

PET BOTTLE CUTTER

Skill Builder
















PREPARATION

MATERIALS

QUANTITY per participant	MATERIAL	DESCRIPTION
1		Plywood 20 mm thick, 12 cm x 20cm
1		Plywood 20 mm thick, 6.5 cm x 4.5 cm
1		30 cm of PVC pipe ½"
1		Ruler
2		Wood screws, Philips, 3cm length
1		2 – 3L Plastic Bottle

PREPARATION TOOLS

QUANTITY per participant	TOOL	DESCRIPTION
1		Pair of safety glasses
1		Pencil for wood
1		Measuring tape
1		Ruler
1		Pair of Scissors
1		Pair of pliers
1		Philips Screwdriver
1		C-clamp
1		Hacksaw
1		Utility Knife
1		Wood saw
1		Power drill
1		Hole saw drill bit for wood, 45 mm diameter
1		Spade blade drill bit for wood, 10 mm

STEP 1

MAKING THE BASE

MATERIALS



Plywood 20mm thick

TOOLS



Pencil

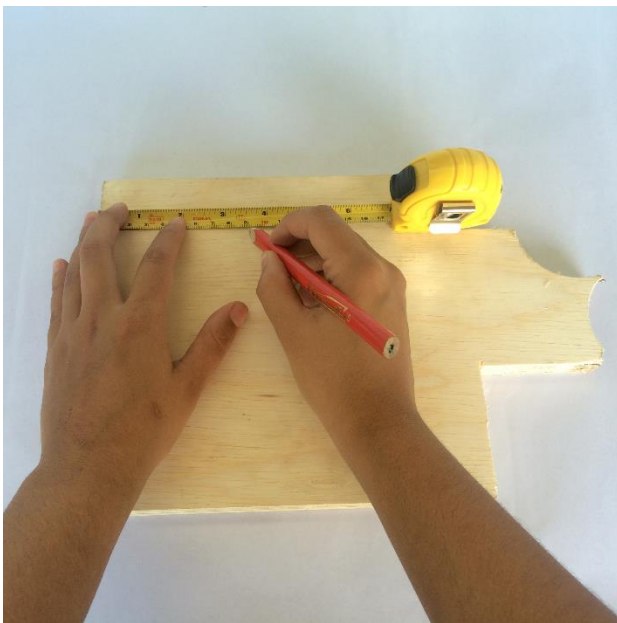


Wood saw



Measuring Tape

INSTRUCTIONS



1.2 Mark and measure
a 12 cm x 20 cm rectangle in the
piece of plywood.



1.1 Cut
it to size using the wood saw.

STEP 2

MAKING THE DONUT

MATERIALS



Plywood 20mm thick

TOOLS



Power drill

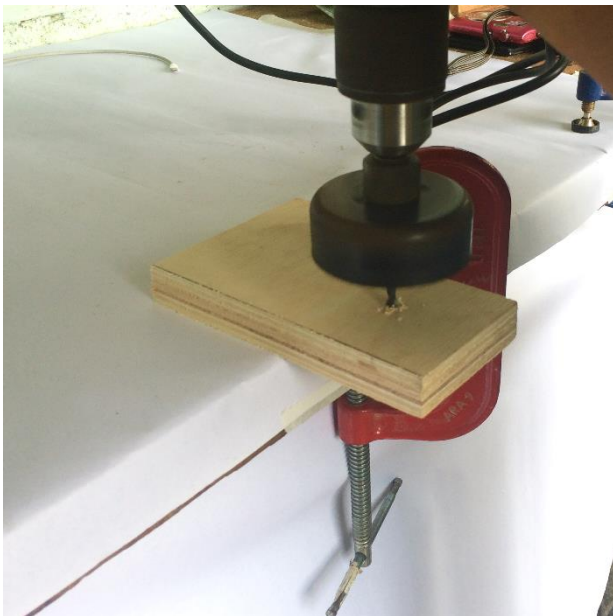


Hole saw bit



Spade bit

INSTRUCTIONS



- 2.1 Drill**
a circular piece out of plywood
using the hole saw and the power
drill.



- 2.2 Drill**
A hole in the middle of the
circular piece you just made
using a spade bit and the power
drill..

