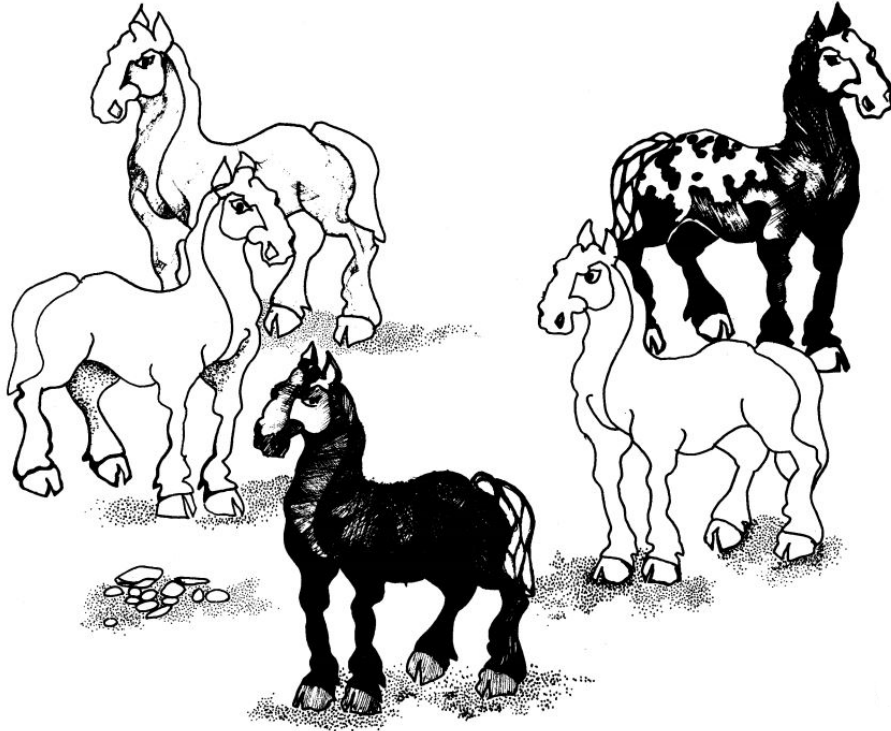


# How Wild Horses Were Captured

Last Updated: April 23, 2019



# Contents

<b>1 Unit Overview</b>	<b>2</b>
1.1 Anchor Text . . . . .	2
1.1.1 Text Summary . . . . .	2
1.1.2 Tribe(s) . . . . .	2
1.1.3 Place and Time . . . . .	2
1.2 Suggested Grade Level . . . . .	2
1.3 Estimated Instructional Time . . . . .	2
1.4 Resources and Materials Needed . . . . .	2
1.5 Related Lessons . . . . .	3
<b>2 Learning Objectives</b>	<b>3</b>
2.1 Content Standards . . . . .	3
2.2 Essential Understanding . . . . .	4
2.3 Computational Concepts . . . . .	4
2.4 Essential Questions . . . . .	5
2.5 Key Concepts . . . . .	5
2.6 Key Knowledge . . . . .	5
2.7 Key Skills . . . . .	5
<b>3 Instructional Guide</b>	<b>6</b>
3.1 Unit Summary . . . . .	6
3.1.1 Learning Outcomes . . . . .	6
3.1.2 Preparation . . . . .	6
3.2 Pre-Lesson Handout . . . . .	6
3.3 Class Period One . . . . .	7
3.4 Class Period Two . . . . .	8
3.5 Class Period Three . . . . .	9
3.6 (Extension) Class Period Four . . . . .	9
3.7 (Extension) Class Period Five . . . . .	9
3.8 Post-Assessment . . . . .	10
3.8.1 Class One . . . . .	10
3.8.2 Class Two . . . . .	10
3.8.3 Class Three . . . . .	10
3.8.4 Class Four . . . . .	10
3.8.5 Class Five . . . . .	10
<b>4 About Storytelling</b>	<b>11</b>

# 1 Unit Overview

In this social studies and life science unit, students will learn about how wild horses were captured by an Indigenous tribe. We focus on a story from the Warm Springs tribe outlining the process and discuss the difficulties that American Indian tribes may have encountered while capturing the wild horses. Students will explore the American history of wild horses and current policies in place for the management of wild horses. Next, students will work in a starter world in the Alice program platform where they will modify code in an Alice world to keep horses in a gated corral.

