Becoming Your Personal Best

Life Lessons from Olympians and Paralympians
A United States Olympic & Paralympic Museum Project

MODULE 3
PROBLEM SOLVING

4th/ 5th GRADE
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Module Overview

Background

The skills associated with problem solving start with the ability to identify the problem, and move to analysis of the problem and how to determine what viable solutions may be. Every possible solution has choices attached to it, and possible consequences that may result from those choices. Upper elementary students can benefit from learning specific strategies for problem solving, as well as having the opportunity to identify and process the emotions that arise in the face of problem-solving challenges and choices.

The purpose of this module is to expose students to the steps of solving a problem, and to give them practice predicting and analyzing possible consequences connected to choices along the way. Additionally, students will practice recognizing and responding to the emotions they experience associated with problems. With awareness of problem-solving processes and strategies, students can build their resiliency to respond effectively to new challenges.
Enduring Understanding
Thinking critically about possibilities, motivations, and consequences in order to make conscious choices helps you to prevent, recognize, and solve problems.

Problem-Solving Skills
Priority skills for the 4th/5th grade curriculum level are in bold.
- Use critical thinking, analysis, and evaluation
- Understand motivations
- Act in alignment with values
- Consider consequences and make conscious choices
- Recognize emotions
- Use creativity and innovation

Problem-Solving Lessons
Lesson 1: Problem Solving with Clarissa Chun
Lesson 2: Critical Thinking and Decision Making
Lesson 3: Reflecting On and Evaluating Choices
Athlete Biography

Clarissa Chun

**Sport:** Wrestling

**Hometown:** Oahu, Hawaii

**Competition Year(s) and Results:** 2012 Olympic Bronze Medalist; 2x Olympic Athlete (2008 & 2012)

**Real World Context:** First wrestler from Hawaii to medal in the Olympic Games

Born and raised on Oahu, Hawaii, Clarissa Chun got involved with judo at the age of seven and over the course of her young career she won five junior national championships. In 1998, as a junior at Roosevelt High School, she gave wrestling a try. In her debut in the sport Clarissa won the state championship; it was the first year girls wrestling became a sanctioned sport in Hawaii schools. She went on to defend her championship title the next year as a senior.

Clarissa accepted a partial scholarship offer with Missouri Valley College which had just started a women’s wrestling program, and really put the program on the map. During her three seasons there she medaled in the U.S. Nationals and Pan American Games during all three of her seasons. Prior to her senior year, Clarissa accepted an invitation to the U.S. Olympic Training Center in Colorado Springs to hone her wrestling skills. While training she earned her Communication degree from the University of Colorado.

She made her Olympic debut in 2008, finishing 5th in the Beijing Games, and went on to win the Bronze medal in the 2012 Games in London. Clarissa is the first wrestler from Hawaii to medal in the Olympics. She is also one of only three females to participate in two Olympic Games in wrestling. In 2017, Clarissa was named the USA Women’s Wrestling Assistant Coach at the Olympic Training Center in Colorado.
Lesson Overview
Students are introduced to the concept of problem solving by Clarissa Chun, and reflect on past choices.

Learning Objectives
*Students can:*
- Explain the concept of problem solving and reflect on problem solving in their own lives
- Establish why problem solving is important for being resilient
- Communicate about problem solving through Clarissa Chun’s story
- Explain how Clarissa has used problem-solving skills in her life

Materials
- Paper or journals
- Problem-Solving Video

Time
45-60 Minute Lesson
LESSON 1: Problem Solving with Clarissa Chun

Kick-Off

Activity: Your Choice Inventory

Tell students that they are going to explore some of the choices that they have made in the recent past. Have them take out two blank pieces of paper and write “best” and “worst” at the top of each one. Now, have students write a short description of the best choice they have made recently on the “best” sheet of paper, and the worst choice they have made recently on the “worst” sheet of paper. Next, have students write down why they selected those choices as their best and worst, along with any emotions they are feeling related to those choices.

Tell students to set their “best choice” paper to the side for a moment, and have them look at their “worst choice” sheet. Ask students what emotions they have as they look at that choice.

Student Support

Offer the following examples of emotions, or refer students to any resources you already use for the naming of emotions.

