

Simple Water Rocket Tutorial

Duration:

Approx. one hour. Waiting for the glue to cure will increase the total duration.

Required:

- 1-Liter Soda bottle
- Tennis ball
- Glue, e.g. Uhu MS Polymer „Kleben Montieren Dichten“, PL-premium or any other glue which is suitable for PET
- Hacksaw
- Knife and scissors
- Cardboard or thin Balsa wood
- Pen (permanent)
- Ruler
- Paint and brush

1. Buy 1-Liter soda bottle and drink it up.



2. Remove the label. Maybe water and a sponge will help.

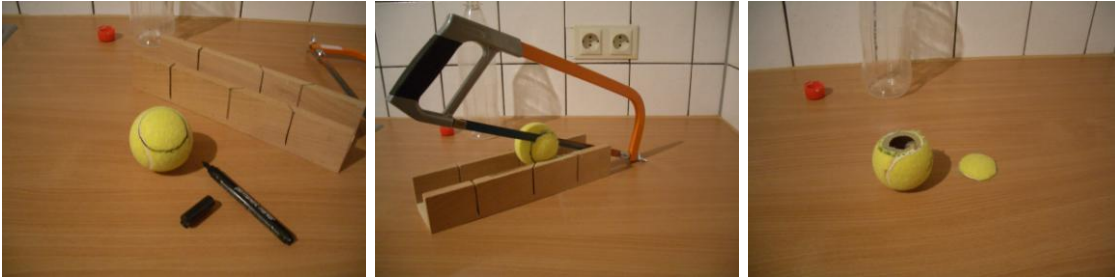


3. Sand the bottom with medium sand paper.



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4. Cut a piece of approx. 1 cm off the tennis ball. It works fine with a hacksaw. Don't use a knife. It can slide and do serious injury to your hands.



5. Put glue on the tennis ball and place it on the bottle.



6. Put some weight on the ball and wait for the glue to cure.



7. Remove the remaining glue with a knife.
8. Use Cardboard to make a fin template. An example can be found at the end of this tutorial. Size and shape can be altered according to your personal taste. Put the template on balsa wood and cut out three fins. Use sand paper to grind the edges. If no balsa wood is available cardboard will do.

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Positioning of the fins on the bottle:

9. Take a thin paper strip and wrap it around the bottle directly behind the thread. Mark the position where the strip begins to overlap.



10. Repeat the procedure approx. 5 cm away from the thread with a second paper strip.



11. Cut both strips at the mark you've made. Measure their length and divide it in three equal sections.



12. Wrap the paper strips around the bottle again. Copy the marks from the strips to the bottle. Don't forget to copy the end of the paper strip. The most difficult part: The marks from the first strip have to be in line with the ones of the second strip.

13. Connect the marks with a straight line.

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14. Your bottle should now look like this: Three straight lines with equal distance between each other.



Attaching the fins:

15. Slightly sand the three marked regions.
16. Put glue on the first fin and place it on the straight line. Turn the bottle until the fin is perfectly vertical. Wait for the glue to cure. Check the vertical position of the fin from time to time. Depending on the glue the fin might need some support until the glue has cured.



17. Repeat item 16 for the remaining fins. Take care of the distance to the thread. All three fins should have the same distance.
18. Remove the remaining glue with a knife.
19. Now the rocket is ready for paint coating. The whole bottle should be sanded slightly before doing so.

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PS.: It works with other bottles as well.



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Example:

