

Practice Tips: **BOTTLE MUSIC**



USEFUL THINGS TO TRY: Practice with your teacher or at home with a parent.

1. Let's recycle! Bottles are made from all kinds of materials – how many can you find that are recyclable? What are some of the differences in their shapes that might influence how they will sound for this event?
2. Big and tall and short and squat. Gather several empty glass or plastic bottles and carefully clean them. Have a contest with your friends to see who can find the bottle that is: (1) tallest, (2) shortest, (3) biggest mouth, (4) smallest mouth, (5) most like a cylinder, (6) strangest shape. Can you get all of your winners to “sound” when you blow across their openings?
3. Are all things equal? Gather several plastic bottles with different heights. Fill each to the *same level* with water. Do they all sound at the same pitch now? Feel the inner lip of each bottle; some are usually smoother than others. Does this influence the quality of the sound?

USEFUL WORDS TO KNOW: Here are some representative words you should know.

Major scale	Sharp	Pitch	Tuning fork	Air column
Minor scale	Flat	Tempo	Amplifier	Organ pipe
Anthem	Composer	Middle C		

USEFUL WEBSITES TO SEE: We verified these in March of 2010.

- <http://hyperphysics.phy-astr.gsu.edu/hbase/sound/soucon.html>
<http://hyperphysics.phy-astr.gsu.edu/hbase/waves/opecol.html>
<http://www.LHS.berkeley.edu/shockwave/jar.html> (This one has a nice activity!)

RULE CLARIFICATIONS: These apply only to DeKalb's Elementary Tournament for 2009.

1. At our Elementary tournament, teams may bring their own bottles or may use a set that we provide. You will need eleven identical bottles. They may not be marked in any way, either by hand or with any type of ridges or undulations of the glass / plastic surface. (For example, some Dasani bottles have a lattice-work of ridges underneath the label; this violates the marking rule.)

(Over)



RULE CLARIFICATIONS: (continued)

2. Please make sure your students understand that the required range of notes does not start with the first note of a scale! (Which bottle *is* the beginning of this major scale?)
3. All teams tune in the same room during their session. Teams are allowed to ask to hear a “test pitch.” This is created either with a tuning fork *or* a single note on a small electric keyboard. If a tuning fork is used, we provide amplification so that students can hear it clearly when standing near the front table. The “test pitch” corresponds to one of the required notes, but it is not announced in advance and it is usually not the lowest required note. Students may blow their corresponding bottle while the event official sounds the tone.
4. We assess relative pitch first. (How well does your entire scale sound without any comparison to other keyboards, tuning forks, or tuners?) We then assess absolute pitch by comparing selected tones to a fixed note played on a small electric keyboard. This note is not named in advance.
5. Your team should be prepared to provide the name of the song they select and its composer. We recommend choosing a song an adult or high school student is likely to recognize!

Will these bottles sound the same? Would you get a good sound from each? (Be sure to take the tops off!)

