

## Appendix C – Music Basics

Modern music is based on scales, a set of 8 notes. The first note is often called the key of the song. The simplest key is C major (sometimes just called C) that starts at middle C (60) and goes up to the next higher C (72). Below is the scale:

C (60) – D (62) – E (64) – F (65) – G (67) – A (69) – B (71) – C (72)

You may notice that the numbers don't change by 2 every time – that is because of the way a major scale is built. The formula for a major scale is 2 whole steps, one  $\frac{1}{2}$ , 3 whole steps, one  $\frac{1}{2}$ . Scratch uses 1 step in place of the  $\frac{1}{2}$  steps, so the numbering works out to 2-2-1-2-2-2-1 instead of 1-1- $\frac{1}{2}$ -1-1- $\frac{1}{2}$ .

2 whole steps – 60 to 62 to 64

3 whole steps – 65 to 67 to 69 to 71

1 half step – 64 to 65

1 half step – 71 to 72

The distance from C (60) to C (72) is known as an octave (a complete jump of eight notes in a scale).

The nice thing about the key of C is that on the piano keyboard you don't have to use any of the black keys (sharps/flats), only the white ones, which are the standard ones Scratch makes available to you. You can still select the black piano keys by typing in the number in between the naturals, for instance, using a value of '70' for Bb (which is the same as A#).

### Instruments in Scratch

- (1) Piano
- (2) Electric Piano
- (3) Organ
- (4) Guitar
- (5) Electric Guitar
- (6) Bass
- (7) Pizzicato
- (8) Cello
- (9) Trombone
- (10) Clarinet
- (11) Saxophone
- (12) Flute
- (13) Wooden Flute
- (14) Bassoon
- (15) Choir
- (16) Vibraphone
- (17) Music Box
- (18) Steel Drum
- (19) Marimba
- (20) Synth Lead
- (21) Synth Pad

### Musical Notes

- (72) High C
- (71) B
- (69) A
- (67) G
- (65) F
- (64) E
- (62) D
- (60) Middle C
- (59) B
- (57) A
- (55) G
- (53) F
- (52) E
- (50) D
- (48) Low C

### Percussion

- (1) Snare Drum
- (2) Bass Drum
- (3) Side Stick
- (4) Crash Cymbal
- (5) Open Hi-Hat
- (6) Closed Hi-Hat
- (7) Tambourine
- (8) Hand Clap
- (9) Claves
- (10) Wood Block
- (11) Cowbell
- (12) Triangle
- (13) Bongo
- (14) Conga
- (15) Cabasa
- (16) Guiro
- (17) Vibraslap
- (18) Open Cuica

While this version of Scratch contains fewer instrument and percussion choices than the previous version, all of the ones available seem to work all the time!