CIGAR BOX UKULELE
designed by Shelley Rickey

Material Costs:
Under 20 bucks!

Building Time:
1 to 3 days, depending on your craftyness.
In any case, it is always a good idea to take your time.

Materials:
Cigar Box
4 Tuners
Ukulele Strings
Wood Glue
Wooden plank W 1.5" x D .25" x H ±26"
  *See Neck Length/Scale Length explained
Hard wood (tiny piece) 1.5"x 3/8" x .5"
Linseed Oil or Bee's Wax Furniture Polish
Small Plastic Cable Zip Ties (12)

Tools:
Hand Saw
Coping Saw
Utility Knife
Knife Blades
Chisel
Hammer
Drill
2 Drill bits:
  1/16 of an inch
  Same diameter as shaft of the tuners
Circle Cutter or a Hand Figure Saw
Fine Wood File
Sandpaper, both Fine & Course
Yard Stick
Small Measuring Stick
90° Triangle Ruler
Clamps
Pencil and Eraser

---

2.5" x .5"
BRIDGE

1.5"
CIGAR BOX LID

13"
PLANK 26"

.25"
STRUT

.25"
FRETBOARD NECK

.25"
HEADSTOCK

1.5"
1. Preparing the Box

Paper Linings
In case the box has a paper lining, it is best to remove the paper. This will greatly improve the sound of the instrument. Cut around the edges of the lining with a utility knife. Brush the lining with hot water till the paper is saturated. Shake out any excess water. Using a knife blade, scrape the paper from the box. It should peel away quite easily.

Stickers
To remove stickers, warm the sticker with a hair dryer and slowly peel it off. Remove any adhesive residue with sticker remover on a cotton swab.

2. Fitting the Plank in the Cigar Box

Open the box and mark the middle of the top and bottom sides of the ukulele. From the middle, cut a notch, 1.5” wide x .75” deep (same dimensions as your plank) in both the top and bottom side. Try fitting the neck through the notches. If needed, use a wood file to widen the notch. Once you have a good fit, remove the plank from the box.

3. Sound Holes

The sound holes are cut into the top of your ukulele body and are located at the top left & right corners. The size of the hole depends on how big your cigarbox is. The diameter should be no less than 1” in diameter. The easiest way to cut these is with an inexpensive hole cutter which can be attached to your drill. Otherwise you can use a hand held figure saw. Mark the placement of these holes on the top of your box with a pencil and cut carefully!

Tip: Brass grommets, available at most hardware stores or haberdasheries, are a very nice way to finish off the sound holes.

4. Measuring and Marking the Plank

(Use the diagram on the first page as a guide)
Measure .5” from the bottom of the plank and mark this off with a pencil. This section is the 'Tailpeice'. Open the cigarbox and place it’s top upon the plank with the bottom edge at the 1” line. Mark off the length of the cigarbox top on the plank. This section is the 'body'. From this point mark another line at approximately 13” (see Neck Length/Scale Length Explained). This section is the 'fretboard&neck' of your instrument. The remaining section is the 'headstock' of your instrument where the tuners will be fitted. Going back to the 'body' section, measure a 1/4 of an inch inward from each side and mark with a pencil. Turn the neck on it’s side and extend these same lines another 1/4 of an inch. Mark this 1/4” off along the side between the two lines. This section will be hollowed out to form the strut.

---

Things to consider when choosing a Cigar Box...
- The thinner the wood, the better the sound.
- This design requires a box with a flat top rather than one with a box lid.
5. Chiseling out the Strut
Secure the plank to a flat surface with with clamps. Saw the plank at the strut lines to the depth of 1/4 of an inch marked on the board. Using a chisel and hammer, remove the wood between the two saw lines of the strut to the 1/4" depth. Once you’ve chiseled out the strut, sand it’s surface smooth.

Clamping Tip
* It’s a good idea to put a small scrap piece of wood between the clamp and the neck in order not to damage the neck’s surface.

Chiseling Tips
* Start with a new sharp 3/4-in. chisel for all-purpose use. Face the bevel down. Push or tap the back of the chisel to remove thin slices. Control the depth by raising and lowering the handle.
* Watch Out! Chiseling with the grain sometimes goes wrong. If the grain runs deeper into the wood, it’ll direct the chisel too deep. Stop and chisel from the opposite direction if you feel this happening.

6. Shaping the Supports for the Top
Measure the thickness of the top of the cigarbox. Mark this same distance off on the sides perpendicular to the strut. Continue the line around the sides till the body section line on both sides of the strut. Saw the neck at the body lines to the depth which you have marked off.

Chisel these sections out to form the supports for the top. Sand smooth. Open up the cigarbox and lay the top in the body section of the neck and check the fit. The top should fit snuggly and sit flush with the neck.
7. The Headstock
Saw the neck at the headstock mark to the 1/4 inch depth. Chisel out the top 1/4 inch of the headstock. Mark the position of the tuners and drill the four holes. Your drill bit should be the same diameter as the cylinder of your tuners. Sand Smooth.

Tip! The Headstock is a great place to add personality to your ukulele. There is a space of 1 1/2 inches from the top with which you can play around with. For example, add an ornament, do some wood carving, apply a label or use a wood burner to customize it.

Your plank should now be looking something like this...

