

DEMOS

From the fusion reaction we get helium and also a neutron. The neutron carries away most of the energy that is released. This is due to the conservation of momentum. You can demonstrate the conservation of momentum with two different sized balls.

You need: A large ball, such as a basketball, and a smaller ball. A soft, toy football works well for indoors as it doesn't go too far.

What to do: First drop the small ball to see how much it bounces. Then hold the balls stacked one on top of the other, the big ball at the bottom. Drop the balls together and see how far the small ball bounces.

What happens?

You will see that the smaller ball flies off very fast and the big hardly bounces - the small ball takes most of the energy.

When the balls bounce, momentum is transferred from each ball to the other, but the big ball has more momentum and so transfers more to the small ball. It gives it a kick. The small, light ball then has a much bigger velocity in order to conserve momentum ($p=mv$).