

COURSE INTRO/ INTRO TO PITCH

YU / LAMONT

JANUARY 23, 2018



UMASS
AMHERST

COURSE ORIENTATION

COURSE WEBPAGE

ling197m.krisyu.org

SYLLABUS

ling197m.krisyu.org

Ling 197M: Language & Music / SPRING 2018

- Quick links: [Current](#) | [Upcoming](#) | [Past](#) | [Syllabus](#)
- Meetings: Tu Th 10:00-11:15, ILC N451
- Instructor: [Kristine Yu](#) (krisyu@linguist.umass.edu / ILC N422)
- TA: Andrew Lamont (alamont@umass.edu / ILC N421F)
- Office hours: by appointment

HW: read this!

TALKING BLACK IN AMERICA

Walt Wolfram

A film screening with executive producer
William C. Friday Distinguished University Professor at North Carolina State University
and director of the North Carolina Language and Life Project



Monday, February 5, 2018
5:30–7:30pm

Integrative Learning Center, N151

University of Massachusetts Amherst

"The status of African-American speech has been controversial for more than a half-century now, suffering from persistent public misunderstanding, linguistic profiling, and language-based discrimination. We wanted to address that and,

the way we talk today."

Walt Wolfram

<https://blogs.umass.edu/linguist/2018/01/18/talking-black-in-america-screening-feb-5th-at-530/>

Anna Branch, Associate Chancellor for Equity
and Inclusion

REVIEW QUESTIONS

- ▶ Each class will begin with review questions
- ▶ Linked as "RQ" from course webpage for each class
- ▶ You must be signed in to your UMass account in order to access the review questions

Calendar (tentative)

Current Week

| Week | Date | Topic | Class | HW |
|------|----------|----------------|----------------------------|----|
| 01 | Tu 01/23 | Intro | RQ, slides | |
| | Th 01/25 | Intro to pitch | | |

CLASS SLIDES AND HOMEWORK

- ▶ Linked from course webpage for each class

Current Week

| Week | Date | Topic | Class | HW |
|------|-------------|----------------|---------------------------|--|
| 01 | Tu 01/23 | Intro | RO slides | For 01/25: Read syllabus , install Praat , play with hands-on demos from class |
| | Th 01/25 | Intro to pitch | | |

WHAT TO BRING TO CLASS

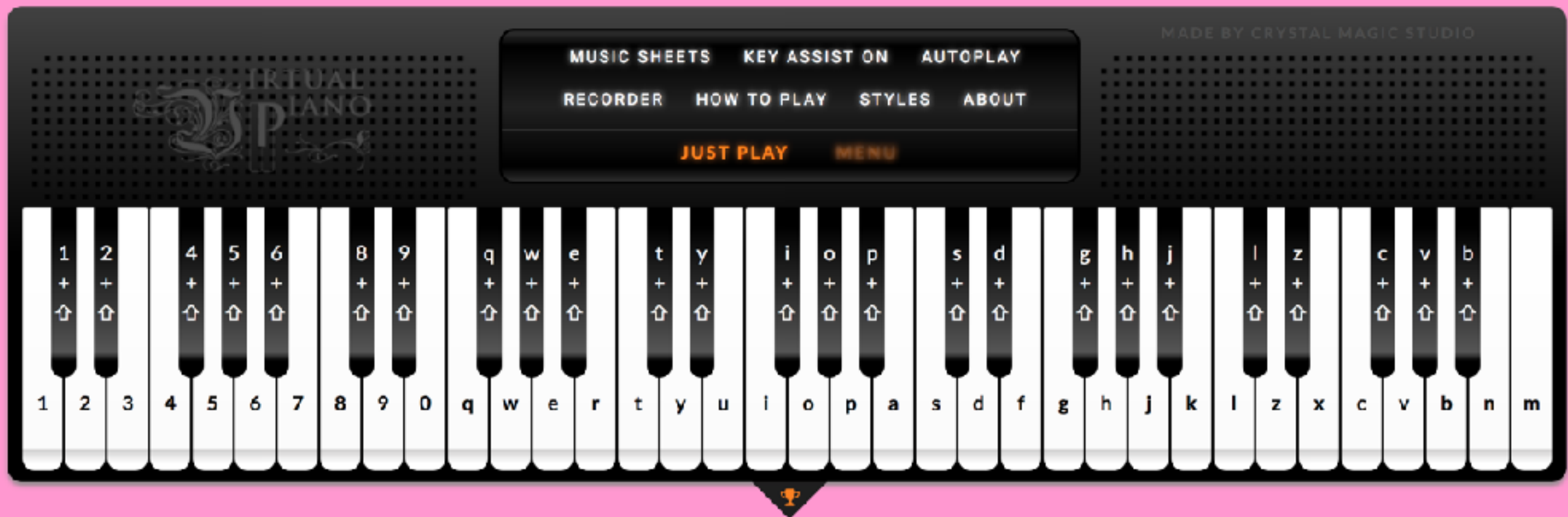
- ▶ A computer (if you have access to one)
- ▶ Earbuds/headphones to listen to audio

