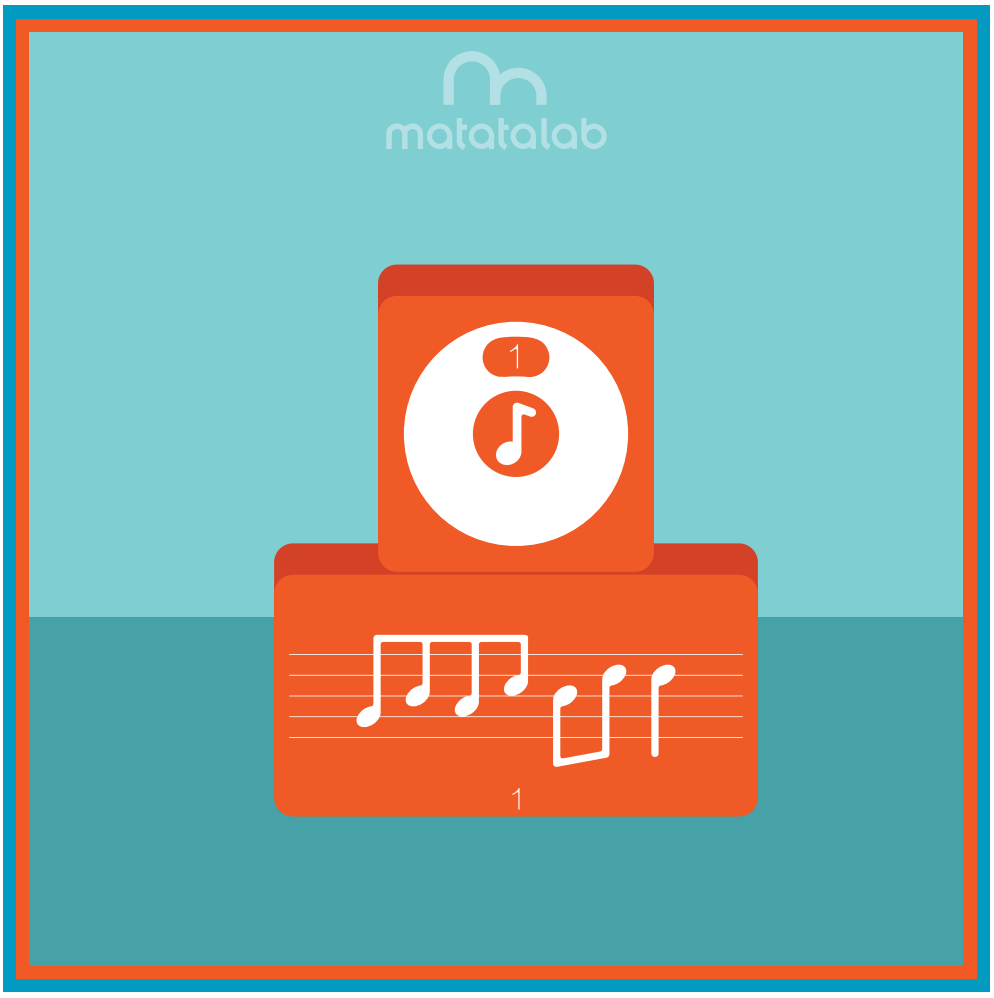
Matatalab
Musician Add-On
Overview and Introduction



matatalab

Musician Add-On

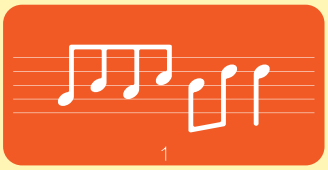
Table of Contents

Overview and Introduction

The Matatalab Musician Add-On Set utilizes 32 Music blocks, 10 Melody blocks and 3 Music warm-up cards. The student will be able to create melodies and musical patterns using the music blocks in combination. This set of lessons will allow students to compose melodies, create musical patterns alone and with others, sing and identify scale degrees (solfege), sing composed patterns with and without lyrics, and identify music notes and notation.


Lower Octave Block


Higher Octave Block


Melody Block

Essential Objective

Understanding the use of music notation with Matatalab music blocks coding to create melodic melodies.

Learning Objectives

- Identify Staff Notes and Pitches
- Identify Music Notation
- Count and Identify Rhythm Patterns
- Identify and Create Musical Patterns
- Sing and Identify Musical Intervals
- Compose Melodic Melodies (with and without lyrics)

Standards

NAfME, CSTA

Aligned Standards

NAfME - The National Association for Music Education (formerly MENC):

Creating

Imagine

K-2

MU:Cr1.1.Ka **With guidance, explore and experience music concepts (such as beat and melodic contour).**
MU:Cr1.1.1a **With limited guidance, create musical ideas (such as answering a musical question) for a specific purpose).**
MU:Cr1.1.2.a **Improvise rhythmic and melodic patterns and musical ideas for a specific purpose.**

3-5

MU:Cr1.1.3a **Improvise rhythmic and melodic ideas, and describe connection to specific purpose and context (such as personal and social).**
MU:Cr1.1.4a **Improvise rhythmic, melodic, and harmonic ideas, and explain connection to specific purpose and context (such as social and cultural).**
MU:Cr1.1.5a **Improvise rhythmic, melodic, and harmonic ideas, and explain connection to specific purpose and context (such as social, cultural, and historical).**

CSTA (Computer Science Teacher Association)

K-2

1A-CS-01 **- Select and operate the appropriate software to perform a variety of tasks, and recognize that the users have different needs and preferences for the technology they use.**

1A-CS-02 **- Use appropriate terminology in identifying and describing the function of common physical components of computing systems (hardware).**

1A-AP-11 **- Decompose (break down) the steps needed to solve a problem into a precise sequence of instructions.**

1A-AP-12 **- Develop plans that describe a program's sequence of events, goals, and expected outcomes.**

1A-AP-14 **- Debug (identify and fix) errors in an algorithm or program that includes sequences and simple loops.**

1A-AP-15 **- Using correct terminology, describe steps taken and choices made during the iterative process of program development.**

3-5

1B-CS-03 **- Determine potential solutions to solve simple hardware and software problems using common troubleshooting strategies.**

1B-AP-08 **- Compare and refine multiple algorithms for the same task and determine which is the most appropriate.**

1B-AP-10 **- Create programs that include sequences, events, loops, and conditionals.**

1B-AP-11 **- Decompose (break down) problems into smaller, manageable subproblems to facilitate the program development process.**

1B-AP-13 **- Use an iterative process to plan the development of a program by including others' perspectives and considering user preferences.**

1B-AP-15 **- Test and debug (identify and fix errors) a program or algorithm to ensure it runs as intended.**

1B-AP-16 **- Take on varying roles, with teacher guidance, when collaborating with peers during the design, implementation, and review stages of program development**

Time

12 Lessons - 60 minutes each

Materials

- **Staff Notes and Pitches Worksheets**
- **Note Values Worksheets**
- **Rhythm Pattern Worksheets**
- **Staff Worksheets**
- **Pencils**
- **Matatalab Coding Set**
  - **Command Tower**
  - **Control Board**
  - **Matatabot**
  - **Matatalab Musician Set**
- **Copy Worksheets**
- **Charge Matatalab Command Tower and Matatabot**

Vocabulary

- **Staff** - a set of five horizontal lines and four spaces that each represents a different musical pitch or, in the case of a percussion staff, different percussion instruments.
- **Pitch** - the highness or lowness of a sound.
- **Scale** - a set of musical notes ordered by a fundamental pitch.
- **Interval** - the distance between two pitches.
- **Sequence** - the restatement of a melodic passage.
- **Solfege** - powerful framework to recognize notes by ear, which lets you improvise and play by ear easily.
- View this video to learn more - https://youtu.be/OkW4v_MJEUg

Lessons Overview

These lessons provide a sequential, meaningful curriculum with fundamental learning experiences for all children. The lessons are sequenced by level of difficulty for each project. Difficulty is reflected in the learning progression and the use of complex problem-solving and creation with music notes. In a standard primary music class, activities change multiple times to maximize the attention span and learning capabilities of the students. Time to play and practice with the Matatalab Musician Add-On set should be integrated into each lesson. In addition, teachers should include time for singing, moving, listening, and performing with each lesson.

LESSON 1: Staff Notes and Pitches

OBJECTIVE: Students will identify the construction of a musical staff and identify high and low pitch sounds.

LESSON 2: Staff Note Names

OBJECTIVE: Students will identify the letter name and pitch location of notes on a musical staff.

LESSON 3: Creating Rhythm Patterns

OBJECTIVE: Students will identify, count, clap and create musical notation.

LESSON 4: Time Signatures

OBJECTIVE: Students will identify how time signatures are used in music and create rhythm patterns with 4/4 and 3/4 time signatures.

LESSON 5: Ear Training

OBJECTIVE: Students will identify Solfege (Do, Re, Mi, Fa, Sol, La and Ti) pitches with the use of the Matatalab music blocks.

LESSON 6: Musical Hands

OBJECTIVE: Students will identify Solfege with the use of hand signs.

LESSON 7: Musical Intervals

OBJECTIVE: Students will identify an interval (the distance between two notes) and the sound and location on the staff.

LESSON 8: Musical Dictation

OBJECTIVE: Students will identify aurally pitch patterns with Solfege and Matatalab music blocks.

LESSON 9: Identify Matatalab Music Kit

OBJECTIVE: Students will identify the music blocks, music pattern blocks and song examples with the Matatalab kit.

LESSON 10: Identify Matatalab Block Pitches

OBJECTIVE: Students will identify the relationship of the pitch on the Matatalab music block with the staff.

