access to a measuring tool.
- Access the National Park Service's 2010-2011 *Preserve and Protect* PDF "Wild Horse Watching Provides Great Photo Opportunities" at www.nps.gov/california/learn/nature/upload/2010-Wild-Horse-Watching-Provides-Great-Photo-Opportunities.pdf. You may choose to project the PDF on an interactive board, have students access it on their 1:1 computers, or make printed copies for each student.
- Arrange to have a school bus parked outside so that students can measure it on the day of the activity. If measuring an actual school bus is not feasible, use 4 cones to replicate the length and width of a large school bus (approximately 45 ft. (13.7 m) by 102 in. (2.59 m)). Showing both the length and width will give students greater access to measuring the width than if only the length is shown.
- Provide string or rope that can be cut to approximately 50 feet and is thick enough and bright enough to be visible from a distance. Enough string and scissors should be provided so that all groups can cut their own length of rope.
- Choose large areas within the school or outside that can be used to measure distance with the string or rope. Some of these areas should include obstacles, such as tables, chairs, bookshelves, playground equipment, natural small hills, or drainage ditches.
- Access or download the evaluation PowerPoint *How Far is Far Enough?* Have it ready to display on an interactive whiteboard.

Procedure: Elicit:

- Ask students to refer to the Anchor Chart for *Safely Viewing Wild Horses* to review Cape Lookout National Seashore's rules for viewing the Shackleford horses. Explain to students that today we will specifically focus on the 50-foot rule.

Engage:

- Ask students to consider the following: *When viewing the wild horses, how do you know if you are 50 feet away?* Discuss with students the difficulty of this task. When out viewing horses, it is not feasible for them to get out a measuring tool, walk up to the horses, measure 50 feet out, and then know that they're at a safe distance. Remind them once again of the reason behind the 50-foot rule: to keep both them and the horses safe. So, the only way they will be able to maintain 50 feet while viewing the horses is by estimation, or "eyeballing" what 50 feet looks like.
- If you are in a large enough area, ask a few students to show you their estimate for 50 feet. You may want to mark their estimates so that you can compare their original estimates to the actual 50-foot length later to see how close their estimates were.
- Finally, ask students to consider some ways that we could learn what 50 feet looks like. Allow students to share their ideas.

Explore:

- Have students refer to their "Protecting Our Local Wild Horses" Rack Card. Instruct them to look at the picture of the person, bus, and horse on side 2, and have them consider why that picture is there. Hopefully students will guess that 50 feet is about the length of a bus. Let them know that it's approximately the length of a large school bus, and tell them that we will be measuring a school bus or cones that represent the size of a school bus during today's lesson so that when

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we get out on the island with the wild horses we will have a good idea of what 50 feet looks like.

- Next, take students outside to the bus. Prior to heading outside, you may want to place students in groups. You should also have each group take out a writing instrument and paper on which to record their measurements.
- Show students all the different tools we can use to measure length: Ruler, sewing tape, yard or meter stick, measuring tape, and ask each group to decide which measurement tool they think will work best for the task. You may allow students to use any of the tools or guide students to the tools which are most appropriate, such as the yardstick or measuring tape.
- Have groups use their tool to measure the length of the bus. Remember that the length of a large school bus is approximately 45 feet, so make sure to check each group's measurements for accuracy as they finish. When each group has accurately measured the length, hand them a ball of string or rope, and tell them to measure and cut the string so that it's the same length as the school bus. Since a school bus is shorter than 50 feet, you may want to have students add the remaining length by knotting on an extra length of rope to make 50 feet.
- Once each group has cut their string, collect the measuring tools, pencils, papers, and scissors. Then have groups use their string to measure 50 feet between themselves and objects outside on the school grounds as well as spaces within the school. At first, have students measure the space without obstacles between themselves and the objects, but as students get better at "eyeballing" 50 feet, have them include obstacles between themselves and the object. Some of these areas could include obstacles, such as tables, chairs, bookshelves, playground equipment, natural small hills, or drainage ditches.
- Also, as students get better at estimating, have them stand at what they feel is a 50-foot distance before measuring to see how accurately they can "eyeball" the distance.

Explain:

- Once you feel that students are good at estimating the 50-foot distance, take them back to the classroom and have them share some of their "tricks" for estimating the distance without the string. You may want to record these tricks for others to see.
- You may also ask them to decide if it's better to underestimate or overestimate the distance between themselves and the horses and explain their reasoning.
- If students used different types of measuring tools, now would be a good time to discuss which tools were most appropriate to the task and why.