INTRODUCTIONS

INTRODUCTION TO PITCH

DEMO: VIRTUAL PIANO

<https://virtualpiano.net/>



DEMO: STRING INSTRUMENTS

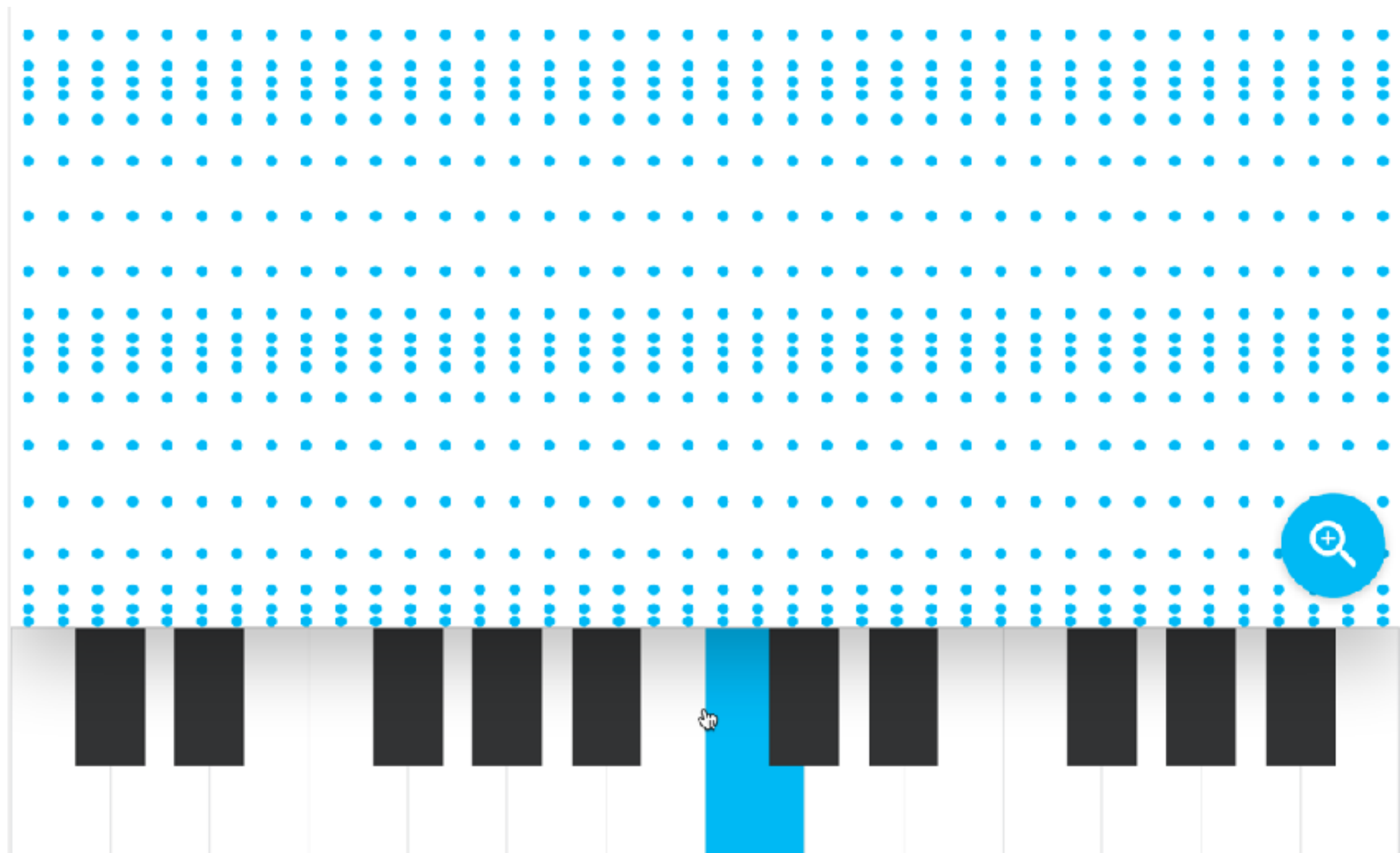
How can I make the pitch change?

