

# engage — the — range

Change the Range

TEACHER  
GUIDE



# Objectives

**After participating in Engage the Range, the learner will be able to:**

- 1. Explain** how past events shaped the current state of the Nebraska rangelands.
- 2. Identify** the impacts that plants, animals, management practices and invasive species have on the Nebraska rangelands.
- 3. Interpret** current issues, opportunities and threatfacing the Nebraska Rangelands.
- 4. Use** their senses to identify common range issues, threats and opportunities while on the range.

## **Today's Objective:**

When given a scenario, students will formulate a potential management solution to solve range management problems to ensure an increase in profitability and production rate.

## YOUR ROLE AS THE DESIGN THINKING FACILITATOR:

- 1. A design thinking facilitator leads the creative process.**
- 2. The Association of Talent Development defines facilitation as “the act of engaging participants in creating, discovering, and applying learning insights.”**
- 3. The facilitators choose the learning experiences students will use to achieve each step of the process.**
- 4. As the facilitator you will help guide the students but will remember there is no “right” answer to the solutions that they create.**
- 5. Here are some of your roles & responsibilities**
  - Establish a creative, safe working environment
  - Use active listening skills
  - Ask open ended questions
  - Be authentic as you engage with the students
  - Be impartial, your solution is not right, and their solution is not wrong.
  - Set the tone for the creative process
  - Be patient as students work through challenges
  - Build and maintain good structure of the experience
- 6. Choose the learning experience**
  - It is suggested that students complete their solution individually but based on your discretion you can allow students to work in small groups/partners.

## MATERIALS

- Personal devices for students to access the Design Thinking Process examples website
- Printed copies of worksheets
- <https://archive.nytimes.com/www.nytimes.com/interactive/2013/12/30/technology/stanford-dschool-projects.html>

## LESSON PLANS

### Interest Approach & Preview

Learner will reflect on the *Experience the Range* lesson and see how problems have been solved using the Design Thinking Process.

The purpose is to connect what they just experienced to what they're about to do.

### Interest Approach (10 MINUTES)

Welcome students back to class and ask for a few observations or reflections from their *Experience the Range* field trip.

1. **Say:** What was the most surprising part of your experience? What was your biggest take away from the information you learned? What were some of the concepts that you learned about in the classroom that you also saw or experienced while on the range?
2. **Say:** Based on your experience in Learn the Range and Experience the Range you will be creating a solution presentation for \_\_\_\_\_ (insert range name here) on \_\_\_\_\_ (date determined by you as the facilitator).
3. **Say:** We will be following the Hasso Plattner Institute of Design at Stanford University's Design Thinking Process as we learned earlier. While on the rangeland, you used the Empathize step to understand the problems and needs. This Design Thinking Process will help us find creative solutions.
4. **Say:** Today you will explore a digital article with several examples of Design Thinking projects. You will choose one example you are interested in to view and share your observations with a partner. I will then choose a few volunteers to share their discussions with the class.

## Guided Discovery & Modeling

Learner will review the five steps and see action steps with each one.

The purpose is to review and explain the five steps while also showing what they look like in application.

### Five Steps of the Design Thinking Process (7 MINUTES)

Have students get out their workbooks from the Experience the Range field trip. Direct them to the Design Thinking Process page.

**SAY:** Let's review these five steps and how we're going to apply them to a rangeland issue once we identify one.

#### EMPATHY:

**ASK:** What is the first step? How have you already experienced this?

**Listen for:**

- **Observe** - View ranchers/range managers in their daily lives, and pay attention to their attitude, behaviors, and communication.
- **Engage** - Interact with the ranchers/range manager through conversations and questions
- **Immerse** - Experience what the rancher/range manager experiences in "Experience the Range" experience

**SAY:** Our next step is to take what we learned during our experience and apply empathy. Empathy is the ability to understand and share the feeling of another. We will be thinking and feeling like the Nebraska rangeland managers who are experiencing problems.

#### DEFINE:

**ASK:** What is our next step?

**SAY:** During your range experience, you may have had some ideas and thoughts about solutions for the range. In this section, you will define the problem you are seeking a solution for. Your problem may be different from others in the class, and that is OK! Stick with what you found most important and interesting. To define your problem, consider and combine your empathy findings to determine a meaningful solution.

You will state your users' needs and problems by analyzing what you learned in the empathy stage and synthesizing thoughts to define the main problems affecting the rangeland manager from your Experience the Range experience.

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#### IDEATE:

**ASK: What is the third step?**

**SAY:** In the past two sections, you may have started thinking about a solution. In this section, your goal isn't one solution. It is to generate numerous ideas based on your problem statement. You will create a large quality of ideas and create diversity among your ideas.

This step is for challenge assumptions and creating ideas. Start to "think outside the box" from your learning in Learn the Range and your experience at Experience the Range. Identify innovative solutions to the problem you identified in the Define section.

**INTERVIEW:**

Before students start prototypes, it is time to gather feedback from stakeholders. Allow students time to communicate (email, phone call, video call, in-person visit) from range-land stakeholders you have identified so they can provide feedback. This will allow students to make changes before moving into prototypes.