Elaborate:

- Also, you may want to have students look back at their initial estimates for 50 feet that they completed during the Engage portion of the lesson. Have them "eyeball" their initial estimates and decide if they are too short, too long, or just about right. Then have them measure to check.

Evaluate:

- Show students the PowerPoint, *How Far is Far Enough?* and have them discuss each photo to decide if the people shown in the photo are too close to the horses or far enough away. Ask students to share their reasoning.

Extend:

- Pair your students up with a younger class (perhaps a second grade class, since the measurement standards addressed in this lesson are aimed at second grade) and have your

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students show this class how to measure the length of a school bus or some other object.

Have your students focus on teaching the younger students how to choose a measuring tool appropriate to the task and how to measure length correctly. You may also want your students to discuss their tips/tricks for estimating with this class.

References and Sources for More Information:

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Dr. Sue Stuska, Cape Lookout National Seashore, Harker's Island, NC

Lesson 3: Horse Communication: Speaking with All the Senses

Content Areas: Science and ELA

NC Essential Standards: Science: 4.L.1, 5.L.2

ELA: RI.3.3, RI.3.7, W.3.8, RI.3.10, RI.4.3,

RI.4.4, RI.4.7, RI.4.9, RI.4.10, RI.5.9, RI.5.10

NGSS: 3-LS2.D, 3-LS3, 3-LS4, 4-LS1-2, 5ESS3

Materials:

- Clip/parts of a whole episode of the *Mister Ed* television series (can be found on YouTube)
- Anchor chart/poster showing the tenets of realistic fiction and fantasy
- Epic! book *Horses: What are They Saying?* by Tammy Gagne (available at www.getepic.com/app/personalize_account_type) or print copy (available to order on Amazon.com)
- PowerPoint on *Horse Communication* (available in unit documents)
- Web graphic organizer (or other chosen graphic organizer) for recording the ways that horses communicate
- Chart paper and markers

Activity Time: One 45-60 minute class period

Setting: Classroom

Objectives:

By the end of this activity, students will be able to:

- Explain how horses, like humans, communicate in a variety of ways using their entire bodies
- Determine when a horse is attentive to their presence and understand what steps to take at that moment
- Identify a potentially dangerous situation with a horse and what steps to take in that instance

Background:

Horses, like human beings, are constantly communicating their wants, needs, emotions, and fears. Unlike humans, horses are less verbal and use their entire bodies to communicate far more often than they use vocalizations. When interacting with wild horses, such as those at Shackleford Banks, it is important for the safety of both visitors and horses to understand what the horses are saying.

In this activity, students will familiarize themselves with common forms of horse communication by looking at ear, head, eye, neck, and tail position, as well as vocal communication.

Getting Ready:

Prior to beginning this lesson, collect or prepare the following materials:

- Choose an episode of the 1960's television show *Mister Ed*. Whole episodes of the show can be found on YouTube at www.youtube.com, but showing a few minutes of the show is enough to make the point. Choose a section of the episode that shows Mister Ed engaging in behaviors that are unusual/impossible for a horse, such as answering the phone and, of course, talking!
- Since you will be comparing realistic fiction and fantasy, make sure that you have either discussed these genres with your students or have anchor charts/posters in place which detail the differences between the two genres.
- Go to the *Epic! Books for Kids* site and sign up for a free teacher account at www.getepic.com/app/personalize_account_type. You will also need to create a profile for each of your students. This can be done under the Teacher Dashboard. Next, search for the *Epic!* book *Horses: What are They Saying?* by Tammy Gagne; either favorite the book or add it to a collection so that students can easily access it during the lesson. This book can also be ordered online at Amazon.com (ISBN #9781624690075).
- Choose a graphic organizer, such as a web, that you feel is most appropriate for displaying what students have learned about horse behavior. The organizer should provide adequate space to allow students to display the meaning of different ear, head, eye, neck, and tail positions, as well as various vocal communications. Decide whether you will create one large classroom graphic organizer or whether students will create their own, and plan accordingly.
- Download the *Horse Communication* PowerPoint from the unit documents to display on an interactive whiteboard.

Procedure:

Engage:

- Show students a clip from the 1960's television show *Mr. Ed*.
- After the clip, ask students: *Is this television show realistic fiction or fantasy?* If necessary, remind students that realistic fiction is fiction that feels like it really could happen today, while fantasy asks the reader to suspend belief by showing scenarios that could not exist today (such as talking animals or extraordinary worlds). *Mister Ed* is fantasy, and students should be able to express that the main reason for this is that the horse talks, while horses in real life do not talk.

