

Ohio 4-H Cloverbud Kit

A teaching tool for Ohio 4-H Volunteers

Funded by the Ohio 4-H Foundation



The Science of Sound



4-H Cloverbuds

OHIO STATE UNIVERSITY EXTENSION

The Science of Sound

Ohio 4-H Cloverbud Kit

Notebook Sections:

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- written by Deborah Curry & Jodi Mills (from the Ohio 4-H Cloverbud Curriculum Series II)	
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Keith L. Smith, Associate Vice President for Agricultural Administration and Director, OSU Extension.

List of Kit Contents



Section 1

The Science of Sound Kit Contents

When you return the kit to the Extension Office,
please make sure the following items are in the kit for
the next 4-H Volunteer.

Teacher's Notebook

Ten Musical Pipe Chimes & Ten Spoons

Sounds All Around (children's book)

Road Games—Sound Effects (CD)

12 Film Canisters for Mix & Match Game

Clothes Hanger for Sound Experiment

1 Blindfold

Completed 4-H Cloverbud Kit Evaluation



4-H Cloverbuds
OHIO STATE UNIVERSITY EXTENSION

Kit Evaluation



Section 2

4-H Cloverbud Kit Evaluation



This is an observational instrument designed to measure the influence of the 4-H Cloverbud Kit on children who have actively participated in the use of this kit.

Please fill in the blanks or circle the appropriate response.

1. County: _____

2. Number of children represented in this evaluation: _____

3. Circle which 4-H Cloverbud Kit was utilized:

FOOD FUN THE SCIENCE OF SOUND OUR COUNTRY

4. Circle the number of meetings/times the children was involved with this 4-H Cloverbud Kit:

1 2 3 4 5 6 or more

5. Was it beneficial for you to have the 4-H Cloverbud Kit for conducting 4-H Cloverbud activities?
 _____ YES _____ NO.

If YES, why, if NO why not? _____

6. How can the 4-H Cloverbud Kit be improved? _____

7. Person completing this form: _____

8. Number of years as a 4-H Cloverbud Volunteer: _____

Developed by Scott D. Scheer, Ph.D.,
 State 4-H Extension Specialist, The Ohio State University
 2/2006

Instructions: For each item, circle a number that represents the children who exhibit/experience the listed behavior/setting as result of their involvement with the 4-H Cloverbud Kit.
 Use the scale 0 = None of the children to 4 = All of the children.

<i>Because of using this 4-H Cloverbud Kit, I observed the 4-H Cloverbud children:</i>	<i>Circle One</i>				<i>All of the children</i>
	<i>None of the children</i>				
Gained subject matter knowledge (children expressed (verbal and non-verbal) knowledge related to the subject matter content of their 4-H Cloverbud kit involvement)	0	1	2	3	4
Improved in getting along with others (children were able to share, communicate, and make friends with other peers in the 4-H Cloverbud group)	0	1	2	3	4
Increased decision-making skills (children able to make decisions in regard to activity input and interaction with peers and adult leaders)	0	1	2	3	4
Experienced positive relationships with caring adults (children learning and developing in an adult leader-directed environment; a positive learning environment that is caring, supportive and fun)	0	1	2	3	4
Experienced opportunities for mastery/competence (children able to be creative with use of kit subject areas; utilizing the experiential learning cycle through the activities as children experience, share, process, and generalize)	0	1	2	3	4
Experienced an emotionally and physically safe environment (meeting the needs of children at where they are emotionally, physically, socially, and cognitively by using the kits in a safe setting; low ratio of children to adults at about 6 to 1)	0	1	2	3	4
Experienced opportunities for engagement of learning (fun, positive experiences for children; providing activities from the kit that interest the children; being a nurturing role model, enthusiastic, and sensitive)	0	1	2	3	4

**Please return to your County Extension Office
 with the 4-H Cloverbud Kit**

The Science of Sound Lesson

From Ohio 4-H Cloverbud Curriculum – Series 2



Section 3

Sound Experiments



Section 4

I Heard That! **(Activities Using the Sense of Hearing)**

1. First, ask everyone to close his/her eyes. Listen for all the sounds that can be heard when focusing on the sense of hearing. Write down the sounds that the Cloverbuds are able to hear.
2. If weather permits, go outside and do the same activity. Ask everyone to close his/her eyes and talk about the sounds that can be heard. Once again, write down the sounds as named.

Now, ask who wants to be the first to wear the blindfold. Choose a volunteer and put the blindfold on that person. (Not everyone likes to wear a blindfold, so ask for volunteers: do not force anyone to wear the blindfold.)

