



Rocket Launchers

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For additional information about rocket launchers and other rocket-related activities, view and/or download the complete *Rockets Educator Guide* available on BioEd Online at <http://www.bioedonline.org/lessons-and-more/teacher-guides/rockets/>.

Reference

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http://www.123rf.com/photo_8779893_baikonur-kazakhstan--january-26-progress-cargo-spacecraft-is-being-elevated-on-the-launch-tower-at-s.html

Materials

Rocket launcher system components:

- Empty, clean 2-liter plastic soft drink bottle
- PVC rocket launcher
- Paper to serve as a rocket
- Eye protection, such as goggles
- The 2-liter bottle will be attached to a 50-cm length PVC pipe using duct tape.







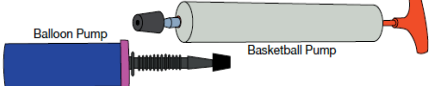


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Materials for Launcher

Shopping List

<p>1 - 1/2" (PVC) 5 feet long (to be cut into smaller pieces) Hardware store or plumbing supply</p> 	<p>2 - 1/2" 45° Elbow (PVC) Slip* Hardware store or plumbing supply</p> 	<p>2 - 1/2" Tee (PVC) Slip* Hardware store or plumbing supply</p> 
<p>2 - 1/2" Caps (PVC) Slip* Hardware store or plumbing supply</p> 	<p>Duct Tape Hardware store</p> 	<p>1 #1, 1-hole Rubber Stopper May be available from hardware store or from school science supply</p> 
<p>Balloon or Basketball Pump Toy or variety store (two different pumps shown with stoppers attached)</p> 		

* Slip means a joint connected with cement rather than threads.

Cut the 5-ft long PVC pipe into the following lengths.

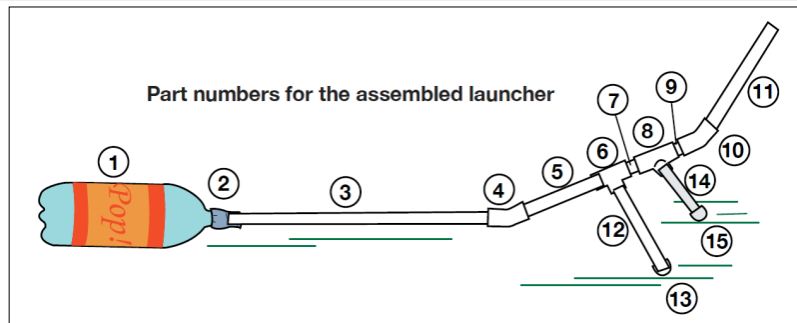
- (1) 19 1/2 in (50 cm)
- (2) 9 3/4 in (25 cm)
- (1) 7 3/4 in (20 cm)
- (1) 7 in (18 cm)
- (2) 1 1/2 in (4 cm)



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Assembling the Launcher



Part numbers for the assembled launcher		
1 – Soda bottle	6 – ½ in PVC tee	11 – 9 ½ in PVC pipe
2 – Duct tape	7 – 1 ½ in PVC pipe	12 – 7 in PVC pipe
3 – 50 cm PVC pipe	8 – ½ in PVC tee	13 – ½ in PVC cap
4 – 45° PCV elbow	9 – 1 ½ in PVC pipe	14 – 7 ¾ in PVC pipe
5 – 9 ½ in PVC pipe	10 – 45° PCV elbow	15 – ½ in PVC cap

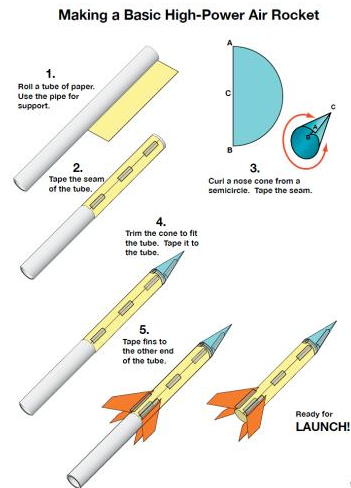


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Paper Rockets

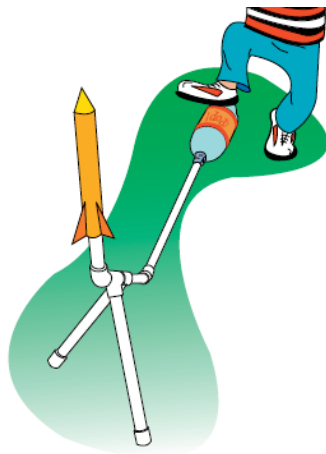
1. Use a piece of PVC as a form for rolling the body of a rocket.
2. One piece of paper will make one rocket.
3. Students decide if the rocket will be the length or width of the paper.
4. Tape 4 fins for the rocket.
5. Cut a nose cone from a semicircle.



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Ready to Launch



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Rocket Launching Tips

- Keep the label on the 2-liter bottle as a target to step on.
- Glue elbow pieces onto straight pipes.
- Leave some pipes unglued, to simplify launcher dismantling and storage.
- Windless days provide the best conditions for launching paper rockets.
- Add a “payload” area at the top of the paper rocket.



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