- Acceptance
- Anger
- Annoyance
- Depression
- Excitement
- Fear
- Grief
- Heaviness
- Interest
- Inspiration
- Loss
- Pride
- Regret
- Sadness
- Surprise
- Upset

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Courtesy of LeRoy Neiman and Janet Byrne Neiman Foundation
Activity: Your Choice Inventory (continued)

Then have students crumple up their worst choice paper into a ball, line up and try to shoot it into the trash can one by one. Once students sit back down, share that by throwing away their “worst choice,” they can let go of that choice. AND, when we make choices that don’t work out so well, it is important to learn from them and to take that learning into the future. Have students turn their “best choice” paper over and write, “What I learned from my worst choice...” at the top. Then engage the class in a whole group conversation using the following prompts:

• When we make negative choices or mistakes, what can we do to make sure we learn from them?
• What kinds of things can you learn from the “worst choices” you wrote down and threw away?

Finally, have students write something they learned from their own “worst choice” that they want to remember in the future.

Student Support
If students need some additional guidance to write their best and worst choices, provide these examples:

• **Best choice:** I chose to try out for my school’s basketball team, even though I wasn’t sure I was going to make it.
• **Worst choice:** I chose to stay home and play video games instead of hanging out with my friends at the movies and I feel like I missed out.

Module Intro
Share with students that skills related to problem solving are important for being resilient, and can impact how they handle challenges in the future. It’s important to take time to think about and plan for how to solve a problem, and to learn from the process, even if it doesn’t go exactly as planned. Each time we work through a problem, we can learn more about ourselves and our abilities to face difficult situations.
Main Activity

Athlete Story

Athlete Bio
Use the athlete bio to introduce students to Olympian Clarissa Chun.

Video
Play the Problem-Solving video featuring Olympian Clarissa Chun.

Conversation
Engage students in a whole group conversation using the following prompts:

- What stood out to you in this video?
- How did Gwendolyn explain the concept of problem solving?
- What are some ways Clarissa has used problem solving to achieve her goals? What other strategies would you try if you had a similar problem to solve?
- What is a challenge Clarissa talked about, and what is a problem-solving skill she used to respond to the challenge in a healthy way? How does this show her being resilient?
Closing Reflection

Use the following prompt as a final opportunity for students to reflect on their learning:

- After hearing Clarissa Chun’s story and reflecting on problem solving, what skills would you use to face your “worst choice” that you tossed into the trash at the beginning of this lesson?

Extended Activity

Better-Choice Graphic Story

Think back to your worst choice that you identified during the class along with your learnings about that choice. Describe an action that you could have taken to make the outcome of your choice better. Write the description on the back of a blank sheet of paper. Now, create a graphic story of that moment happening. Start with when you are first presented with the choice, and show what happens when you take the action that leads to a better outcome.
1. **Answer the question:**
   - What are the best and worst choices you have recently made?

2. **Watch the module video**

3. **Answer the questions:**
   - What is problem solving?
   - What is a challenge Clarissa Chun talked about, and what is a problem-solving skill she used to respond to the challenge in a healthy way? How does this show Clarissa being resilient?

4. **Answer the question:**
   - What is one key learning from today about problem solving and making choices that you want to remember in the future?
Lesson Overview
Students will reflect on problems that they have encountered in the past, including their associated emotions, and will work in teams to apply problem-solving strategies by building a bridge.

Learning Objectives
*Students can:*
- Reflect on problems they are already solving
- Use critical thinking to evaluate possible choices and their consequences
- Identify emotions related to problem solving

Materials
- Paper or journals
- Balloons
- Masking tape
- Permanent markers
- A roll of string
- Uncooked spaghetti noodles
- Scotch tape
- Sheets of stickers (1 per group)
- Stack of newspapers
- Several heavy objects (books, full water bottles, etc.) to evaluate weight that bridges can hold

Time
45-60 Minute Lesson
Lesson Intro

Tell students that there are many strategies that can contribute to being a good problem solver. Today they will practice some of those strategies by exploring possible choices and potential consequences, along with their emotions related to problems.

Problem-Solving Balloons

Explain that students will be creating a “problem-solving balloon” today, focusing on one problem that they have experienced and tried to solve recently, and the emotions they felt while doing so.