3. With the volunteer blindfolded, make some noises and ask him/her to identify the noises. Examples: clap hands, shut the door, knock on a table or on the door, stomp your feet, bounce a ball. Discover how many sounds the volunteer was able to identify. Allow other players to be blindfolded if they would like to.
4. After everyone has had a chance to recognize sounds, ask another volunteer to start a new activity. Blindfold the volunteer, and then, instead of noises, ask other Cloverbuds to speak (one at a time.) Ask the blindfolded member to identify the voices. Next, ask the blindfolded volunteer to point to the direction that the voice is coming from.
5. Repeat the above activity, but ask the blindfolded volunteer to put a hand over one of his/her ears. Does having only one ear change the accuracy of the sense of hearing?
6. Play the game, Marco Polo. Here are the directions:

Blindfold one person (or ask him to close his eyes.) That person is IT.

The other players must move out away from the person who is IT. (Designate an area where the players must stay- a basketball court, etc.) Once the players have found their spots, they must stay in that spot until someone else is tagged and becomes IT. IT must find the other players by saying "Marco" to which the other members must reply "Polo." As IT finds a player, he/she must tag that player and that player becomes the new IT. The game starts again.

No Peeking!!!



Mix and Match- Film Can Activities

Before you begin:

Open the Ziploc bag full of film cans and fill containers numbered 2 and 10 with water. Make sure all lids are tightly snapped shut.

The contents of the cans are as follows:

1. Salt
2. Water
3. Cotton ball
4. Rice
5. Penny
6. Bell
7. Cotton ball
8. Salt
9. Bell
10. Water
11. Rice
12. Penny



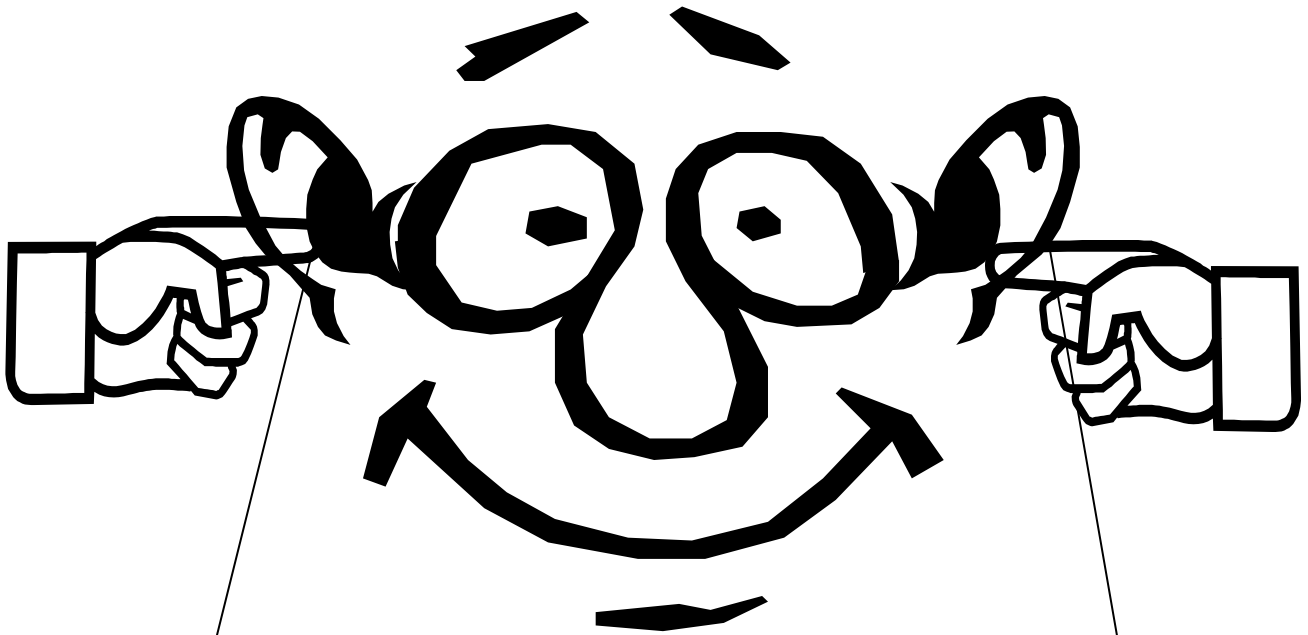
Put all film containers out on table with the numbers facing downward so Cloverbuds will not be able to use the numbers to find the answers to the activity.

In the first activity, invite the Cloverbuds to shake the containers and try to determine what is in each one.

Next, ask the Cloverbuds to try to match the film cans that make the same sounds.

Last, see how many matches the Cloverbuds can make without missing. Be sure to work as a team to stress the noncompetitive nature of Cloverbuds. See if the group is able to match all the containers without making any mistakes.

Some of the objects sound very much alike. Some Cloverbuds may have a difficult time distinguishing among all the different sounds. If necessary, open all the cans and show the objects in each one to help clarify some of the containers that sound the same.