STEP 3

MAKING THE POST

MATERIALS



PVC pipe ½"

TOOLS



Pencil

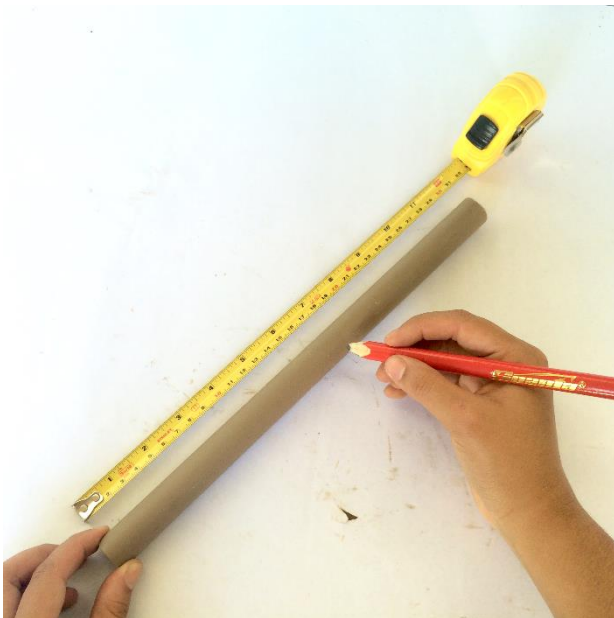


Hacksaw



Measuring tape

INSTRUCTIONS



3.1 Measure and mark
a 30 cm piece of ½" PVC tube.



3.2 Cut
it to size using a hacksaw.

STEP 4

MAKING THE HOLDER

MATERIALS



Wood left from donut

TOOLS



Pencil



Ruler

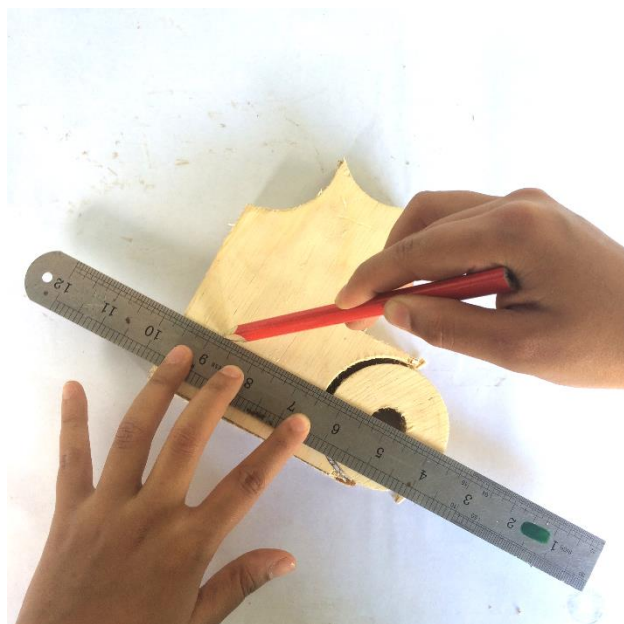


Wood Saw



C-clamp

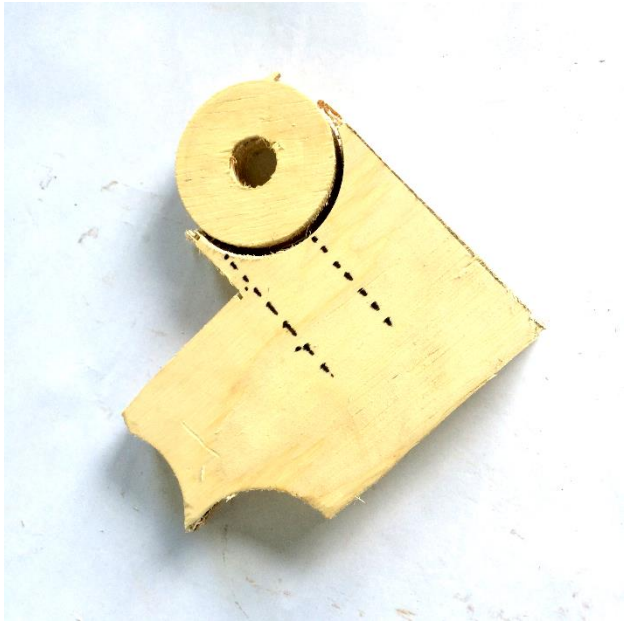
INSTRUCTIONS



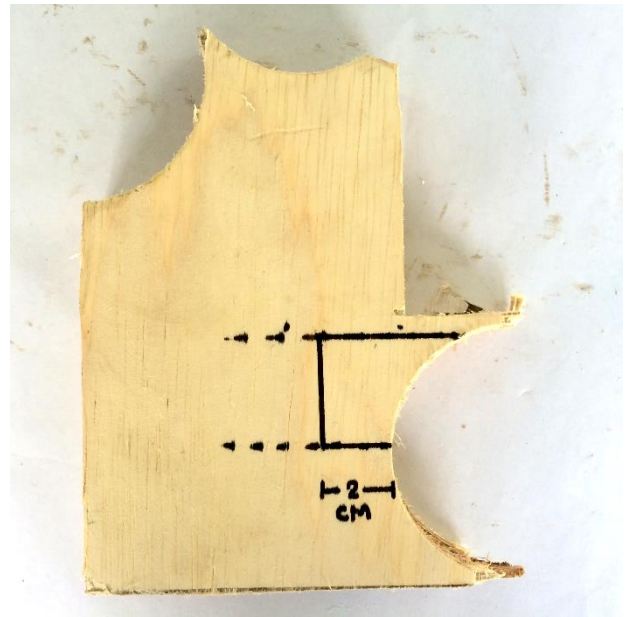
- 4.1 Trace**
a line across the center of the circle made by the previously cut donut.



- 4.2 Trace**
a line tangent to the circle and parallel to the previous line.



4.3 Checkpoint!
your piece should look like this.



4.4 Trace
a line 2 cm away from the center
of the circle.



4.5 Cut
The piece using a wood saw.



4.6 Checkpoint!
Your piece should now look like
this.

STEP 5

SET CUT WIDTH

MATERIALS



Donut



Holder

TOOLS



Pencil



Ruler

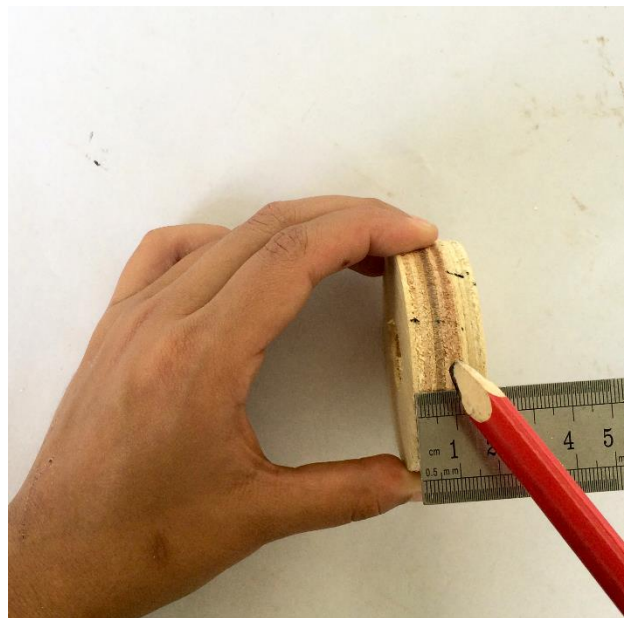


Hacksaw

INSTRUCTIONS

My cut width is:

_____ cm



5.1 Choose

What you want your stripe thickness to be. This will be the cut width. Recommended range is 0.5 cm – 1 cm.

5.2 Measure and mark

your chosen cutting width on the donut's height.



5.3 Cut
a straight groove at the marked cut width until you can see the hacksaw through the donut hole.



5.4 Measure and mark
the cut width on the shortest flat side of the holder that is adjacent to the round face.



5.5 Cut
with the hacksaw a 1cm deep groove at the mark previously made, and then make a cut perpendicular to it through the bottom of the piece.



5.6 Checkpoint!
Your piece should now look like this.

STEP 6

BLADE PLACEMENT

MATERIALS



Donut



Blade

TOOLS



Pliers



Safety Glasses

INSTRUCTIONS



- 6.1 Break**
the blade in half using the pliers.
Make sure to wear safety glasses while you do this!



- 6.2 Place**
the blade in the donut's groove
until the sharp side hits the end
of the groove.