**Directions to students:**

1. Blow up your balloon

   *Note:* If your students may have trouble blowing up the balloons, they can be inflated prior to the activity.

2. Think about one problem that you have experienced recently and tried to solve, and write that problem on your balloon with your permanent marker. Be careful not to pop it!

   *Example:* My garbage disposal broke at home, so I helped my mom unclog and fix it.
Problem-Solving Balloons (continued)

3. Once your problem is documented, turn the balloon over and write any emotions on the balloon that you felt while solving that problem.

   Example: Proud (that I was able to help fix the garbage disposal); Frustrated (that it was hard to figure out how to fix it).

4. After each person in your group has their balloon completed, circle up with the rest of the class.

5. Now, your challenge is to keep all the balloons afloat (not touching the floor) for 30 seconds. By the end of that time, you should have someone else’s balloon.

6. Take a moment to read the balloon you ended up with, and think about these questions:
   - Can you relate to the problem or to the emotions your classmate experienced?
   - What do you think your classmate did to try to solve the problem?

   Emphasize to students that everyone experiences problems in their lives, small ones and big ones, so it’s important to have strategies to use when those problems arise.

   Note: Balloons can either be popped or displayed as a reminder that everyone experiences problems.
Main Activity

Building Bridges

Setting the Stage

Explain that when people face problems, choices have to be made as part of the process of addressing and trying to solve those problems. Today, students will practice thinking critically about choices in the context of solving the problem of how to build a bridge.

Activity: Building Bridges (Part 1)

Now that students have a general understanding of what they’ll be doing in this lesson, break them up into teams of four students. Each group will get a stack of newspaper to begin their bridge construction. Between each of the choices that they have to make, they’ll have 10 minutes to plan and build. After the 10 minutes has lapsed, the teams will be presented with another choice.

Procedure:

1. Divide students into groups of four.
2. Give each group a stack of newspaper.
3. Tell students they will build the tallest, sturdiest bridge that they can using the materials they have, starting with newspaper. Show them the heavy objects that you will be using to measure their bridges’ strength when the bridges are all built. Use the same objects for all of the bridges in order to get an accurate picture of which teams constructed the stronger bridges.
4. Every 10 minutes, students will pause and be presented with a choice of what they want their next material to be. Encourage students to think critically about which material would work best to fortify their bridge and make it stronger. They should take a few minutes to think about which material would work best to accomplish their goal.
5. Once students have made their choice, the materials they did not choose will no longer be available to them for the duration of the activity.
6. Allow another several minutes for students to further fortify their bridge with each of their new materials. (10 minutes total for discussion about materials and additional construction time)

Material Choice A

Base Material: Newspaper (everyone gets this)

Choice 1: String or uncooked spaghetti noodles

Choice 2: Tape or Sheet of stickers
Critical Thinking Questions:

- What do you predict will happen with each possible material?
- Which material will you choose, and why?

Closing Reflection

Use the following prompts as a final opportunity for students to reflect on their learning.

- In hindsight, would you have chosen a different material for your bridge than the one you selected?
- How did you and your classmates come to an agreement about which materials to use?

Extended Activity

Bridge Fortification

Take a step back from your project and analyze your construction. Really think about what could help fortify your bridge. Then find one portion of the bridge, or one aspect of the design, that you think you could change to make the bridge stronger. Examine this portion of the bridge or design aspect from a variety of angles in order to see it from different perspectives. Then generate a list of creative ideas about how to strengthen your bridge in the next lesson.
1. **Answer the questions:**
   - What are some problems that you have experienced and tried to solve in the past?
   - How did you feel as you faced and tried to solve these problems?

2. **Complete the activity**
   - Using whatever materials you have on hand (newspaper, tape, paper clips, string, etc.), build the strongest bridge that you can in 15 minutes. As you choose which materials to use and how to use them, reflect on your choices, what you predict will happen as a result, and the actual outcome.
Reflecting On and Evaluating Choices

Lesson Overview

Students will complete the construction of their bridges while continuing to think critically about choices and their impact.

