One of the weaknesses of modern notation is that the exact amount of distance between two pitches is not indicated. In the example below, since all the note pairs involve adjacent note names, you might assume that they were equidistant, but the note pairs in measures 1 and 3 involve whole steps, while the note pairs in measures 2 and 4 involve half steps. A half step is the smallest interval (or distance) between two pitches in Western music; a whole step is equal to two half steps.

A good model for understanding where half and whole steps occur in the musical alphabet is found in the piano keyboard. On the piano (or any other keyboard instrument, for that matter), any two adjacent keys, regardless of color, form a half step.

This example shows that there are notes between the simple letter names. Those "notes between" derive their names from the simple notes around them. You have noticed that each one has two names, one using the symbol # and one using the symbol♭. The # symbol is called a sharp; it indicates that the note named has been raised a half step. Thus, we find G# above G, C# above C, F# above F, and so on. The ♭ symbol is called a flat; it indicates that the note named has been lowered a half step. Thus, we find Eb below E, Db below D, and A♭ below A. A related symbol is ♮, the natural. It's effect is to cancel any prior sharpening or flattening; therefore, a natural can either raise or lower a note, depending on context. The example below gives some examples of half steps.

If you can remember that there is a half step between B and C and between E and F, you will have mastered one of the stumbling blocks in reckoning half and whole steps.
Once you understand half and whole steps, you can begin to construct scales, which are nothing more than a succession of pitches. There are theoretically as many scales as there are points on a line, but Western music, in its common practice period (from about 1600-1900) used just two basic scale types: major and minor. Let's concentrate on major scales first.

All major scales have exactly the same pattern of whole and half steps:

```
WHOLE STEP                between notes 1 and 2
WHOLE STEP                between notes 2 and 3
HALF STEP                 between notes 3 and 4
WHOLE STEP                between notes 4 and 5
WHOLE STEP                between notes 5 and 6
WHOLE STEP                between notes 6 and 7
HALF STEP                 between notes 7 and 8
```

Once you know the pattern, it is easy to construct a scale on any given note. First, simply write down the given note and write in seven notes in succession above it (making eight notes in all):

Given:

```
\[ \text{given note} \]
```

Step 1:

```
\[ \text{eight notes in succession} \]
```

Now adjust the notes with accidentals to fit the pattern:

Step 2:

```
\[ \text{notes with accidentals} \]
```

If you're writing just one scale, it doesn't seem like a lot of work to write in the accidentals (the sharps and flats you need to follow the major scale pattern). However, if you were writing a long piece of music in D major, you would soon find it tiresome to have to write in F# and C# every time those notes arise. The solution is to put those recurring accidentals in a key signature at the beginning of the piece. Every major key has a different key signature, so they can be very handy in determining what key a given piece of music is in. There are some tricks to determining key from the key signature, however:

1. If the signature has sharps, look at the last sharp. The note a half step above the last sharp is the keynote (the note that the scale is built upon).
2. If the signature has flats, look at the second-to-last flat. That note is the keynote.
3. Of course, #2 above assumes that the key signature has at least two flats. You simply have to know that a key signature of one flat is F major, and a key signature with no sharps or flats is C major.
Circle of Fifths
Write a note a half step above the given note.

Write a note a half step below the given note.

Write major scales upward from the given note. Use accidentals, not key signatures.
Identify the key signatures below.

Write the key signature for the given key.

F major

A major

C major

A-flat major