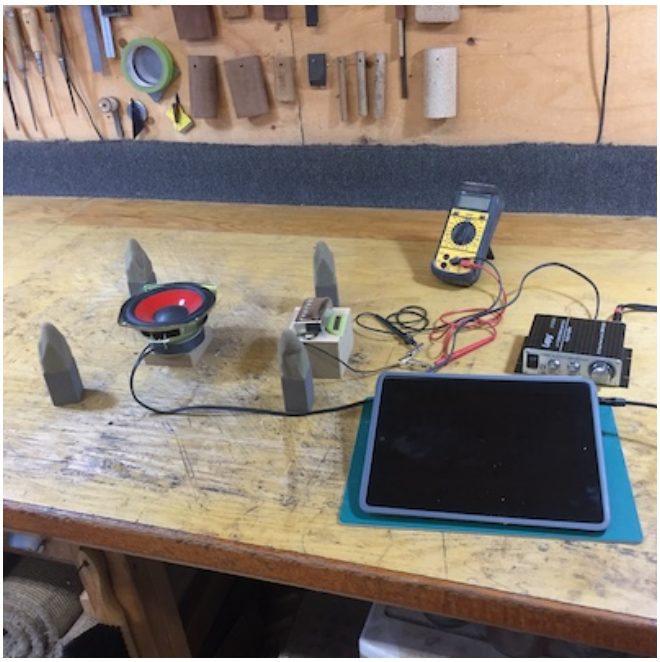
Tone Wood Data Project – tonewooddataproject@gmail.com

Example testing procedure ver 1.

So you'd like to know more about the materials you're using? Here's how for ~$50 and some things most guitarmakers have around their shop you can.

Step 1:



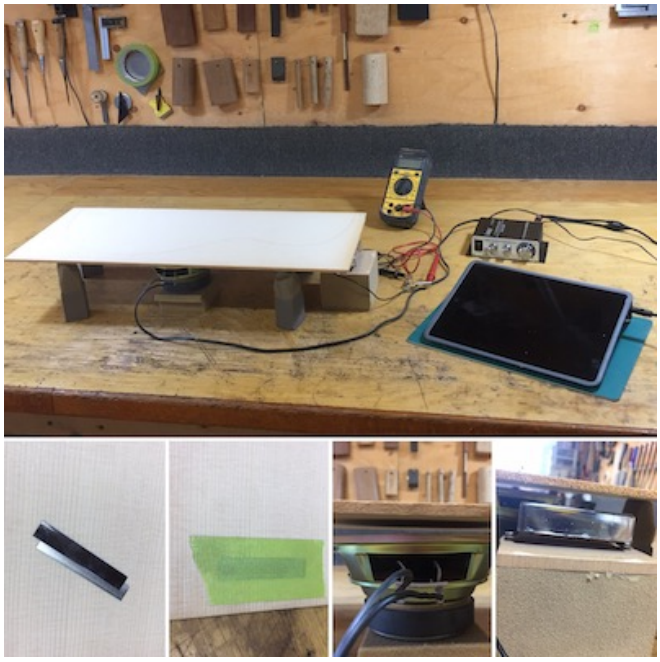
Assemble your kit:

- smart device (we'll be using this to generate sine waves)
- cute little amp (I used a "20 Watt RMS" amp that I purchased from amazon for ~$30)
- small speaker (I used a 4.5" 8 ohm 55 watt car speaker I purchased at the flea market for $14)
- multimeter
- old guitar pickup
- a couple of metglas strips (it's what's inside those old little plastic "theft deterrent stickers"
- some foam bits
- ruler
- scale (as accurate as possible .1 g is good)
- thickness calipers

Step 2:

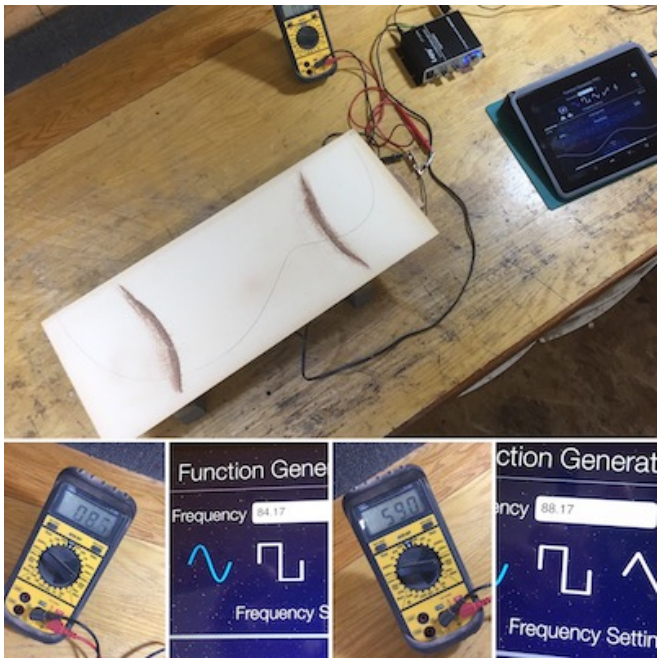
Measure the length, width, thickness, and weight of your "sample". It's important that the sample be nicely rectangular and even in thickness. Record your data.

