

Audio Engineering Worksheet

Part 1: Make a Musical Image

1. Listen to the song. Try to decide on which side the instruments are located.
2. Listen to the left side of song and write down the instruments you hear.
3. Listen to the right side and write down what you hear.

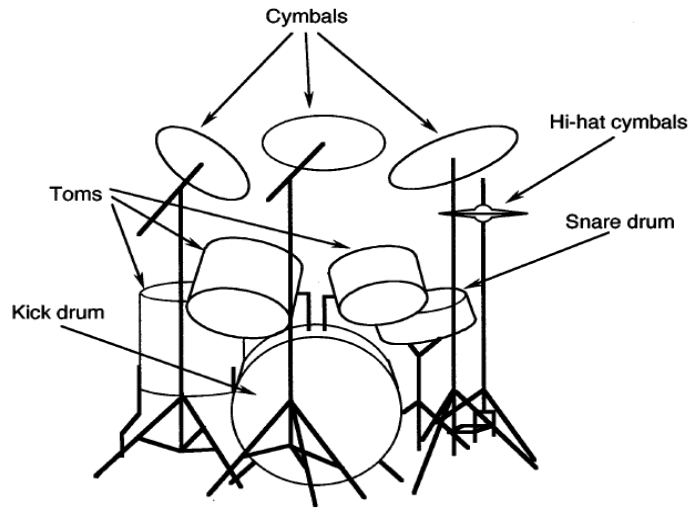
Tip: You may hear an instrument loudly on both sides; that instrument is in the center.

| LEFT | CENTER | RIGHT |
|------|--------|-------|
| | | |

4. Draw the instruments below to create a musical image.
Are the instruments more toward the left, the center or the right?

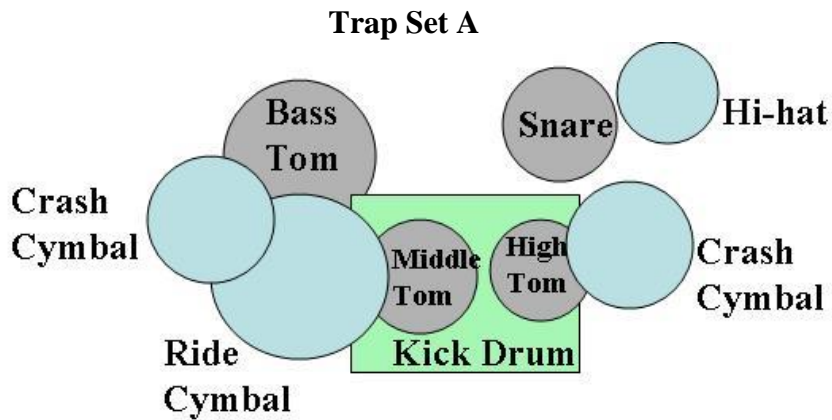
Part 2: Mic a Trap Set

What is a trap set? One is shown in the image below. Drummers sit behind the kick drum with the snare drum to their left.



Your task is to create a musical image of this trap set. Just as an audio engineer does, place the microphones in the correct spots to create the desired musical image.

Below is a top view of a slightly different trap set:



Draw two microphones and a line of equidistance on the drawing of **Trap Set A** to create the following musical image (in other words, so the instruments are correctly placed on the trap set image):