**PROTOTYPE:**

**ASK: What is the next step?**

**SAY:** At this point, we will laser in on one solution to create a physical representation of your idea. You will create a prototype (a first preliminary model of something; other words: model, mock-up, sample, example)

This step allows you to fail quickly by learning as you build, getting feedback as you test, solving disagreements with your team, and exploring edits as you go. This is the experimental phase. On a small scale, you will produce an inexpensive, scaled-down version of the solution you propose.

**NOTE:** When students are done with the ideate step and you see students who have similar solution ideas, you can allow them to merge to make a group solution if wanted.

**TEST:**

**ASK: And what is the last step?**

**SAY:** This last step is trying your solution and getting feedback. For this class, you will present your prototype to the audience your teacher has prepared (rancher/range

## FIVE STEP ACTIVITIES

### **APPLICATION:**

**Learner will complete various activities as chosen by the teacher. Steps have multiple activities. It is up to the teacher on which ones the students do and how they should be executed.**

**Five Step Activities** (Time varies based on activities)

The following activities are organized by step. Each step has an intention behind the activity. It is recommended students do at least one activity at each step to fulfill the intention of the step. For some steps, it may be helpful to do more than one activity to lead students to the end result. You may choose any combination of these activities to be done in a way that works best for your students and classroom.

### **PURPOSE:**

**The purpose of this section is to allow students to apply each step of the process individually.**

These steps are organized to bring students to the final goal: creating a presentation of their solution to stakeholders. Let students know the final outcome to allow them to narrow ideas during each of these steps.

## EMPATHY ACTIVITIES

During these activities, students should be empathizing with the rancher or range manager to consider what problems he/she is facing.

Use the pre-made activity sheets on the following pages. Be sure to make enough copies for students to choose their activity.

**OR**

**Create your own!**

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### REFLECTION SHEET:

Have students reflect on Experience the Range by answering the following questions:

“Who is the user?”

“How would you describe the user?”

“What stood out to you about the user and their problem?”

“What do you wonder about this problem?”

Then, create a one-sentence summary using this format:

(User name) is a \_\_\_\_\_(describe the user) \_\_\_\_\_ who needs \_\_\_\_\_(describe the problem) \_\_\_\_\_ to \_\_\_\_\_(what the solution will give the user) \_\_\_\_\_?

### EMPATHY MAP:

Create a 4-quadrant worksheet with the labels say & do on the left (observation) side and think and feel on the right (interpretation) side.

Prompt students to fill out the quadrants based on their experience from “Experience the Range”



# **EMPATHY: Experience the Range Reflection**

**DIRECTIONS:** Reflect on your Experience the Range experience by answering the questions below. Make sure to answer using complete sentences and correct punctuation.

## **1. WHO WAS THE USER?**

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## **2. HOW WOULD YOU DESCRIBE THE USER?**

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## **3. WHAT STOOD OUT TO YOU ABOUT THE USER AND THEIR PROBLEM?**

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## **4. WHAT DO YOU WONDER ABOUT THIS PROBLEM?**

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## **5. CREATE A ONE SENTENCE SUMMARY USING THIS FORMAT:**

(User name) is a (describe the user) who needs (describe the problem) to (what the solution will give the user).

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# EMPATHY: 4-Quadrant Empathy Map

SAY

THINK

OBSERVATION

INTERPRETATION

DO

FEEL

## DEFINE ACTIVITIES

During these activities, the students should be defining one problem they identified on the ranch as the problem they will investigate further.

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### **I LIKE, I WISH, I WONDER:**

Have students set up a three-column chart. The columns should be labeled: I like, I wish, and I wonder. They should answer each prompt defining the rancher or range manager's needs and problems regarding the rangeland. They should finish by identifying one problem they want to focus on.

### **KNOW VERSUS NEED TO KNOW:**

Have students split a piece of paper in half and write "know" on the left side and "need to know" on the right side. At this point, have students decide on a clear problem they identified from the rangeland they visited. Allow students to write down everything they know about the problem/need on the left side and everything they will need to research to find more information on the right side.

## IDEATE ACTIVITIES

During these activities, students should be brainstorming solutions and/or considerations to the problem they just identified in the last step.

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### JOYS AND DISCOMFORTS:

Have students split a piece of paper in half and write “joys” on the left side and “discomforts” on the right side. Consider the range problem you are facing. Write all the “joys” things that are going well for the producer and all the “discomforts” problems the producer is facing.

### IDEA WEB:

Have students create a mind-map/idea web for solutions to the problem they identified. Allow students to ideate as many solutions as they can, and encourage them to branch off into where their brain takes them.

### 100 IDEAS IN 3 MINUTES:

Have students write down as many solutions as they can in 3 minutes. Explain that the ideas don't have to be good, but they need to throw out as many as they can in only 3 minutes. They may use post-its or a scrap piece of paper. Then, have students select their top 3-5 solutions.