8. The Tailpiece
Measure .25” from the bottom and draw a line. The holes for the strings will be drilled along this line. Measure .25” inward from each side. Divide the space between these two marks by three and mark these points. Prik these 4 points with a nail before drilling. Use a 1/16 drill to drill the holes.

9. The Back of the Neck
Round off the edges of the back of the neck starting 1” above the point where the neck meets the body and ending where the headstock begins. This can be done with a chisel and/or sandpaper.

Tips:
• The best way to tell if something is sanded evenly is to run your hand along the surface.
• The more rounded the neck, the easier the ukulele will be to play.

10. Finishing the Wood
Use a fine grade of sandpaper to smooth out the entire plank. Be sure to use a sanding block when sanding the fretboard in order to avoid sanding it unevenly. Dust the wood off, brush it with linseed oil and let it sit for at least 15 minutes. Buff out with a clean cloth and repeat.
11. Attaching the Tuners to the Headstock
Push the eyelets through the holes on the front side of the headstock. Put the tuners through the holes on the back of the headstock. Adjust the tuners and then mark the holes for the screws. Prick the holes with a nail. Now the tuners can be screwed to the headstock.

12. The Nut
The nut guides your strings to your fretboard from your tuners. Cut a piece of hardwood to 1.5” x 3/8” x .5”. When fitting the nut at the ledge above the fretboard, some shaping may be necessary. Once the nut fits snugly, sand the top of the nut down to about 3/16 of an inch higher than the fretboard. Finally, saw 4 shallow notches for the strings with a fine hand saw. These notches should be less than 1/16 of an inch deep and spaced exactly as the holes in the tail piece. When fitting the strings the height of the nut and the string notches can be adjusted accordingly. The nut is held in place by a very tiny amount of glue so that it could possibly be removed if need be. Sand lightly.

13. The Bridge
The bridge supports the strings and transmits the vibrato of the strings to the body of the uke. The bridge has to be approximately 2 to 2.5 inches wide and have a depth of about .25 of an inch. It can be made of many things: for example, an old skeleton key, a headless screw or wood. The bridge is not fixed but floats on top of the body. Experiment with various materials and different placements for the best sound.

14. String It Up
Assemble your neck to the box and temporarily hold it in place with rubber bands. Tie the strings to the tail piece and then thread them through your tuners. Tune your ukulele to “G C E A”. Strum the strings and listen to how it sounds. Play around with the placement of the bridge until you find the place where it sounds best.

Tips:
• Information can be found online showing how to attach the strings to the tailpiece and the tuners.
• If you don’t have a tuner, use an online ukulele tuner.
15. The Frets
Calculate the scale length of your ukulele by measuring the distance from the front edge of the nut, where it butts against the end of the fingerboard, to the exact point where the strings touch the bridge. Use an online 'fretboard calculator' to calculate the position of your frets. Fill in the scale length and the number of frets, which is 12 for a ukulele, and the fret calculator will give you the precise placement of each fret, measuring from the nut. Mark the placement of each fret onto the fretboard with a sharp pencil. It's very important to be as precise as possible. At each fret line, wrap a plastic zip tie around the neck (under the strings) placing the eyelet on the left hand side of the fretboard.

16. Gluing the box shut
Once you're happy with everything you can take the strings off and then glue the cigarbox closed. Use a small amount of wood glue around the sides and on the supports and hold it together with rubber bands while it dries.

Once the glue has dried you can string it up again. It will take a while for the slack to stretch out in the strings. Keep tuning it and playing. After a while it will stay tuned. Now you are ready to play your very own Cigar Box Ukulele!
Some Final Notes
There are many different designs and techniques that can be explored when building homemade instruments. These instructions are hopefully a good guide to get you started. Chances are that your first build will have some short comings. Don’t fret! (Non pun intended) See it as a learning experience. My first ukulele wasn’t the most practical instrument and was, quite frankly, quite hard to play. But, in building it I learned enough to make a second instrument which played wonderfully. With that said, I still ADORE the first ukulele I built and am quite proud of it.

You can see a video of me showing off my first cigarbox ukulele and hear it play here:  
www.shelleyrickey.blogspot.com/2009/02/see-hear-my-cigarbox-ukulele.html
And here you will find detailed pictures and a description of the instrument  

Resources
Cigar Box & Homemade Instruments
There are some wonderful online communities which offer tips, tricks, photographs, videos and lots of building enthusiasts who are more than happy to answer questions and offer advice. These are my two favorites...
www.cigarboxnation.com
#1 resource for Cigar Box Guitars. Free Plans, & the Homemade Music Movement presented by Shane Speal.
www.handmademusicclubhouse.com
Cigarbox Guitars and Homemade Instruments. They’re making music fun again!

Ukulele
The ukulele is an amazing instrument. It’s very easy to learn the basics techniques but it is also an instrument which one could dedicate a lifetime to in mastering it. The uke has seen an incredible surge in popularity the last 5 years. There are numerous online resources but I’m going to limit myself to just one which I think is the best all round website for the absolute beginner to the advanced player;  
www.ukulelehunt.com
Absolutely wonderful ukulele site run by Al Wood. Don’t forget to subscribe to the blog!

And Lastly
Stop by sometime and drop me a line. I’d love to hear from you!
Websites:
www.shelleyrickey.blogspot.com
www.etsy.com/shop/thejumpingfleamarket
www.youtube.com/shelleyrickey
www.soundcloud.com/the-uke-box
www.youtube.com/theukebox

Email:
shelleyrickey@gmail.com