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Elicit:

- Now, ask students to imagine a world where their pets could really talk. Ask students to share what kind of things they think their pets would “tell” them. Record responses on chart paper or on the classroom board.
- Once students are done sharing their responses, tell them that today we are going to learn how to “talk” to horses so that when they visit the wild horses of Shackleford Banks, they will be better able to understand what the horses are trying to “tell” them.

Explore:

- Either display the Epic! book *Horses: What are They Saying?* on an interactive whiteboard or have students access the book on their 1:1 devices. Read as a group, in partners, or independently.
- View the *Horse Communication* PowerPoint.

Explain:

- After you read *Horses: What are They Saying?* and view the *Horse Communication* PowerPoint, create a web or other graphic organizer that shows how horses can communicate with humans. Focus on how they use their ear, head, eye, neck, and tail position, as well as vocalizations, to communicate. Focus on what it means when a horse does the following:
 - **Groans, nickers, whinnies, squeals, blows, snorts**
 - Points its ears forward, backward, to the side, or pins them back
 - Raises or lowers its head
 - Pinches or flares its nostrils
 - Closes its eyes, looks at an approaching object, or shows the whites of its eyes
 - Holds its tail in different positions
 - Changes body positions, such as when lying **laterally** or **sternally**

Evaluate:

- DLIQ (AVID strategy): See example below. You can adjust the number of items students should include in each section. You can ask students to provide one statement of what we did. For example: *We studied Horse Communication so we could learn what a horse is trying to tell us.* Ask them to list at least five things they learned, including two or more facts they found interesting as well as two questions they have. You can use the questions for lesson extensions. Since this lesson has an ELA focus, require students to give their best writing on their DLIQ (such as correct sentence structure and spelling appropriate to grade level).

DLIQ Setup Example: Students always write ‘DLIQ’ in the margins

D	What I <i>did</i> .
L	Several things I <i>learned</i> while I did this.
I	A couple of <i>interesting</i> facts I found out.
Q	A couple of <i>questions</i> I still have about this topic.

Extend:

- The second part of this lesson, *Horse Communication 2: Putting It All Together* is a natural extension to this activity. In that lesson, students will role play a field trip to Shackleford Banks and learn to identify what horses are telling them by looking at eyes, ears, tail, head, neck, body posture, and voice. They will then learn to adjust their behaviors based on what the horses are saying to maintain the safety of both themselves and the horses.

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Lesson 4: Horse Communication II: Putting It All Together Content

Areas: Science and ELA

NC Essential Standards: Science: 4.L.1, 5.L.2

ELA: RI.3.3, RI.3.7, W.3.8, RI.3.10, RI.4.3, RI.4.4, RI.4.7, RI.4.9, RI.4.10, RI.5.9, RI.5.10

NGSS: 3-LS2.D, 3-LS3, 3-LS4, 4-LS1-2, 5ESS3

Materials:

- Graphic organizer on ways that horses communicate (created in Lesson 3)
- *Horse Communication* PowerPoint included in unit, refer to as needed
- Epic! book *Horses: What are They Saying?* by Tammy Gagne (available at www.getepic.com/app/personalize_account_typeaccount_type) or print copy (available to order on Amazon.com)
- Scenario Cards and Character Tags for Field Trip Scenario (included in unit)

Activity Time: One 45-60 minute class period

Setting: Classroom or outside area

Objectives:

By the end of this activity, students will be able to:

- Recognize that horses, like humans, communicate in a variety of way using their entire bodies
- Determine when a horse is attentive to their presence and demonstrate what steps to take at that moment
- Identify a potentially dangerous situation with a horse and what steps to take in that instance

Background:

In Lesson 3, students learned about basic Horse Communication. They learned that horses use their entire bodies to interact with the environment around them and that we must pay attention to the entire horse to determine what horses are trying to tell us. We must look at the ears, eyes, nose, tail, head, neck, body posture, and vocalizations when watching horses.

In this activity, students will learn to associate the form of communication with its common meaning (what the horse is trying to “tell” them) and will understand how to modify their interactions with the horses accordingly. Examples of modification can be putting more distance between themselves and the horses, stopping while approaching, and approaching in a wide arc from the side so the horse can have time to focus on and identify them.