STEP 7

DONUT PLACEMENT

MATERIALS



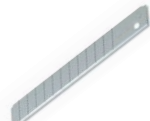
Base



Donut



2 screws



Blade

TOOLS



Pencil

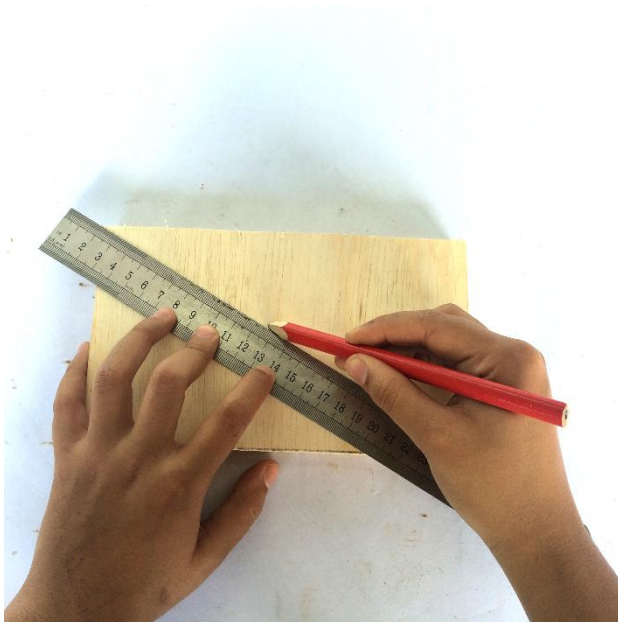


Ruler

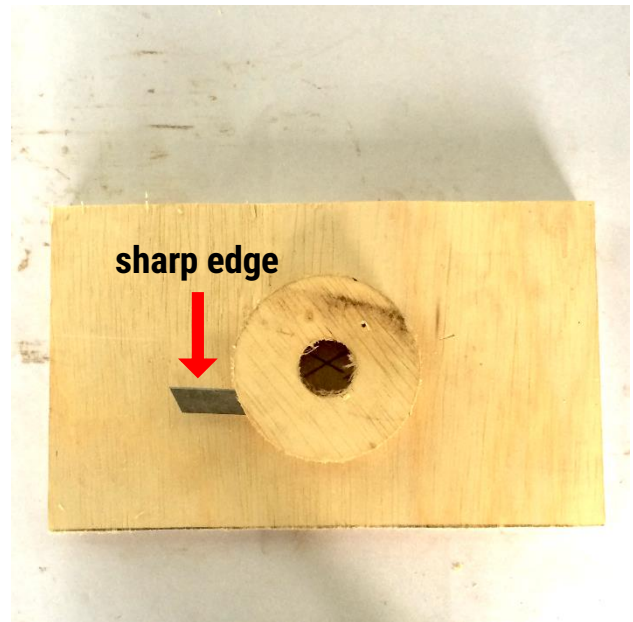


Screwdriver

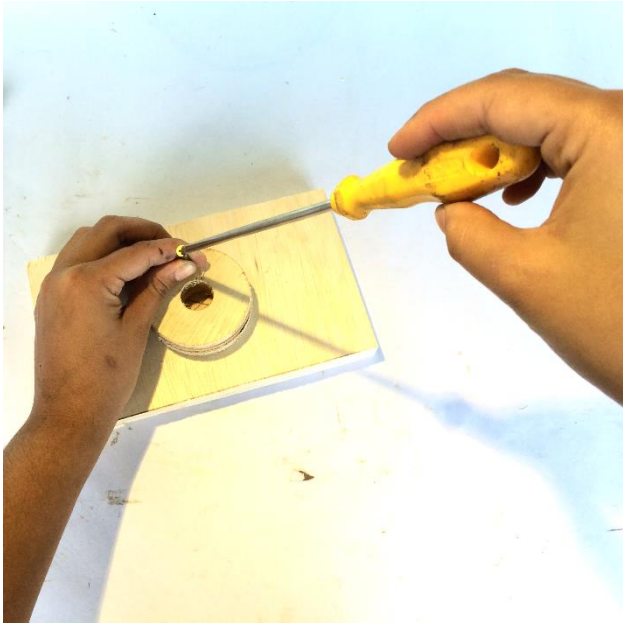
INSTRUCTIONS



7.1 Mark
the center of the base.



7.2 Place
the donut such that the blade is parallel to the larger side of the rectangle, and the sharp edge of the blade is facing inwards.



