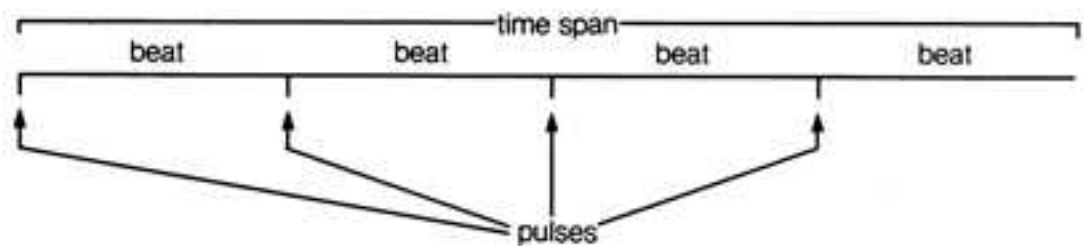


# Beat, Meter, Rhythm

## BEAT

There is an underlying pulse that persists from the beginning to the end of almost all music. It is to this that one reacts physically when hearing or participating in marches or dances. The pulse, plus the time span between one pulse and the next, constitute the **beat**.



A single beat is represented by a note. A frequent choice, for example, is the quarter note, which in a series of beats would appear like this: ♩ ♩ ♩ ♩ and so on. Among other possibilities are half-note beats, ♪ ♪ ♪ ♪, or eighth-note beats, ♪♪ ♪♪ ♪♪ ♪♪.

With reference to the marches and dances mentioned above, pulses recur regularly but are unequal in strength. Thus beats represented by quarter notes may succeed each other as follows, the accent mark signifying a stronger pulse.

- *in marches* ♩ ♩ ♩ ♩
- *in waltzes* ♩ ♩ ♩ ♩ ♩ ♩
- *in some marches, dances, and songs* ♩ ♩ ♩ ♩ ♩ ♩ ♩ ♩

In the last example the smaller accent is a less strong pulse than the larger accent.

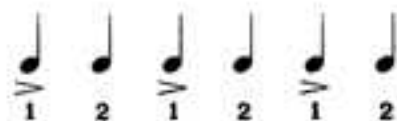
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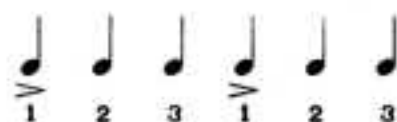
## METER

When beats are grouped in patterns **meter** exists. One metric pattern usually recurs constantly in a short musical composition. The patterns in the three previous examples are identified specifically as:

- *duple meter, two beats in an accented-unaccented pattern:*



- *triple meter, three beats in a pattern of one accented plus two unaccented beats:*



- *quadruple meter, four beats in a pattern of one accented beat, one unaccented beat, one beat with a secondary accent, and another unaccented beat:*

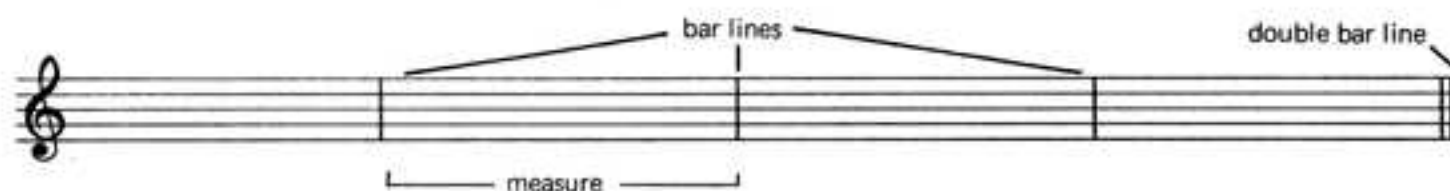


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## MEASURES, BAR LINES

Each metric pattern is completed within a period of time called a **measure**. One measure is separated from another by a **bar line**. A **double bar line** signals the end of a section or composition.