## 1.1 Anchor Text

“How Wild Horses Were Captured”, was written in 1977 by the Warm Springs Reservation Committee to teach students about methods used to domesticate wild horses. The story provides historical insight into the techniques used by the tribe, and is the central text for this lesson.

### 1.1.1 Text Summary

The story starts by describing how the men would go in the springtime to build corrals with gates to hold wild horses. The horses would be chased to the corral and then directed into it by tribal members hiding near the entrapment. The horses would then be trained and broken for riding by the young members of the tribe.

### 1.1.2 Tribe(s)

The story was recorded by the Warm Springs, but it is applicable other Montana tribes that captured and trained horses, after they were introduced to America.

### 1.1.3 Place and Time

Plains of the northwest (Oregon) after the introduction of the horse until the modern day.

## 1.2 Suggested Grade Level

Middle school (Grades 6–8).

## 1.3 Estimated Instructional Time

Three class periods of 50 minutes each. This unit can be adapted by selecting the activities that best fit your time-frame.

Lesson one involves the “How Wild Horses Were Captured” story and the introduction to the Alice starter world animating the story. Lesson two dives deeper into the story of the horse in America and continues the development of the Alice animation. Lesson three explores resources from the Bureau of Land Management to learn about modern policies in place for the management of wild horses and allows the student a more creative development of their animations.

Additionally, there is a two class period extensions with additional material based on a Nebraska PBS program “Wild Horses: An American Romance”.

## 1.4 Resources and Materials Needed

1. Computers for students with Alice 2.5 installed.
2. A projector or television where the classroom can view the program “Wild Horses: An American Romance”.
3. Resources available on the MSU Story Telling lessons page:
  - (a) A PDF of this lesson plan.

- (b) A pre-built world wild\_horses\_starter\_world.a2w that depicts the story with a brief animation. This world can be saved to a local folder then opened from within Alice 2.5 by selecting the ‘Open a World’ tab from the welcome screen.
- (c) A link to the Indian Reading Series: How Wild Horses Were Captured story.
- (d) The following articles:
  - i. Wild Horses: Ancient Connection
  - ii. Wild Horses: Journey to the New World
  - iii. Wild Horses: Native Americans
- (e) Access to video “Wild Horses: An American Romance”
- (f) Lesson handouts for preparation and assessment of understanding.  
 [[XXX TODO: mwittie 4/2/19: We still need to link to these handouts. Who would like to volunteer to make them?]]

## 1.5 Related Lessons

- How Wild Horses Were Captured Lesson Plan by Education Northwest
- Wild Horses: An American Romance

## 2 Learning Objectives

This module is a part of the collection of lesson plans developed under NSF DRL 1657553, which funds the creation of lesson plans at the middle school level that (1) meet content standards, (2) address the IEFA Essential Understandings, and (3) introduces students to topics in computing. We provide learning objectives with assessments for each of these areas:

[[XXX TODO: mwittie 4/2/19: Go through these standards and which of these still make sense with respect to the revised lesson plan.]]

### 2.1 Content Standards

We follow the content standards provided by the Montana Office of Public Instruction (OPI) K-12 Content Standards and Revisions.

- Primary: **MCCS Social Studies Standards:**

**SSCS.1 Students access, synthesize, and evaluate information to communicate and apply social studies knowledge to real world situations.** (End of Grade 8)

SSCS.1.1 Apply the steps of an inquiry process (i.e., identify question or problem, locate and evaluate potential resources, gather and synthesize information, create a new product, and evaluate product and process).

SSCS.1.2 Assess the quality of information (e.g., primary or secondary sources, point of view and embedded values of the author).

