Notation of Pitch

The word "pitch" can refer to many things—from baseball to airplanes to pine trees. However, as far as music is concerned, *pitch* is the relative highness or lowness of a sound. Think of the difference between the sound of a piccolo or birdsong (high sounds) and a tuba or crashing wave (low sounds). On a piano keyboard, higher pitches are to the right and lower pitches are to the left.
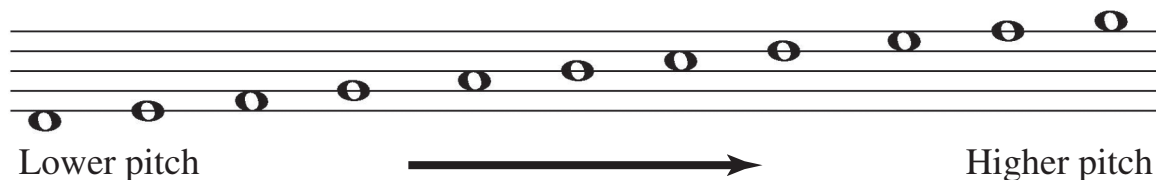

Lower pitch   ⟶   Higher pitch

Written pitch uses circular symbols called ***note heads***, placed on a group of five parallel lines called a ***staff***. The higher up the staff the note head is placed, the higher the pitch being notated. See below.

Lower pitch ⟶ Higher pitch

Note heads are always placed either directly on one of the lines of the staff, so that the line cuts through the middle of the note head, called creatively enough ***line notes***; or in the space between two lines (or also just touching a line with the edge of the note head), called ***space notes***. Notice in the example above, line notes and space notes alternate as the pitches get progressively higher.
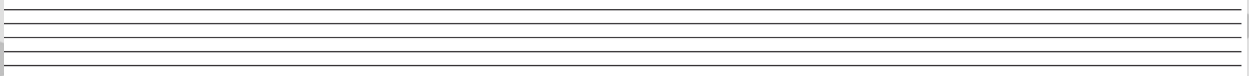
Name: _____
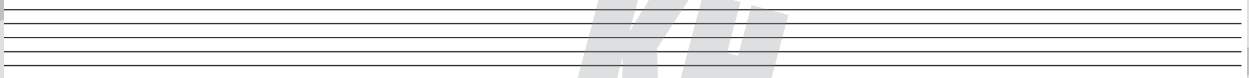
Course Section: _____ Instructor: _____

LET'S TRY IT!

1) **On the staff below, write 10 note heads on the lines (*line notes*) using each line at least once.**

2) **On the staff below, write 10 note heads in the spaces (*space notes*) using each space at least once.**

Clefs

Each line or space of the staff is assigned a *letter name* that corresponds to a specific key on a keyboard (or fret on a guitar, or fingering on a violin, clarinet, etc.). In English-speaking countries, we use the first seven letters of the alphabet to name notes on a staff in alphabetical order as the pitch gets higher (**A, B, C, D, E, F, G**) and reverse alphabetical order as the pitch gets lower (**G, F, E, D, C, B, A**). A *clef* is a symbol that specifies which of these seven letter names apply to which lines and spaces. Although musicians have many clefs to choose from to write music, we will learn the two most common ones, *treble clef* and *bass clef*.

Treble Clef

Treble clef (pictured above) is also known as *G-clef*, both because of its shape, which is based on the shape of the capital letter G, and because its position on the lines of the staff identifies one specific line as the note **G**. Can you guess which one? Look at the way the symbol swirls around the second line from the bottom of the staff. A note head on that line has the letter name **G**. Once the letter name of one line is established, the letter names of each line and space on the staff proceed in alphabetical order as shown below.