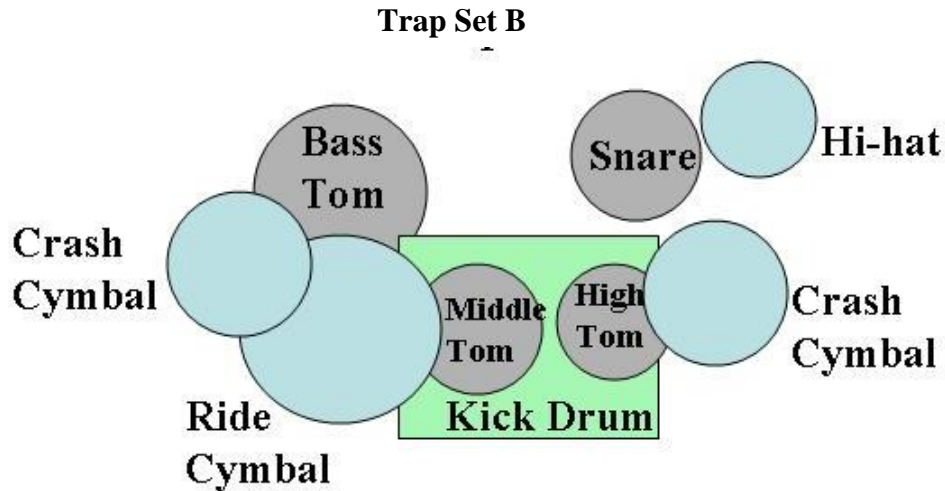
LEFT
bass tom
crash cymbal
ride cymbal

CENTER
snare
middle tom

RIGHT
hi-hat
crash cymbal
high tom
kick drum

Part 3: More Mic a Trap Set

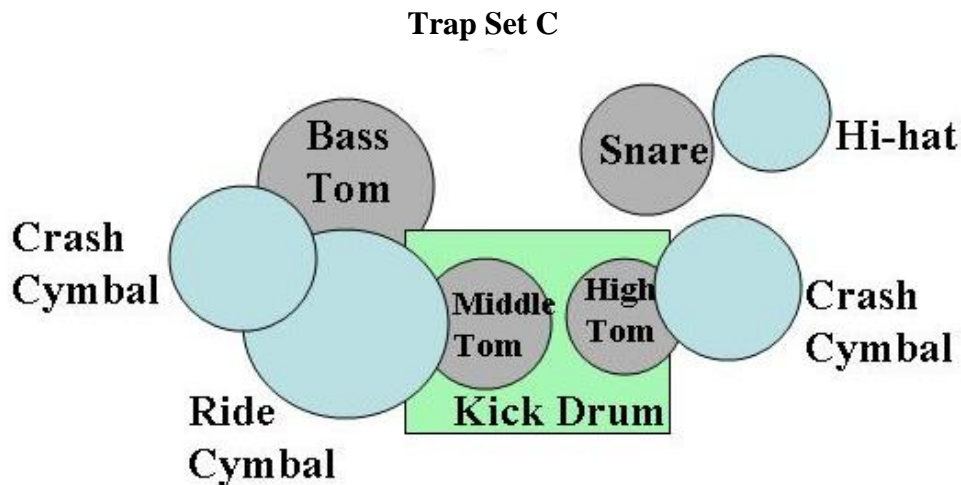
Use construction paper to cut out circles for the toms and snare, circles for the cymbals, and a big rectangle for the kick drum. Arrange the shapes on the floor to create Trap Set B. It should look like this:



Cut out two microphones, and use your ruler as the line of equidistance. Place them on **Trap Set B** to create the following musical image. Draw your idea on the picture of Trap Set B.

| | | |
|--------------|---------------|--------------|
| <u>LEFT</u> | <u>CENTER</u> | <u>RIGHT</u> |
| bass tom | kick drum | snare |
| crash cymbal | | hi-hat |
| ride cymbal | | crash cymbal |
| middle tom | | high tom |

Next, arrange the shapes on the floor to create **Trap Set C**. It should look like this:



Name: _____ Date: _____

Place your two microphones and your ruler (line of equidistance) on **Trap Set C** to create the following musical image. Draw your idea on the picture of Trap Set B.

| <u>LEFT</u> | <u>CENTER</u> | <u>RIGHT</u> |
|--------------|---------------|--------------|
| high tom | bass tom | snare |
| crash cymbal | crash cymbal | hi-hat |
| ride cymbal | | |
| middle tom | | |
| kick drum | | |

(Hint: There is more than one correct answer. Have fun!)

Part 4: Audio Engineering Questions

Think about a song that you like to hear. Answer the following questions:

1. Does the song use several instruments? (List them if you can identify them!)

2. Does the musical image of the song come through two or more speakers when you hear it?

3. Who created the musical image of the song?

4. What might the song sound like if it did not have the musical image you listen to?

5. What other sounds besides songs do audio engineers work with?

6. How has audio engineering changed how we listen to things?