Learning Objectives

Students can:
- Reflect on problems they are already solving
- Use critical thinking to evaluate possible choices and their consequences
- Identify emotions related to problem solving

Materials

- Paper or journals
- Previously constructed bridges
- Popsicle sticks
- Pipe cleaners
- Aluminum foil
- Cardstock/cardboard

Time

45-60 Minute Lesson
Lesson 3: Reflecting On and Evaluating Choices

Kick-Off

Lesson Intro

Tell students that they will be finishing the construction of their bridges from the last lesson and putting their final products to the test. They will continue to add to their creations while having to critically think through materials choices.

Conversation

Share the following Clarissa Chun quote with students and then engage in whole group conversation using the prompts below:

“I knew I could have done it differently... How can I be better? How can I do things differently? What am I missing?”

- Clarissa Chun, reflecting on not taking home a wrestling medal at the 2008 Olympics, and preparing to try again in 2012.

• How does this quote show Clarissa problem solving?
• What are some other questions that might be helpful to ask when you have a problem to solve?
• What questions do you want your group to ask today as you continue building your bridge?
Main Activity

Building Bridges

Setting the Stage

Explain that when people face problems, the process of addressing and trying to solve those problems involves making choices. Today students will practice thinking critically about choices in the context of solving the problem of how to build a bridge.

Activity: Building Bridges (Part 2)

Each group will get access again to their partially constructed bridge structures. Students will follow the same format as the previous lesson and will be presented with new materials choices to think about critically. Between each of the choices that they have to make, they’ll have 10 minutes to plan and build.

Procedure:

1. Instruct students to get back into their teams of four.
2. Give them access to their partially built structures.
3. Remind students that they are trying to build the tallest, sturdiest bridge that they can using the materials they have.
4. Note that they will continue to pause every 10 minutes and be presented with a choice of what they want their next material to be.
5. Once students have made their choice, the materials they did not choose will no longer be available to them for the duration of the activity.
6. Allow another 10 minutes for students to further fortify their bridge with each of their new materials.

Material Choice B

Base Material: Partially completed bridge built last lesson

Choice 1: Pipe cleaners or popsicle sticks
Choice 2: Aluminum foil or cardstock/cardboard

Critical Thinking Questions:

• What do you predict will happen with each possible material?
• Which material will you choose, and why?
Wrap-Up

The final piece of this project is seeing how much weight each team’s bridge can withstand. This will be the moment of truth that tests the foundation, construction, and choice of materials. First, measure each of the bridges to determine who has the highest bridge. Then, go through the student teams one at a time and have them place the designated heavy objects on top, one by one. Use the same objects for all of the bridges to get an accurate picture of which teams constructed the stronger bridges.

As students complete their bridges, tell them that critical thinking is an important skill to use when addressing problems. As they evaluate choices they can potentially make, the more they understand the possible consequences associated with those choices, the better equipped they will be to find solutions that work for them. Through each problem they encounter, they have the opportunity to practice their problem-solving skills.

Closing Reflection

Use the following prompts as a final opportunity for students to reflect on their learning.

- What was it like to work through the bridge-building problem with your team? What feelings did you have throughout the process?
- If you could go back and choose a different material, would you? Why or why not?
- What lessons about problem solving can you take with you to use in the future?
Extended Activity

Look back at your bridge structure. What limitations does it have? Where would you say your team failed in the process? Now that you know the limitations of your bridge, try to build it back up even stronger and taller. The twist here is that now you can only use the materials you did not originally choose. For example, if you chose the pipe cleaners over the popsicle sticks, you may now only add on with popsicle sticks (and any of the other materials that you did not choose the first time around).

Once your new bridge is constructed, re-test it with the same heavy objects that were used to initially evaluate your project and answer the following questions:

- Did the alternate materials work better or worse than your original decisions?
- How are the new materials helping you solve problems that the original materials did not solve?
- If you could go back in time, which choices would you make differently?
1. **Complete the activity:**
   - When you have completed your bridge, test how well it holds some common items that increase in weight, such as a pen, a large eraser, a stapler, etc. If you are completing this activity in a group setting, you can work with others, and/or compare the strength of your bridges.

2. **Answer the questions:**
   a. If you could build your bridge again, what would you do differently?
   b. What problem-solving lessons can you take with you to use in the future?
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