Even though the letter names of notes occur in alphabetical order on the staff, for centuries music teachers have taught the letter names of the line notes separately from the letter names of the space notes, presumably because the first thing you notice when you look at a note head on a staff is whether it is on a line or in a space. A common memory aid for remembering the names of the line notes in treble clef (**E, G, B, D, F**) is the phrase "**E**very **G**ood **B**oy **D**oes **F**ine" reading from the bottom line up to the top. As this phrase lacks "gender equity," we could instead use "**E**very **G**irl/**B**oy **D**oes **F**ine." The letter names of the spaces in treble clef (**F, A, C, E**) are perhaps easier to remember since they simply spell the word **FACE** (see below).
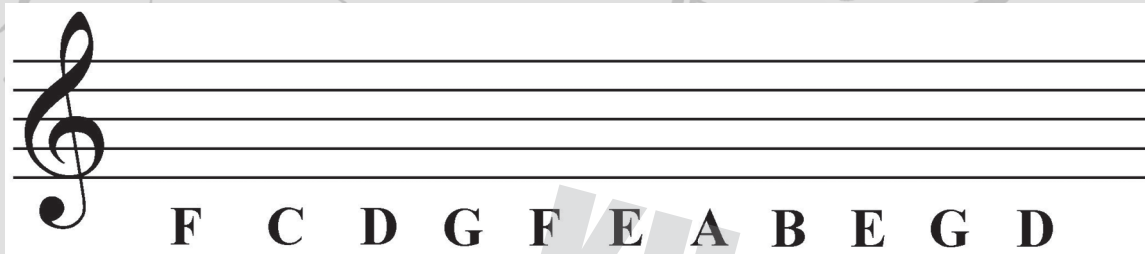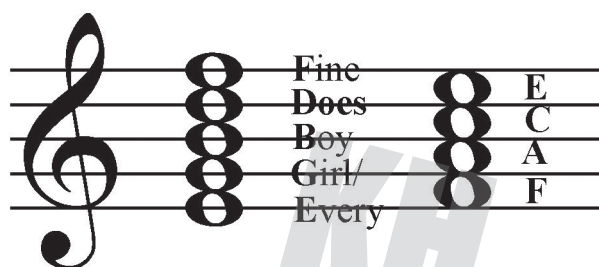

You will probably notice that some letter names appear in two different locations on the staff (the **E** of **E**very and the **E** in FAC**E** for example). The distance between two notes with the same letter name in different positions on the staff is called an *octave*, which gets its name from the notes being eight lines and spaces (or eight letter names) apart from one another.
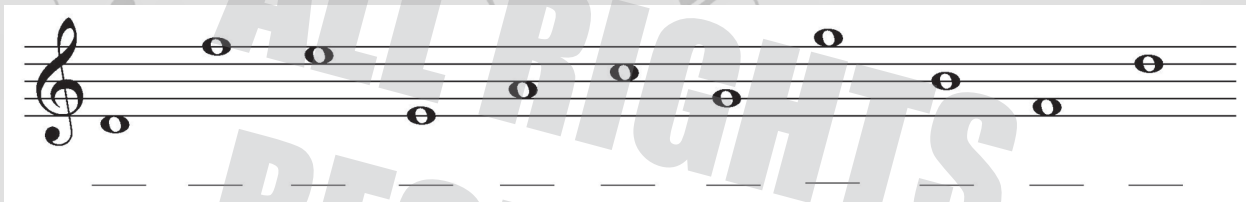
LET'S TRY IT!

1) **On the staff below, write note heads on the lines or spaces indicated by the given letters. When a letter repeats, write the note an *octave* away from the one you wrote first.**

F   C   D   G   F   E   A   B   E   G   D

2) **Fill in the blanks below with the letter name that corresponds to the note written on the staff.**
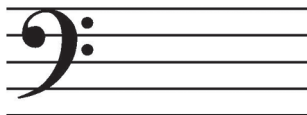
___   ___   ___   ___   ___   ___   ___   ___   ___   ___

Note: If you are confused by, or unable to do the exercises above, go back and reread the previous section and/or meet with your instructor. Do not continue until you master these exercises.

Bass Clef

Bass clef (pictured above) is also known as *F-clef* both because of its shape, which is based on the capital letter F (think of the two dots as the two horizontal lines of a capital F), and because its position on the lines of the staff identifies one specific line as the note **F**. Can you guess which one? Look at the way the two dots on either side of the second line from the top of the staff draw your eye to that line. A line note on that line has the letter name **F**. Once the letter name of that line is established, the letter names of each line and space on the staff proceed in alphabetical order as shown below, this time in reverse order for the sake of variety.