SSCS.1.3 Interpret and apply information to support conclusions and use group decision making strategies to solve problems in real world situations (e.g., school elections, community projects, conflict resolution, role playing scenarios).

**SSCS.3 Students apply geographic knowledge and skills (e.g., location, place, human/environment interactions, movement, and regions).** (End of Grade 8)

SSCS.3.3 Analyze diverse land use and explain the historical and contemporary effects of this use on the environment, with an emphasis on Montana.

SSCS.3.4 Explain how movement patterns throughout the world (e.g., people, ideas, diseases, products, food) lead to interdependence and/or conflict.

SSCS.3.5 Use appropriate geographic resources to interpret and generate information explaining the interaction of physical and human systems. (e.g., estimate distance, calculate scale, identify dominant patterns of climate and land use, compute population density).

- Primary: **MCCS Life Science Standards:**

**LS2.A Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem and analyze scientific concepts used by American Indians to maintain healthy relationships with environmental sources.** (Grades 6-8)

- Secondary: **MCCS Social Studies Standards**

**SSCS.4 Students demonstrate an understanding of the effects of time, continuity, and change on historical and future perspectives and relationships.** (End of Grade 8)

**SSCS.5 Students make informed decisions based on an understanding of the economic principles of production, distribution, exchange, and consumption.** (End of Grade 8)

- Secondary: **MCCS Reading Standards for Informational Text:**

**RI.5.6 Craft and Structure: Analyze multiple accounts of the same event or topic, including those of historical and contemporary American Indian events and topics, noting important similarities and differences in the point of view they represent.** (Grade 5)  
MCCS reading standards for informational text.

- Secondary: **MCCS Reading Standards for Literacy in History/Social Studies:**

**RH.6-8.4 Anchor Standard #RH.6 – 8.4 for Craft and Structure: Determine the meaning of words and phrases as they are used in a text, including vocabulary specific to domains related to history/social studies.** (Grades 6-8): MCCS reading standards for literacy in history/social studies.

## 2.2 Essential Understanding

We follow the Montana Office of Public Instruction (OPI) Essential Understandings Regarding Montana Indians.

- **Essential Understanding 3 (Beliefs, Spirituality, Oral History):** The ideologies of Native traditional beliefs and spirituality persist into modern day life as tribal cultures, traditions and languages are still practiced by many American Indian people and are incorporated into how tribes govern and manage their affairs. Additionally, each tribe has its own oral histories, which are as valid as written histories. These histories pre-date the “discovery” of North America.

## 2.3 Computational Concepts

We follow the Computer Science Teachers Association K-12 Computer Science Standards.

- Primary: **Create programs that include sequences, events, loops, and conditionals.** (CSTA 1B-AP-10). *Control structures specify the order (sequence) in which instructions are executed within a program and can be combined to support the creation of more complex programs. Events allow portions of a program to run based on a specific action. For example, students could write a program to explain the water cycle and when a specific component is clicked (event), the program would show information about that part of the water cycle. Conditionals allow for the execution of a portion of code in a program when a certain condition is true. For example, students could write a math game that asks multiplication fact questions and then uses a conditional to check whether or not the answer that was entered is correct. Loops allow for the repetition of a sequence of code multiple times. For example, in a program that produces an animation about a famous historical character, students could use a loop to have the character walk across the screen as they introduce themselves.*

- Secondary: **Test and debug (identify and fix errors) a program or algorithm to ensure it runs as intended. (CSTA 1B-AP-15).** *As students develop programs they should continuously test those programs to see that they do what was expected and fix (debug), any errors. Students should also be able to successfully debug simple errors in programs created by others.*
- Secondary: **Design and iteratively develop programs that combine control structures, including nested loops and compound conditionals. (CSTA 2-AP-12).** *Control structures can be combined in many ways. Nested loops are loops placed within loops. Compound conditionals combine two or more conditions in a logical relationship (e.g., using AND, OR, and NOT), and nesting conditionals within one another allows the result of one conditional to lead to another. For example, when programming an interactive story, students could use a compound conditional within a loop to unlock a door only if a character has a key AND is touching the door.*

## 2.4 Essential Questions

- How can storytelling be used to understand society and culture?
- How can historical details be used as a tool to understand culture?
- How does culture shape society as it progresses?