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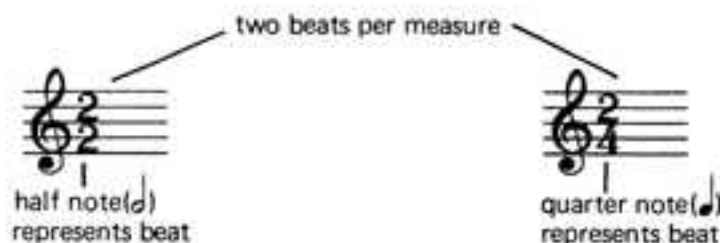
## METER SIGNATURES

The first sign to appear on a staff is the clef sign, which gives pitch orientation. Following this is a **meter signature**, sometimes called the *time signature*, which denotes the metric pat-

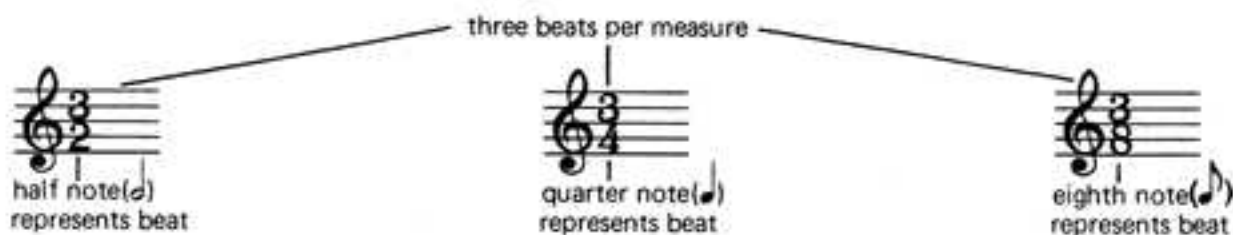
tern to be used. The meter signature consists of two numbers in vertical alignment above and below the middle line of the staff, the lower number indicating the *type of note* representing one beat (for example, 2 =  $\text{half note}$ , 4 =  $\text{quarter note}$ , 8 =  $\text{eighth note}$ ), the upper number indicating the *number of beats* in each measure.

Although others are possible, the most frequently used duple, triple, and quadruple meter signatures are:

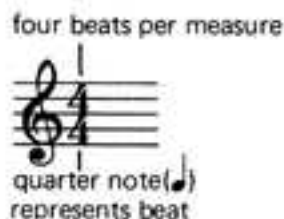
- *duple*



- *triple*



- *quadruple*




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#### 4.1 Exercises: Meter Signatures

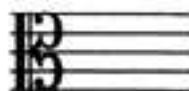
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1. Write on the staves the meter signatures indicated.

**Example:** a duple meter in which the beat is represented by a quarter note



- a. a triple meter in which the beat is represented by an eighth note



- b. a duple meter in which the beat is represented by a half note



- c. a triple meter in which the beat is represented by a quarter note



- d. a quadruple meter in which the beat is represented by a quarter note



- e. a triple meter in which the beat is represented by a half note



2. Describe the following, less frequently used meter signatures.

**Example:**  $\frac{4}{8}$  There are four beats per measure and the eighth note represents the beat.

- a.  $\frac{4}{2}$                       b.  $\frac{3}{1}$                       c.  $\frac{4}{16}$                       d.  $\frac{2}{8}$

## TEMPO AND TEMPO MARKINGS

Since values of notes are relative to one another and do not have fixed time spans, a suggestion must be given as to the rate of speed at which beats recur. This rate of speed is called **tempo** and is indicated by **tempo markings** written above the staff at the beginning of the composition. These markings are usually Italian words, although English, French, and German words may be used instead. Some of them are:

- *largo*                      slow and stately (the slowest marking)
- *lento*                      slow (between largo and andante)
- *adagio*                      slow
- *andante*                      moderately slow, easily flowing
- *moderato*                      at a moderate tempo
- *allegro*                      lively, brisk, rapid
- *presto*                      fast, rapid (faster than allegro)

Tempos are more precisely indicated by *metronome markings*. A **metronome** is a mechanical apparatus the function of which is to sound beats at regular intervals. If the metronome marking is M.M. ♩ = 60<sup>1</sup> (which means that the quarter note recurs at a rate of sixty per minute) the tempo is slow, and if M.M. ♩ = 208 it is fast. The approximate tempo for marching is M.M. ♩ = 120, or two steps per second.