LESSON 11: Compose and Play Matatalab Intervals

OBJECTIVE: Students will review intervals and compose intervals to identify aurally with a partner.

LESSON 12: Compose Matatalab Melodies with Lyrics

OBJECTIVE: Students will compose an original melody with lyrics with the music blocks.

Matatalab
Lesson 1
Staff Notes and Pitches

Overview and Introduction

Where do you hear music? What types of music (genre) do you like? How do we write music? Orchestras, choirs and bands use sheet music to play the music we hear. Today we will identify the musical staff and identify high and low pitches.

Learning Objectives

- Identify the five lines and four spaces that create the staff.
- Identify higher and lower pitches on the staff.

Standards

K-2: MU:Cr1. 1.Ka, MU:Cr1. 1.1a, MU:Cr1. 1.2a
3-5: MU:Cr1. 1.3a, MU:Cr1. 1.4a, MU:Cr1. 1.5a

Time

60 minutes

Materials

- Staff Notes and Worksheets
- Pencils
- Matatalab Coding Set
  - Command Tower
  - Control Board
  - Matatabot
  - Matatalab Music Blocks

Teacher Set-Up and Preparation

- Copy *"The Staff, Notes and Pitches"* worksheet
- Matatalab Music Coding Set pieces
- Charge Matatalab Command Tower and Matatabot

Activity

Students will identify note location and pitch name on the musical treble staff. Students will create and identify high and low pitches.

- Distribute "The Staff, Notes and Pitches" worksheet.
- Students will read and identify the five lines and four spaces that create the staff.
- Use one Matatalab music block and turn the dial to "1" and place on the Control Board. Press the play button.
- Dial 1 -7 and play each pitch on the Control Board and inform the students that the notes are the first seven pitches of a major scale.
- Use two music Matatalab blocks. Dial one block to number "3"; dial one block to number "5". Students will identify which block is higher and lower in pitch.

Students will

- Students will identify high and low pitches on the staff.
- Students will complete exercises 1, 2, 3 and 4.
- Students will be given one Matatalab Block and form pairs. Students will turn block dials and identify who has the higher and lower sound by placing their block on the Control Board.

Closing

Assessment

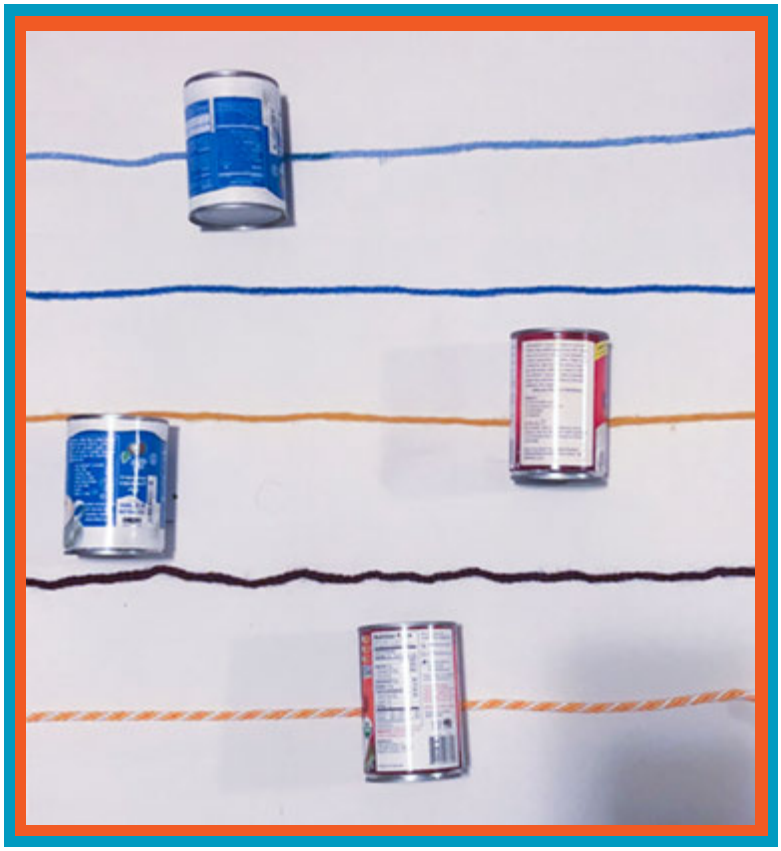
We have identified and compared high and low pitches and how they look on the staff.

Have the students answer the following questions:

- How many lines are on a staff?
- How many spaces are on a staff?
- How many notes are on a major scale?

Extensions

Music staffs are located on paper. How can we create and construct a music staff using other materials? One idea would be to use five different colors of yarn. The notes could be items in your house like cans, cups, etc. These items can be placed on the staff.



We all like different types of music. Create a music game that involves recordings of male and female vocalists singing the same song and determine the comparison and differences in high and low sounds. Your audience can vote on the best vocalist.

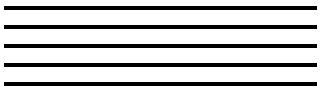
Real World Connections

Music can be viewed and heard. How would someone write music without playing an instrument? How long will it take someone to learn how to read music? Is music on the staff written the same as music in other countries?

Have you ever played an instrument? How many instruments can a person learn proficiently?

The Staff, Notes and Pitches

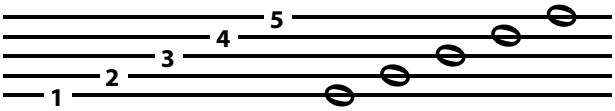
Music is written on a STAFF of five lines and the four spaces between.



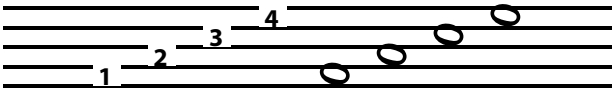
The STAFF

Music NOTES are oval-shaped symbols that are placed on the lines and *in* the spaces. They represent musical sounds, called PITCHES.

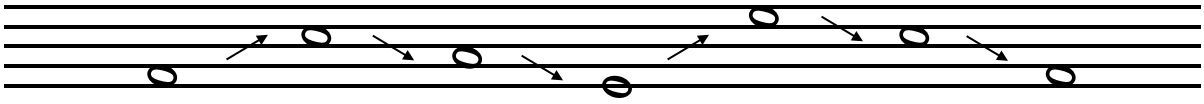
The lines of the staff are numbered from bottom to top.



The spaces between the lines are also numbered from bottom top.



If the notes appear *higher* on the staff, they sound *higher* in pitch.
If the notes appear *lower* on the staff, they *lower* in pitch.

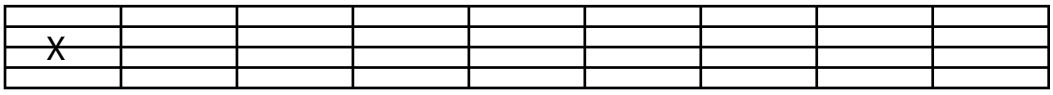


Higher *Lower* *Lower* *Higher* *Lower* *Lower*

Exercises

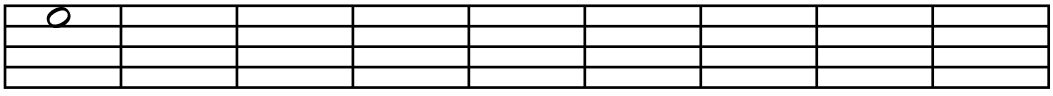
1 Draw a staff by connecting the dots
Use a ruler or straight edge Number the lines, then the spaces from low to high

2 On the staff, mark an **X** in the following locations:



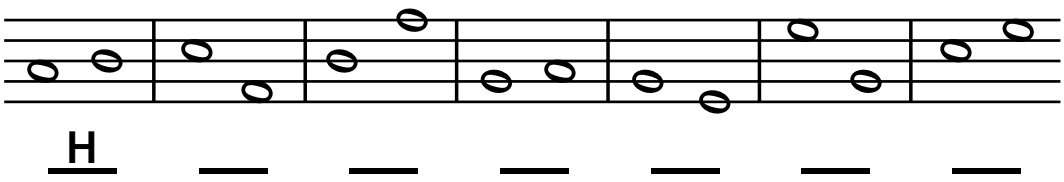
line 3 *Space 2* *Line1* *Space 4* *Line 5* *Space 1* *Line 4* *Space 3* *Line 2*

3 Write notes like this _ on the following lines and spaces:



line 3 *Space 2* *Line1* *Space 4* *Line 5* *Space 1* *Line 4* *Space 3* *Line 2*

4 Indicate whether the 2nd note is higher or lower than the 1st note by using an H (higher) or L (lower)



Matatalab
Lesson 2
Staff Note Names

Overview and Introduction

Just like reading a book, music has a language. The language of music is placed on a staff. These are called notes and each note on the staff has a letter name. Some notes are also identified above and below the staff. In this lesson you will identify note names on the staff.

Learning Objectives

- Review the five lines and four spaces that create the staff.
- Identify the treble clef line and space note names.

