Mixing Tools

Levels

What is most important?

Pans – imaging

What's in the middle all hear
What is on top of another is lost

EQ

Cut rather than boost if possible
for better fidelity
Not much is needed if the right mic
is used - the best scenario

Muddy? Cut around 250 Hz
Honky or Hollow? Cut around 4-500K Hz
Air? about 10K Hz
Sibilance? 3-8K Hz
Presence? 5K Hz
Bottom? 65 Hz

Compression

Controls loud bursts
Makes things seem louder
Makes things controllable

Ambience

Sets front to rear imaging
More reverb time= farther back
Recreates the room
Also adds texture
Snare drums often have extra rev
It makes the notes "bigger"
In beat-centered music, set delay and
reverb time to fractions of the
beat time.
Example: 100 bpm = 60sec/100 = .6 sec or .3 sec, or .15 sec, etc
Classical/acoustic music
needs 1 to 2 sec reverb
Natural reverb rolls off highs (*damping*)

Special Processing Effects

Chorus, overtone adders, etc
Can add overtones and make
instruments smoother, warmer,
brighter, more interesting,
and easier to EQ

Submixes

Sending (using ***aux send***) the output of several channels (like six horns) to a pair of empty channels (using ***aux return***), and using these channels to allow the adjustment (***levels***, usually) of the whole horn section all together. Used on sections and often on drum tracks.

Elements of a Mix

The Foundation

- rhythm section
- bass, drums, sometimes more
- usually panned nearer to center

Pad

- long sustaining notes or chords
- musical ambience - glue
- synths, strings, sometimes organs
Rhodes, power chord on guitar.
Extra rhythm guitar probably not

Rhythm

- anything counterpoint to foundation
- shakers, tambourine, congas, guitar

Lead

- voice or instrument carrying the melody

Fills

- adding short musical melodic
or rhythmic phrases,
- placed in between lead sections
- keep arrangement from being boring

Legitimate reasons to have more than one rhythm instrument/track in the mix:

1) a different rhythm – a counterpoint

2) can't get the texture right with only one

3) bring in different instruments on different parts of the tune, to add interest

4) use one as fills during pauses in the melody

5) play at different times, or only on one part to make it heavier, louder

6) transpose to different octaves. Easy with MIDI. Possible with waveforms also.

Maximum Number of Elements at once?
Four is usually enough at the same time.
-sometimes *three* (typical rule of thumb for film). However several tracks can *combine* to form one element like a foundation.

"Competing" Tracks that Hide Each Other?
Every element needs its own frequency range.
Of course the solo instrument or voice gets the biggest chunk of range.

Panning to different locations helps.
Try tweaking the pans around a little.
Often gets clearer.

Alternate the levels of the competing tracks

Building a Mix: Typical Sequence
1) Listen to each track and fix bad notes, or at least note problems

2) Eliminate inferior/duplicate tracks (save alternate rhythm tracks to bring in for interest later)

3) Basic mix: what is the main element?
…feature it.
Start with bass, kick drum at -5 or -6
Together they will be -4 or -5
Later, with compression -6 or -7
Bring in what's needed around the main feature
In a section (horn, string), work from highest to lowest pitched.

4) High/low pass and EQ each track for clarity

5) Add compression to tracks that need control

6) Build ambience (reverb and/or delay/echo) tracks and aux sends to them

7) Adjust pans and levels for clarity

8) Edit tracks for interest (arrange the music)

9) Listen on *many* playback systems and adjust

10) Add master compression/EQ if necessary

11) Set overall levels to eliminate clipping and to normalize with other projects

Building a Mix: Other Options
• Start with everything up and see what you can pull back?
• Start with the drum and bass loops?

Building a Mix: Pop Options
Start with bass?
Start with kick drum?
Start with snare drum (2,4 back beat)
Start with bass and drums?

Building a Mix: Jazz
Melody first. Then bass.

Helpful Actions to Reduce CPU Load
Switch off effects when recording.
Less effects means less CPU load
For some, wait until mastering?
Install a master effect and suspend it.
Any effect setting you like, save using a name that is specific.
Use solo often to isolate sounds.

Arrangements
As sound designer or producer, make the piece interesting. That = not boring = not repetitive.

Try never to make the listener listen to the same mixed part (verse, etc.) twice. Change something.
A good use for that extra rhythm guitar!

Stuck for options?
• Change the software instrument for Verse2
• Drop something out and make room in V2
Then bring it back in for V3 interest
• Add a simple percussion track to V2 or V3
Pan to an empty space.
• Take the first solo and transpose it octave