The Jupiter is a pressurised water rocket capable of reaching a height of 40m, designed by the multicultural team Kaatsheuvel 2. It consists of a two litre pressurised chamber, three stabilising fins and a semi-detachable nose cone balanced by four weights. The parachute system consists of an octagonal shaped sheet of plastic that is attached by eight strings that guarantees a slow decent rate and safe landing.

The Jupiter is fully constructed from recycled materials ensuring an environmentally friendly water rocket. The fins have been designed with a hollow centre to reduce total weight, along with duct tape to help prevent damage.

Kaatsheuvel 2 was divided into 3 groups, to design the parachute system, construct the rocket and to complete the presentation. This ensured an efficient use of time and skills.

Our first design was a circle with a small hole in the centre, however an octagon was much more practical to cut and measure the positions to attach the strings.

When testing the performance between the octagonal designs we found the one without the hole had a slightly better performance.

The initial nose cone design was to include a balloon, which compressed under the pressure of the acceleration. At the peak of flight the balloon would return to its original state forcing the cap off as the rocket fell. However after testing this method it was determined to not be reliable.

The second design includes weights which will help pull the nose cone off as the rocket starts its descent. This deployment system worked noticeably better during testing.

Our design was originally curved however we decided to have flat edges as it was easier to modify if needed. The final design was also much shorter to save weight.

Removing the inner section of the fins and covering with duct tape reduces weight while still providing a sufficiently sturdy structure. The duct tape is also used to reduce the skin friction encountered, allowing for a longer flight time.

The centre of mass for the rocket was determined to be 1/3 of the way from tip of the rocket, this will allow for very stable flight.