Again, despite the alphabetical arrangement of the notes, students usually learn the letter names of the line notes separately from the letter names of the space notes. A common memory aid for remembering the names of the line notes in bass clef (**G, B, D, F, A**) is the phrase "**G**ood **B**urritos **D**on't **F**all **A**part." A traditional memory aid for the spaces in bass clef (**A, C, E, G**) is "**A**ll **C**ows **E**at **G**rass," which I like to update a little to read "**A**ll **C**ars **E**at **G**as" (see below).

LET'S TRY IT!

1) **On the staff below, write note heads on the lines or spaces indicated by the given letters. When a letter repeats, write the note an *octave* away from the one you wrote first.**

F   C   D   G   F   E   A   B   A   G   D

2) **Fill in the blanks below with the letter name that corresponds to the note written on the staff.**

Note: If you are confused by, or unable to do the exercises above, go back and reread the previous section and/or meet with your instructor. Do not continue until you master these exercises.

13

The Grand Staff

Look at the brief excerpt of written music below. Note that there are both a treble clef and a bass clef, each on its own staff (the plural of staff is **staves**). These two staves are connected with vertical lines, combining them into a single **grand staff**.

From *Waltz in Party Time* by John Alan Gerhold. © 1999 Gerhold Music (ASCAP). Used by permission.

A grand staff, normally consisting of both a treble and bass clef, is the usual staff used for writing music to be played by instruments that can play a wide range of high and low notes, such as a piano, harp, marimba, or xylophone (the music above is for piano). Typically, those notes written in the treble clef are played by the pianist's right hand, since higher notes are on the right side of the piano, and notes in the bass clef are played by the left hand. You can also see that these note heads are filled in and have vertical lines attached to them. These differences in the appearance of the note heads play a role in the timing or **rhythm** of the music, as we'll see in the next chapter. For now, though, your task is to focus on the location of the note heads on the lines and spaces.

Ledger Lines

Look at the example above again and try to identify the letter name of every note head. Not so easy, is it? This is because some of the note heads are not touching the staff lines and instead are written on short horizontal lines that add lines beyond the normal five lines of the staff. These "staff extensions" are called **ledger lines**. Ledger lines are necessary because with the combined high/low range of the bass and treble clef there are a mere 22 notes that actually touch the staff lines. However, there are 52 white keys on a piano, 30 of which are either too high or too low to be written on the lines and spaces of the grand staff. Also, ledger lines are sometimes used for notes in the bass clef that could have been written in the treble clef (and vice versa) to show which hand, right or left, a pianist would use to play them (see below).

These notes are the same key on the piano in either treble or bass clef
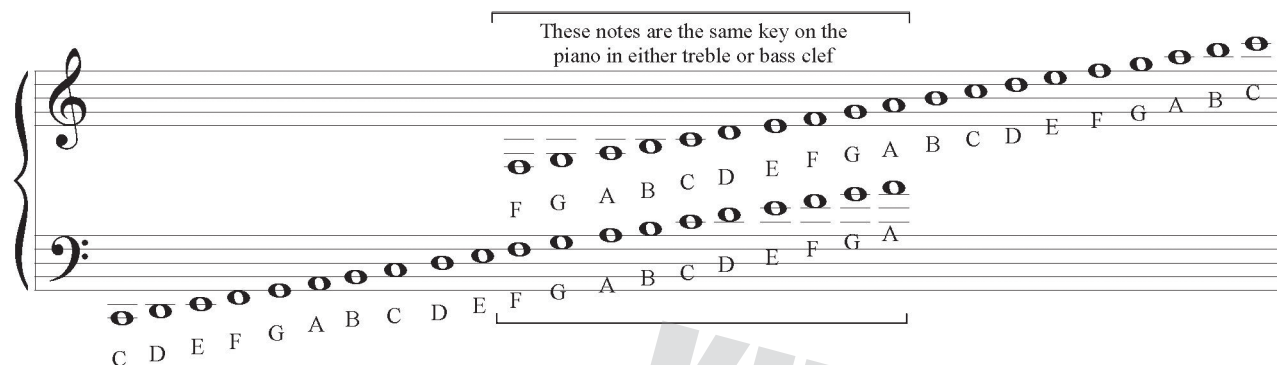
Ledger lines continue the alphabetical order of the five lines and four spaces of the staff. Notice on the grand staff above that, as the notes proceed in alphabetical order, the note heads alternate between line notes and space notes. For example, look at the first four ledger line notes in the bass clef above. The first one is a line note **C**, followed by a space note **D**, then a line note **E**, and then a space note **F**.