Good Vibrations

Tie a string to each end of a clothes hanger. Wrap the ends of the strings around your index fingers and put your fingers into your ears. Let the hanger bump into something like a table or a chair. Listen to the sound of the hanger as it hits. You will be able to feel the vibrations and hear the sounds they produce.

Listening Skill Activities



Section 5

Listening & Coloring Activities



Background:

Have you ever given any thought to the words “hearing” and “listening”? They may sound like the same thing, but they are different. Hearing is described as “the function of perceiving sound” while listening is described as “paying attention in order to hear.” The definitions make it easy to see that listening and hearing are different. You may be able to hear, but that does not mean that you listen. To be a listener, you must pay attention.

Instructions:

You will need at least two people to complete the following activities. You will need someone who will read the instructions and someone who will follow the instructions. You will also need to print all the instructions and the coloring sheets.

As you do the activity, it is important that the instructions are read (one at a time) to the listener who will follow the directions as they are given. The instructions will only be given once. Nothing will be repeated so the reader must read slowly and the listener must listen closely.

When the activity is finished, the reader and the listener will check the pages together. Did the listener follow all of the instructions perfectly? Probably not! Sometimes we think we are listening, but we may not be listening as well as we think.

Follow-up Questions:

Through this activity, did you discover that you are a good listener? Did you pay attention as the instructions were given? What about in real life? Are you a good listener?

Did you discover that you are a good reader, or speaker? Did you talk slowly so the listener could understand your instructions? What about in real life? Do you speak so that others can hear you and will pay attention?

We all need to work on our listening skills. After all, hearing and listening are not the same thing!

Developed by: Janine Yeske, Extension Educator, 4-H Youth Development

Ohio State University Extension, Jefferson County, Ohio 2/06

Artwork by: Cheryl Goodrich, FNP Program Assistant, Monroe County, Ohio

The Shopping Trip

1. Color the dog's tail green and the cat's tail yellow.
2. Color the woman's lips purple and her purse blue.
3. Color the package that the cat is standing on: one side orange, and the other side red.
4. Write your name in the top right corner of the page.
5. Draw a blue cloud under your name.
6. Draw a black line for the dog to stand on.
7. Color the tubes of paper under the lady's arms: one red, one blue, and one green.
8. Color the dog your favorite color (except for his tail which is already another color.)
9. Make rain fall from your cloud and put a rainbow anywhere in the sky.
10. Color the package that is above the striped package yellow.

When everyone is finished, check the pages together. Did anyone get all of the instructions perfect? Probably not! Sometimes we think we are listening, but we may not be listening as well as we think.

After going over the pages together, allow the Cloverbuds to finish coloring the pictures any way they want.

How did you do? Want to try again. Here are a few more coloring pages with a lot more instructions. Can you listen and complete the pages correctly? Good luck!