Getting Ready: Prior to beginning this lesson, collect or prepare the following materials:

- Access materials from Lesson 3 on Horse Communication including the *Epic!* book *Horses: What Are They Saying?*, *Horse Communication* PowerPoint, and graphic organizer. You will want students to reread or review this information prior to the start of today’s lesson.
- Copy the Scenario Cards and Character Tags onto card stock paper. Cut out both; for the Character Tags, you may want to punch out holes and attach string so that each character can wear the tags around his neck.
- To get students excited about the Field Trip Role Play, you may want to ask them to dress the

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part. Decide which students will be “horses” and which will be members of the “field trip class.” Students who are going to be part of the “field trip class” can wear field researcher outfits (wear long pants, long-sleeved shirts, hats, and boots, and carry backpacks, water bottles, notebooks, pencils, binoculars, etc.) Students who are going to be the “horses” can wear brown or black and let their hair hang loose if it’s long. As the teacher, you will be playing the part of the Park Guide/Horse Biologist, so you should dress the part as well.

Procedure: Elicit:

- Review the readings, PowerPoint, and notes from yesterday’s lesson to remind students what a horse is saying through each of his gestures or vocal communications.

Engage:

- Tell students that today we are going to be taking a “Field Trip” to view the horses of Shackleford Banks. Explain that we will be role playing this field trip and using our school surroundings but that students should take this seriously so they can apply what they learn during a real trip to Shackleford Banks.
- Also, let them know that we will be looking at what a horse is saying by looking at all his gestures and vocal communications at once to make it feel more like a real trip.
- Choose students to be the horses, students to read the Scenario Cards, and those who will be viewing the horses/answering the questions in the scenarios. If you chose roles prior to today’s lesson and are allowing students to dress up for their performance, now is a good time to have them go put on their costumes (see Getting Ready).

Explore:

- Hand out the Character Tags to each of the horses. Instruct each horse to read the information on his tag silently, then read his info aloud to the class. Horses included in this scenario are from one **harem**. This harem’s **home range** is on the West End of Shackleford, the side that is accessed from the ferries in Beaufort. In fact, when visiting the West End of Shackleford, students might see this harem as they emerge from the ferry; we are using this harem for our field trip because it will best simulate an actual experience students may have on Shackleford.
- Now hand out Scenario Cards to students who have been chosen to read them. Have them silently read the cards and ask for help with unknown words or comprehension but do not have them read the cards aloud until the actual role play is being done.
- Finally, set up for the scenario. Have “horses” group together at the front of the classroom and the “field trip class” stay with you. Head outside and do the same thing. As you complete the scenario, you probably won’t want to observe the fifty-foot rule for staying away from the horses because you want the “horses” to hear your instruction as well but remind students that we do need to stay at least 50 feet away in a real-life encounter with wild horses.
- Run through the Scenario Cards in order (they’re numbered). Ask the student reading each card to read loudly and at an appropriate pace. Also, remind them that words written in parentheses/italics are not to be read aloud but should be followed (these are like stage directions). “Horses” should listen to what is being said on each Scenario Card and act out the scenario indicated. “Field trip students” will listen to the scenario and choose the best option presented at the end of the scenario. The “Park Guide/Horse Biologist” (teacher) will elaborate and explain as necessary.

Scenario 1: After students have listened to the scenario and answered the question,

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elaborate and explain as necessary. Tell students: *The best answer is that the horses have heard the group approach and are trying to figure out who/what they are. The fact that the horses are still eating indicates that they are relaxed and calm and don't yet feel threatened by the group's approach.*

Scenario 2: After students have listened to the scenario and answered the question, elaborate and explain as necessary. Tell students: *The fact that the horses have stopped eating and raised their heads shows that they are no longer calm and relaxed but are alert to your presence. At this point, your group should stop or even move back. The horse is telling you he considers you a threat and is considering flight. The mother mare nickering to her foal is her way of telling the foal that it's unsafe. The foal comes back to her side as a way of staying protected. If we stop or back up, the horses may return to grazing, telling us they no longer perceive us as a threat. We can watch them from this spot without them fleeing.* Remind students that horses, being prey animals, tend to choose to flee rather than fight. They will only attack a human being if they feel cornered and trapped. That's why our group is staying bunched together so the horses don't feel like they're being surrounded. Also, remind students that we should never try to pet a wild horse or feed them anything. Wild horses get all the nutrition they need from the grasses they eat. Other foods can upset their amazingly delicate digestive systems.

