

AMPUTATION

Narrative Simulation

Material Needed: “Jim in a Jam” problem booklet and answer sheets

Time Frame: 15 minutes for written completion
15 minutes for discussion

Use the narrative simulation “Jim in a Jam” with the students to develop a view of a real life incident in which amputation occurs. The simulation will allow students to develop an understanding of the factors leading to an incident in which injury occurs. Students may work individually or as small groups. After the activity is completed, allow for discussion of the information with student interaction about their findings.

Sample questions to use with the “Jim in a Jam” narrative:

- How did Jim get injured? What are other causes of amputation?
Jim was entangled in a PTO shaft.
Amputation can also be caused by entrapment, crushing, other machinery, and wound infection after injury.
- What are some key safety rules that Jim and the other workers should have followed to prevent his limb loss?
Always turn off machinery before working on it.
Disable equipment so others cannot start it.
Never step over a rotating PTO shaft.
Always keep shields and guards in place.
- How will Jim’s limb loss affect his life?
His position on the wrestling team will be lost.
He will face medical expenses, which may limit his funds for college and veterinary school.
He will have to undergo extensive therapy and learn how to perform daily tasks all over again.
He will have a difficult time adjusting emotionally.

Focus on the physical, psychological, financial, and farm productivity areas of change in the life of the injured person.

Problem Booklet

Flesch-Kincaide Grade Level	5.5
Flesch Reading Ease	77.2

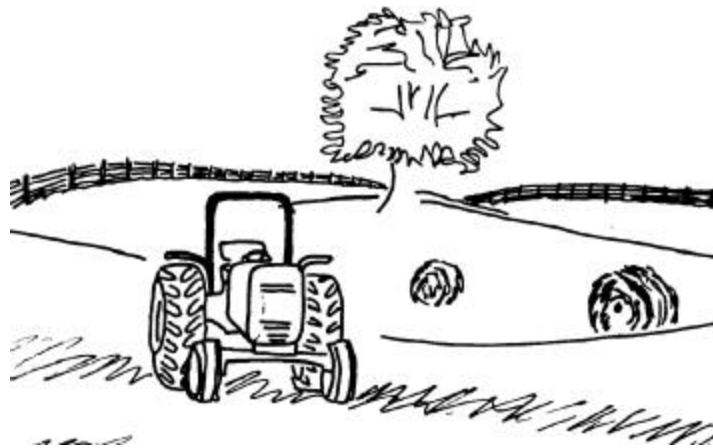
Answer Key

Flesch-Kincaide Grade Level	6.0
Flesch Reading Ease	72.7

Answer Sheet, Questionnaire/Eval.

Flesch-Kincaide Grade Level	6.8
Flesch Reading Ease	69.1

Jim In A Jam



Purpose

This simulation exercise is a story about a teenager who works on a farm. The exercise is based on discussions with parents and their children across Kentucky, Iowa, and Mississippi. The exercise also includes information from University of Kentucky researchers about economics, productivity, health, and injury. The purpose of the exercise is to tell the story of Jim in a way that lets you experience some of the decisions the characters face as they experience and then cope with a serious farm injury. We hope the exercise is meaningful for you and will help you develop safe farm-work practices.

Credits

This simulation exercise was initially developed in 1999 by Pamela Kidd, Deborah Reed, Henry Cole, Daniel Rosnik and Tim Struttman at the Southeast Center for Agricultural Health and Injury Prevention, the Kentucky Injury Prevention and Research Center, and the University of Kentucky College of Nursing under the United States Department of Health & Human Services/United States Public Health Service/Centers for Disease Control & Prevention/ National Institute for Occupational Safety and Health (NIOSH) Grant #1 RO1 CCR414307 to the Southeast Center for Agricultural Health and Injury Prevention, Deborah Reed, Principal Investigator. The views and conclusions contained in the document are those of the authors and do not necessarily represent the official policies or recommendations of NIOSH, the University of Kentucky or any department or agency of the government of the United States or the Commonwealth of Kentucky.