It's A Big World We Live In

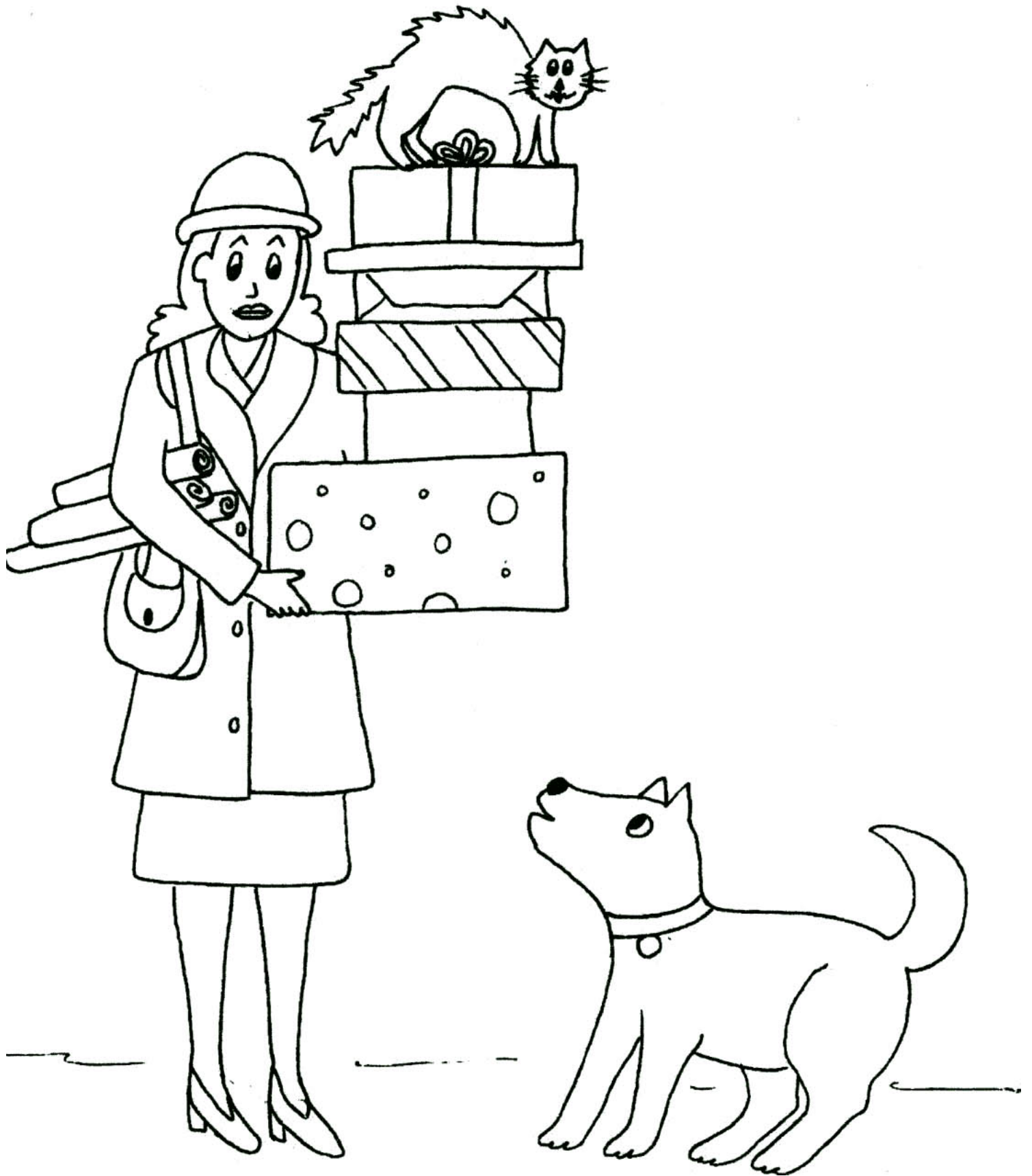
1. Color the boy's face brown (the face you can see.)
2. Color the other boy's striped shirt yellow and the girl's shirt blue.
3. Write your name in the top left corner.
4. Color the base of the globe stand orange.
5. Color the part of the globe stand that holds the globe in place purple. (This is the part of the stand that has lines and numbers that show latitude.)
6. Draw wavy lines through the oceans on the globe.
7. Color the United States of America red, white, and blue. You decide how to use the three colors together.
8. Put a black circle around the area where Ohio is located.
9. Color the land seen at the bottom of the globe green. This is called the South Pole.