Step 3:



Using a bit of masking tape, Stick the metglas strips to the end of one face of your sample. Rest the sample on a couple of foam bits, place the speaker under the sample, and place the pickup under the taped metglas strips. It's important to try to get the speaker and pickup as close as is reasonable to the sample. Connect the pickup to the testing leads of the multimeter—I just use alligator clips.

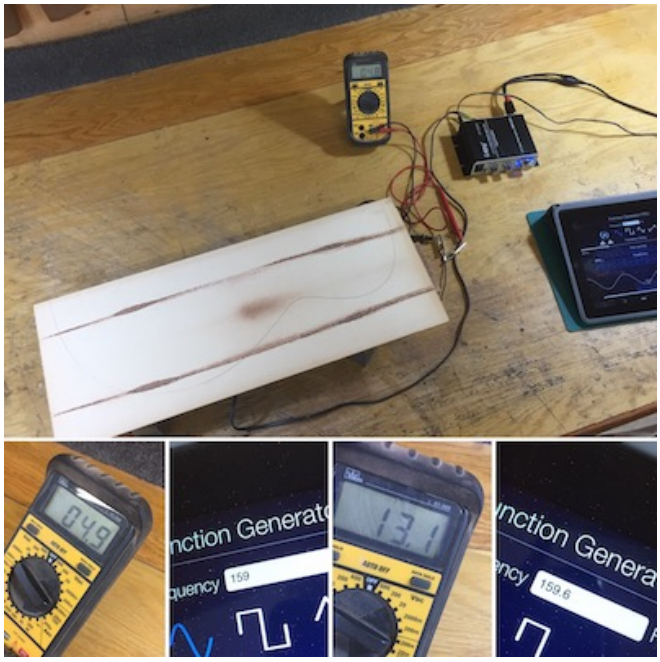
Step 4:



Sprinkle some "dust" (tea leaves, metal filings, or I just use some table saw dust) on the sample. Using a signal generator app (there are a few and as long as it has a . 1Hz resolution you're golden) on your smart device proceed to find the primary long grain bending mode.

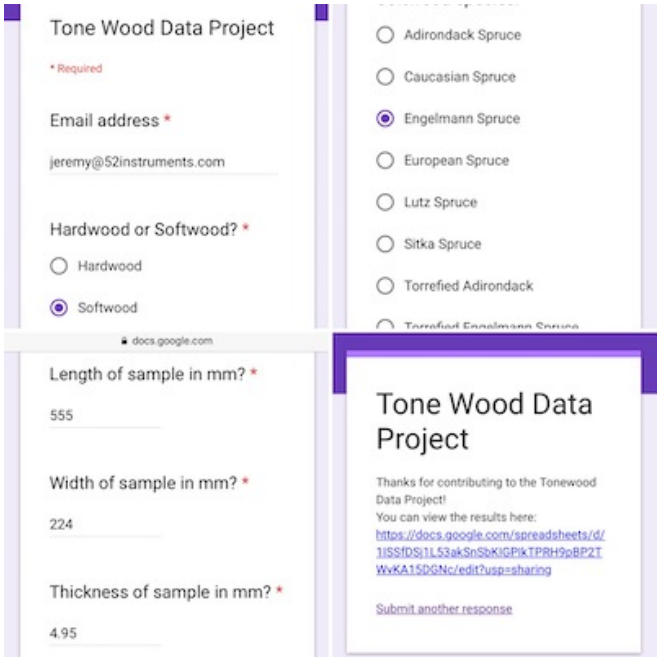
Now we need to find the peak frequency of that movement. Reposition the foam bits the sample is resting on so they are directly below the "dust lines", and turn on your multimeter to the VAc setting. The metglas strips that are taped to the sample disrupt the magnetic field of the pickup and the multimeter will read the current —just think about how an electric guitar works. Without adjusting the volume, shift the frequency up and down to find the frequency that reads the highest output on the multimeter. There you have it...peak frequency to the .1Hz. Record your data.

Step 5:



Repeat step 4 but rather than finding the primary long grain bending mode, find the primary cross grain bending mode.

Step 6:



Calculate your results. Very shortly you'll be able to do this pretty easily by pulling up the #tonewooddataproject form and filling out the details.Take a look at the spreadsheet and view the results. Ooh and aah appropriately at all the information you have at your fingertips... isn't life grand!