What's the difference between producing musical notes on a violin vs. a ukulele (and a piano)?

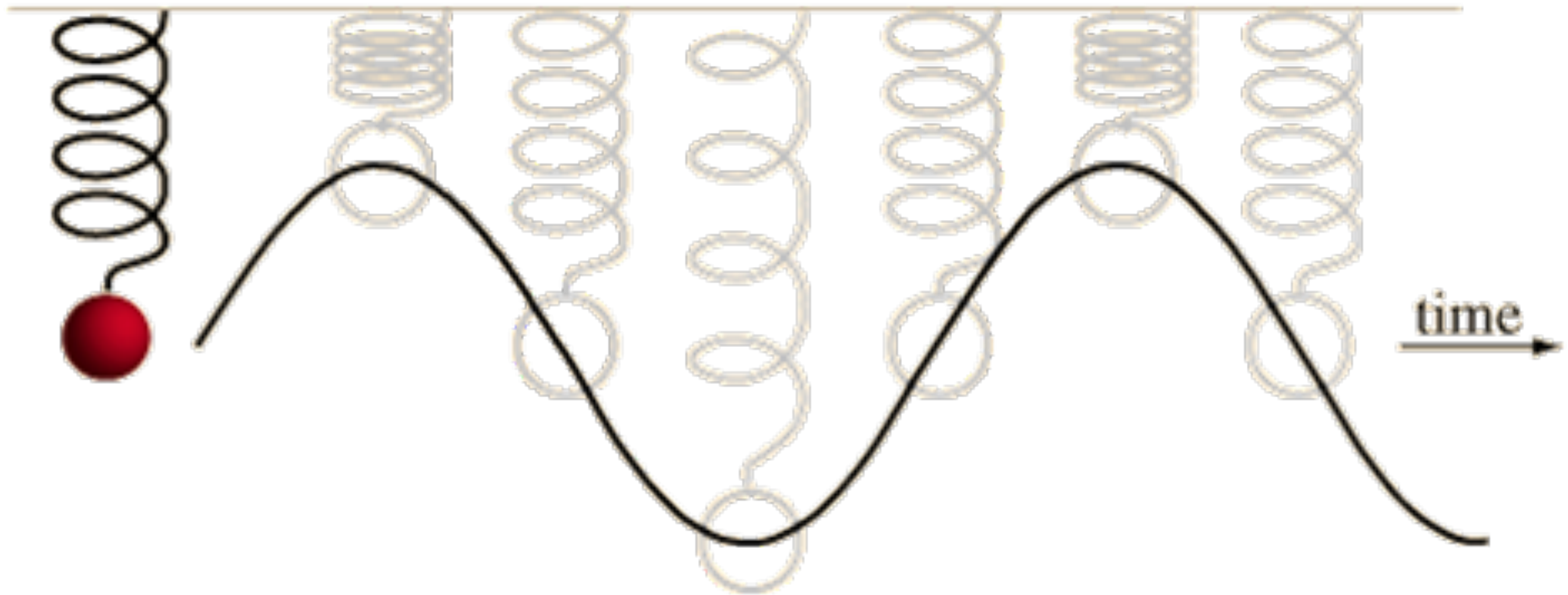
Why does the same "note" sound different on a violin vs. a ukulele vs. a piano?

