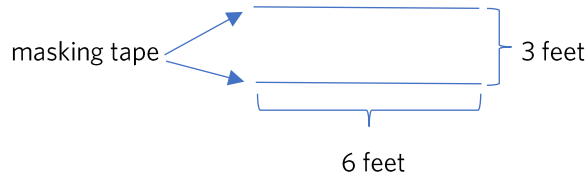


THE BRIDGE CROSSING CONUNDRUM

This classic team building activity fosters critical thinking as students develop trust and work together to solve a logic puzzle in a short amount of time. Numeracy is important for all individuals to develop logical thinking and critical problem-solving skills, and necessary for proficiency in the real-world. Making sense of numbers, time, patterns, and shapes are vital employability and life skills.

PREPARATION

- Find a space large enough for students to complete the activity with few barriers.
- Determine how you will put students in groups of 4. Groups of 2-4 can be substituted as needed.
- Print one copy of “The Bridge Crossing Conundrum” handout for each group.
- Have students either imagine the six elements (4 people, 1 torch, 1 narrow bridge), or create the following setting for each group of 4 students.
- On the floor create an imaginary narrow bridge by placing two parallel lines of masking tape on the floor, approximately 6 feet long and 3 feet apart.
 - **Pro-tip:** Adding this experiential element students are more directly involved in the learning process; they are better able to connect theories and knowledge learned in the classroom to real-world situations.



ACTIVITY TIME	30 Minutes
FOUNDATIONAL PRINCIPLES	
Integrity	Win-Win Focus
Responsibility	Sound Judgment
KEY CONCEPTS	
<ul style="list-style-type: none"> • Critical Thinking • Creativity • Communication • Leadership • Respect • Trial and Error (Failure) • Contribution Motivation • Comparative Advantage 	
MATERIALS NEEDED	
<ul style="list-style-type: none"> • The Bridge Crossing Conundrum group handout - 1 per group • Props - 1 torch (flashlight or lantern) and narrow bridge, created with masking tape - optional • Empowered Currency - Printed or Virtual 	

INTRODUCTION

- Four people come to a river in the night, facing constraints to crossing quickly and safely. There is a narrow bridge, but it can only hold two people at a time. They have one torch and, because it's night, the torch must be used when safely crossing the bridge. Person A can cross the bridge in 1 minute, B in 2 minutes, C in 5 minutes, and D in 8 minutes. When two people cross the bridge together, they must move at the slower person's pace. Can everyone get across the bridge in 15 minutes or less, quickly, and safely? The torch only lasts 15 minutes before burning out.

ACTIVITY STEPS

1. Tell students they are going to participate in solving a classic bridge-crossing puzzle which usually has one answer. To accomplish the task, collaboration, creativity, and critical thinking are required.
2. Give each group one torch (or lantern or flashlight).
3. Rule of Law states:
 - a. Explain that they (four people) are faced with a significant challenge. They need to cross the narrow bridge at night, but it can only hold two people at a time. They only have one torch between all of them, and with the darkness, the torch must be used to cross the bridge safely. The torch only lasts 15 minutes before burning out.
 - b. Each of the four people (A, B, C and D) travel at different speeds: 1, 2, 5, and 8 minutes respectively. When two people travel together, they must move at the slower person's pace. Can all four people cross the river in 15 minutes or less?
4. Your group's challenge is to identify a solution to the problem that gets all four people safely across the narrow bridge in 15 minutes or less.

- Groups will have 8 minutes to discuss their ideas, conduct experiments, and solve the conundrum. Instruct groups to record all their ideas and solutions on their groups "The Bridge Crossing Conundrum" handout.
- Optionally, at the end of the 8 minutes if the group does not complete the task, you may give them more time in 2-minute increments.
- When time is up, have each group share their best solution. Use the debrief questions below to drive class conversation regarding their solution.

Solution:

The two fastest people cross together on the 1st and 5th trips, the two slowest people cross together on the 3rd trip, and EITHER of the fastest people returns on the 2nd trip, and the other fastest person returns on the 4th trip. This solution gives a total of 5 crossings

Elapsed Time	Starting Side	Action	Ending Side
0 minutes	A B C D		
2 minutes	C D	A and B cross forward, taking 2 minutes	A B
3 minutes	A C D	A returns, taking 1 minute	B
11 minutes	A	C and D cross forward, taking 8 minutes	B C D
13 minutes	A B	B returns, taking 2 minutes	C D
15 minutes		A and B cross forward, taking 2 minutes	A B C D

ACTIVITY DEBRIEF

PRINCIPLES + MARKETS

- Did someone emerge as a leader? If so, how did this work for the group? If not, how would things have gone for the group if one person did all the directing and the others followed?
- Did your group use comparative advantage to solve the problem? Explain.
 - If not, how could your group have used the concept of comparative advantage to solve the problem?
- How did your group capture all the new ideas shared by individuals? Were the Foundational Principles of Integrity and Sound Judgment demonstrated? Explain
- Was respect present during the activity? Does respect create real value in society?
- How was cooperation (Win-Win Focus) demonstrated by your group? Does cooperation create real value in society? Explain.
- Contribution motivation is acting on the belief that your success is tied to the success of others. Does an individual have to be the leader to demonstrate contribution motivation? Explain.
 - If we are not the leader, how can we demonstrate contribution motivation?

MINDSET

- As your group worked through the ideas, did you experience failure along the way? How did your group respond to this failure? Did you use trial and error (failure) to solve the problem?
 - Did your group demonstrate perseverance or grit during the activity?
 - Did your group become frustrated at any time during the activity? How did you respond? How could you have responded?
- How did it feel when others did or did not listen to your ideas?
 - What did you learn about how your group communicates with one another?
 - What did you learn about how you make decisions
- How will this activity help you move forward when you are faced with a challenging task?



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