Instructions

You should have three items to complete this simulation: A problem book, an answer sheet, and a pencil. Read the background information and problem situation described on the following pages. Next, answer each of the questions one at a time. Do not mark your answers in the problem book. When you have selected an answer to a question, look up its number on the answer sheet, and circle T if the answer is true or F if it is false. Some questions may have more than one true answer. Don't jump ahead. As you work the exercise look at the background information about "Jim in a Jam" (page 3) as often as you need to. It's okay to look back to earlier questions and answers, but please don't change your answers.

When you have finished, you will learn how to score your answers. You will also receive a master answer sheet that will explain why each answer is true or false.

Background Information

Jim

Jim is 15 years old. He is state champion in the 108-115 pound weight class division of the wrestling team. He grew up in Central City and is a FFA member at Central City High.

Although he's never lived on a farm, for the last three summers he has worked on a farm. Jim likes working on the farm because he loves the outdoors, and the money he earns will help him pay for college. He plans to be a veterinarian.

Jill and Her Dad

Jill Ogden is Jim's vo-ag classmate, and she lives on a 450-acre hay, grain, and cattle farm. Jill lives with her mom, dad, and 10-year old sister. Jill works with her dad on the farm but they occasionally need an extra hand at harvest times. Usually Mr. Ogden hires teenagers Jill knows from school.

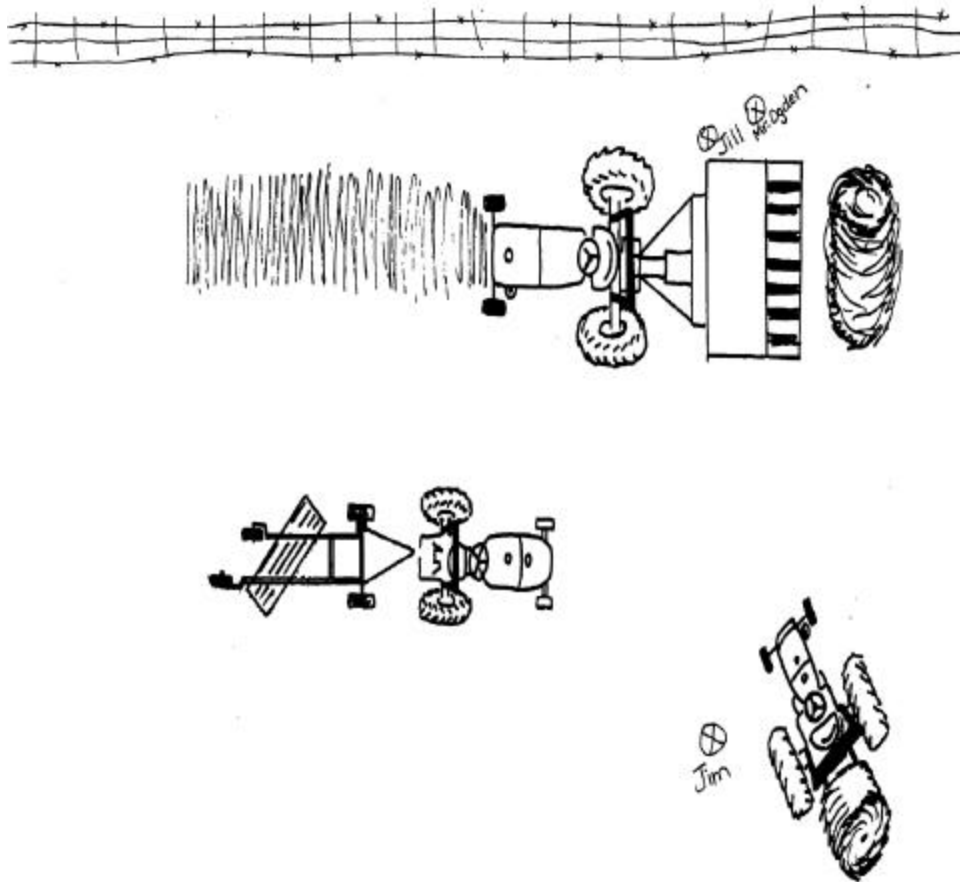
It's fall haying season. The Ogdens have 20 acres of hay cut and on the ground. Mr. Ogden asked Jill if she could find someone to help with the haying tomorrow (Saturday) because the weather forecast is calling for rain by Saturday evening. Jill calls Jim to see if he can help. He agrees.

