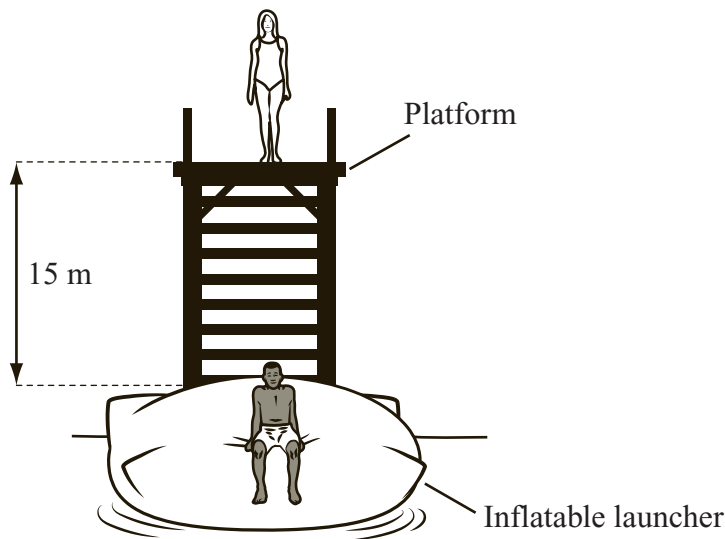


Inflatable launchers are large, air-filled bags that float on the surface of the water at lakes, water parks, and community pools. A launcher works by transferring energy from one person to another. A person sitting on a launcher is launched into the air when another person jumps onto the bag. The diagram shows a boy and a girl using an inflatable launcher at a lake.



The 75 kg girl is standing on a platform 15 m above the top of the launcher.

- Calculate the gravitational potential energy of the girl relative to the top of the launcher. Show your calculations and include units in your answer.

The girl steps off the platform and lands on the launcher.

- Describe how the girl's kinetic energy and gravitational potential energy change during the time interval that begins when she steps off the platform and ends just before she lands on the launcher.

The boy is launched several meters into the air but wants to be launched higher.

- Describe one change that could be made so that the boy would be launched higher. Explain your reasoning.