### Lesson Plan: Squawking is talking

**Grade 2-Science Standard # 2 ET 4.2.1 .2 & .3**

**Music Education:** The learner will listen to, analyze, and describe sounds

**Objectives: Students will learn:**

* sound is produced by vibrating objects
* the pitch of the sound can be varied by changing the rate of vibration
* how birds learn
* compare bird song with human song
* develop an initial understanding of how the larynx and vocal cords work
* learn that a bird’s “voice box” is called the syrinx
* consider how both humans and birds learn to sing and focus on various aspects of songs
* be able to identify similarities in how birds and humans learn to sing
* craft bird calling cups to make their own bird calls
* study musical terms and compare and contrast structure of bird songs with human songs

**Materials:**

* access to the Internet
* website addresses(below)
* vocabulary list (attached)
* solo plastic drinking glasses- one per student
* yarn- approximately 2 ft. per student
* paperclips- 1 per student
* glue
* scissors
* water for students to dip their fingers in
* various craft supplies such as googly eyes, felt, and feathers (construction paper can be used if you do not have craft supplies

**Background Information**

The vibrating mechanism inside the human throat is the *larynx*. Many people call it a voice box. The larynx houses the vocal chords. During speech, the vocal cords are stretched across the larynx. As air pushes between the cords, they vibrate and produce sound. Various muscles adjust the tension and space of the vocal cords, which causes differences in pitch. Animals make sounds in ways similar to humans and use these sounds to communicate with other members of their species. The voice box in humans is called the larynx; in birds it is called a *syrinx*.

* View the PowerPoint [Human Vocal Production: How We Make Sound](http://www.learnnc.org/lp/multimedia/14916). Use information and selected material from this presentation in your discussion with students.
* Also view the YouTube <http://www.youtube.com/watch?v=ni0QoSGM7LQ> of inside view of human vocal cords vibrating.
* An example <http://www.youtube.com/watch?v=nvmrthgMHek>-The discovery that young songbirds babble before they can mimic an adult's song adds to evidence that young animals are born with circuitry to make them explore the possibilities of their vocal apparatus and to make sense of the world.
* This [*YouTube video*](http://www.youtube.com/watch?v=sDocL7AfIRo) is an entertaining example of a baby experimenting with speech.

**Procedure**

1. Using the teacher background information, share or review with students how humans make sounds with their larynx and vocal cords. Explain that birds make their sounds in similar (but not exact) ways and that their voice box is called a syrinx.
2. Ask students to imitate a bird call or whistle.
3. Ask students if all birds sound the same.
4. Listen to the recordings of several different bird calls or songs and discuss how they are similar and different. (see links above)
5. Ask students how they think birds learn their songs. After students have offered ideas, ask them to remember how they learned songs. Remind students that when they were younger, they didn’t immediately know how to sing or talk but experimented with sound by babbling — or using “baby talk.” Little by little, they learned to use words and to make sentences — and to sing songs. Inform students that scientists have found that birds seem to learn their songs in a similar way. They experiment at first by babbling and then try to mimic adult sounds.
6. Play examples of human baby babble and bird baby babble.
7. Compare the song structures of birds and humans using the appropriate terms from the vocabulary list.
8. Identify examples of rote singing, musical phrases, patterns, echo singing, and call and response in both human and bird song. Explain how these techniques can help humans learn songs.
9. Discuss how different types of birds have calls that vary in length and complexity.
10. Get students ready to make the Bird Calling Cups. Pass out the materials or assemble a table for students select their own supplies. Create the Bird Calling Cups according to the following directions.

**Craft: Bird Calling Cups**

* 1. **Teacher:** (Poke a hole in the bottom of a cup for students). Keep cup upside down throughout activity.
	2. Tie a piece of yarn to a paper clip.
	3. Put the end of the yarn that does not have the paperclip on it through the hole in the cup. Pull it until the clip is resting on the cup.
	4. Decorate the cup to look like a bird using construction paper, googly eyes, feathers, etc.
	5. Hold the cup at the top by the paper clip, moisten fingers in water and pinch the yarn near the bottom of the cup. Jerk down on the yarn to make a bird call.
	6. Allow students to demonstrate their bird calls to the class or have them perform a bird ensemble.

**Assessment**

As a class, discuss the following questions.

1. How do birds learn to sing?
2. How do people learn to sing?
3. How are bird songs and human songs similar and different?

**Teacher Background Terminology: Musical Vocabulary List**

**Rote singing** -learning and singing a song using routine or repetition

**Pattern** - a consistent, characteristic form, style, or method

**Echo singing-**singing in which a leader sings a phrase of a song and the follower repeats (echoes) the phrase while trying to imitate the different tones or pitches

**Call and response-**a term referring to the alternation between two musical voices in a work, particularly that between a solo singer (the “call”) and a group chorus (the “response”)

**Time signature or meter-** used in Western musical to specify how many beats are in each measure

**Melody-**musical sounds in agreeable succession of single notes or arrangement

**Rhythm-**the organization of sounds and silences across time; the temporal quality of sound

**Improvisation-** the act of composing or performing music spontaneously without planning or reading sheet music

**Harmony-**the use of two or more simultaneous pitches (tones, notes) or chords

**Composition-**a musical work

**Steady beat-**rhythmic pulse of music

**Repertoire-**a collection of musical pieces performed by a musician or ensemble;

**Vibration-** the back and forth motion of an object

**Larynx-**name for the vocal organs in mammals, commonly known as the voice box

**Syrinx-** name for the vocal organ of birds

Source: [Hall](http://www.learnnc.org/lp/people/1358), D. & and [Patillo](http://www.learnnc.org/lp/people/1359), C. (2008). [Kenan Fellows Program](http://www.ncsu.edu/kenanfellows/) Retrieved August 22, 2012