Standards

K-2: MU:Cr1. 1.Ka, MU:Cr1. 1.1a, MU:Cr1. 1.2a.
3-5: MU:Cr1. 1.3a, MU:Cr1. 1.4a, MU:Cr1. 1.5a

Time

60 minutes

Materials

- Staff Notes and Worksheets
- Pencils
- Matatalab Coding Set
  - Command Tower
  - Control Board
  - Matatabot
  - Matatalab Music Blocks

Teacher Set-Up and Preparation

- Copy *"Treble Clef and Staff"* worksheet
- Staff paper
- Matatalab Music Coding Set pieces
- Charge Matatalab Command Tower and Matatabot

Activity

- Distribute *"Treble Clef and Staff"* worksheet.
- Students will review the five lines and four spaces that create the staff.
- Students will identify the treble clef line note names and identify the phrases that work to help identify the names of the notes on the staff (**E**very **G**ood **B**oy **D**oes **F**ine and **FACE**)
- Identify the line notes E, G, B, D, F and the line the note is located on the staff (**E** 1st line, **G** 2nd line, etc.)
- Identify the space notes F, A, C, E and the space the note is located on the staff (**F** 1st space, **A** 2nd space, etc.)
- Use one Matatalab music block on the Control Board and turn the dial to "3" and press the play button.
- The sound that is heard is the note **"E"** on the 1st line of the staff.
- Use two music Matatalab blocks. Dial one block to number "3"; dial one block to number "4". Students will identify which block is **"E"** on the line and **"F"** on the space.

Students will

- Students will complete exercises 1, 2, and 3.
- Students will be given Matatalab music blocks and form pairs. Students will use the staff paper and draw the notes on the lines and spaces and create and write their own phrases to identify the notes. Example: Lined notes: **E**very **G**ood **B**urger **D**eserves **F**ries; Space Notes: **F**ind **A**nd **C**ook **E**ggs.

Closing

Assessment

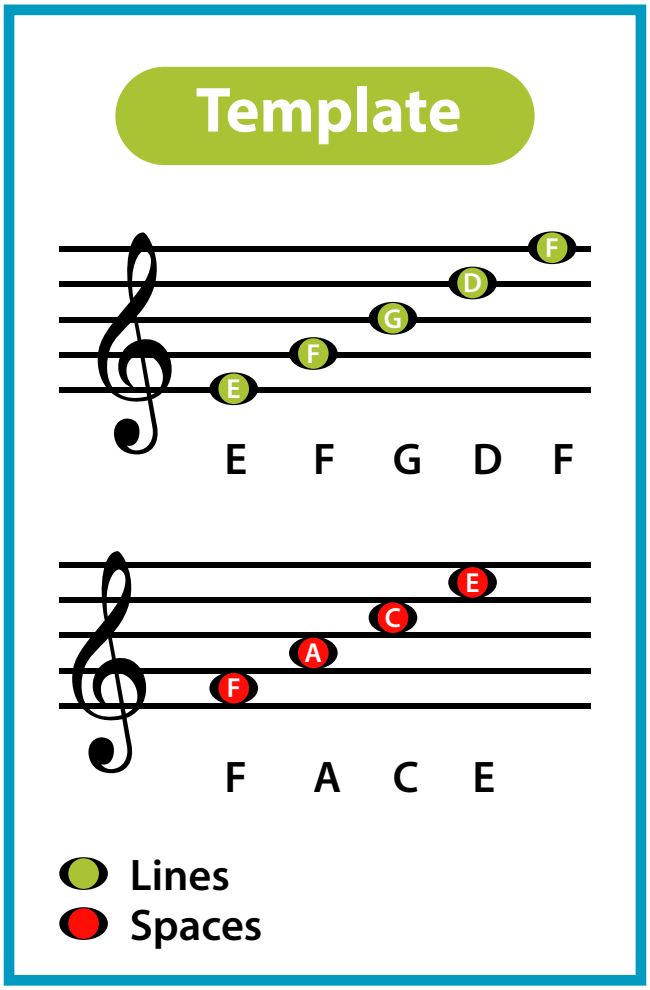
We have identified the letter names for notes on the treble clef staff.

Have the students answer the following questions:

- What are the letter line names for notes on the lines?
- What are the letter line names for notes on the spaces?
- What type of pitch is located in the Treble Clef?
- How many letters are used to identify music notes?

Extensions

Create a template to identify notes on the lines and spaces by color. Are notes limited to the staff or should other colors be used to show notes above and below the staff?



You may want to create a staff that is designed like your favorite food. How would you identify the notes in the lines and spaces?

Real World Connections

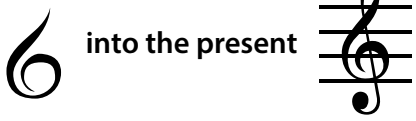
Have you ever been to an orchestra or performance? Did the musicians use music? Did everyone play the same thing? Did different musicians play different parts? Were the musicians limited to 9 notes? How do you think the music is created for an orchestra or band?

Treble Clef and Staff

Music notes are named after the first seven letters of the alphabet, from A to G. By their position on the staff, they can represent the entire erange of musical sound.

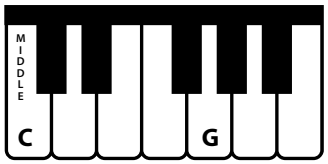
CLEF signs help to organize the staff so notes can easily be read.

The TREBLE CLEF is used for notes in the higher pitch ranges. The treble (or G) clef has evolved from a stylized letter G:



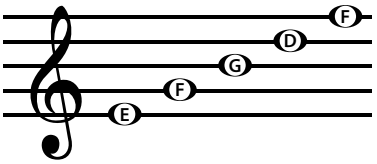
The curl of the treble clef circles the line on which the note G is placed. This G is above MIDDLE C (the C nearest the middle of the keyboard).

The TREBLE STAFF



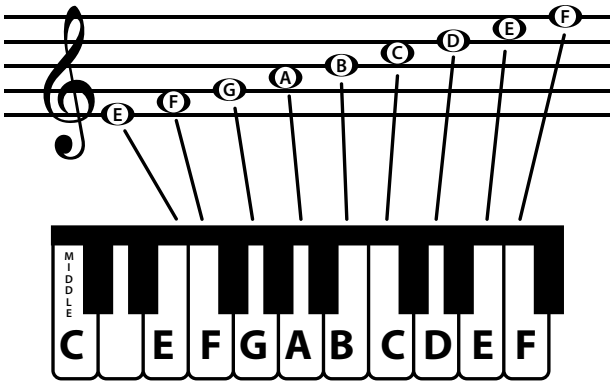
In the treble staff, the names of the notes on the lines from bottom to top are E, G, B, D, F.

Line Notes



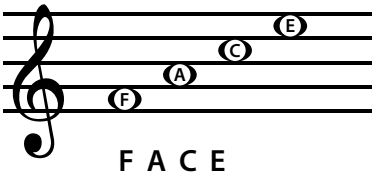
Evert Good Boy Does Fine

All the notes of the TREBLE STAFF:



The names of the notes in the spaces from bottom to top spell FACE.

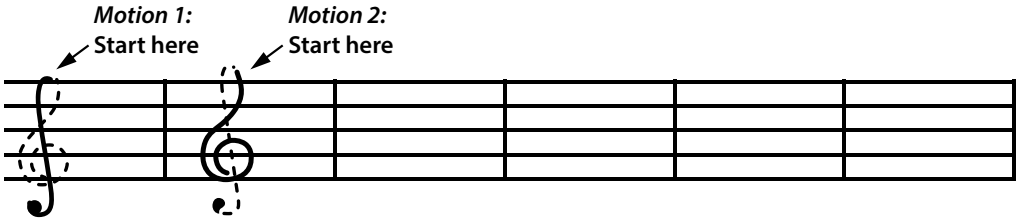
Space Notes



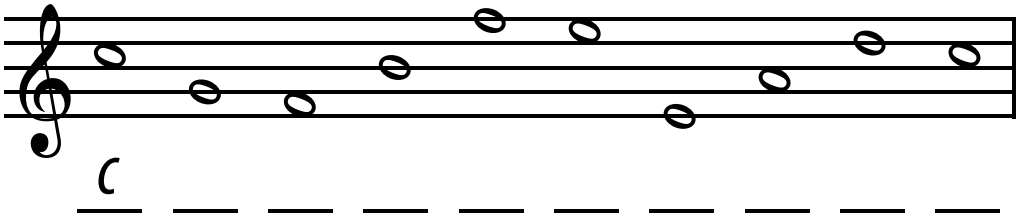
F A C E

Exercises

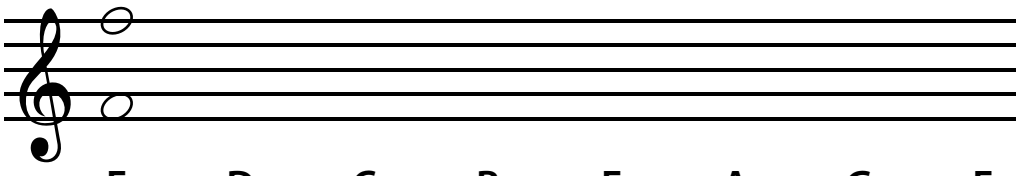
1 **The treble clef is written in two motions. Trace along the dotted lines as indicated then draw four more**



2 **Write the letter names of the following notes. Use captital letters.**



3 **Write the notes on the staff indicated by the letters. If the notes can be written in two places, write one above the other.**



F D C B E A G F

Matatalab
Lesson 3
Creating Rhythm Patterns

Overview and Introduction

Letters are used to create words. Words are used to identify a language or story. Music notes and rhythm patterns are the language of music. Today we will identify the whole, half and quarter note.

Learning Objectives

- Students will identify, count, clap and create musical notation.
- Students will identify the whole, half and quarter note.