Problem

It is Saturday morning. Jim shows up for work dressed in sneakers, baggy jeans, and an oversized T-shirt. Mr. Ogden assigns the tasks. Jill will rake the hay, Mr. Ogden will run the baler, and Jim will transport the round bales to a storage shed a quarter-mile away. The work is proceeding smoothly, but more slowly than expected. Lunchtime comes and goes without a break. The sky darkens.

Please turn the page and continue.

Jim returns to the field from the storage shed to get another round bale. Jill and her dad are stopped in the middle of the field by the fence and are off their tractors. They are bending over the right side of the baler pointing at something in the baler. The tractor is idling, and the baler is running slowly. Jim pulls up on the left-hand side of Mr. Ogden's tractor. He decides to go see what's wrong. He puts his tractor in neutral, sets the brake, and gets off. The baler PTO shaft and Mr. Ogden's tractor are between him and Jill and her dad.



Please turn the page and continue.

Question A

How should Jim approach Jill and her dad?

1. Walk around the tractor and the baler and get a closer look.
2. Carefully step over the slowly rotating PTO shaft.
3. Lean over the PTO shaft and pull the PTO lever on the tractor to stop the baler.

[After you have marked your answer sheet please continue with the story.]

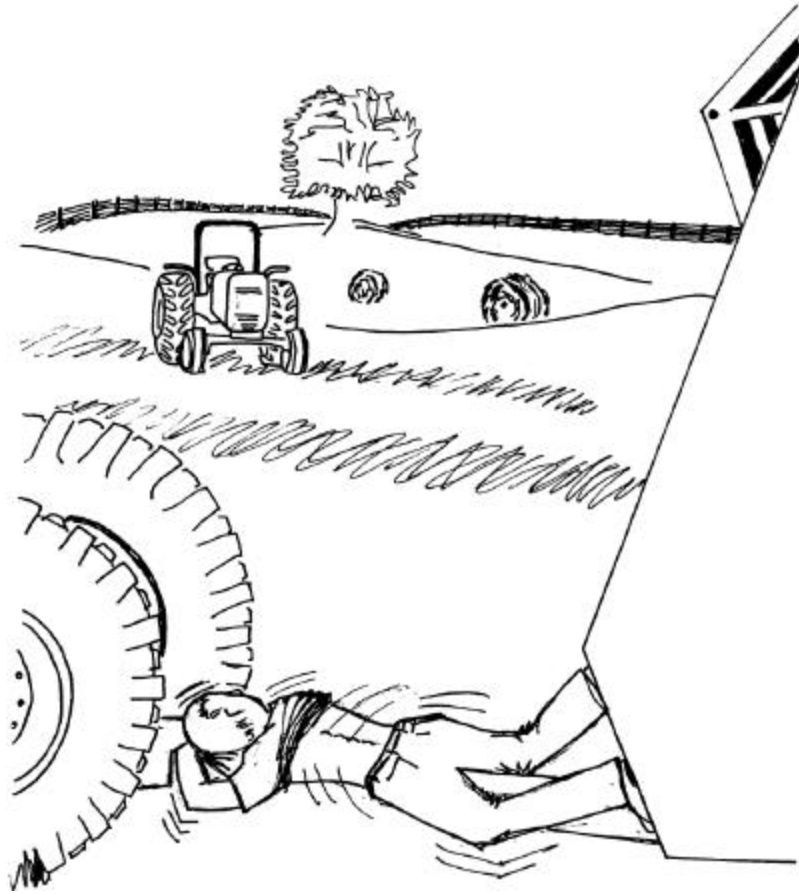
To save time, Jim decides to carefully step over the PTO shaft. He sees the shaft is turning slowly (2-3 rotations per second). He also notices that part of the PTO shield on the shaft is missing. But he decides to step over the shaft anyway.

Question B

What could happen to Jim as he steps over the rotating PTO shaft?

4. His shirt could get caught in the shaft.
5. He could step over the shaft without a problem.
6. His pants could get caught in the rotating shaft.
7. He could trip and fall into the PTO shaft.