SOUND WAVES HANDS-ON

<https://musiclab.chromeexperiments.com/Sound-Waves>





ANOTHER EXAMPLE OF WAVES



PITCH VS. FREQUENCY

- ▶ *Frequency* is an objective property of sounds in the physical world: a physical (acoustic) property.
 - ▶ *Pitch* is a perceived property of sounds.
-
- ▶ **Frequency:** a physical attribute of a sound, which can be measured in cycles per second, or Hertz (we will look at cycles and pitch measurement in detail soon)
 - ▶ **Pitch:** "that property of a sound that enables it to be ordered on a scale going from low to high" (Acoustical Society of America)
 - ▶ While it is not correct to equate pitch and frequency, it is true that the main physical correlate of pitch is frequency.

DEMO: A RECORDING (ACOUSTIC RECORD)

| Praat: doing phonetics by computer | |
|--|---|
| Download Praat: <ul style="list-style-type: none">* Macintosh* Windows* Linux, FreeBSD* SGI, Solaris, HPUX* the source code | Information on Praat: <ul style="list-style-type: none">* Introductory tutorial: choose Intro from Praat's Help menus.* Extensive manuals and tutorials: in Praat's Help menus.* Beginner's manuals by others.* Paul Boersma's publications on algorithms and tutorials. |
|  Paul | The authors Paul Boersma and David Weenink Phonetic Sciences , University of Amsterdam Spuistraat 210 1012VT Amsterdam The Netherlands |
| |  David |

www.praat.org

HW: install this!

PITCH IN THE HUMAN VOICE

FREQUENCY OF THE VOICE

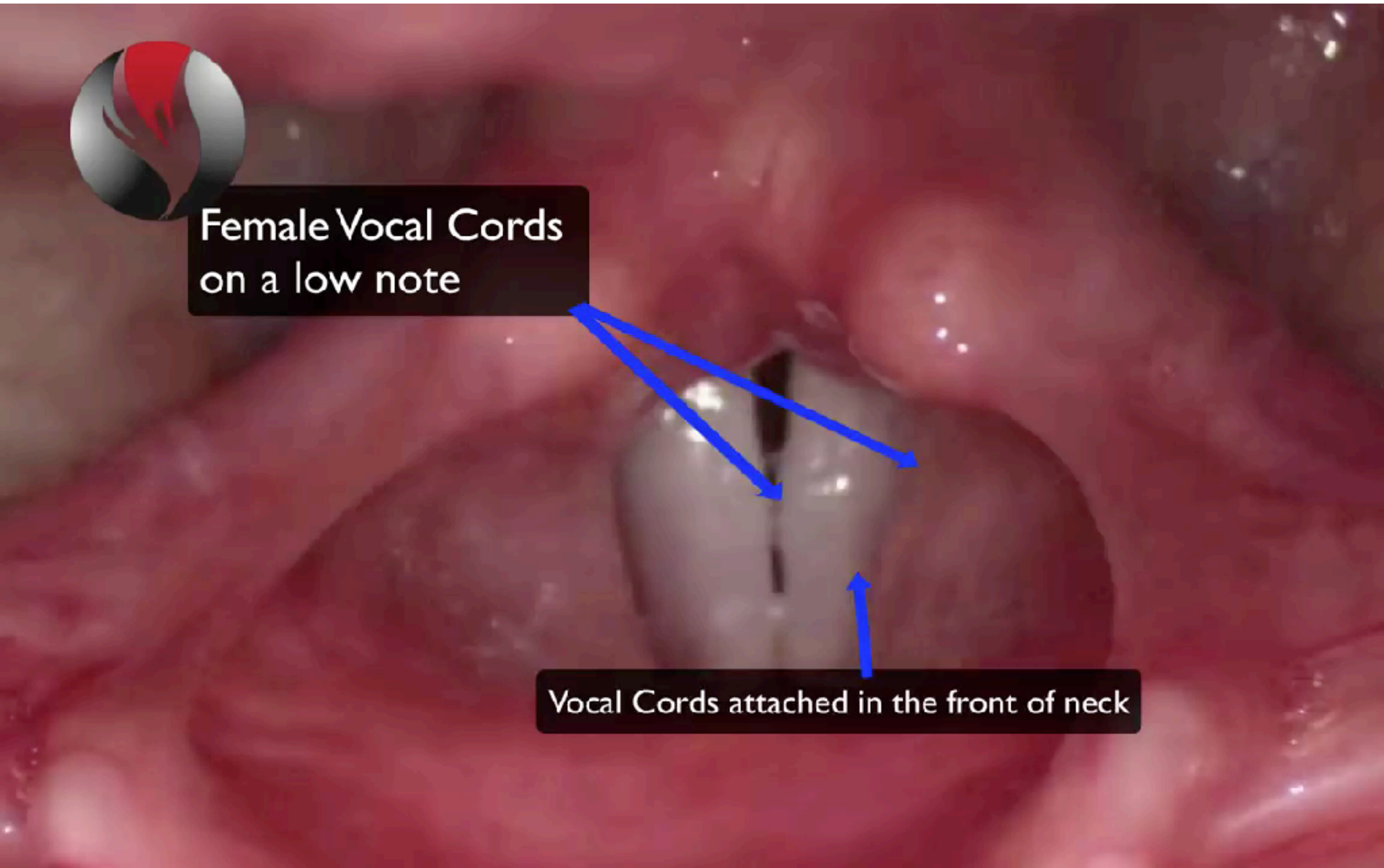
The frequency of the voice is the rate of vocal fold vibration at that timepoint.

