

1. Body

2. Two legs

3. Drill holes in legs and body. Lower leg hole and eye should be 1/8 inch holes. Upper leg hole 1/4 inch to fit pivot axle made from 1/4 inch dowel. Body pivot hole should be greater than 1/4 inch to allow the leg axle to freely rotate. I drilled 5/16 inch hole.

4. Cut dowels for axle and leg stop - length should be width of body, twice the leg width and a little extra for the washers.

5. Sand edges smooth, clean up drill holes, sand dowels if needed.

6. Assemble: Insert dowels into one leg. Add washer to axle (pivot dowel), insert into body, add the other washer and insert into second leg. Align dowels correctly and press together for a snug fit. DO NOT GLUE the dowel into the holes until you have tested hopping action.

7. The 1/8 inch dowel on the lower part of the leg should swing freely along the belly until it hit the 'stops'/bumps by the front leg and tail. These stops constrain the length of the hop and keep the legs below the body's center of gravity. If the stop is not there, the legs collapse and you don't get any hops.

8. Use a rough pieces of wood, back of clip board or book to make a ramp, around 25 - 30 degrees slope.

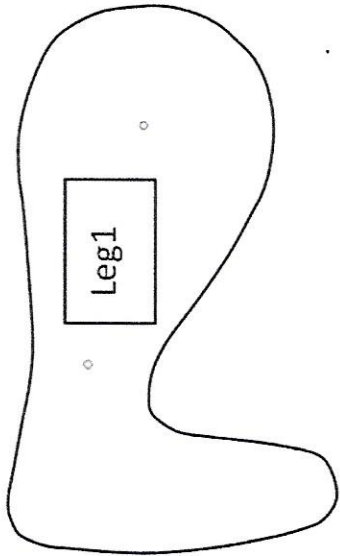
9. Lift kangaroo tail and gently drop, which should start a hopping motion. Vary angle of slope until the kangaroo hops. If the front leg slips or slides down the slope instead of acting as a pivot point, use a little bit of masking tape or rubber cement to add some friction, and/or abrade leg bottom with a file or coarse sand paper.

10. If kangaroo still doesn't hop, see the section on tweaking the design for more suggestions.

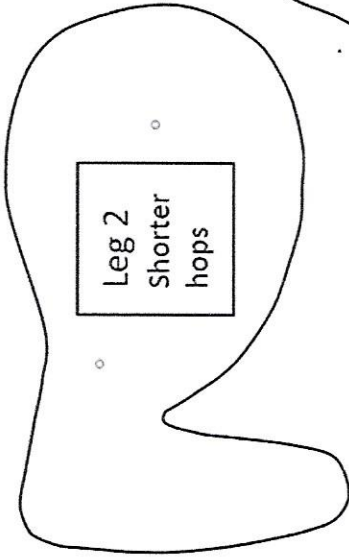
Here's my hopping kangaroo in action

<http://youtu.be/e2o7TjNvUiQ>

Kangaroo
Wombatmorrison (SRM) 6/2011
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Leg 1



Leg 2
Shorter
hops

