**Materials list for echolocation lesson**

**Most of these items can be found at a dollar store**

**A TUNING FORK – any sound**

**20’ garden hose**

**4 funnels**

**1. Produce sound:**

**Make drum:**

– use pencils (one per student) for drumsticks and hands to show different sounds

- cylinder (wide, short) shaped canister or bowl (one per student)

- balloon large enough to cover cylinder top (2 per student)

- rubber bands – large enough to wrap around balloon (two per student)

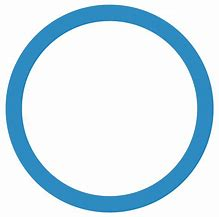
- items to use on drums (marbles, beans, rice)

- scissors (one per student)

**2. Making sound waves visible:**

**Tonoscope:**

* Reuse containers for drums (from experiment 1)
* Keep balloon tightly secured to drum (from experiment 1)
* 6” x 12” piece of heavy poster board (one per student)
* Sturdy tape to adhere to poster bard and hold it securely in the chape of a cylinder 2: wide by 12” long; also stirdy enough to tape poster board cylinder to side of drum
* Scissors
* 2” circle stencil



* Scissors (cut 2” diameter circle in side of drum)
* Salt or sand ( one tablespoon or so per student)
* Do not ruin the poster board tubes as will reuse them

**3. Reflection and absorption**:

**Reflection:**

- reuse tubes from experiment 2 (2 per two students)

- aluminum pie pans (one per two students)

- sturdy tape

**Reflection and absorption:**

- use drum from experiment 2 (one per student)

- remove drum membrane (balloon)

- tape up hole

- large rubber bands (big enough to wrap around the container), like this:

 (6 per student)

- sturdy tape to hold rubber bands in place

- rags to put inside container (any rags) (one per student)

**4. Feel sound:**

- Balloons (any size) (one per student)

- music (cell phone or computer)

**5. Echolocation:**

- earplugs (one pair per student)

- blindfold (strip of fabric, et al) (one per student)