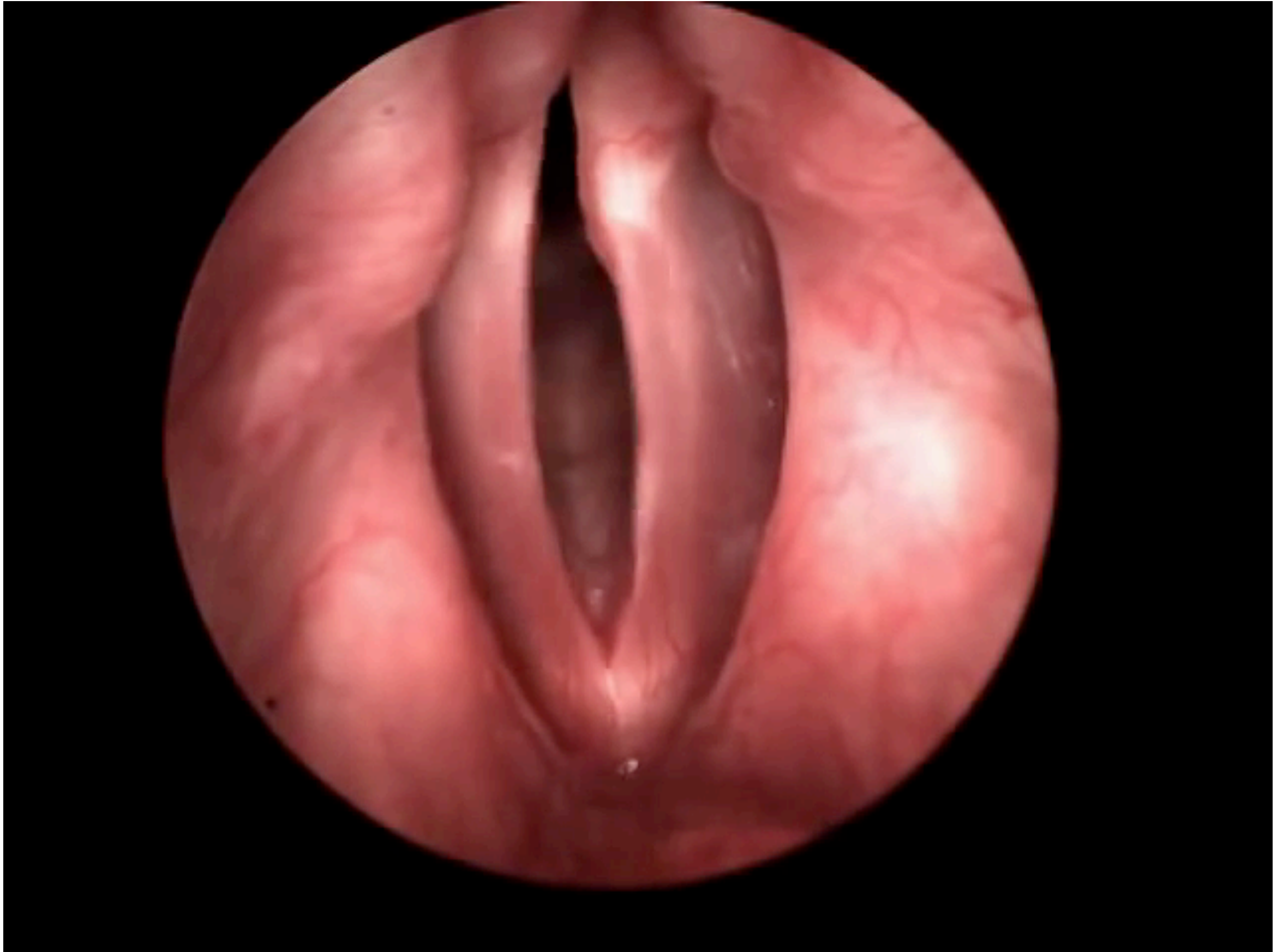
- ▶ **Watch what happens to the vocal folds as you hear pitch going up and down**
- ▶ <http://youtu.be/P2pLJfWUjc8?t=3m53s>
- ▶ <http://www.youtube.com/watch?v=9kHdhibEnhoA>



