# ZOMBIES, A BRIDGE AND A LANTERN

BASED ON THE TED-ED VIDEO "CAN YOU SOLVE THE BRIDGE RIDDLE?"

# **PREPARATION:**

For each student:

- Print pages 3 and 4 back-to-back (double-sided printing).
- Print pages 5 and 6 separately or back-to-back.

For the teacher:

- Print pages 2, 7 and 8.

### ZOMBIES, A BRIDGE AND A LANTERN

- Just play and watch the video through the problem—to 2:00. (Do **not** play the solution yet!)
- 2. Give each student a copy of pages 3 and 4 of this PDF (transcript A and the word bank with images). Preview the missing vocabulary.

3. Play the video again. Recommend that they just read while listening the first time. Then they should try filling in the blanks without the video. Finally, play the video again while they complete the cloze exercise.

- 4. Answer any comprehension questions the students have.
- 5. View the video again, knowing what is being said.
- 6. Give the students a **limited** time (2 minutes?) to think about the problem. They can also take additional time to discuss it **in English**.
- Hand out the hint Q & A sheet. Give them more time to think and discuss <u>in English</u>.
- 8. Hand out the B transcript. Play the video again. Students correct the <u>fourteen changed words</u>.
- 9. Make sure everyone now understands the solution.

**note**: If at any point multiple students think they have the solution, you might give each 20 seconds in turn to explain the solution. Each one can pick up where the last speaker left off or start over, as they wish.

10. Watch the video one last time.

# THE BRIDGE AND THE TORCH – TRANSCRIPT A

This is the transcript for the problem set-up.

Faking that internship in a remote mountain lab might not have been the b	est
dea. Pulling that lever with the skull symbol just to see what it did probably	у
wasn't so smart either. But now is not the time for regrets because you nee	d to
get away from these mutantfast.	
Nith you are the, the, and the old	
. You've gotten a head start, but there's only one way to	
safety: across an old rope spanning a mammoth	
You can dash across in a minute, while the	
akes minutes. The is a bit slower and needs minu	ites.
And the takes a whole minutes, holding on to the rop	e
every step of the way.	
By the calculations, the will catch up to y	you
n just over minutes, so you only have that much time to get everyone	
across and cut the rope. Unfortunately, the can only hold	
people at a time. To make matters worse, it's so dark out that you can bare	ly
see, and the old you grabbed on your way only	
a tiny area.	
Can you figure out a way to have everyone in time?	
Remember: No more than people can cross the toget	ther.
Anyone crossing must either hold the or stay right next to	) it.
And any of you can safely wait in the dark, on either side of the	
Most importantly, everyone must be safely across before	the
arrive. Otherwise, the first could step on	the
while people are still on it.	
Finally, there are no tricks to use here. You can't swing across, use the	
as a raft, or befriend the	

# WORD LIST

• The base word forms are given. You may need to change the form of some words. For example, *dog* might be in the word bank, but you might need *dogs*; for *break* you might need *breaks*, *broke*, *broken* or *breaking*.

- Use a dictionary if you need to.
- The words for the green blanks are not in the word list. They are numbers.



#### Think

There are some hints in these questions that might help you.

1. Why do you have to get everyone to the other side before the zombies start to cross?

- 2. How much time do you have to get everyone in your group across the bridge?
- $\diamond$  4 minutes  $\diamond$  7 minutes  $\diamond$  14 minutes  $\diamond$  17 minutes  $\diamond$

3. How many minutes are needed for each of the four people in your group to cross? (Circle four answers.)

 $\diamond 1 \diamond 2 \diamond 3 \diamond 4 \diamond 5 \diamond 6 \diamond 7 \diamond 8 \diamond 9 \diamond 10 \diamond 11 \diamond 12 \diamond 13 \diamond 14 \diamond$ 

4. How many people can the bridge hold at a time? A 4  $\Rightarrow$  B 3  $\Rightarrow$  C 2  $\Rightarrow$  D 1

5. Why do two people crossing the bridge have to stay together?

- A It's dark and there's only one lantern.
- B Everyone is too scared to be left alone.
- C The footing is unstable and you have to hold on to each other.
- D You have to be ready to defend yourselves if the zombies catch up.