## SIMPLE METER

A meter in which the beat naturally divides into multiples of two is called **simple meter**.

Following are the most frequently used simple meters. Each note represents a beat and each example constitutes one measure.

- *simple duple meter*       $\frac{2}{2}$  ♩ ♩       $\frac{2}{4}$  ♩ ♩
- *simple triple meter*       $\frac{3}{2}$  ♩ ♩ ♩       $\frac{3}{4}$  ♩ ♩ ♩       $\frac{3}{8}$  ♩ ♩ ♩
- *simple quadruple meter*       $\frac{4}{4}$  ♩ ♩ ♩ ♩

### 4.2 Exercises: Simple Meter

Perform the above one-measure examples as follows.

1. Establish a tempo (for example, M.M. beat = 120) by tapping the foot.
2. Intone the beat numbers with characteristic metric accentuation, repeating until each example can be performed with fluency (for example, *oñe two, oñe two, and so on*).
3. Keep your eyes on the example being performed so that the notation becomes associated with the sound.

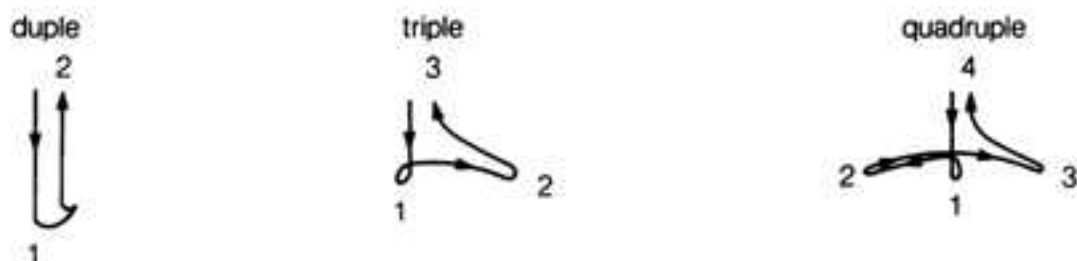
<sup>1</sup> *M.M.* means *Maelzel's metronome*, and refers to the man regarded as the inventor. The letters *M.M.* are not always included in a tempo marking.

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## CONDUCTING

*Conducting* is the physical act of directing a performing group. Certain gestures by the conductor to indicate metric patterns have become traditional. Two gestures that are standard for all meters are a strong downward movement of the arm for the first beat of the measure, called the **downbeat**, and an upward movement for the final beat of the measure, called the **upbeat**. At the beginning of a performance one beat of preparation is given to establish tempo. The following patterns are from the conductor's point of view.



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### 4.3 Exercises: Conducting

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1. At a tempo of beat = 120, practice conducting in duple, triple, and quadruple meters. Begin with an upbeat and maintain a steady tempo.
2. Conduct the metric patterns of pieces played by the instructor.

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## RHYTHM IN SIMPLE METER

Rarely does music consist entirely of notes equal in duration to the beat itself. Instead, music proceeds with a variety of durations (notes and rests)—some equal to the beat, some shorter than the beat, and some longer than the beat. This diversity of durations, together with the implications of meter, is called **rhythm**.<sup>2</sup>

In a measure the totals of the durations and of the implied beats are the same.

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<sup>2</sup> Appendix A contains a syllable system for rhythmic reading that may be used in this chapter and throughout the book.

each note longer than beat

Implications of meter

## DURATIONS SHORTER THAN THE BEAT

Durations shorter than the beat are represented by *divisions* or *subdivisions* of the beat unit. The most frequently used beat units in simple meter are shown next with their divisions and subdivisions.

	Half Note	Quarter Note	Eighth Note
• <i>beat</i>			
• <i>division</i>			
• <i>subdivision</i>			

Following are the simple meters discussed previously with one-measure examples illustrating beats, divisions, and subdivisions.