## PROTOTYPE ACTIVITIES

This step should be about bringing student ideas to life and having something physical to show for their solutions. The first activity might help the students brainstorm what to create for their prototype.

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### ON YOUR MARK, GET SET, GO:

Use the pre-made sheet on the following page or create your own.

Create a worksheet with 3 main boxes that are labeled: on your mark, get set, and go. Students will write their answers to these prompts located in the boxes.

- Under **ON YOUR MARK** students should answer:  
What their solution looks like and describe it with words and pictures.
- Under **GET SET** students should answer:  
What materials do you need to create your prototype and who will you ask for support?
- Under **GO** students should answer:  
Where will you do your work, when will you start, and how long will you need?

### PROTOTYPE CREATION:

Students will create a prototype using any materials they wish. Example materials:

- cardboard
- pipe cleaners
- PowerPoint
- construction paper
- playdoh
- Canva
- hot glue
- clay
- Word/Docs
- toilet paper rolls
- styrofoam
- Etc.

The prototype should include the solution to the problem they have identified.

For example, if a student has identified water as a rangeland issue, their prototype may feature a stock tank made from cardboard. This prototype will be presented in the “test” part of the process along with a poster/slide describing the aspects of their solution.

**PROTOTYPE: On Your Mark, Get Set, Go!**

**DIRECTIONS:** Answer the questions in each box.

**ON YOUR MARK**

What does your solution look like?  
Describe it with pictures and words.

**GET SET**

What materials will you need.  
Who will you ask for help and support?

**GO!**

Where will you do your work? When will  
you start? How long do you need?

## TEST ACTIVITIES

**This step is about testing the student's ideas with audience feedback. This is your chance to make the presentations fit for your students. You can allow them to present in front of a crowd with a slide deck, they can do 1-on-1.**

### **POSTER SESSION:**

**After students have created their prototypes, they should create a presentation display (posters, slide deck, trifold, etc.). Set up a time for the class for a range of stakeholders to attend a presentation by the students. Possible stakeholders might include the rancher/range manager the students visited, teachers, administration, extension agents, etc.**

**Stakeholders will rotate around to students' solutions as you would in a science fair. Students will engage with stakeholders by presenting their solutions and answering questions.**

**Allow all stakeholders present to vote on exceptional solutions, like the most plausible idea, the best idea for grazing productivity, the best idea for wildlife habitats, etc.**

## Processing & Planning

Learner will reflect on the presentation experience and their projects.

The purpose is to allow students to hear stakeholder feedback and reflect on their solutions.

### Post Presentation Reflection (15 MINUTES)

After students' presentations, share any relevant feedback you received from the stakeholders with the students.

Have students answer these questions in a written reflection, then share with a partner, then ask the class:

- What went well from your presentation?
- What did you learn from the stakeholders?
- What would you do differently?
- What have you learned from this Engage the Range experience?

## Review / Closure

Learner will review the three parts of *Engage the Range* and their objectives.

### Engage the Range Review and Close (2 MINUTES)

**SAY:** Thank you so much for your time and intention with Engage the Range.

**With these three parts we have gone over:**

- How past events shaped the current state of the Nebraska rangelands.
- The impacts that plants, animals, management practices and invasive species have on the Nebraska rangelands.
- Current issues, opportunities and threats facing the Nebraska Rangelands.
- Using our senses to identify common range issues, threats and opportunities while on the range.
- Formulating a potential management solution to solve range management problems. to ensure an increase in profitability and production rate.



## Assessment

Learner will be evaluated on the three-part experience using these grading metrics.

The purpose is to assess the learner's understanding and application of the materials.

### Grading Guide Suggestions:

Points should be chosen based on your school/class grading requirements

#### LEARN THE RANGE

- RISE Course completion
  - Past
  - Present
  - Future

#### EXPERIENCE THE RANGE

- Participation in the Experience the Range experience
- Completion of Student Range Experience Guide

#### CHANGE THE RANGE

- Completion of each step of the design thinking process
- Completion of any activities deemed important
  - Examples: Presentations, voting, thank-you cards

Name: \_\_\_\_\_

## Student Task Card

	Due Date	Date Completed	Grade
<b>LEARN THE RANGE:</b> <b>PAST MODULE</b>			
<b>LEARN THE RANGE:</b> <b>PRESENT MODULE</b>			
<b>LEARN THE RANGE:</b> <b>FUTURE MODULE</b>			
<b>EXPERIENCE THE RANGE:</b> <b>PARTICIPATION</b>			
<b>EXPERIENCE THE RANGE:</b> <b>STUDENT EXPERIENCE GUIDE</b>			
<b>CHANGE THE RANGE:</b> <b>EMPATHY</b>			
<b>CHANGE THE RANGE:</b> <b>DEFINE</b>			
<b>CHANGE THE RANGE:</b> <b>IDEATE</b>			
<b>CHANGE THE RANGE:</b> <b>PROTOTYPE</b>			
<b>CHANGE THE RANGE:</b> <b>TEST</b>			