10. Color the water at the North Pole green. (There is no land shown on the map at the North Pole, so just color a small portion of water.)

Let's Go See It

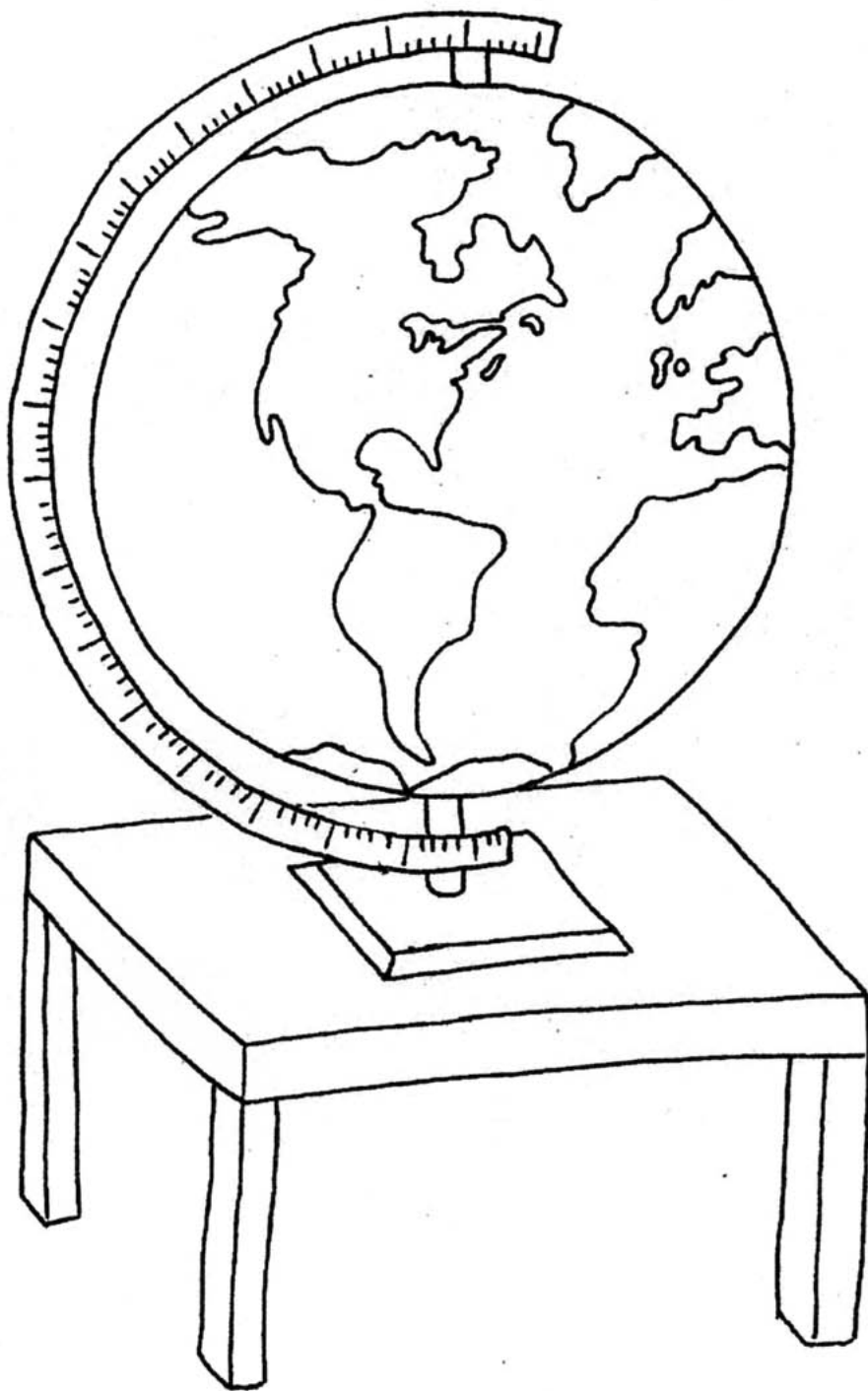
1. Color the man's hat red and the boy's hat yellow.
2. Color the canoe green with orange polka dots. (You decide how many polka dots.)
3. Color the car headlights yellow and make yellow lines coming out of the lights showing that they are turned on.
4. Color the suitcases green, yellow, OR red. You decide which colors on which suitcases.
5. Color the pool toy on the top of the pile purple.
6. Make a little bit of smoke come out of the back of the car.
7. Write your name on either top corner.
8. Draw a sun on the other top corner.
9. Color the car your favorite color and color its tires black.
10. Draw a smiley face on the front door of the car.