As Jim steps over the shaft, his T-shirt gets caught on a piece of metal sticking out from the PTO shaft where the guard is damaged. Jim feels a tug and panics as he realizes his shirt is winding around his arm and pulling him toward the rotating PTO shaft.



Question C

What can Jim do now?

8. Yell for help.
9. Jerk free.
10. Take off his shirt.
11. Turn off the PTO.

[After you have marked your answer sheet please continue with the story.]

In an instant, Jim's shirt is yanked off his shoulders. In less than a second, his arm and shirt become caught in the rotating PTO shaft and, as if in a bad dream, he feels the crunching of bones as his arm wraps around the shaft. In the five seconds it takes Jill's dad to run to the tractor and shut off the PTO, Jim is flipped around and around 15 times. Jill runs to the house to call the rescue squad. The rescue squad arrives, frees Jim, and then rushes him to the hospital. The surgeon operates and tries to save Jim's arm. After intensive therapy for two weeks in the hospital, Jim's arm is amputated just above the elbow. Jim realizes that his life is changed forever. His injury will also affect the lives of others who know him.

Question D

What effects could Jim's injury have on him and his family?

12. Jim's family may have financial problems because of the cost of Jim's treatment and rehabilitation.
13. Jim will not be able to become a veterinarian.
14. Jill's dad may face criminal charges because Jim was injured while working on the Ogden farm.
15. Jim will be thought of as "different."
16. Jim will have to retrain to be a competitive wrestler.

End of the story

Please mark your answers on the answer sheet and complete the questionnaire that is attached to the answer sheet. Ask the instructor for a copy of the answer key. Discuss any ideas and differences of opinion. Give your completed answer

sheet and questionnaire to the instructor. Thanks! Your answers may be used to improve this exercise.

Jim In A Jam Answer Sheet

As you read the problem booklet, circle your answer to each question on this answer sheet. Please don't write in the problem booklet. That way the problem booklets can be reused.

Circle a T or F in front of each answer number that appears in the problem booklet.

Question A	Question B	Question C	Question D
T F 1.	T F 4.	T F 8.	T F 12.
T F 2.	T F 5.	T F 9.	T F 13.
T F 3.	T F 6.	T F 10.	T F 14.
	T F 7.	T F 11.	T F 15.
			T F 16.

Please complete the questionnaire on the bottom and back of this page. Thanks!

Questionnaire

1) Name of exercise: Jim In A Jam

2) Your age? _____ 3) Your sex? ____ M ____ F

4) Do you work around farm jobs where machines with rotating parts (like PTOs, combines, mowing machines, or augers) are used? ____ Yes ____ No

5) If "Yes" to item 4, about how many days a month do you work around jobs that use machines with rotating parts? _____ days a month

6) a. Do you work on a farm? ____ Yes ____ No b. Size of farm (acres) _____

7) Please note the condition of the shields on the machines with rotating parts that you are around.. (check only one item)

Good (all have working shields, no cracks or breaks)
 Fair (have shields, but some may be cracked or broken)
 Poor (some equipment may be missing shields)

8) Have you ever had an injury because of a machine with a rotating part? ____ Yes ____ No

9) Have you ever had a "close call" because of a machine with a rotating part? ____ Yes ____ No

10) Out of every ten times you work around a machine with rotating parts, how many times do you step over the rotating part?

Never 0 1 2 3 4 5 6 7 8 9 10 Always

Now think about the story you just finished. Circle the number that tells how much you agree or disagree with the following statements.