- 7.3 Secure** the donut to the base with a screw at 1 o'clock and another one at 7 o'clock (this screw should prevent the blade from moving towards the inside of the donut). ***Make sure you remove the blade from the donut before this step.***



- 7.4 Checkpoint!** Your piece should now look like this.

STEP 8

HOLDER PLACEMENT

MATERIALS



Base



Holder



2 screws



Blade

TOOLS



Pencil

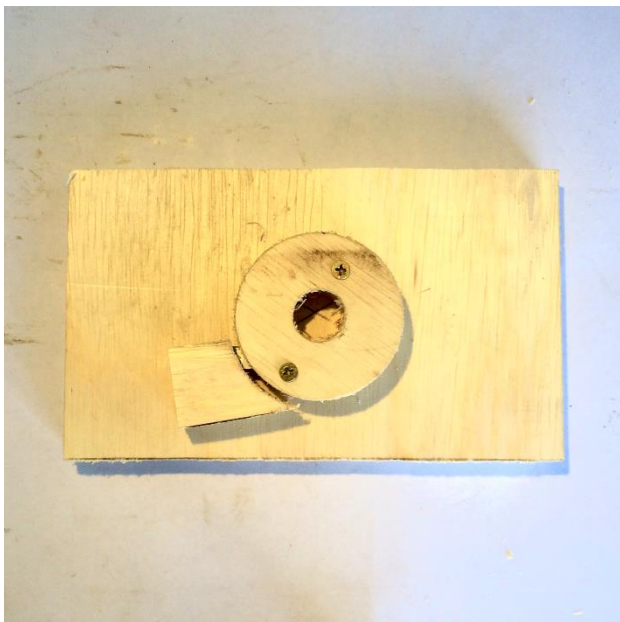


Ruler



Screwdriver

INSTRUCTIONS



- 8.1 Place**
the holder so that it covers the blade as shown above.



- 8.2 Secure**
the holder to the base with 2 screws, one through the center of the holder, and the other one to the right of the blade (this screw should prevent the blade from moving to the right).