(Number 4 may present a few difficulties for the Cloverbuds. Some may color all the suitcases the same color and others may color the suitcases all different colors. This is another example of the fact that listening can be difficult. Some people may hear something one way, while someone else may hear the same thing completely differently.)

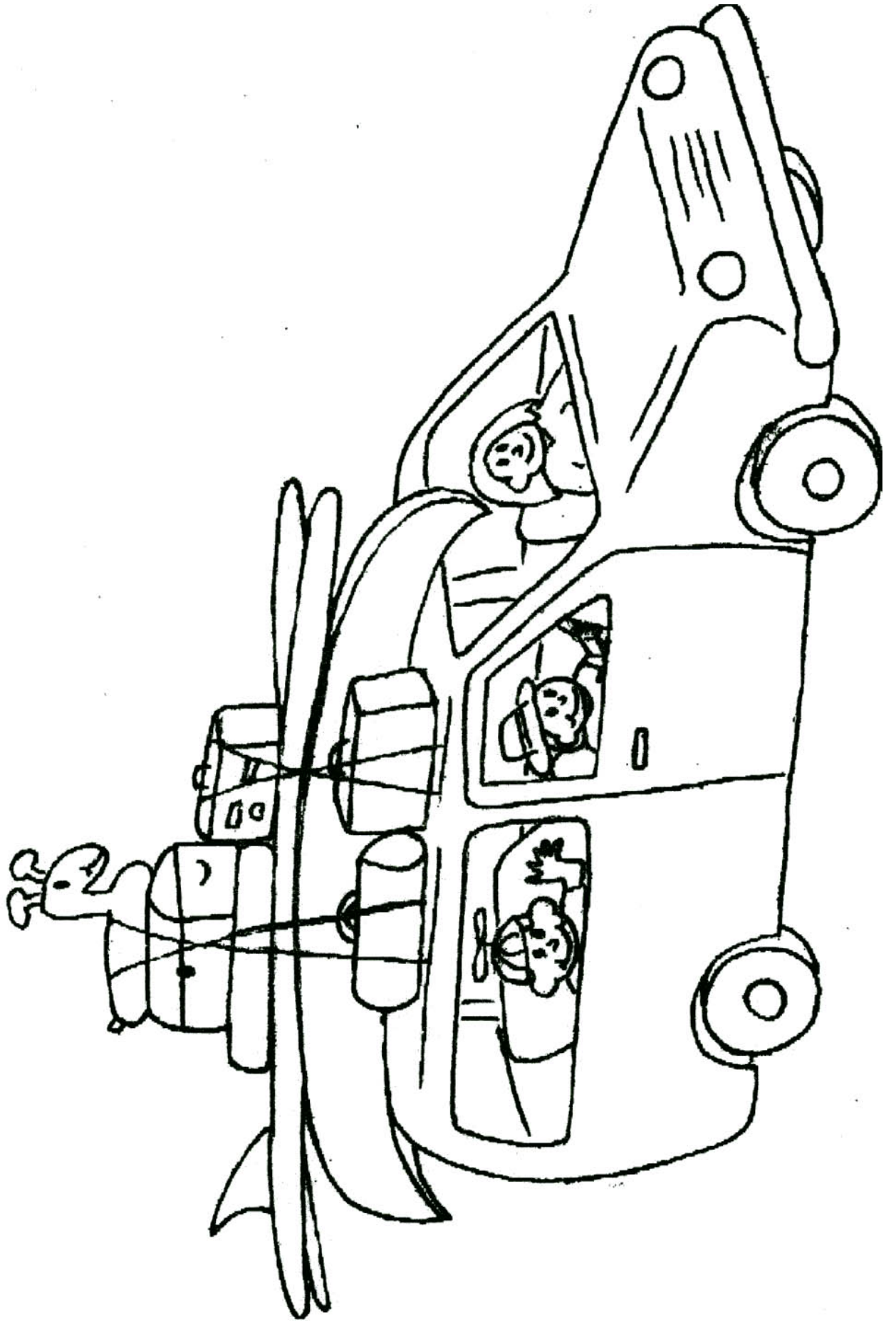
The Shopping Trip



It's a Big World We Live In



Let's Go See It



Musical Chime Activity



Section 6

Pipes + Spoons = Tunes



Cloverbud members from Jefferson County, Ohio: Left to right: Allison Lamantia, Nicholas Molinaro, Anthony Molinaro, Joey Wood, Mickenzie Bailey, and Michael Mosti

Musical Pipe Chimes

Materials: Two each of ten (10) feet, ½ inch electrical conduit. Leather lace to hang the pipes. Pipe cutter or hack saw. Measuring tape and drill press. 3 1/2" x ¼ bolts to tap on chimes to make them ring.

Directions:

1. Cut conduit to appropriate lengths as listed below.
2. Ream ends to remove sharp edges.
3. Drill ¼ hole about one inch from end of pipe for leather lace.
4. Using a permanent marker label each pipe with pipe number and note.

<i>Number</i>	<i>Note Name</i>	<i>Length of Pipe</i>
1	B ^b	13 3/8
2	B	13
3	C (middle)	12 5/8
4	C [#]	12 ¼
5	D	11 7/8
6	E ^b	11 ½
7	E	11 ¼
8	F	10 7/8
9	F [#]	10 5/8
10	G	10 ¼
11	A ^b	9 7/8
12	A	9 5/8
13	B ^b	9 3/8
14	B	9 1/8
15	C	8 7/8
16	C [#]	8 5/8
17	D	8 3/8
18	E ^b	8 1/8
19	E	7 7/8
20	F	7 ½

Pipe Chime Music

Purpose: To have fun learning to play pipe chimes and to learn basic steps in reading music.

Materials needed: Pipe chimes (each has a letter on it), spoons, music sheets

Time: 20-30 minutes

Preparation: Ten chimes are included in kit. Give each member a pipe chime and a spoon. Ask each member to look for the letter on his or her pipe. Each letter is a note on the scale. (If there are not ten members present, lay the pipes chimes on a carpeted floor or hang all pipes from a dowel rod and let each Cloverbud take turns playing pipes.)

Place the desired music sheet where chime players can see it. Using a pointer, point to the name of the note that is to be played. Member with appropriate pipe chime plays the note. Play to end of song. Play each song several times.

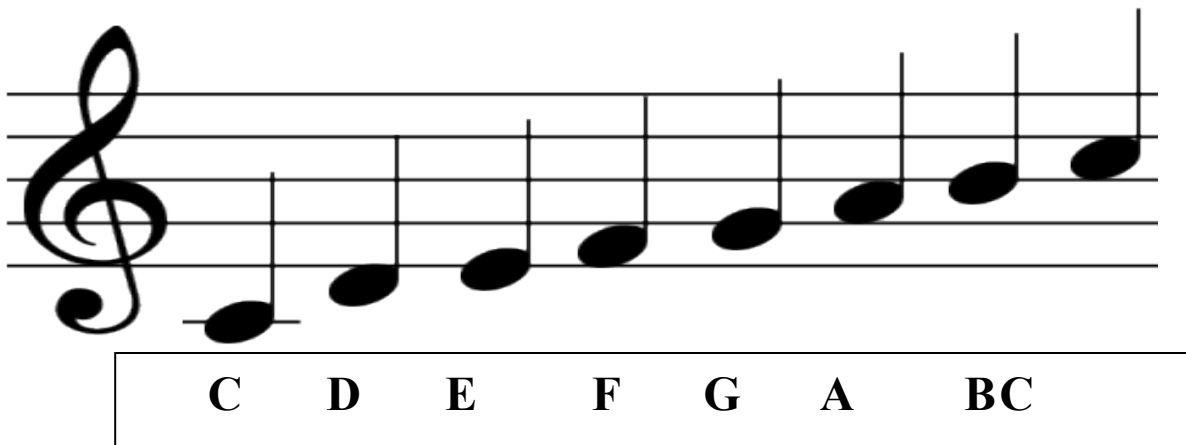
After members are familiar with songs, try singing along with the chimes.