- *simple duple meter*


• *simple triple meter*

• *simple quadruple meter*

Except in division where the half note is the beat unit, divisions and subdivisions are beamed so that the metric organization within a measure is clear.

**Examples:**

**4.4 Exercise: Durations Shorter than the Beat**

1. With the class divided into three groups, perform each of the duple, triple, and quadruple one-measure examples above as indicated.

Group I taps a steady beat with the foot while intoning the beat numbers.



Group II claps the division of the beat.

Group III taps the subdivision of the beat on desks with pencils or knuckles.

With characteristic metric accentuation repeat these one-measure patterns until they can be performed with fluency.

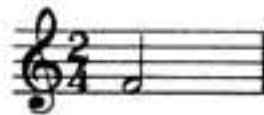
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## DURATIONS LONGER THAN THE BEAT

A duration longer than the beat is notated in one or more of the following ways:

- *by writing a single note value that combines beats*









- *by using dotted notes*



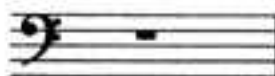
- *by using ties (durations that extend over the bar line must use the tie)*



Below are meters with a single duration that constitutes a full measure.

- *simple duple meter*       $\frac{2}{2}$         $\frac{2}{4}$  
- *simple triple meter*       $\frac{3}{2}$         $\frac{3}{4}$         $\frac{3}{8}$  
- *simple quadruple meter*       $\frac{4}{4}$  

A full measure of silence in *any* meter is indicated by a whole rest.



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## 4.5 Exercise: Durations Longer than the Beat

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1. In the above meters and at a tempo of beat = 100, sing and sustain any pitch for a full measure. Repeat while conducting.

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### THE QUARTER NOTE AS BEAT UNIT

The quarter note most frequently serves as the beat unit, for two reasons.

1. It is in the middle range of note values and thus most easily allows representation of durations longer and shorter than the beat.



For example, if the beat were  $\frac{3}{8}$ , longer durations would be awkward. If the beat were  $\frac{1}{8}$ , division and subdivision would be difficult to comprehend readily.

2. At the division level, the reading of rhythm is facilitated by the use of beams to connect groups of notes. Compare the two illustrations below, one with quarter note as beat, the other with half note as beat. The three beamed groups in the first illustration immediately identify the beats, whereas the unbeamed notes in the second illustration show no groupings.



At the subdivision level, on the other hand, the first illustration below is easier to read than the second illustration, where extra beaming is required.



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### SONGS IN SIMPLE METER

Here are excerpts from three well-known songs. Implied beats are shown below the staff. Accent marks are not needed on the staff to show metric organization, as strong and weak pulses are implied by the meter signatures. With regard to rhythm, some note values coincide with the beat and some note values

are longer or shorter than the beat. Tempo and dynamic markings are indicated above the staff and the text is printed below.

### 1. duple meter

$\text{♩} = 120$   
*f*

Hot cross buns, Hot cross buns, One a pen-ny, two a pen-ny, Hot cross buns.

implied beats

1 2 1 2 1 2 1 2 1 2 1 2 1 2

### 2. triple meter

Andante  
*p*

We three kings of Or - i - ent are,

implied beats

1 2 3 1 2 3 1 2 3 1 2 3

### 3. quadruple meter

$\text{♩} = 100$   
*mf*

Twinkle, twinkle, little star, How I wonder what you are.

implied beats

1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4

## 4.6 Exercises: Songs in Simple Meter

Do the following exercises for each of the songs above.

1. Count aloud the implied beats, placing emphasis where appropriate and maintaining a steady tempo.

2. Speak the words in the notated rhythm and tap the beats.
3. Find the pitches on the keyboard and match the pitches with your voice. Change octave if necessary.
4. Sing the song with words at the established tempo and dynamic level while keeping your eyes on the music. Your voice provides the timbre.
5. Practice conducting the song.