Female Vocal Cords
on a low note

Vocal Cords attached in the front of neck





RUSS SCHUH (UCLA)



<http://www.linguistics.ucla.edu/people/schuh/schuh.htm>

CANTONESE TONES

(Don't worry about the funny symbols at the bottom right now)



poem to try matter time history market

BOLE TONES (CHADIC LANGUAGE, NIGERIA)

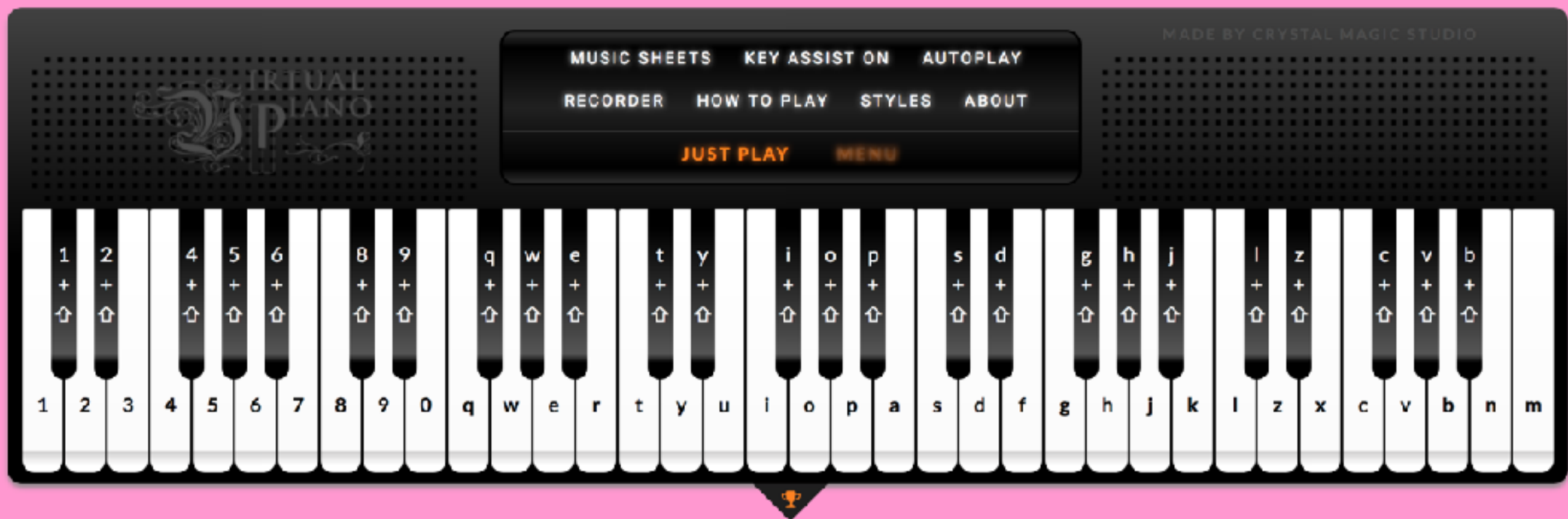


Bole
Tones

MUSICAL CHORDS AND SCALES

DEMO: SCALES ON VIRTUAL PIANO

<https://virtualpiano.net/>



HW: play with this!

