Name: Period:

**Palm Pipes Lab**

***Unit 11 – Sound***

**Materials:** ½” PVC pipe cut to the lengths listed below. A complete set of two octaves can be made from one standard 10 ft length of pipe. The pipes can be marked with permanent marker or fingernail polish. The pipes produce notes in the key of F major. The student holds the pipe in one hand and strikes one of the open ends on the palm of the other hand, producing the pitch which corresponds to the length of the pipe.

**F Major Scale: F G A B*b* C D E F**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| ***Note*** | ***Length (cm)*** | ***Frequency (Hz)*** |  | ***Note*** | ***Length (cm)*** | ***Frequency (Hz)*** |
| **F** | 23.4 | 349 |  | **G** | 10.9 | 748 |
| **G** | 20.9 | 392 |  | **A** | 9.3 | 880 |
| **A** | 18.6 | 440 |  | **B*b*** | 9.17 | 892 |
| **B*b*** | 18.3 | 446 |  | **C** | 7.82 | 1046 |
| **C** | 15.6 | 523 |  | **D** | 6.97 | 1174 |
| **D** | 13.9 | 587 |  | **E** | 6.21 | 1318 |
| **E** | 12.4 | 659 |  | **F** | 5.86 | 1397 |
| **F** | 11.7 | 698 |  |  |  |  |

**TWINKLE, TWINKLE LITTLE STAR**

**Melody: F F C C D D C B*b* B*b* A A G G F**

**Harmony: C C A A B*b* B*b* A G G F F E E C**

**Melody: C C B*b* B*b* A A G (REPEAT)**

**Harmony: A A G G F F C**

**HAPPY BIRTHDAY**

**Melody: C C D C F E C C D C G F C C C A F E D B*b* B*b* A F G F**

**Harmony: A A B*b* B*b* B*b* A F C B*b* C**

**AMERICA**

**1. F F G E F G A A B*b* A G F G F E F**

**2. C C C C B*b*  A B*b*  B*b*  B*b*  A G**

**3. A B*b*  A G F A B*b*  C D B*b*  A G F**