Standards

K-2: MU:Cr1. 1.Ka, MU:Cr1. 1.1a, MU:Cr1. 1.2a.
3-5: MU:Cr1. 1.3a, MU:Cr1. 1.4a, MU:Cr1. 1.5a

Time

60 minutes

Materials

- Staff Notes and Worksheets
- Pencils
- Matatalab Coding Set
  - Command Tower
  - Control Board
  - Matatabot
  - Matatalab Music Blocks

Teacher Set-Up and Preparation

- Copy *"Note Values"* worksheet
- Matatalab Music Coding Set pieces
- Charge Matatalab Command Tower and Matatabot

Activity

- Review the staff; identify the five lines and four spaces.
- Identify the whole, half and quarter note.

Whole Note

4 Beats: Count "1 2 3 4"

Half Note

2 Beats: Count "1 2"

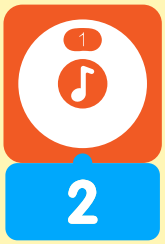
Quarter Note

1 Beat: Count "1"

Students will

- Students will clap and count "1-2-3-4" (clap once and count "1-2-3-4"). This is how we identify the Whole Note.
- Students will clap and count "1-2" (clap once and count "1-2"). This is how we identify the Half Note.
- Students will clap and count "1" (clap once and count "1"). This is how we identify the Quarter Note.
- Distribute ***Note Values Worksheet.*** (Located at end of lesson)
- Read and identify the Whole, Half and Quarter Note durations and construction (Stem and Notehead).
- Identify the Stem direction, extension and the location on the staff.
- Identify that 1 Whole = 2 Half Notes; 2 Half Notes = 4 Quarter Notes
- Review staff note names from Lesson 2.
- Students will complete exercises 1, 2, and 3.
- Students will be given one Matatalab music block and form pairs. Students will create quarter note patterns with the music blocks on any pitch and clap with the audio pitch.

Use one block to identify one beat; the quarter note.



Use blocks to identify two beats; the half note.

Use blocks to identify four beats; the whole note.

Rhythm Game

Select a 4 or 8 beat phrase from a folk song that the children know (Twinkle, Twinkle Little Star). Choose the appropriate number of students to represent each beat. These students stand up and make a line across the front of the classroom. The class claps the rhythm of the phrase while the teacher moves from child to child. That child or a volunteer from the class should determine whether they hear one or two sounds on each successive beat. If one sound is heard, the child who is representing the beat can hold up one finger (or one hand) or if two sounds are heard, two fingers (or hands). The class can clap the rhythm once again to check answers. If correct, the volunteers can sit down. The exercise can be repeated or the rhythm could be transferred to the board in stick notation.

Closing

We have identified the whole, half and quarter note with their beat values. We have completed a Note Value worksheet to help increase our understanding of beat values.

Have the students answer the following questions:

- How many beats are in a whole note?
- How many beats are in a half note?
- How many beats are in a quarter note?
- How many quarter notes are in a whole note?
- How many half notes are in a whole note?
- How many quarter notes are in a half note?

Extensions

People love to clap to the beat when they hear good music. Some people clap on beats "2" and "4". Some people clap on beats "1", "2", "3" and "4". You could create a clapping game. You could set up index cards with note values and tell your participants to clap that beat value.

You can design an instrument that is used for clapping on beats "2" and "4" and "1", "2", "3" and "4". This can be made with soft and loud objects like plastic spoons, cans, etc.

Real World Connections

Some bands have a drummer, guitarist and bassist. Which musician has the job to keep the beat? Can another musician keep the beat? Is it possible for a song to have multiple beat patterns?

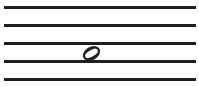
Find a recording of an orchestra, band and choir. Can all three ensembles perform together and keep a steady beat? Who is responsible for keeping the beat? If you started a performance group what instruments would you have and why?

Note Values

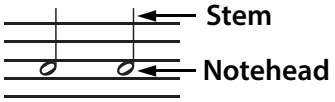
Two HALF NOTES equal the duration of one whole note.

Four QUARTER NOTES equal the duration of one whole note.

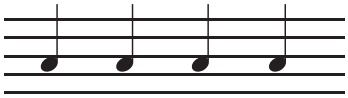
Whole Note

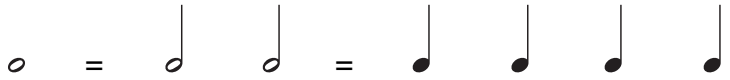


Half Notes



Quarter Notes

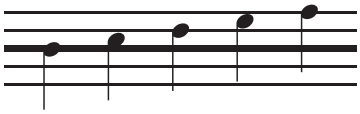




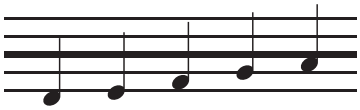
1 Whole note = 2 Half notes = 4 Quarter notes

1 Half note = 2 Quarter notes

Stems extend downward on the left side when the note appears on or above the 3rd line of the staff.

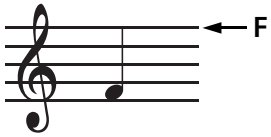


Stems extend upward on the right side when the note appears below the 3rd line of the staff.

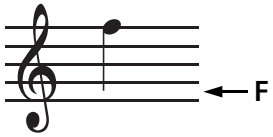


The stem length should continue to the space or line with the same letter name, above or below.

Stem extends to F above.



Stem extends to F below.



Exercises

1 Fill in the blanks with the correct number:

a. 4 = 𝅗𝅥

b. ____ = 𝅗𝅥

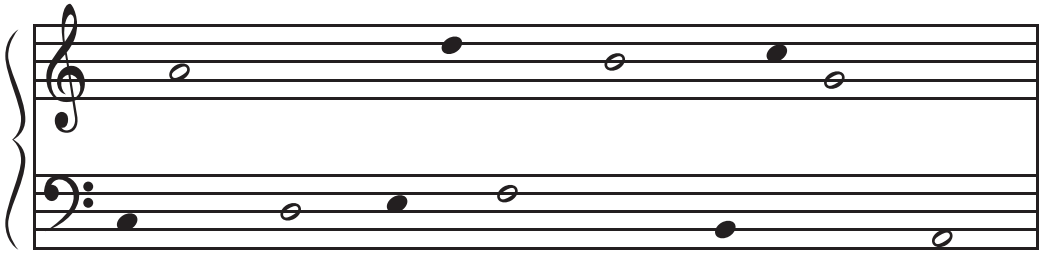
c. ____ 𝅗𝅥 = ♩ ♩ ♩ ♩

d. ____ 𝅗𝅥 = 𝅗𝅥

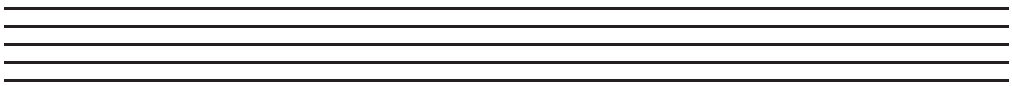
e. ____ 𝅗𝅥 = ♩ ♩ ♩ ♩

f. ____ 𝅗𝅥 = 𝅗𝅥 𝅗𝅥

2 Draw the stems in the correct direction with the correct length. Write the names of the notes between the staff.



3 Draw the treble clef and write the indicated notes. Use only notes within the staff.



C whole A quarter E half F whole B quarter D quarter G half

Matatalab
Lesson 4
Time Signatures

Overview and Introduction

Have you ever clapped your hands to a song? Have you ever clapped your hands with a group of people and did everyone clap together? It is important to keep a steady beat. Today we will identify what a time signature is used for and create rhythm patterns.

Learning Objectives

- Identify how time signatures are used in music.
- Create rhythm patterns with 4/4 and 3/4 time signatures.

Standards

K-2: MU:Cr1. 1.Ka, MU:Cr1. 1.1a, MU:Cr1. 1.2a.
3-5: MU:Cr1. 1.3a, MU:Cr1. 1.4a, MU:Cr1. 1.5a

Time

60 minutes

Materials

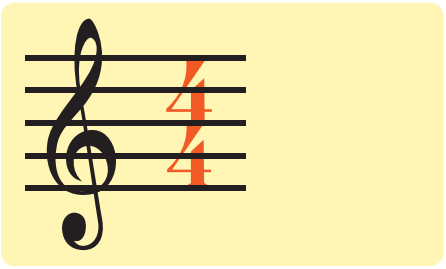
- Worksheets
- Pencils
- Matatalab Coding Set
  - Command Tower
  - Control Board
  - Matatabot
  - Matatalab Music Blocks

Teacher Set-Up and Preparation

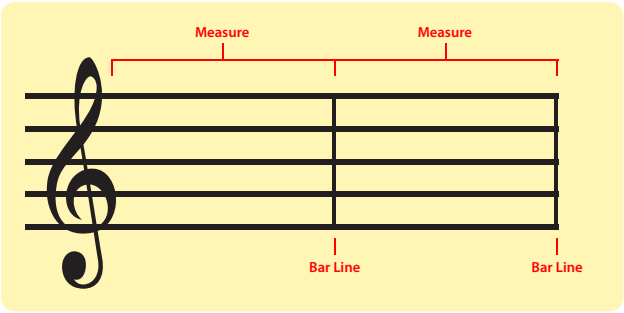
- Copy *"Time Signature and Note Values"* worksheet.
- Matatalab Music Coding Set pieces.
- Charge Matatalab Command Tower and Matatabot.