CHORDS HANDS-ON

<https://musiclab.chromeexperiments.com/Chords>

C Major Chord

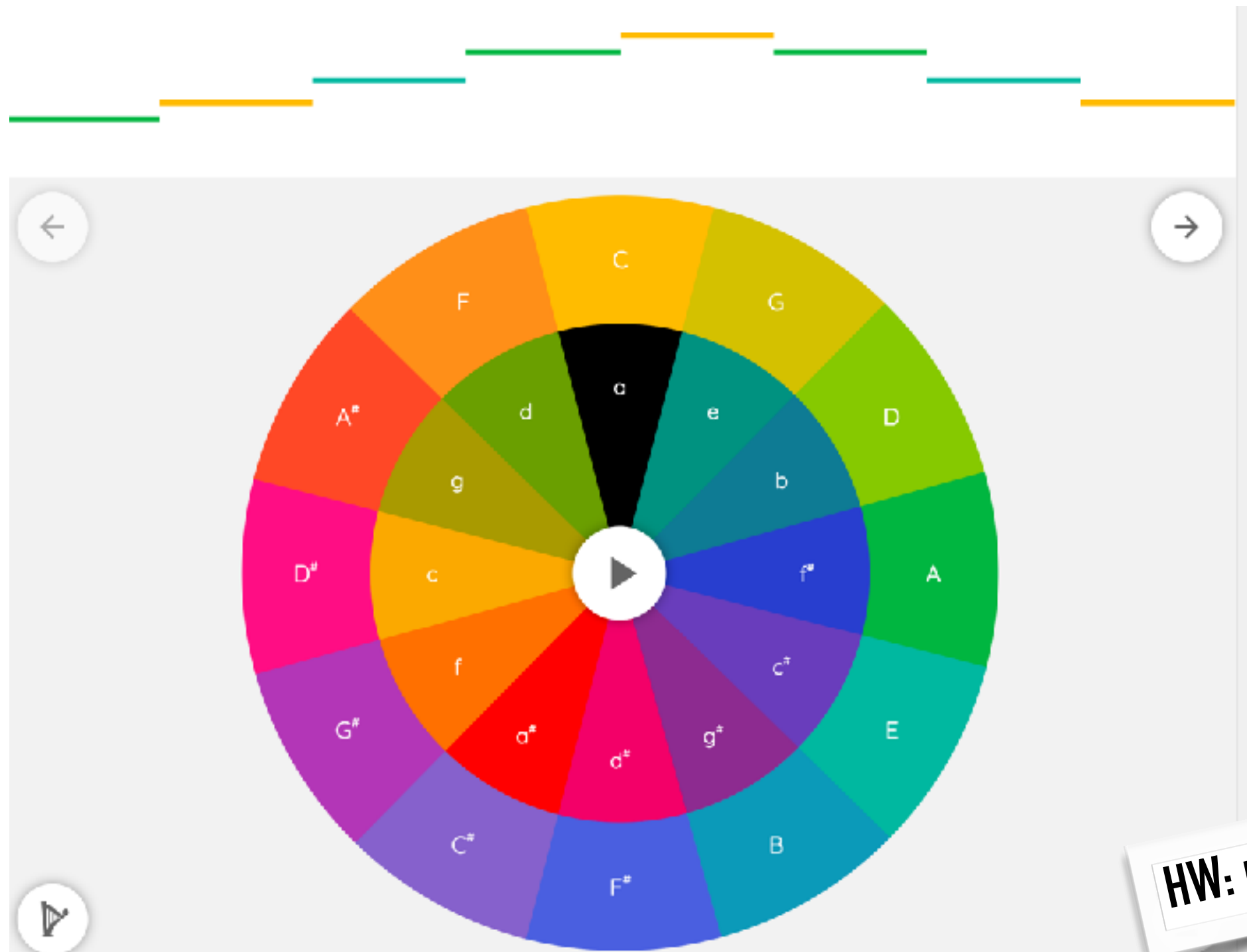


Minor ☒ Major

HW: play with this!

ARPEGGIOS HANDS-ON

<https://musiclab.chromeexperiments.com/Arpeggios>



HW: play with this!