## 2.5 Key Concepts

By the end of this lesson, a student will understand:

- The importance of horses in the history of Indigenous peoples.
- The importance of tradition in contemporary Indigenous societies.
- How technology changes traditional processes.
- The importance of logic in computer programs.
- The differences between making decisions in real life and in computer programs.

## 2.6 Key Knowledge

By the end of this lesson, a student will know:

- The process of capturing horses used by Indigenous peoples.
- How traditional processes of capturing horses have evolved over time.
- How the Warm Springs tribe used horses in the past.
- What makes a horse wild and how “wild” can be misunderstood and misconstrued.
- How a computer interprets a conditional statement.

## 2.7 Key Skills

By the end of this lesson, a student will be able to:

- Engage effectively in productive, multifaceted debates about how to manage public lands.
- Navigate the Internet in order to gather valuable information about public policy.
- Engage in algorithmic problem solving: design, implement, test, evaluate.
- Engage effectively in collaborative discussions, building on others’ ideas and clearly expressing their own.
- Integrate new features and capabilities into an previously developed algorithm to solve more advanced problems.

## 3 Instructional Guide

This unit is comprised of three lessons. The following descriptions provide specific instructions for the execution of each lesson.

### 3.1 Unit Summary

Students will learn about how wild horses were captured by American Indians both in the past and currently, the history of wild horses in the American west, and explore resources from the Bureau of Land Management to learn about modern policies in place for the management of wild horses. Students will work in Alice to complete an animation depicting horses being led into a corral, modifying the code to capture the horses.

#### 3.1.1 Learning Outcomes

By the end of this lesson, a student will understand:

[[XXX TODO: mwittie 3/3/19: tie these to individual lesson days and their activities]]

- Define what makes a horse “wild” (contributing to LS1.B).
- Critically discuss the costs and benefits of wild horses living on public lands managed by the U.S. government (contributing to SSCS.1).
- Gain an understanding of the history of wild horses (contributing to SSCS.3).
- Explain how wild horses were captured by Indigenous people and who played which role in the capturing of the horses (contributing to EU 3).
- Utilize compound conditional statements to instruct Alice to close the corral gate after a certain number of horses have entered (contributing to 1B-AP-10, 1B-AP-15, and 2-AP-12).

#### 3.1.2 Preparation

1. Provide students with the reading *How Wild Horses Were Captured*.
2. Download Alice 2.5 onto all computers and open the program. Allocate two to three students for every computer.
3. Download the starter world `wild_horses_starter_world.a2w` and open it in the Alice programming environment.

### 3.2 Pre-Lesson Handout

We suggest asking the following questions prior to the outset of the lesson. This can be done as homework, a classroom discussion, or group work, before the discussion of the artwork begins. A handout is available on our website<sup>1</sup>.

[[XXX TODO: mwittie 4/1/19: We need questions and worksheets for pre-assessment. Who would like to volunteer to create this content?]]

---

<sup>1</sup><http://www.montana.edu/storytelling/>

### 3.3 Class Period One

In this class period, students will read the story “How Wild Horses were Captured” and explore the history of wild horses in America. They will also familiarize themselves with the Alice programming environment and the starting code for animating the story.

1. (*15 minutes*). Read the story “How Wild Horses were Captured.” Following the reading, begin a discussion with students related to how people herded the horses into the corral using some of the following questions as starting points.