Activity

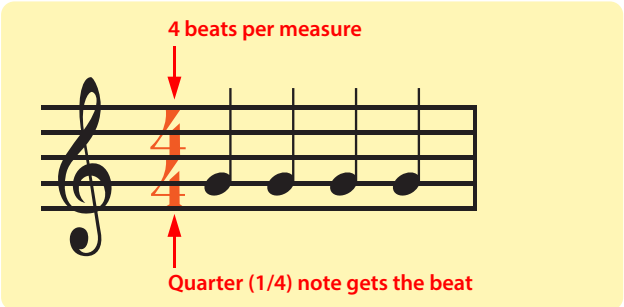
- Review the staff; identify the five lines and four spaces.
- Review the whole, half and quarter note.
- Display the staff with the Treble Clef and the Time Signature.



- The two numbers stacked on top of each other is called the time signature
- The top number tells you how many beats (counts) are in a measure. The bottom number tells you what type of note receives one beat (the quarter note).
- On a staff, the distance between two Bar Lines is called a measure.

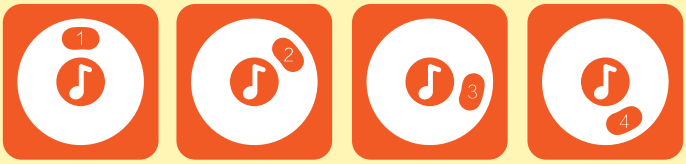


- The quarter note is one beat therefore four quarter notes is four beats and four quarter notes is equal to one measure.



- Distribute *Time Signature and Note Values Worksheet*. (Located at end of lesson)

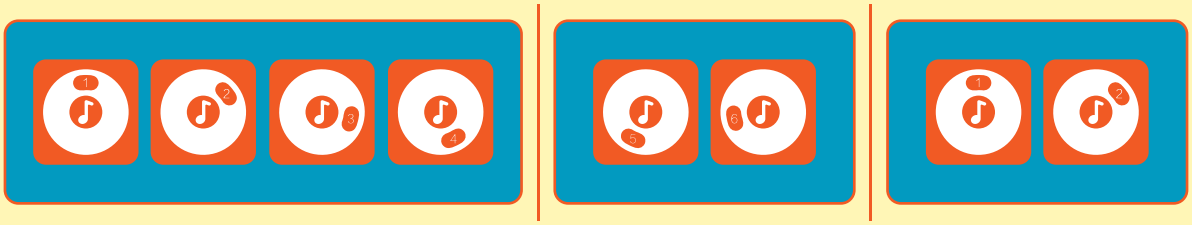
- Students will be given four Matatalab music blocks and form pairs. Students will set up Matatalab and place blocks on boards.
- Students will press play . Students will hear the four notes. Ask the students how many notes were heard and what type of time signature would this represent. **Answer: 4/4**



Students will

- Students will complete exercises 1, 2 and 3.
- Students will create four measures in 4/4 time signature and create rhythm patterns. Students will use the quarter, half and whole note. Students will clap and count their work.
- Students will create four measures in 3/4 time signature and create rhythm patterns. Students will use the quarter, half and whole note. Students will clap and count their work.
- Students will hear the following pitch groupings with Matatalab music blocks (this will require setup and breakdown for each pattern).
  - The Matatabot blocks will be set up as illustrated. Each Matatabot group will have a pitch and will identify a time signature.
  - Students hear the first grouping of 3 pitches and will write the time signature which will be 3/4.

  - Students will continue to write the time signature as each grouping is played individually.



(setup and breakdown for each pattern is required)

- Play each pattern once and students will write the time signature and draw the quarter note pattern.

Home Base Game

This is a variation on the old game of 'musical chairs'. You will need a number of white sheets of paper (probably 4 or 5). On each sheet write down a rhythmic pattern (a 4-beat pattern for easy challenge or an 8-beat pattern for a harder challenge). Lay the sheets around the room. It works well with one sheet in each corner of the room and one in the middle. If classroom space is a restriction, consider playing this game outside. Next, you will need something to provide music, such as a CD player, a percussion instrument or you can sing a well-known folk song. While music is being played, students walk around the room on the beat. When the music stops, students must run to the closest card and stand in that area. The teacher then performs one of the rhythm patterns from the card. Any students who are standing in the proximity of the card are eliminated and must sit down. Play continues until a winner is found.

Closing

We have identified the Time Signature and how the numbers are identified.

Assessment

Students will answer the following questions:

- The top number of the Time Signature identifies how many _____ are in each measure. **(beats)**
- The bottom number of the Time Signature identifies what type of note receives _____beat. **(one)**
- The distance between two bar lines is called a _____. **(measure)**

Extensions

Some of us have played musical chairs. Create a game using a music recording. You could use a ball and when the music stops the one who is holding the ball is out the game. You may want to use a clock or watch to time the game.

Make a board game using different time signatures and notes. Create your own rules.

Real World Connections

How does music communicate to people without words? Why do some instruments sound louder than others? Should instruments play the same song with the same time signature during a performance?

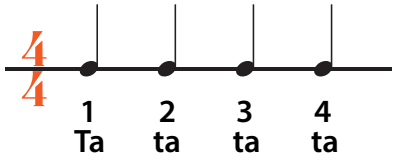
There are different styles of music. Do all styles of music have the same time signature? Yes or no? Please explain your answer.

Time Signatures and Note Values

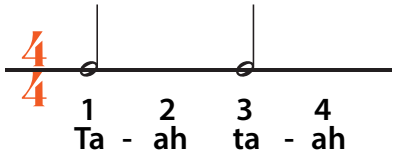
The upper number tells how many beats (or counts) are in each measure. In this case, 4.
The lower number indicates what type of note receives 1 beat. In this case, a quarter note

In $\frac{4}{4}$ time:

A quarter note ( ) is equal to one count (or beat). Count (1, 2, 3, 4) and clap the rhythm evenly (once per beat). The beat numbers are written under the notes. Also, say "ta" and clap.

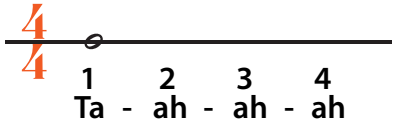


A half note ( )is equal to two counts (or beats). Count and clap the rhythm evenly (holding your hands together for 2 beats). The beat numbers are written under the notes. Also, say "ta-ah" (in a continuous sound) and clap.



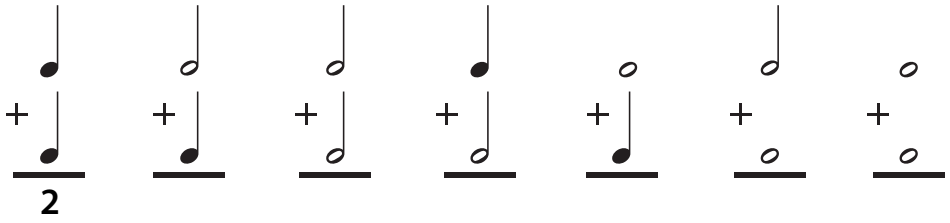
A dash means to sing in a continuous sound.

A whole note ( ) is equal to four counts (or beats). Count and clap the rhythm evenly (hands together for 4 beats). The beat numbers are written under the notes. Also, say "ta-ah-ah-ah" (in a continuous sound) and clap.

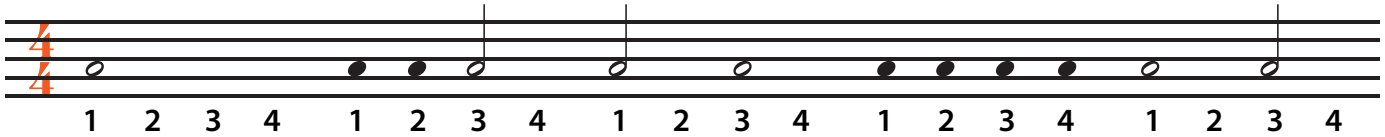


Exercises

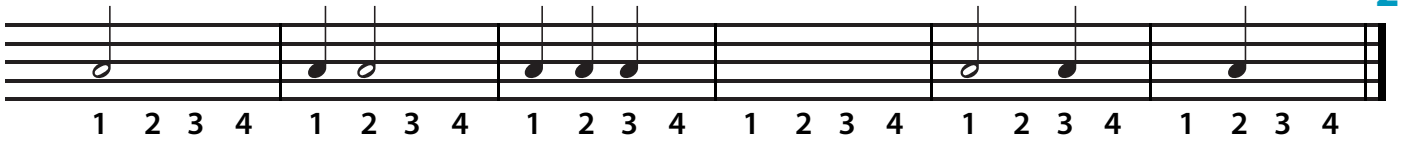
1 Add the following notes to get the total number of beats:



2 Draw bar lines, a double bar at the end, and stems on the apporpriate notes in the following example so that there are 4 beats in each measure. Count and clap; say (using "ta", etc.) and clap.



3 Write the $\frac{4}{4}$ time signature and fill in the missing beats (if any) by adding only one note per measure. Count and clap: say and clap.



Matatalab
Lesson 5
Ear Training

Introduction

Have you heard the words Do, Re, Mi, Fa, Sol, La, Ti, Do? These words are used in a musical scale. We will identify the words with musical notes. Let us sing the scale.

Learning Objectives

- Students will identify Solfege (Do, Re, Mi, Fa, Sol, La and Ti) pitches.
- Students will identify the musical scale.