Statement	Strongly Disagree			Strongly Agree	
1) I enjoyed working through the story.	1	2	3	4	5
2) The activities described in this story are realistic.	1	2	3	4	5
3) The written directions were easy to follow.	1	2	3	4	5
4) The story was easy to read.	1	2	3	4	5
5) The story took too long to complete.	1	2	3	4	5
6) The story taught me new information about the relationship between injury and economics.	1	2	3	4	5
7) Before working through this story, I had thought about the lifestyle changes from an injury caused from stepping over a PTO shaft.	1	2	3	4	5
8) Working through this story helped to convince me not to take shortcuts while working.	1	2	3	4	5
9) Working through this story has helped me to identify injury risks when using a PTO.	1	2	3	4	5
10) Working through this story reminded me of ways I can prevent PTO injuries to myself and others.	1	2	3	4	5
11) Until I read this story, I only thought about dying from an injury, not having a permanent disability.	1	2	3	4	5
12) Working through the story will help me make better judgments about safety when doing farm work.	1	2	3	4	5
13) What I learned in the story will help me to prevent injuries to myself and others.	1	2	3	4	5
14) The questions and answers were easy to understand.	1	2	3	4	5
15) The story has encouraged me to discuss with my family ways to make a farm safer.	1	2	3	4	5
16) Working through the story has helped me to understand the impact an injury can have on my life.	1	2	3	4	5
17) Working through the story has helped me to understand how an injury can affect farm and family finances.	1	2	3	4	5
18) The pictures were easy to understand.	1	2	3	4	5

Jim In A Jam ¹

Answer Key

Instructions

Compare your answers to the questions in the story to the answers and ideas listed in this key. Discuss the answers and any differences of opinions with your friends and the instructor.

Your ideas are important and can help to improve this exercise. Therefore, please don't mark additional answers or change the answers you marked on your answer sheet.

Question A

- T 1. By walking around the tractor and baler, Jim has followed safety procedures.
- F 2. Jim is endangering himself by stepping over a rotating PTO shaft and also endangering others whom might have to rescue him. No PTO shaft, whether in perfect condition or not, should be crossed while it is rotating or if the tractor motor is on.
- F 3. It is never a good idea to lean or step over a moving PTO shaft. Although unlikely in this situation, another person could start the PTO shaft.

Question B

- T 4. Loose or dangling objects, such as clothing, shoe strings, drawstrings, necklaces, and long hair are the leading causes of entanglement in farm machinery. A T-shirt can instantly wind into a strong rope and pull the person into the machine. Any clothing can become entangled and can pull a person into the machine.
- T 5. Jim has probably done this before or seen others do this. Many people who have thought they could step over a rotating PTO shaft have been severely hurt or killed.
- T 6. In less than a second, Jim can get caught in the shaft. Loose clothing is a leading cause of entanglement. Jim is wearing baggy jeans that are more likely to be caught in machinery than tighter fitting clothing.
- T 7. Hay stubble, vines, rocks, and holes can trip Jim. At best he could be scratched up and bruised. At worst, he could be killed.

Question C

- T 8. It's too late for Jill or Mr. Ogden to get to the tractor and shut it off before Jim is entangled. But if they hear him over the noise of the equipment they may be able to shut it off before he is killed.
- F 9. The PTO is too powerful for Jim to free himself once his T-shirt is wound around the shaft.

¹ This answer key is to be used with the "Jim In A Jam" exercise problem booklet.

- F 10. Once his shirt and arm are caught and wound around the shaft, Jim can't pull free.
- F 11. PTO controls are located on the tractor away from the rotating shaft and out of the reach of someone entangled in the shaft.

Question D

- T 12. The average hospital charge for an injury like Jim's ranges from \$500 to \$1,000 per day. Jim's injury kept him in the hospital for 21 days (\$21,000). And the costs for his doctors could easily add another \$15,000 – \$20,000.
- F 13. With extra effort and expense Jim will likely have to use assistive devices to help him complete some of the tasks he would have been able to do if he still had both arms.
- T 14. Although Jim was working on a family farm, he was not a member of the family. Family members are exempt from the Fair Labor Standards Act. Until age 16 Jim is too young to be operating hazardous equipment or a tractor over 20 PTO horsepower without a certificate showing he had specialized training. Not only could Jim's parents sue the Ogdens for medical expenses, but the Ogdens could also face criminal charges.
- T 15. In time, Jim may not see himself as different, but for the rest of his life he will meet other people who will see him as different.
- T 16. Jim will have to learn new skills to continue in the sport he loves. This will require time, patience, and determination. He will have to prove these skills to other people who think his disability means he can never wrestle again.

Finding Your Score

Compare your answers to those on the answer key. Count the number you got correct.

If you got _____, you are:

16	Expert
12-15	Pretty good
8-11	Trying
0-7	In big trouble