LET'S TRY IT!
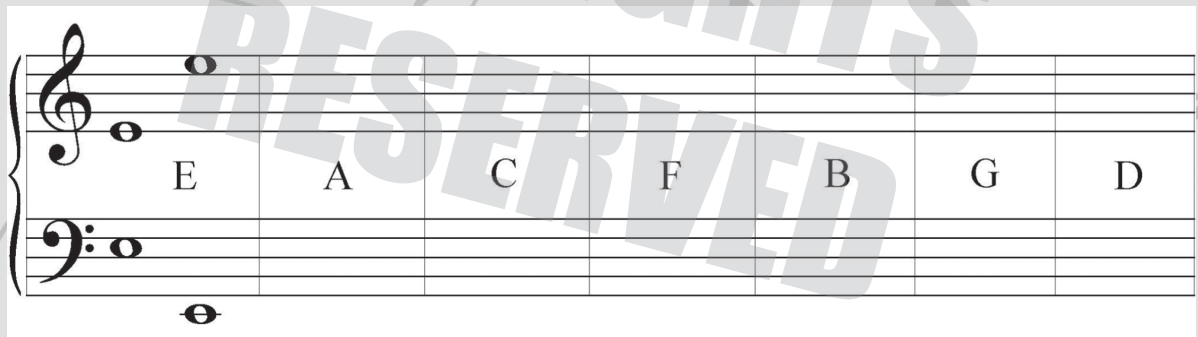
1) **On the grand staff below, fill in each blank with the letter name of each note head. Remember to think in alphabetical order for those note heads on ledger lines!**
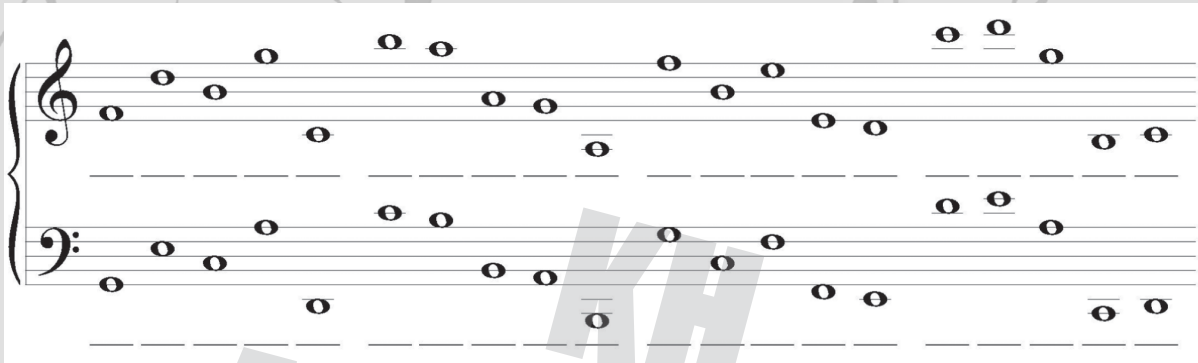
2) **On the grand staff below, write note heads on the lines and spaces for the given letter in four different locations (octaves). In some cases, this will require the use of ledger lines. See example.**

Note: If you are confused by, or unable to do the exercises above, go back and reread the previous section and/or meet with your instructor. Do not continue until you master these exercises.