Standards

K-2: MU:Cr1. 1.Ka, MU:Cr1. 1.1a, MU:Cr1. 1.2a
3-5: MU:Cr1. 1.3a, MU:Cr1. 1.4a, MU:Cr1. 1.5a

Time

60 minutes

Materials

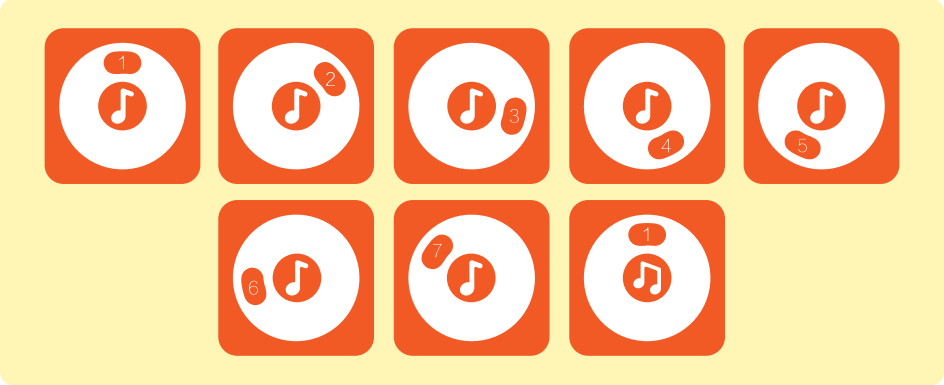
- Staff Notes and Worksheets
- Pencils
- Matatalab Coding Set
  - Command Tower
  - Control Board
  - Matatabot
  - Matatalab Music Blocks

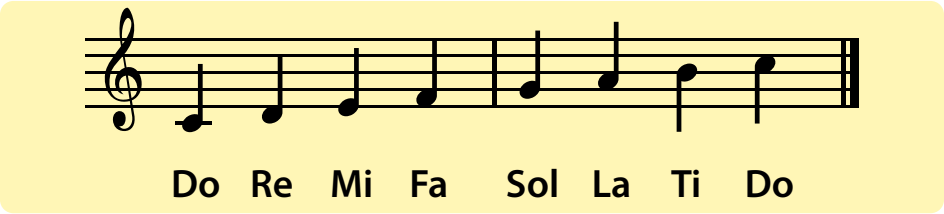
Teacher Set-Up and Preparation

- Copy *"Solfege Worksheet #1" and "**Beginning** Solfege Worksheet #1"*worksheet
- Matatalab Music Coding Set pieces
- Charge Matatalab Command Tower and Matatabot

Activity

- We will review the staff; identify the five lines and four spaces.
- We will review the whole, half and quarter note.
- What is a scale? A scale is a set of musical notes ordered by a fundamental frequency or pitch.
- In music, the pitch of a note means how high or low a note is. Not all musical instruments give a particular pitch.
- Set up the Matatalab set.
- Set up 8 Matatalab music blocks.





- "Do" will represent Block 1; "Re" will represent Block 2; "Mi" will represent Block 3; "Fa" will represent Block 4; "Sol" will represent Block 5; "La" will represent Block 6; "Ti" will represent Block 7; "Do" will represent Block 1 with the two eighth notes.
- Press the Play Button.

- Students will hear the musical scale.
- Identify that the block number identifies the pitch of the scale.
- The scale names are also called Solfege which is a method to teach pitch and sight singing.
- Set up the Music Blocks in reverse order; 1, 7, 6, 5, 4, 3, 2, 1 (Do, Ti, La, Sol, Fa, Mi, Re, Do).
- Have the students sing in reverse order with the music block pitches.

Students will

- Students will complete *Solfege Worksheet #1*.
- Students will write all three note representations: note letter names, numbers and Solfege.
- Students will sing the patterns with the use of the music blocks.
- Students will complete *Beginning Solfege Worksheet #1*.
- Students will write the Solfege and letter name for each note.
- Students will sing the patterns with the use of the music blocks.

Closing

We have identified the letter names and Solfege for a major scale. We sang the notes with the pitches.

Assessment

Have the students answer the following questions:

- What is a scale?
- What is a pitch?
- What are the 7 Solfege words we used today?

Extensions

Create a Solfege game using different shapes to identify the Solfege words. Make the shapes different colors. You could establish the sound of "Do" with the shape. Place the shapes in a bowl and when someone pulls out the shape they must sing the Solfege pitch.

Make an instrument with paper towel rolls and create Solfege pitches. Get other students involved and create your own band!

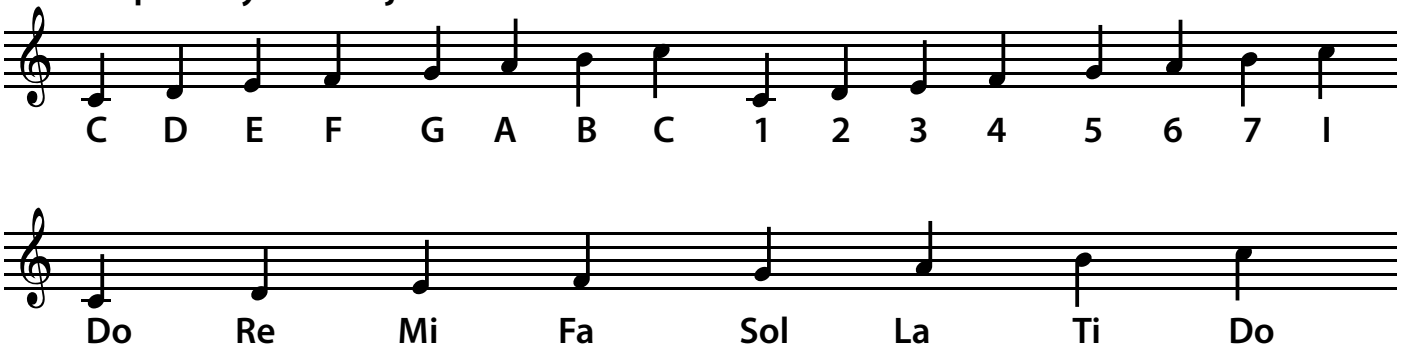
Real World Connections

Think about places you hear music. What are the locations? Is the music instrumental, vocal or both? Are the people interacting with the music? How do you react to music that you hear in a store or at the mall? Do you like the music you hear? Please explain your answer.

Name _____

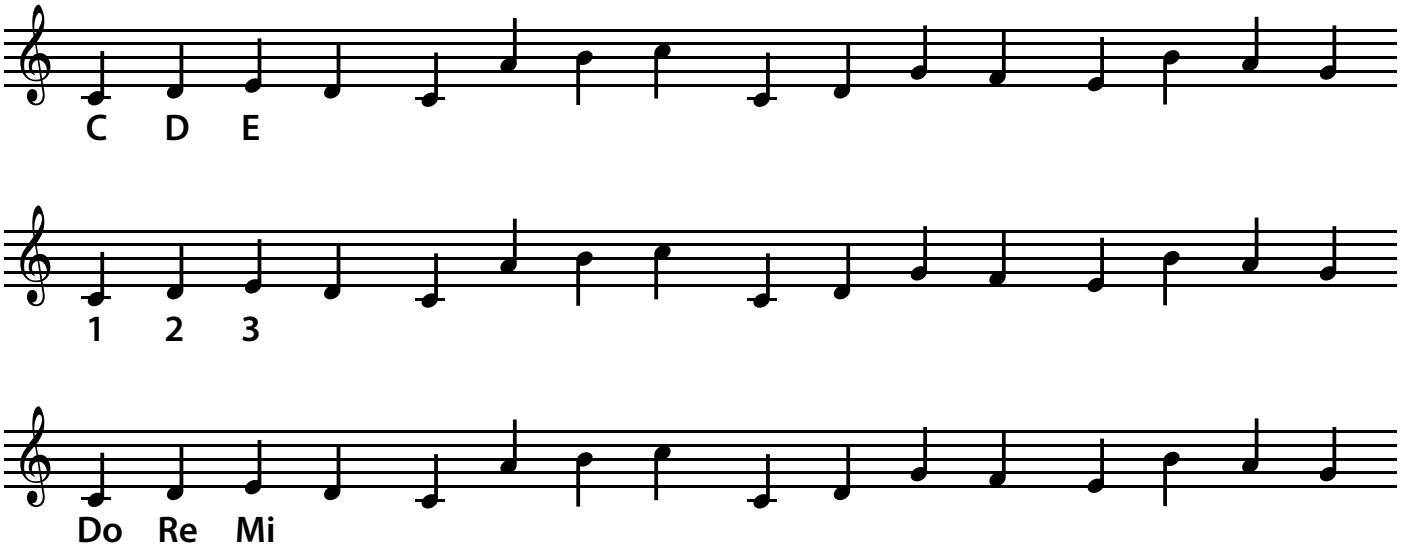
Solfege Worksheet #1

Example: Key of C Major

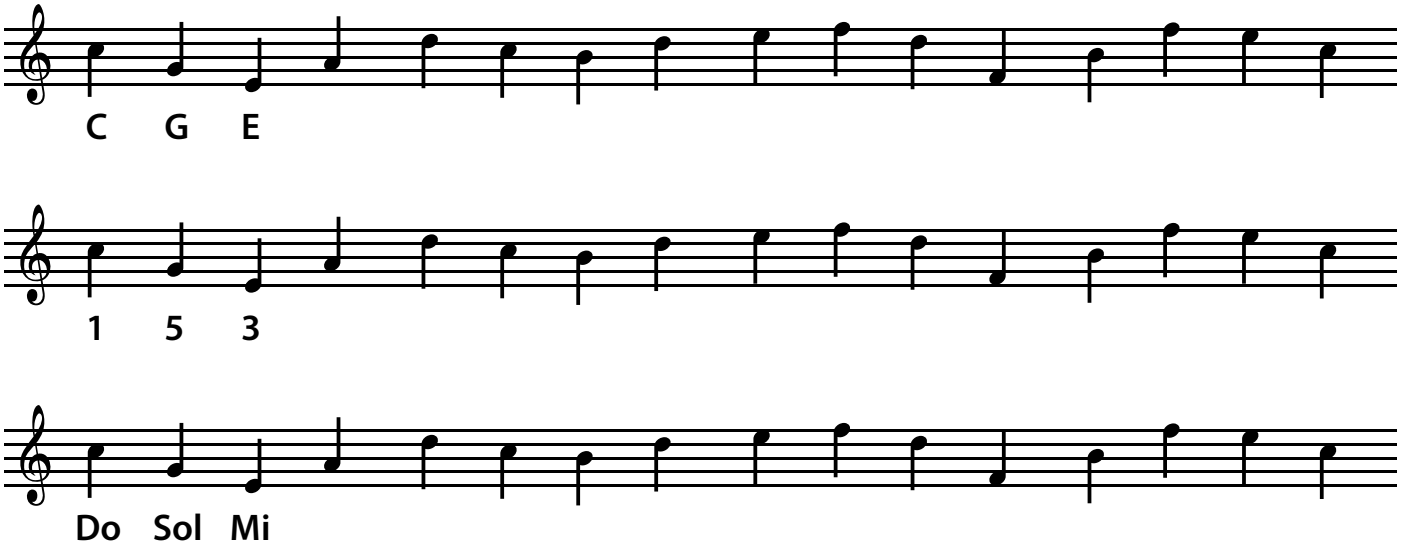


Write down all three note representaions for the following melodic phrases:

