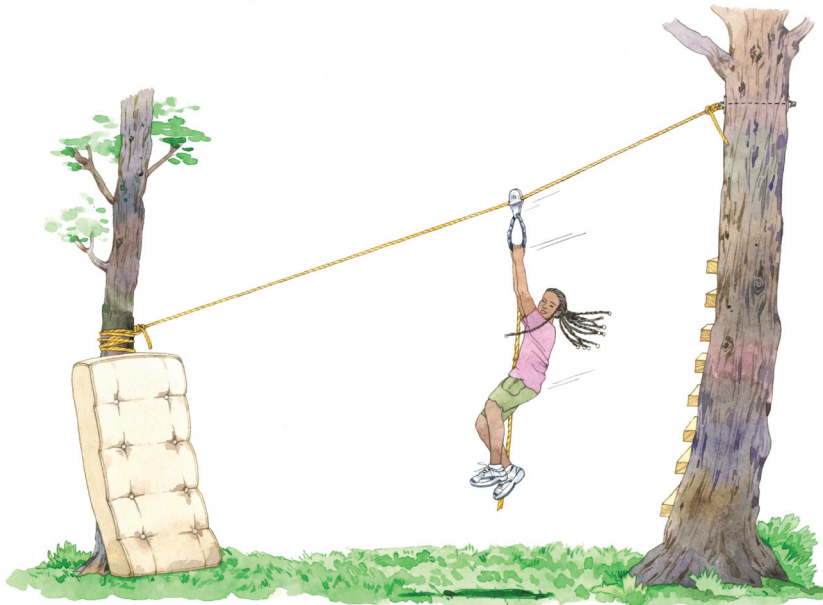


Reproducible Activity Sheet

Make Your Own Zip Line

From the book *The Pocket Daring Book for Girls* © 2008 by Andrea J. Buchanan & Miriam Peskowitz.
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If you can't globe-trot to Costa Rica and ride a zip line in full harness above the rainforest canopy, you can build a more modest zip line in your own backyard. Ours is simpler than a high-pressure steel cable stretched 400 feet high in the air, and uses a make-your-own grab bar and easily available rope.



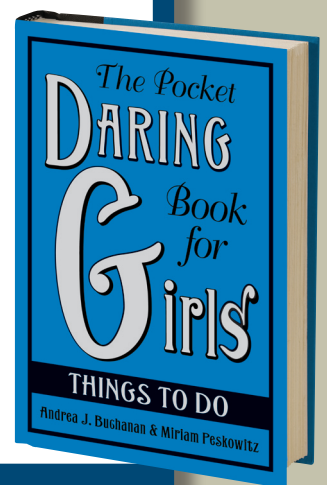
You will need:

- ❖ Twelve metal coat hangers (more if they're thin)
- ❖ Wide electrical tape and duct tape
- ❖ Lots of polyethylene rope (aka clothesline)
- ❖ Pulley, sized to match the rope, and strong enough to hold your weight
- ❖ Tape measure

Optional

- ❖ One or two eyebolts, with nuts and washers
- ❖ Enough wooden planks (about 2" x 10") to make a ladder up your tree, a hammer and galvanized nails.

Building a zip line in your backyard presents a series of challenges to solve.



Make Your Own Zip Line (cont.)

1. *Where shall the zip line start and stop?*

Find a jumping-off spot and a landing spot: two trees, a tree house, a swing set, a playscape with a ladder to a fort at the top, the edge of an elevated patio or deck. You can jump from the roof of a shed, or a banister off the second floor porch, or a tree in your neighbor's yard. Consider how tall you and your friends are, how high up in the air you want to be, and for how long. The zip line's starting point must be higher than the finishing point. Consider, too, the length of your line: too short and it's too quick a ride, but too long and it grinds to a stop, leaving you suspended in midair.

2. *How will you climb to the starting point?*

If the starting point is a tree, does it have low branches to climb? If not, find a ladder and wrap it against the tree, or hammer some wood planks into the trunk for footing. Galvanized nails are key because they won't rust and weaken.

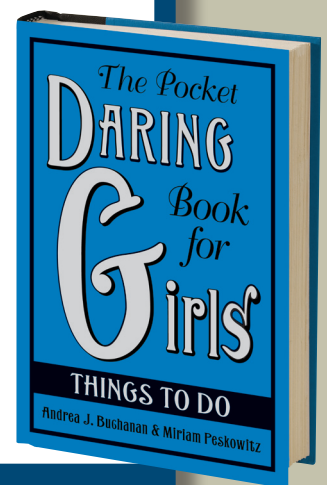
3. *How will you connect the rope to your starting point?*

Once you've found your start and finish, measure the distance between them and triple or quadruple the number, since you'll need to wrap the line many times around the tree and tie it with a solid knot, and it's much easier to cut off extra rope than to discover you don't have enough. Wrap the rope five or six times around the tree at the height you've chosen. End with a tautline hitch—see the chapter on Knots and Stitches. Double it if you want to be extra sure.

However, according to our arborists, it's not so great to permanently wrap ropes around trees because it scars the bark and cuts off circulation. Believe it or not, it's better to knock a nail or bolt through a tree. For this option, find an eyebolt large enough for the rope and matched to the width of the tree, drill a large enough hole, and secure it with a nut, washers on both sides. Knot the rope to the bolt.

4. *What's the best grab bar to use?*

The grab bar needs to be secure enough that it won't disintegrate when you're holding on for dear life, and soft enough to hold comfortably with your hands as you whirl through the air. Take your twelve metal hangers and undo the twist at the top of each one. Braid or weave the hangers together as best you can, to form a thick metal rope. Wrap the braided metal with several layers of electrical wire but leave a few inches at each end unwrapped. The bottom of the pulley has an opening for an attachment. Insert one end of the grab bar through this hole. Then sculpt the hangers into a circular



Make Your Own Zip Line (cont.)

or oval shape, and twist the strands together, one-to-one, to hold the circle tight. Wrap the whole contraption with electrical tape, and then wrap it again. After that, cover many times with duct tape. The more tape, the better.

Now thread the zip line rope—already attached to the jumping off spot—through the pulley. Cut a smaller piece of rope that you can use to pull the grab bar back to the starting point, and attach it to the grab bar. (By the way, once this system is up, you'll find many creative uses for pulleys. For instance, you might string a pulley system between your house and your friend's house next door and use clothespins or a basket to send messages, books, trading cards, and borrowed clothing back and forth. The possibilities are endless.)

5. *What is the slope, and where is the endpoint.*

The steeper the slope between the two trees, the faster the zip line will go and the more thrilling it will be. Leave enough give in the rope so the ride slows about three fourths of the way down. This will prevent you from slamming into a tree and wasting precious zip line time in the Emergency Room. (Some kids drag an old mattress against the landing point to cushion the ending.) A three-to-five foot difference in elevation between start and finish usually does the trick. Pull the rope tight at the ending point, wrap it many times around the tree, and make a tautline hitch (or use an eyebolt here, too). You may have to experiment a few times with how high you tie the rope, rewinding and tying several times until, by trial and error, the perfect amount of tension and slope is found.