The "Landmark C's"

Identifying notes on a grand staff as you have just done in the exercises above is easier when the notes are actually on the lines and spaces of the treble or bass staves but requires more patience and effort when the notes are on ledger lines. This is because the help provided by the memory aids for remembering the names of the lines and spaces of each staff all but disappears when notes are on ledger lines. However, with a few ledger-line landmarks on the grand staff, you will become much more accurate and fast at recognizing these notes. Look at note heads on the grand staff below.
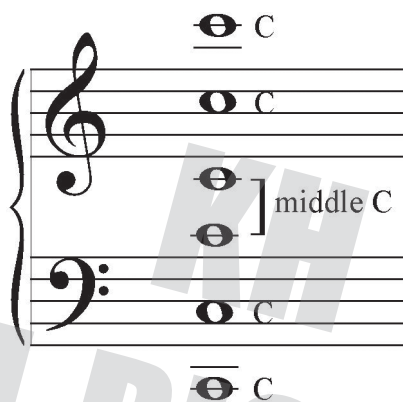
Each of these note heads is on a line or space named **C**. Each is also an octave away from its nearest neighbor, except for the two labeled as "middle C," which actually represent the same key on the piano written in both treble and bass clef. *Middle C* is the **C** in the middle between the treble and bass staves and also the **C** closest to the middle of a piano keyboard. Do you see a pattern? Notice that the highest **C** is a line note on the second ledger line *above* the treble staff and the lowest **C** is also a line note on the second ledger line *below* the bass staff. In fact, all of the notes named **C** in the bass staff are a mirror image of those in the treble staff. This group of C's is sometimes called the "Landmark C's." Remembering the letter name and location of the Landmark C's can make identifying the letter name of nearby notes much easier.

LET'S TRY IT!

1) **On the grand staff below, fill in each blank with the letter name of each ledger line note. Use the position of the Landmark C's as a reference to help you increase your recognition speed.**

Register (Octave) Numbers

With as many as eight different octaves of each of the seven letter-named notes, musicians have found it necessary to give each octave a specific name so that they can be clear about which note they are speaking. For example, if you were asked to write a note head on a particular **D** on a grand staff, you would need more information in order to choose the right **D**. Although there are several different octave naming systems, this text teaches the system of register numbers.

Register numbers are numbers for each octave of the piano keyboard. Since there are about eight octaves on a piano, the register numbers are 1 through 8. Each of these eight numbered octaves begins on the note **C** (illogical, perhaps, since **C** is not the first letter of the alphabet, but I didn't invent the system, I'm just describing it). Middle C is **C4**, since 4 is the number closest to the middle of 1–8.

Look at the grand staff below to see the register numbers in relation to the Landmark C's.
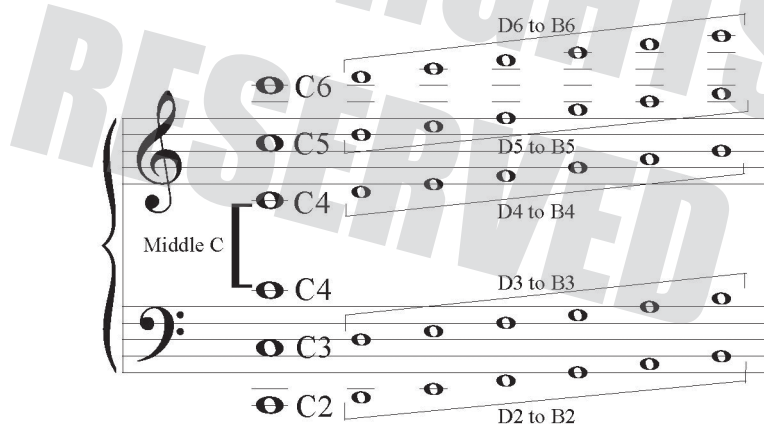
Notice that all of the note heads between **C4** and **C5** are in octave 4, just as all of the note heads between **C5** and **C6** are in octave 5.

Markings that Change Octaves (8va, 8vb, and 15ma)

You probably also noticed in the graphic above that the Landmark C's only cover octaves 2–6 and that the notes of octave 6 use a ridiculous number of ledger lines above the treble staff, making them harder to recognize. Imagine the number of ledger lines that would be necessary for octaves 7 and 8 or octave 1 in the bass staff!