## COMMON TIME AND ALLA BREVE

Two time signatures that are relics of former systems of notation but still in use today are  $\text{C}$ , which signifies **common time**, the equivalent of  $\frac{4}{4}$  time, and  $\text{C}$ , the symbol for **alla breve** or **cut time**, the equivalent of  $\frac{2}{2}$  time.

### Examples:

$\text{♩} = 88$   
*mp*

Au clair de la lune, Mon ami Pierrot,

implied beats

1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4

$\text{♩} = 120$   
*f*

Yan-kee Doo-dle went to town, a-riding on a pony,

implied beats

1 2 1 2 1 2 1 2

### 4.7 Exercises: Common Time and Alla Breve

Do the following exercises for each of the songs above.

1. Count the implied beats aloud, placing emphasis where appropriate and maintaining a steady tempo.

2. Speak the words in the notated rhythm.
3. Find the pitches on the keyboard and match the pitches with your voice. Change octave if necessary.
4. Sing the song with words at the established tempo and dynamic level while keeping your eyes on the music.
5. Practice conducting the song.

## UPBEAT OR ANACRUSIS

A piece of music does not always begin with the first beat of the measure. It may begin with one or more unaccented notes, and if so the first bar line appears just before the primary accent of the first complete measure. This unaccented beginning is the **upbeat** or **anacrusis**. The final measure of the composition will traditionally be incomplete, and when added to the upbeat will total one complete measure.

“My Bonnie Lies over the Ocean,” for example, begins on an unaccented beat. The final measure has a duration equal to two beats.

The image shows musical notation for the song "My Bonnie Lies over the Ocean" in 3/4 time. The first staff shows the beginning of the piece with an upbeat of two eighth notes (G4 and A4) followed by six eighth notes (B4, C5, B4, A4, G4, F4) with lyrics "My Bon - nie lies o - ver". A bracket above the first two notes is labeled "upbeat". The second staff shows the continuation of the melody with lyrics "my Bon - nie to me, \_\_\_\_\_". A bracket above the final two notes (G4 and F4) is labeled "final measure". Below the staves, "implied beats" are indicated with vertical lines and numbers: 3, 1, 2, 3, 1, 2 for the first staff, and 3, 1, 2, 3, 1, 2, 3, 1, 2 for the second staff. Wavy lines indicate the continuation of the melody between the two staves.

## CHAPTER EXERCISES

1. Rewrite the following with, where appropriate, beams in place of flags.

Example:

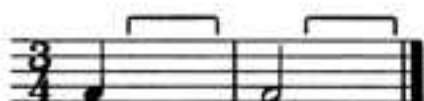
The example shows two staves of music in 3/4 time. The first staff contains a sequence of notes: a quarter note (G4), a quarter note (A4), a quarter note (B4), a quarter note (C5), a quarter note (B4), a quarter note (A4), and a quarter note (G4). The second staff contains a similar sequence: a quarter note (G4), a quarter note (A4), a quarter note (B4), a quarter note (C5), a quarter note (B4), a quarter note (A4), and a quarter note (G4). The notes are written with stems and flags, but no beams are present.



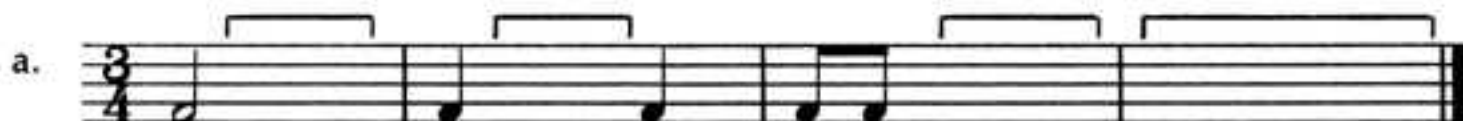


3. Where a bracket occurs add one note to complete the measure.

Example:

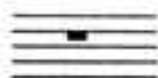


Answer:

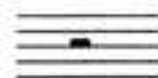


4. Where a bracket occurs add one rest to complete the measure.

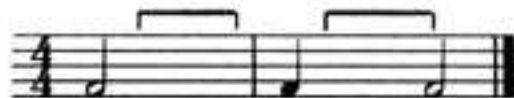
Make whole rests like this:



Make half rests like this:



Example:



Answer:





a. 

b. 

c. 

d. 

e. 

f. 

g. 

h. 

