

# Logical Trick-or-Treating

Four children (Olivia, Doug, Carrie, and Jackson) went trick-or-treating on Halloween. They each dressed in a different costume and went out at different times. There was a ghost, a princess, a vampire, and a clown. From the clues, determine each child's costume and when he or she went trick-or-treating.



1. Neither of the boys dressed as a princess.
2. Carrie went out before Olivia but right after Doug.
3. The child who dressed as a princess went 3 hours after the one who dressed as a clown.
4. The child who dresses as a vampire went at 5 p.m.
5. Jackson did not dress as anything scary.
6. Doug was in bed at 7 p.m.

**Tip:** Put check marks ( $\checkmark$ ) and minus signs ( $-$ ) in the boxes. You should end up with two  $\checkmark$ s under each name – one next to a costume and one next to the time.

	Olivia	Doug	Carrie	Jackson
Ghost				
Princess				
Vampire				
Clown				
4 p.m.				
5 p.m.				
6 p.m.				
7 p.m.				

## Logical Trick-or-Treating (Solution)

We know that neither of the boys was the princess. We also know that Jackson's costume was not scary. Therefore, Jackson must have been the clown. Also, we know that the child who was the princess went out 3 hours after the clown. Therefore, Jackson must have gone out at 4 p.m., and the princess must have gone out at 7 p.m.

Carrie went out before Olivia. Therefore, Carrie could not have been the last one to go out at 7 p.m. She could not have been the princess. Olivia must have been the princess who went out at 7 p.m.

There are only two times left – 5 p.m. and 6 p.m. However, since Carrie went out after Doug, Doug must have gone out at 5 p.m. and Carrie at 6 p.m. Since the vampire went out at 5 p.m., Doug must have been the vampire. That leaves Carrie as the ghost.

	Olivia	Doug	Carrie	Jackson
Ghost			✓	
Princess	✓			
Vampire		✓		
Clown				✓
4 p.m.				✓
5 p.m.		✓		
6 p.m.			✓	
7 p.m.	✓			

- Olivia dressed as a princess and went at 7 p.m.
- Doug dressed as a vampire and went at 5 p.m.
- Carrie dressed as a ghost and went at 6 p.m.
- Jackson dressed as a clown and went at 4 p.m.