Point out to members that this is a C scale and that it begins and ends with C. If the note desired is the first C note on the scale, the black C pipe should be played. (This is a low C.) If the C note desired is the last note on the scale, the red C pipe should be played. (This is a high C.) Play the two C pipes together so Cloverbuds can compare the tones.

Some of the songs have a \sharp . “Baby Bumble Bee” and “Bingo” each have an F sharp. When playing these songs, the F \sharp is played instead of the natural F pipe. It is important to tell Cloverbuds that the pipe is not sharp, the tone is. It is a little higher than the natural F tone.

Some of the songs have a \flat . “A Ram Sam Sam” and “If You’re Happy and You Know It” each have a B \flat . When playing these songs, the B \flat is played instead of the natural B pipe. It is important to tell Cloverbuds that the pipe is not flat, the tone is. It is a little lower than the natural B tone.

Practice playing this C scale before playing songs. This will allow Cloverbuds to hear how the notes fit together. (The F \sharp and B \flat are not used in the C scale.)



(Round)

Hello



C C E E G G



C C D D G G E C



D D G G E C C C



G G E E C C

Source: 4-H Camp Songbook

Used by Permission: 3/06

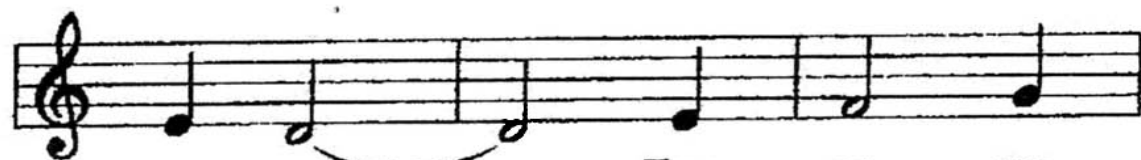
Bill Henderson & Larry Hall

My Hat



My hat it has three

G C G F E



cor - ners Three cor - ners

E D E F G



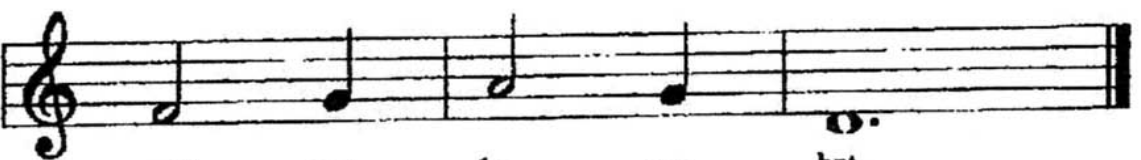
has my hat. And had it

A G E G C G



not three cor - ners it

F E F D E



would not be my hat.

F G A G D

1st time: no motions

2nd time: instead of singing "hat", point to head.

3rd time: point to head, and instead of singing "three", show 3 fingers

4th time: Repeat earlier motions and point to elbow instead of singing "corners"

Source: 4-H Camp Songbook

Used by Permission: 3/06

Bill Henderson & Larry Hall

Row, Row, Row Your Boat



C C C DE E DE F



G CCCGGG EEE CCC



G F E D C

Three Blind Mice

Three Blind Mice Three Blind

E D C E D

Mice See How they Run

C G F F E

See how they run. They all ran af-ter the

G F F E G C CBAB

farm-ers wife who cut off their tails with a carv-ing knife did

C G G G CCCBAB C G G G

you ev-er see such a sight in your life as three blind

CCC BAB C GGGF E D

mice!

C

Source: 4-H Camp Songbook
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 Bill Henderson & Larry Hall

Bingo

The F's in this song are F sharps.



There was a far-mer had a dog and

D GG GD E E D D



bin-go was his name - o B - I -

G G A A B G B B



N - G - O B - I - N - G - O

CC C A A BB B



B - I - N - G - O and bin-go was his

G G A A A G F D E F

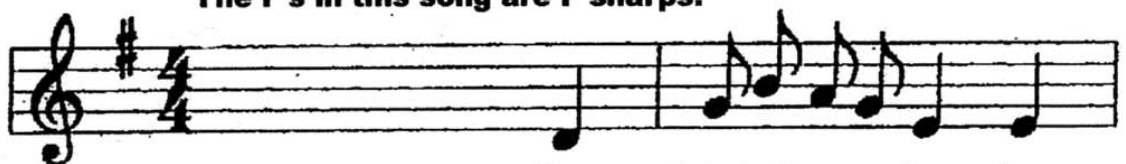


name - ol

G G

Baby Bumble Bee

The F's in this song are F sharps.