5. Add meter signatures to the following.

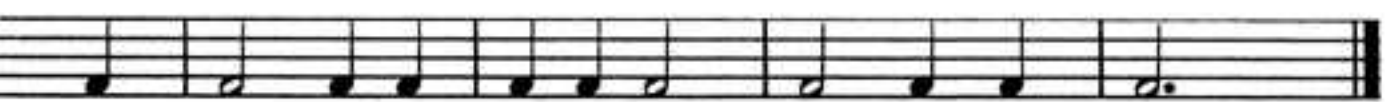
Example:



Answer:

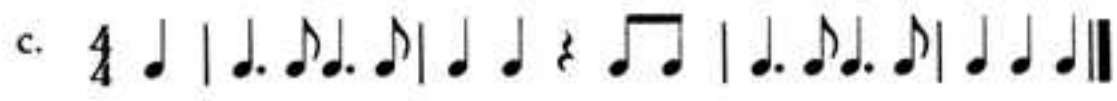


a. 

b. 



6. At a tempo of beat = 80, practice the following rhythm exercises until each can be performed fluently. Maintain a steady beat and use rhythmic syllables.



7. Rhythmic duets for additional practice.

**Instructor:** Begin by practicing each part separately. Sing as duets at an interval of a perfect fifth.

$\bullet = 92$

Two staves of music in 2/4 time. The first staff begins with a *mf* dynamic and the second with a *p* dynamic. Both staves contain a sequence of notes: a quarter note, a quarter note, a quarter note, a quarter note, a quarter note, a quarter note, a quarter note, and a quarter note. The notes are arranged in a pattern that suggests a perfect fifth interval between the two parts.

$\bullet = 96$

b. Two staves of music in 4/4 time. The first staff begins with a *f* dynamic and the second with a *p* dynamic. The first staff contains a sequence of notes: a quarter note, a quarter note, a quarter note, a quarter note, a quarter note, a quarter note, a quarter note, and a quarter note. The second staff contains a sequence of notes: a quarter note, a quarter note, a quarter note, a quarter note, a quarter note, a quarter note, a quarter note, and a quarter note. The notes are arranged in a pattern that suggests a perfect fifth interval between the two parts.

$\bullet = 84$

c. Two staves of music in 3/4 time. The first staff begins with a *p* dynamic and the second with a *f* dynamic. The first staff contains a sequence of notes: a quarter note, a quarter note, a quarter note, a quarter note, a quarter note, a quarter note, a quarter note, and a quarter note. The second staff contains a sequence of notes: a quarter note, a quarter note, a quarter note, a quarter note, a quarter note, a quarter note, a quarter note, and a quarter note. The notes are arranged in a pattern that suggests a perfect fifth interval between the two parts.

$\bullet = 72$

d. Two staves of music in 2/4 time. The first staff begins with a *f* dynamic and the second with a *p* dynamic. The first staff contains a sequence of notes: a quarter note, a quarter note, a quarter note, a quarter note, a quarter note, a quarter note, a quarter note, and a quarter note. The second staff contains a sequence of notes: a quarter note, a quarter note, a quarter note, a quarter note, a quarter note, a quarter note, a quarter note, and a quarter note. The notes are arranged in a pattern that suggests a perfect fifth interval between the two parts.

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## PIANO EXERCISES

1. Play the excerpts from “Hot Cross Buns,” “We Three Kings,” “Twinkle, Twinkle, Little Star,” “Au clair de la lune,” and “Yankee Doodle” (pages 41–42).<sup>3</sup>
2. Using any pitch on the keyboard, play Exercise 6 of the Chapter Exercises.
3. With another person, play Exercise 7 of the Chapter Exercises.

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3. *Appendix C contains information on piano fingering and on playing melodies.*