7. How can you minimize the time used up by the slowest people?

8. At least one of the two fastest people has to go in the first crossing. Why?

#### THE BRIDGE AND THE TORCH – TRANSCRIPT B

This is the transcript for the problem solution. 14 words have been changed!

At first, it might seem like no matter what you do, you're just a minute or two short of time. But there is a way.

The key is to minimize the time wasted by the two fastest people by having them cross together. And because you'll need to make a couple of dark trips without the lantern, you'll want to have the youngest people available to do so.

So, you and the lab assistant quickly run across without the lantern, though you have to slow down a bit to match her pace. After three minutes, both of you are across. And you, as the quickest, run back without the lantern.

Only four minutes have passed. So far, so good.

Now comes the hard part: The professor and the janitor take the lantern and cross together. This takes them five minutes, since the janitor has to slow down for the old professor, who keeps muttering that he probably shouldn't have given the zombies night vision.

By the time they're across, there are only five minutes left—and they're still stuck on the wrong side of the bridge.

But remember: The lab assistant has been waiting on the other side. And she's the second-slowest of the group.

So she grabs the lantern from the professor and runs back across to him.

Now, with only three minutes left, the two of you make the final crossing.

As you step on the far side of the gorge, you cut the rope and collapse the bridge behind you—just in the nick of time.

Maybe next summer, you'll just stick to the library.

#### THE BRIDGE AND THE TORCH – <u>TEACHER'S</u> TRANSCRIPT A

This is the <u>teacher's</u> transcript for the problem set-up.

In YouTube, search for "TED-Ed bridge riddle".

Taking that internship in a remote mountain lab might not have been the best idea. Pulling that lever with the skull symbol just to see what it did probably wasn't so smart either. But now is not the time for regrets because you need to get away from these mutant **zombies**—fast. With you are the **janitor**, the **lab assistant**, and the old **professor**. You've gotten a head start, but there's only one way to safety: across an old rope **bridge** spanning a mammoth **gorge**.

You can dash across in a minute, while the **lab assistant** takes **two** minutes. The **janitor** is a bit slower and needs **five** minutes. And the **professor** takes a whole **ten** minutes, holding onto the rope every step of the way.

By the **professor's** calculations, the **zombies** will catch up to you in just over **seventeen** minutes, so you only have that much time to get everyone across and cut the rope. Unfortunately, the **bridge** can only hold **two** people at a time. To make matters worse, it's so dark out that you can barely see, and the old **lantern** you grabbed on your way only **illuminates** a tiny area.

Can you figure out a way to have everyone **escape** in time? Remember: No more than **two** people can cross the **bridge** together. Anyone crossing must either hold the **lantern** or stay right next to it. And any of you can safely wait in the dark, on either side of the **gorge**. Most importantly, everyone must be safely across before the **zombies** arrive. Otherwise, the first **zombie** could step on the **bridge** while people are still on it.

Finally, there are no tricks to use here. You can't swing across, use the **bridge** as a raft, or befriend the **zombies**.

#### THE BRIDGE AND THE TORCH - TEACHER'S TRANSCRIPT B

Teacher's transcript for the problem solution. 14 words have been changed!

At first, it might seem like no matter what you do, you're just a minute or two short of time. But there is a way.

The key is to minimize the time wasted by the two **slowest** people by having them cross together. And because you'll need to make a couple of **return** trips **with** the lantern, you'll want to have the **fastest** people available to do so.

So, you and the lab assistant quickly run across **with** the lantern, though you have to slow down a bit to match her pace. After **two** minutes, both of you are across. And you, as the quickest, run back **with** the lantern.

Only **three** minutes have passed. So far, so good.

Now comes the hard part: The professor and the janitor take the lantern and cross together. This takes them **ten** minutes, since the janitor has to slow down for the old professor, who keeps muttering that he probably shouldn't have given the zombies night vision.

By the time they're across, there are only **four** minutes left—and **you're** still stuck on the wrong side of the bridge.

But remember: The lab assistant has been waiting on the other side. And she's the second-**fastest** of the group.

So she grabs the lantern from the professor and runs back across to **you**. Now, with only **two** minutes left, the two of you make the final crossing. As you step on the far side of the gorge, you cut the rope and collapse the bridge behind you—just in the nick of time.

Maybe next summer, you'll just stick to the library.