STEP 9

PVC PLACEMENT

MATERIALS

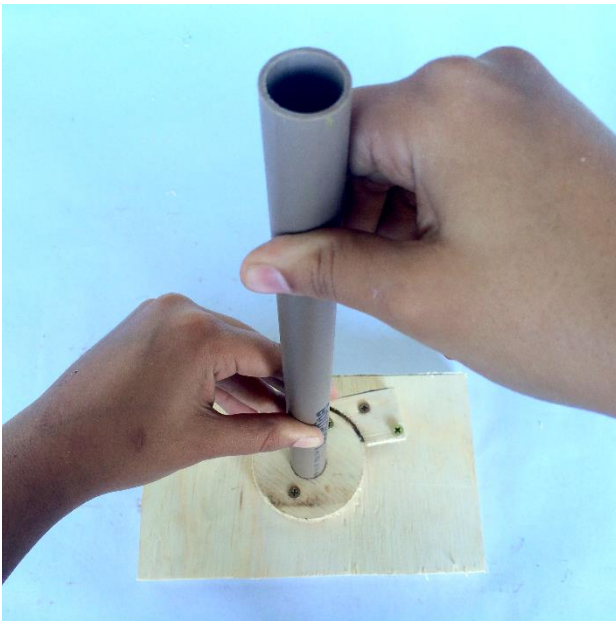


Base

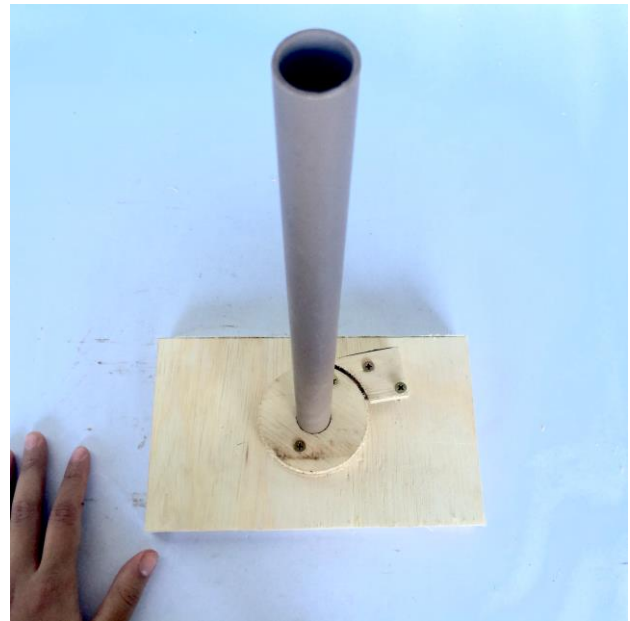


PVC

INSTRUCTIONS



9.1 Place
the PVC in the



9.2 Ready to cut!
Your PET Bottle cutter should
now be ready to cut!

STEP 10

CUTTING

MATERIALS



Plastic Bottle



PET Bottle Cutter

TOOLS

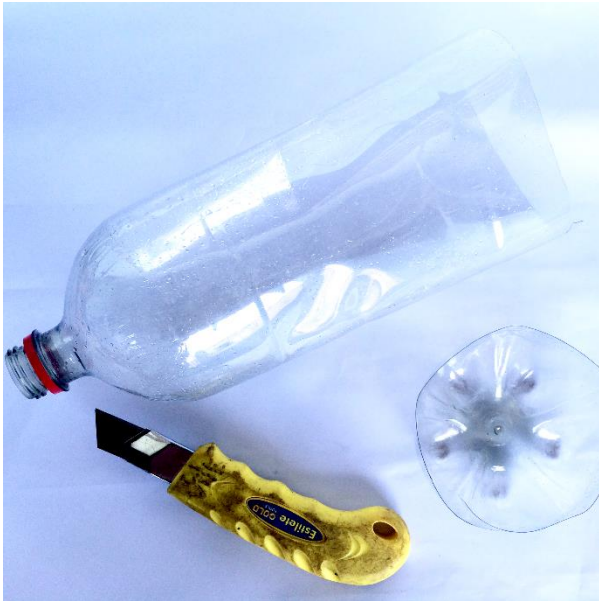


Utility knife



Scissors

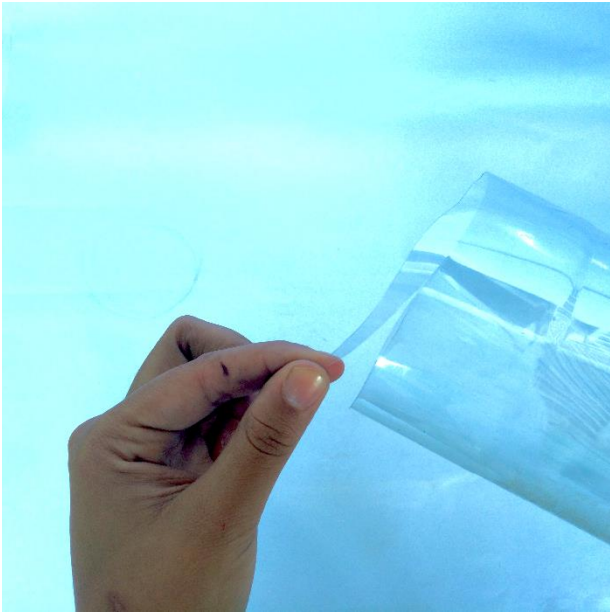
INSTRUCTIONS



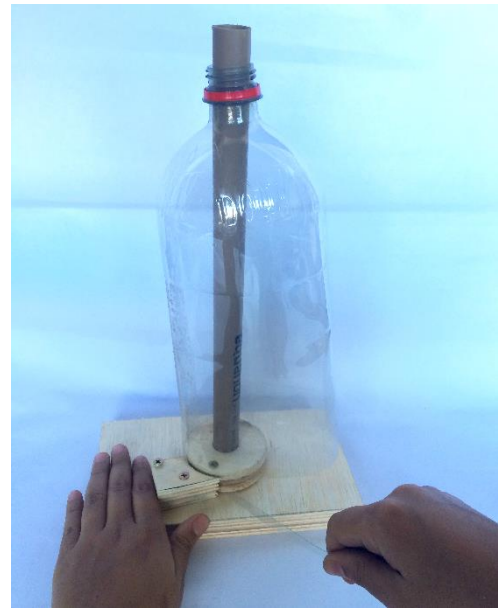
- 10.1 Cut**
out the bottom of the plastic
bottle using a utility knife.



- 10.2 Cut**
a stripe at the edge of the bottle
for starting.



10.3 Checkpoint!
The starter stripe should look like this.



10.4 Pull
the starting stripe towards you while holding the base of the PET bottle cutter to cut.