No. 1



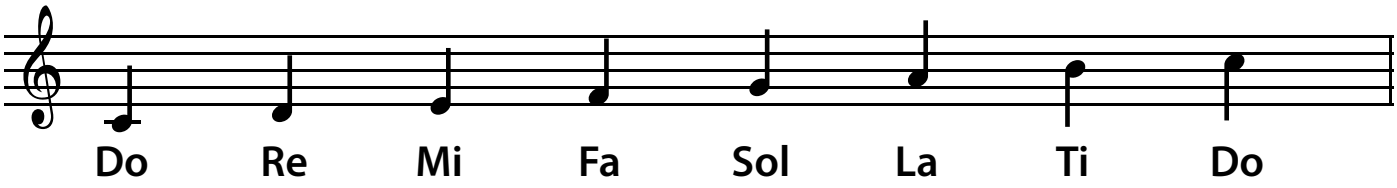
No. 2



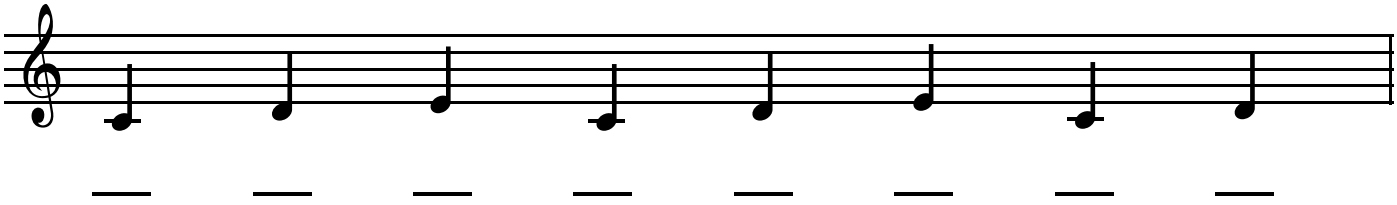
Name _____

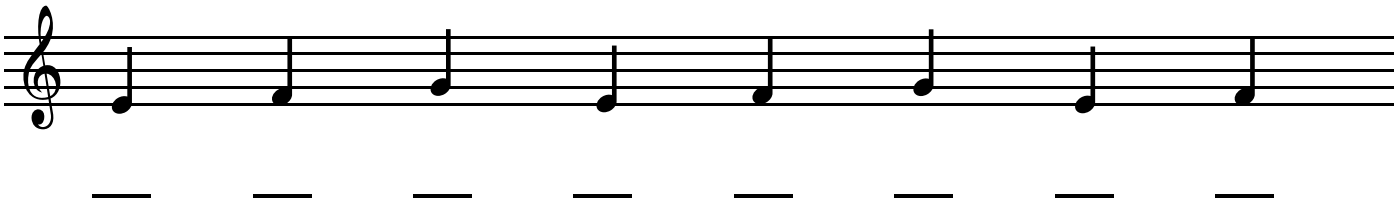
Beginning Solfege Worksheet #1

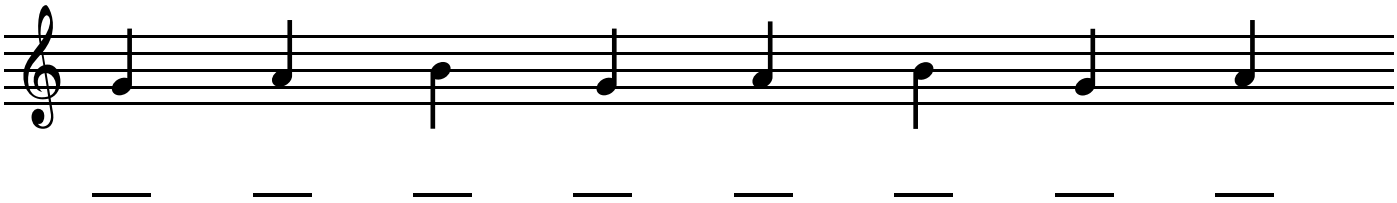
Example:

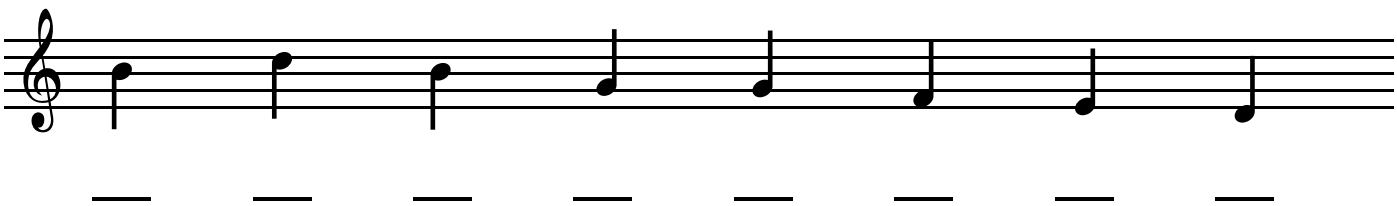


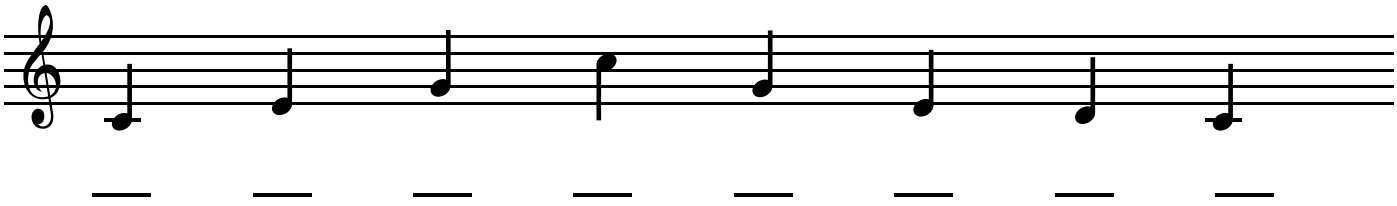
Write out Solfege for the following notes:











Matatalab
Lesson 6
Musical Hands

Overview and Introduction

Have you ever heard of sign language? What is sign language? Sign language is a system of hand gestures for communication. Today we will identify how musical hand signs will identify Solfege (Do, Re, Mi, Fa, Sol, La and Ti) pitches. The hand signs will be used to help develop pitch memory.

Learning Objectives

- Identify musical hand signs for use with Solfege.
- Sing with Solfege and hand signs.

Standards

K-2: MU:Cr1. 1.Ka, MU:Cr1. 1.1a, MU:Cr1. 1.2a
3-5: MU:Cr1. 1.3a, MU:Cr1. 1.4a, MU:Cr1. 1.5a

Time

60 minutes

Materials

- Staff Notes and Worksheets
- Pencils
- Matatalab Coding Set
  - Command Tower
  - Control Board
  - Matatabot
  - Matatalab Music Blocks

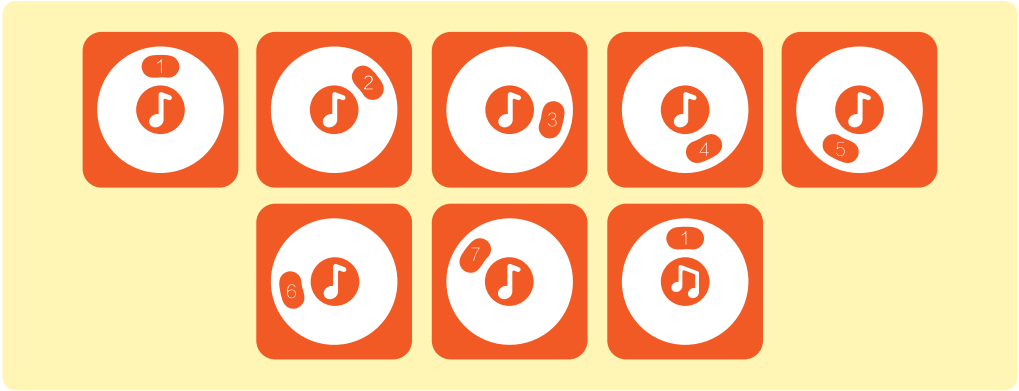
Teacher Set-Up and Preparation

- Copy hand sign diagram
- Matatalab Music Coding Set pieces
- Charge Matatalab Command Tower and Matatabot