I'm bringing home a ba - by

D G BAG E E



bum - ble bee

D D G

Won't my mom - my

A A B B

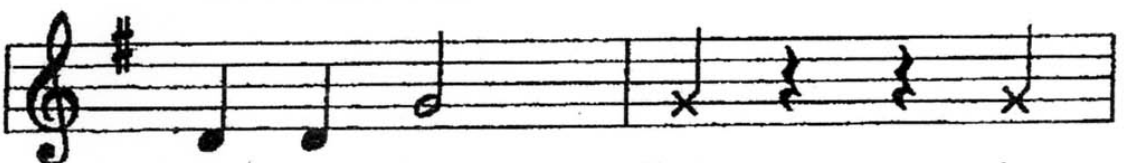


be so proud of me

A B A G E D

I'm bringing home a ba - by

G BAG E E



bum - ble bee.

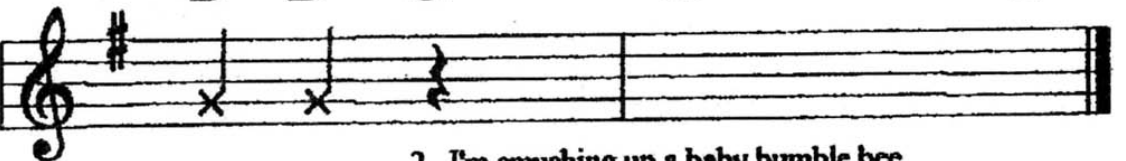
D D G

Ouch!

G

it

G



stung me.

G G

2. I'm smushing up a baby bumble bee,
Won't my mommy be so proud of me.
I'm smushing up a baby bumble bee.
Oh, it's yucky.

3. I'm licking up a baby bumble bee,
Won't my mommy be so proud of me.
I'm licking up a baby bumble bee.
See, all clean.

4. I'm yucking up a baby bumble bee,
Won't my mommy be so proud of me.
I'm yucking up a baby bumble bee.
Oh I feel better.

Source: 4-H Camp Songbook
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A Ram Sam Sam

The B's in this song are B flats.

The musical score is written in 4/4 time on a single staff. The key signature has one flat (B-flat). The lyrics are written below the staff, and piano accompaniment is indicated by chord symbols (C, F, G, A) placed below the lyrics. The score is divided into five systems, each with a double bar line at the end.

System 1:
 Lyrics: ram sam sam a
 Chords: C F F F C

System 2:
 Lyrics: ram sam sam gu-li gu-li gu-li gu-li gu-li
 Chords: F F F E F G G GG GGFG

System 3:
 Lyrics: ram sam sam A ra - fi a
 Chords: A F F C C A C

System 4:
 Lyrics: ra - fi gu-li gu-li gu-li gu-li gu-li
 Chords: C A GA B B BB B B A B

System 5:
 Lyrics: ram sam sam
 Chords: C A A

Source: 4-H Camp Songbook

Used by Permission: 3/06

Bill Henderson & Larry Hall

If You're Happy

The B's in this song are B flats.

The musical score is written on seven staves in 4/4 time, with a key signature of one flat (B-flat). The lyrics and corresponding chord letters are as follows:

- Staff 1: If you're hap py and you know it, clap your **C C F F F F F F E F**
- Staff 2: hands. (clap clap) If you're hap- py and you know it clap your **G C C G G G G G G F G**
- Staff 3: hands If you're hap- py and you know it then your **A A A B B B B D D B B**
- Staff 4: face will sure - ly show it. If you're **A A A G F F A A**
- Staff 5: - hap - py and you know it clap your **G G G F E E D E**
- Staff 6: hands. **F**

Source: 4-H Camp Songbook
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2. Stomp your feet
3. Shout horray
4. Do all three

Additional Resources



Section 7

Additional Resources

Sounds All Around by Wendy Pfeffer

Read the book together with the Cloverbuds.

Discuss with the children the many different sounds that we hear everyday. How do animals listen to sounds? Do they use their ears the same way we do? What are some different ways that animals hear?

Road Games CD

Listen to the sounds on the CD and play the game together. Because non-competitiveness is stressed in all Cloverbud activities, play as a group until everyone wins.

Can You See Sound?

All you need to do this activity is a stereo with a small speaker that can be turned up loud and a tissue. Turn the music on loud and turn the dials to the bass side, if possible. This will make the low beats of the music the distinguishing sound. Hold the tissue in front of the speaker. When the beat of the music is very loud, can you see the tissue move? The loud vibrations of the music are actually moving the tissue.