Scenario 3: Tell students: *By continuing to approach the horses, we have forgotten their tendency to move away from perceived threats. Since we got too close, the horses moved away to keep a comfortable distance between themselves and us. We need to stay where we are or back up so the horses won't continue to move.*

Scenario 4: Tell students: *Obviously, this member of your group has gotten himself into a potentially dangerous situation. By ignoring the safety rules and the stallion's warnings, this student has entered far into the stallion's personal space bubble; now the stallion feels threatened and cornered. While horses tend to flee rather than fight, this stallion feels that he has no choice but to fight. By blowing and stomping, he's giving this student one last warning, "Back off NOW!" Let's hope no one is silly enough to ignore that kind of warning, because kicks or bites by a horse can cause serious injury!*

Scenario 5: Tell students: *In this scenario, your group got too close to the horses. By running away, these horses were letting you know they felt threatened. Hopefully, next time you go horse watching, you will be careful to keep the 50-foot distance between yourself and the horses. Then, you can have a safe and enjoyable viewing experience.*

Evaluate:

- Monitor student responses during the role play to determine if students can correctly identify what the horse is communicating in each scenario and can decide the best response to the horse's communication. Explain, redirect, and elaborate as necessary.

Extend:

- The best way to extend this activity is to plan a visit to Cape Lookout National Seashore to put what they learned into action. Throughout the field trip, students can be asked to observe horse communication, make inferences about what the horses are telling them, and should adjust

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their behavior accordingly.



A

Another great way to share what they learn is to have students complete a Community Action Class Project where students create posters or public service videos to teach others about horse communication and about the *Cape Lookout Rules for Viewing Wild Horses*. A good way to introduce this idea is to read the picture book, *Follow the Moon Home: A Tale of One Idea, Twenty Kids, and a Hundred Sea Turtles* by Philippe Cousteau and Deborah Hopkinson. This story tells how one class launched a campaign to save sea turtles. Finished posters or public service videos can be displayed/presented to the school to instruct even more students about best practices for interacting with wild horses.

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4W



I am the dominant (alpha) stallion in this harem. I am easy to identify because I am all black with no white markings or freeze brand. I may be rather small for a dominant stallion, but don't let that small size fool you; I can still injure or kill when threatened!

3H



I am the dominant (alpha) mare in **4W's** harem. I am chestnut colored (reddish) with a flaxen mane and tail (meaning my tail and mane are mostly white). My freeze brand **3H** can easily be seen on my left haunch; this brand is actually made up of white hairs. I am the mother of **7C**, the young stallion in the harem.

7C



I am an immature (young) stallion in **4W's** harem. Like my mother **3H**, I am a flaxen chestnut, meaning my body color is reddish while my mane and tail are mostly white. Like **4C**, I have no white markings and no brand. Before long, I will have to leave my maternal harem to wander as a bachelor stallion until I can get a harem of my own.

19M



I am another mare in **4W's** harem. I am a bay, meaning my body is a reddish brown and my tail and mane are darker brown or black. My freeze brand is not easy to see on my left haunch; only part of the 9 and the M show faintly. I have a small square star on my forehead.

8H



I am another mare in **4W's** harem. I am a chestnut, which means that my tail and mane are nearly the same color as my body, and the freeze brand on my left haunch is easy to see. I have a medium-sized, rectangular star on my forehead.

11Z

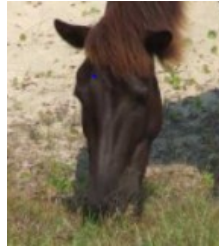


I am another mare in **4W's** harem. I am a bay, meaning that my body is brown and my mane and tail are black. I have a medium-sized, roundish star face marking.

5M



I am another mare in **4W**'s harem. Like **4W**, I am black with a black mane. You may notice that my ears are "low set" or "quarter-to-three" ears. They make it easy for people to identify me. My freeze brand is very faint and is vertical rather than horizontal. Watch out for me though! I've been known to charge people!



2E



I am the newest member of **4W**'s harem as a foal born this year. My mother is 11Z.

Scenario 1:

You have just arrived at Cape Lookout. Off in the distance, you see a group of horses calmly eating marsh grass at the edge of a tidal pool. *(Pause here and allow time for the “horses” to pretend to eat grass.)*

Your guide has already informed you that this group of horses is called a harem and includes one dominant stallion (also called the alpha stallion-he’s in charge), five mares (adult females), one immature (young) stallion whose mother is part of the harem, and a foal who was born this year.