[[**XXX TODO: mwittie 3/3/19: provide answers for the questions below**]]

- (a) In this story, who is a “short stop”?
  - (b) Who were the herders and who were short stops?
  - (c) What role did the short stops play in herding the wild horses?
  - (d) What reward did the boys who participated in horse chase get?
  - (e) What were these boys expected to do with their reward?
  - (f) What were the corrals and gates made of?
  - (g) What part of the gate is a “wing line”?
2. (*35 minutes*). Introduce the students to the Alice programming environment and the code animating the story. By the end of this activity students will start developing the conceptual solution to improving the animation.
    - (a) Point out the different sections of the layout and how to run their code.
    - (b) Push play and watch the starter animation. Horses will wander in and out of the corral without being captured.
    - (c) Inspect the code and walk the students through the logic of the program.
    - (d) Ask the students why the gate does not close when the horses enter the coral.
    - (e) Describe conditional statements, briefly, to offer some intuition as to how they might be able to make the gate close as horses enter it.
    - (f) Select the gate and show students its properties and how they may be used to close the gate after the horses.
    - (g) Ask the students to talk through changes to the program code that would close the gate after the horses.



### 3.4 Class Period Two

In this class period, students will learn about the history of horses in America. They will also make modification to the modify the code in the Alice programming environment to correctly animate the “How Wild Horses Were Captured” story.

1. (*10 minutes*). Break the students up into three groups and ask each group to read one of the three stories below.
  - (a) Wild Horses: Ancient Connection
  - (b) Wild Horses: Journey to the New World
  - (c) Wild Horses: Native Americans
  
2. (*10 minutes*). Discuss the articles and how the past relates to our modern relationship with horses. See the following talking points to spark discussion.

[[XXX TODO: mwittie 3/3/19: do we need worksheet for this?]]

  - (a) Have horses always inhabited North America? (Horses inhabited from about 50,000 years ago until they emigrated from North America approximately 5,000 years ago.)
  - (b) How was the horse we see today introduced to North America? (When the Spanish conquistadors came to the Americas, they brought with them both domesticated horses and cattle to help them traverse the land.)
  - (c) How were the horses transported to North America? (On the ship, slings were constructed to allow the horses to swing with the roll of the ship and to take the weight off their feet. When the ships docked, horses were blindfolded, raised from below deck by hoists, lowered into the water, and made to swim ashore.)
  - (d) When did Native Americans first acquire horses? (In 1541, Spanish Viceroy Mendoza put allied Aztec warriors on horses to better lead their tribesmen in the Mixton War of Central Mexico.)
  - (e) What uses did Native Americans have for horses? (The Pueblo mainly valued the horse as food and as an item to trade with the Plains tribes for jerked buffalo meat and robes. Horses and horsemanship gradually spread from tribe to tribe until the Native Americans of the Plains became the mounted buffalo hunters.)
  
3. (*30 minutes*). Open the Alice starter world, on a computer connected to a projector, and offer a brief refresher of what was discussed in the previous class.
  - (a) Remind students the location of the play button and re-watch the animation of the starter world.
  - (b) Ask the students to implement their ideas from the previous class period to close the gate once the horses enter the coral by modifying the *if* statement.
  - (c) Show the students the completed solution in the `wild_horses_solution_world.a2w` Alice world.
  - (d) For students who complete the task above, ask them to make the gate shut once only two horses enter the corral. The third horse should not run into the corral once the gate is shut.

### 3.5 Class Period Three

In this class period, students will learn about the contemporary management of horse populations. They will also explore additional animations to their Alice story.

1. (25 minutes) Have students investigate the Wild Horse and Burro Program using web-links on the Bureau of Land Management’s webpage **[[XXX TODO: add this link to the webpage and the set of required materials]]** to answer the following questions. **[[XXX TODO: We may want to provide a more curated view of these pages to make the relevant information easier to find for the students.]]**  
**[[XXX TODO: mwittie 3/3/19: Provide answers to these questions.]]**
  - (a) How many acres of land does the BLM oversee that is used by wild horses?
  - (b) How quickly can unchecked herds double in size?
  - (c) If left alone what will happen to the horse population? (balance their population with the amount of resources available)?
  - (d) What is the name of the herd management area in Montana? How many acres does it cover?
  - (e) How does the BLM gather wild horses and burros?
  - (f) What is the process of adopting a wild horse? What are the requirements? Would you adopt a horse?
2. (25 minutes) Have students extend the Alice world to incorporate more elements of the story.
  - (a) Ask student to implement the horses moving in from a different direction and a short stop jumping out from hiding to turn then towards the corral. Ask them to incorporate the *if* statement to sequence their animations.
  - (b) Following the work session, have groups volunteer to share the animation of their world with the class. Project the group’s animation to the class and press play. Once the animation has played, have students in the group describe the code modifications they have made, including their use of the *if* statement.