Given this difficulty and since reading music requires musicians to recognize notes quickly and fluently, symbols were invented to simplify the appearance of notes that would otherwise require a high number of ledger lines to write on the staff. These symbols are called ***ottava markings*** and are used to raise or lower a written pitch by one octave (***8va***/***8vb***) or two octaves (***15ma***/***15mb***). ***8va***, called ***ottava alta*** (from Italian), raises a note by one octave and is written directly above the note head it affects. To remember its meaning, think of the "a" in ***8va*** as meaning "above." ***8vb***, called ***ottava bassa***, lowers a note by one octave and is written directly below the note head it affects. To remember its meaning, think of the "b" in ***8vb*** as meaning "below." ***15ma***, called ***quindecima alta***, raises a note by two octaves (again, think of the "a" as meaning "above"). ***15mb*** (***quindecima bassa***), means to play the note two octaves lower than written, but is exceptionally rare in written music since there are fewer notes below middle **C** than above it.

The grand staff below shows all eight octaves using *ottava* markings to reduce the number of ledger lines required. The dotted lines show that the *ottava* marking applies to a range of notes. The first two notes in the bass clef are called A0 (zero) and B0 respectively.

LET'S TRY IT!

1) On the grand staff below, fill in each blank with the letter name and register number of each note head. The first one is done for you. (HINT: Use the graphic on the previous page if you get into trouble.)

1. _G4_   2. ____   3. ____   4. ____   5. ____   6. ____   7. ____   8. ____   9. ____   10. ____

11. ____   12. ____   13. ____   14. ____   15. ____   16. ____   17. ____   18. ____   19. ____   20. ____

2) Write the indicated note head on the grand staff below. Use *ottava* markings as appropriate. The first one is done for you.

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.
D3	F5	A4	C2	E6	G1	B4	D5	F2	A7	C6	E3	G4	B2	D1

Name: _____

Course Section: _____   Instructor: _____

CHAPTER ONE EXERCISES

1) Define the following terms from the chapter in your own words.

1. *pitch* _____

_____

2. *note head* _____

_____

3. *staff* _____

_____

4. *line note* _____

_____

5. *space note* _____

_____

6. *treble clef* _____

_____

7. *bass clef* _____

_____

8. *octave* _____

_____

9. *grand staff* _____

_____

10. *ledger line* _____

_____

11. *middle C* _____

_____

12. *register number* _____

_____

13. *ottava alta* _____

_____

14. *ottava bassa* _____

_____

15. *quindecima alta* _____

_____

2) Answer the following questions.

1. What is the memory aid (phrase) that is used to learn the **lines** of the **treble clef**?

_____

_____

2. What is the memory aid (phrase) that is used to learn the **spaces** of the **treble clef**?

_____

_____

3. What is the memory aid (phrase) that is used to learn the **lines** of the **bass clef**?

_____

_____

4. What is the memory aid (phrase) that is used to learn the **spaces** of the **bass clef**?

_____

_____

5. What are the **Landmark C's**?

_____

_____

3) Identify the note heads on the grand staff below by both <u>letter name</u> and <u>register number</u>.

1. ___ 2. ___ 3. ___ 4. ___ 5. ___ 6. ___ 7. ___ 8. ___ 9. ___ 10. ___

11. ___ 12. ___ 13. ___ 14. ___ 15. ___ 16. ___ 17. ___ 18. ___ 19. ___ 20. ___

21. ___ 22. ___ 23. ___ 24. ___ 25. ___ 26. ___ 27. ___ 28. ___ 29. ___ 30. ___

31. ___ 32. ___ 33. ___ 34. ___ 35. ___ 36. ___ 37. ___ 38. ___ 39. ___ 40. ___

41. ___ 42. ___ 43. ___ 44. ___ 45. ___ 46. ___ 47. ___ 48. ___ 49. ___ 50. ___

51. ___ 52. ___ 53. ___ 54. ___ 55. ___ 56. ___ 57. ___ 58. ___ 59. ___ 60. ___

29

4) Write the indicated note heads on the grand staff below. Use *ottava* markings as appropriate.

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.
F5	A3	C1	E5	G2	B5	D6	F3	A6	C5	E2	G3	B1	D2	F4

16.	17.	18.	19.	20.	21.	22.	23.	24.	25.	26.	27.	28.	29.	30.
C2	E6	G1	B4	D3	F2	A5	C6	E3	G4	B2	D1	F5	A4	C3

30