The guide tells you to stay together and slowly walk a little closer to the harem. As you approach, the horses continue eating grass, but you notice that the horses’ ears have turned toward you. *(Stop reading and wait until the “horses” place one hand, palm open on their ear closest to you. This shows they can hear you even though they are still eating.)*

What are the horses trying to tell you?

- a. Flies have landed on the horses’ ears, and they’re flicking them off.
- b. The horses are aware of your presence and are listening to figure out if you are a threat. However, they don’t feel threatened by you yet. *(Correct answer.)*
- c. It doesn’t mean anything. Horses’ ears are always moving so you should ignore them.

(After your classmates answer the question, hand the card back to your teacher.)

Scenario 2:

The Park Guide tells you to continue walking toward horses. She reminds you to walk slowly and quietly and to stay close together-that way the horses won’t feel like you are trying to surround and trap them. *(Wait for students to walk a couple of steps closer to the horses.)*

Suddenly, one horse, the mare closest to your group, stops eating, raises her head, and stares directly at your group. She nickers quietly to the harem, and they also raise their heads to look at you. 11Z nickers to her foal, and the foal quickly comes back to her side. *(Wait while the “horses” perform these actions.)*

What are the horses trying to tell you?

- a. The horses are excited that you are coming close. They want you to approach and pet them.
- b. The horses are ready to attack your group. You should turn around and run back to the ferry.
- c. You’re too close. The horses perceive you as a threat and may flee if you come closer. Now’s a good time to stop approaching and maybe even back up a little. *(Correct answer.)*

(After your classmates answer the question, hand the card back to your teacher.)

Scenario 3:

The horses were telling you that they think you are a threat. If you had stopped or even moved back a little, you might have been able to continue watching the harem graze.

But, someone in your group ignores the warnings of the Tour Guide, decides she wants to pet the foal “because it’s so cute”, and continues to walk toward the harem. The horses move away from your group and return to grazing. *(Wait while the “horses” perform these actions.)*

What are the horses trying to tell you?

- a. The horses feel unsafe; you have interrupted their grazing, which they need to stay healthy. They are moving to a distance which feels safe enough that they can continue eating. *(Correct answer.)*
- b. The horses aren’t really telling you anything. They are just moving to a better grazing spot.
- c. The horses are ready to attack your group. You’d should turn around and run back to the ferry.

(After your classmates answer the question, hand the card back to your teacher.)

Scenario 4:

By moving away from you, the horses are trying to tell you that they are frightened and anxious; they are trying to keep a safe distance between your group and their harem. Hopefully, you were smart and moved back to the 50 feet safe distance or farther.

Yet again, however, someone in your group ignores the warnings of both the Tour Guide and the horses. Another member of your group decides she wants to pet the stallion, 4W, because he is after all “only a wee stallion”. *(Wait while a member of your group approaches the stallion)*

And while it’s true that 4W is relatively short for a stallion; he is a full-grown horse! A foal only a few hours old can engage in aggressive behavior if threatened, so imagine what a full-grown, dominant stallion can do to the “puny little human”. As this group member approaches the stallion, 4W stomps and blows air through his nostrils. *(Wait while the “horses” perform these actions.)*

What is the stallion trying to tell you?

- a. He’s challenging you to a race. Who do you think can run faster?
- b. He’s telling you to back off! By coming so far into his personal space bubble, you are making him feel threatened and cornered. If you continue to approach, you may be in danger. A stallion may kick or bite you if he feels he needs to defend himself. *(Correct answer.)*
- c. Hey, he’s bluffing. He really wants you to continue walking toward him so you can pet him.

(After your classmates answer the question, hand the card back to your teacher.)

Scenario 5:

Okay, let's back up to the scenario where the harem is moving away from you. The horses are attempting to keep a safe distance between themselves and your group. *(Wait while "horses" get back into their group and move away from you. They should be walking, not running.)*

As a group, you make the mistake of ignoring what the horses are telling you and continue to walk toward them. This time, however, the horses choose to run away from you. *(Wait while the horses run away before continuing.)*

What are the horses trying to tell you by running away?

- a. They are playing a game of tag and hope that you will run after them.
- b. The horses see another group of people in the distance and are heading there to see if the other group will pet them.
- c. Since horses consider humans to be predators, these horses felt threatened and choose to flee. You should remember the 50 feet safe distance and not pursue the harem now. *(Correct answer.)*

(After your classmates answer the question, hand the card back to your teacher.)