### 3.6 (Extension) Class Period Four

In this class period, students watch the first half of the “Wild Horses: An American Romance” video. Following the video, a classroom discussion can be had about what constitutes a “wild” horse.

- (a) (29 minutes) Watch the first half of “Wild Horses: An American Romance”.
- (b) (20 minutes) After the video, have students split into student groups and discuss the following questions. After enough time has passed, have the students come together and discuss their answers to these questions as a class.
  - i. What makes a horse “wild”?
  - ii. Is a wild horse just an unbroken horse?
  - iii. Are these horses “feral”?

### 3.7 (Extension) Class Period Five

In this class period, students watch the second half of the “Wild Horses: An American Romance” video. Following the video, a classroom discussion can be had about management of horses.

- (a) (29 minutes) Watch the second half of “Wild Horses: An American Romance”.

- (b) (15 minutes) After watching the video, have students split into small groups of 3-4. Assign each of the following wild horse management options to a group, who will summarize their discussion for the class.

Wild horses reside on lands owned and managed by the U.S. government. There is a large amount of debate about who should benefit from the management of these lands. What are the pros and cons of your option?

- i. **Wild Horses:** Wild horses have been roaming free on these lands for over 100 years.
  - ii. **Wildlife:** Wild horses are a recent addition to these environments and other wildlife should take precedence.
  - iii. **Ranchers, Loggers, and Miners:** These individuals have the right to make a living.
  - iv. **Ecosystems:** Too many wild horses negatively impact these lands and everything that relies on these lands.
  - v. **All of the above:** A resolution should be found to offer something to each group without excluding anyone.
- (c) (5 minutes) Lead a classroom discussion directed toward selecting who they believe should benefit from the management of the public lands on which wild horses roam.

### 3.8 Post-Assessment

The following are suggested formative and summative assessments for monitoring student understanding. These can be assigned as homework or test questions, or can be used as discussion questions for small groups:

#### 3.8.1 Class One

- **[[XXX TODO: add post-assessment item here to assess if student has met the desired learning outcomes]]**

#### 3.8.2 Class Two

- **[[XXX TODO: add post-assessment item here to assess if student has met the desired learning outcomes]]**

#### 3.8.3 Class Three

- **[[XXX TODO: add post-assessment item here to assess if student has met the desired learning outcomes]]**

#### 3.8.4 Class Four

- **[[XXX TODO: add post-assessment item here to assess if student has met the desired learning outcomes]]**

#### 3.8.5 Class Five

- **[[XXX TODO: add post-assessment item here to assess if student has met the desired learning outcomes]]**

## 4 About Storytelling

The Storytelling project develops middle school curriculum materials that incorporate computer science and computational thinking into lesson plans, in addition to the Montana content standards and IEFA Essential Understandings. The team uses Alice 2, a drag-and-drop programming environment, to create interactive activities for the students. Using Alice, students can animate their own stories in the lesson plans being developed. This process ties into the American Indian tradition of using storytelling to share their heritage. This research is conducted by a group of researchers at Montana State University, under grant NSF DRL 1657553 For more information, please email us at [storytelling@montana.edu](mailto:storytelling@montana.edu) or visit our website [www.montana.edu/storytelling](http://www.montana.edu/storytelling). We welcome any suggestions for improvements and/or suggestions for future lesson plans to develop.

This particular lesson plan was developed by Sam Micka, Allyson Theobald, Barbara do Amaral, and Mike Wittie. **Disclaimer:** Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

DRAFT