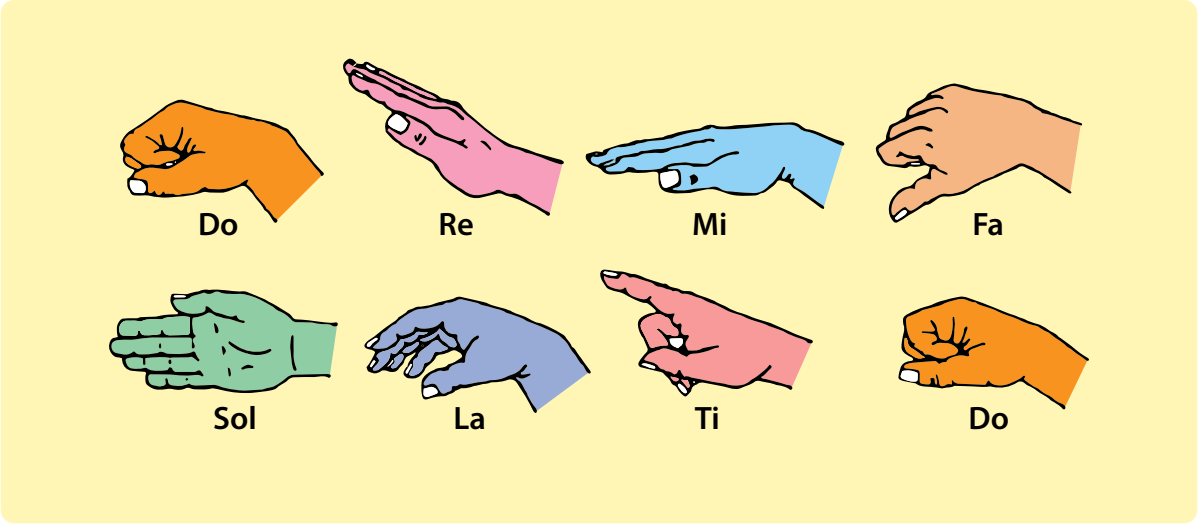
Activity

- Review Solfege note names; Do, Re, Mi, Fa, Sol, La and Ti.
- Set up the music blocks with the Matatalab set.
- "Do" will represent Block 1; "Re" will represent Block 2; "Mi" will represent Block 3; "Fa" will represent Block 4; "Sol" will represent Block 5; "La" will represent Block 6; "Ti" will represent Block 7; "Do" will represent Block 1 with the two eighth notes.
- Press the Play Button.

- Students will sing Do, Re, Mi, Fa, Sol, La, Ti, Do with the Music Blocks.



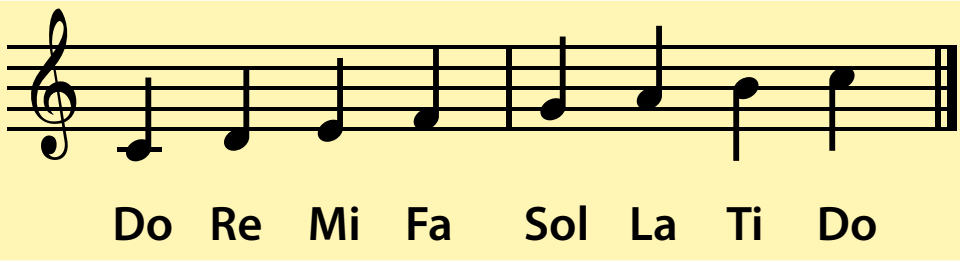
- Slowly identify Do, Re, Mi, Fa, Sol, La, Ti, Do with each corresponding hand sign:



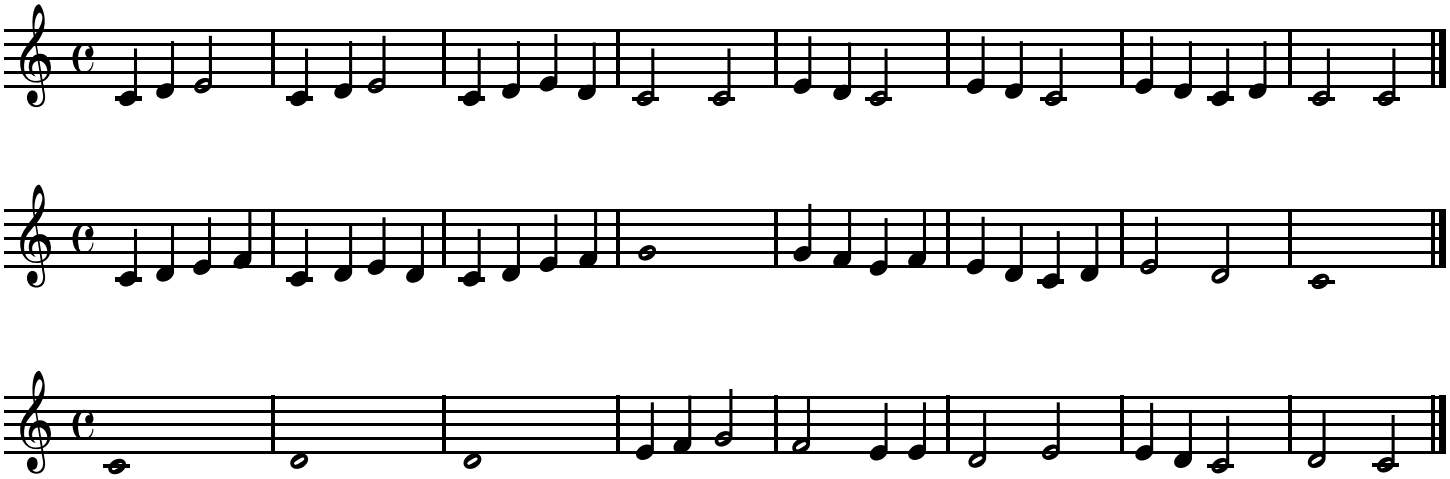
Students will

Sing "Do" with the Hand Sign.
Sing "Re" with the Hand Sign.
Sing "Mi" with the Hand Sign.
Sing "Fa" with the Hand Sign.
Sing "Sol" with the Hand Sign.
Sing "La" with the Hand Sign.
Sing "Ti" with the Hand Sign.
Students will write the Solfege name under the note.

Example:



- Students will clap the rhythm patterns.
- Students will write the Solfege words under the notes.
- Students will do the musical hand signs with the Solfege words.
- Students will sing and use hand signs.



Closing

We have identified the names for Solfege for a major scale. We sang the notes with the Solfege hand signs.

Assessment

Have the students answer the following questions:

- How many musical hand signs are used in Solfege?
- What two hands signs are alike?
- What hand sign "points" upward?

Extensions

Draw a graph of seven blocks. Write the Solfege name in the blocks in order. Throw a coin in a box. Sing the Solfege.

Make a Solfege Bingo Board. Draw the Hand Signs and when you hear the note put a coin on the board. The first one to sing "Solfege" is the winner.

Real World Connections

Can you imagine a life without music? How could you create sounds that make music without an instrument or a voice? What materials could be used to create the instrument or instruments? What do other cultures use for musical instrument materials?

Matatalab
Lesson 7
Musical Intervals

Overview and Introduction

When we sing a scale with the Solfege words Do, Re, Mi, Fa, Sol, La, Ti, Do, we are actually singing notes that are "side by side." When we sing Do, Sol, we are missing notes. The distance between two notes in music is called an interval. Intervals in music are labeled by its numerical value and its quality. For example the interval from C 1(Do) to D2 (Re) is a "Second" because it includes two tones. The interval from E 3(Mi) to G 5(Sol) is a "Third" because we count E (1), F (2) and G(3).

Learning Objectives

- Define "interval".
- Identify musical intervals.
- Identify interval distance and location on the staff.

Standards

K-2: MU:Cr1. 1.Ka, MU:Cr1. 1.1a, MU:Cr1. 1.2a
3-5: MU:Cr1. 1.3a, MU:Cr1. 1.4a, MU:Cr1. 1.5a

Time

60 minutes

Materials

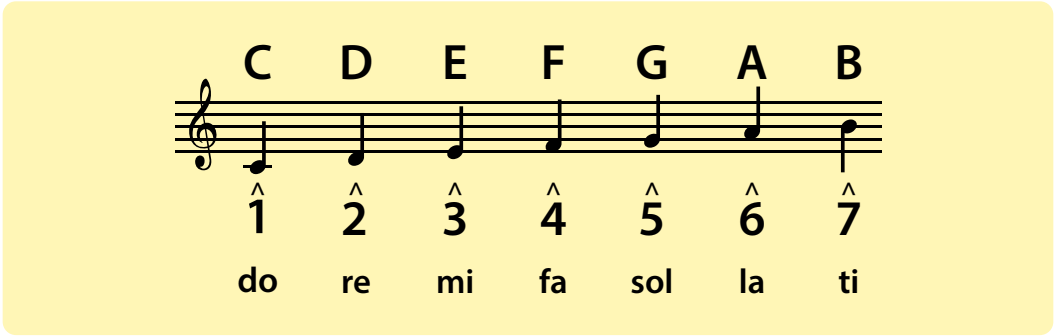
- Staff Notes and Worksheets
- Pencils
- Matatalab Coding Set
  - Command Tower
  - Control Board
  - Matatabot
  - Matatalab Music Blocks

Teacher Set-Up and Preparation

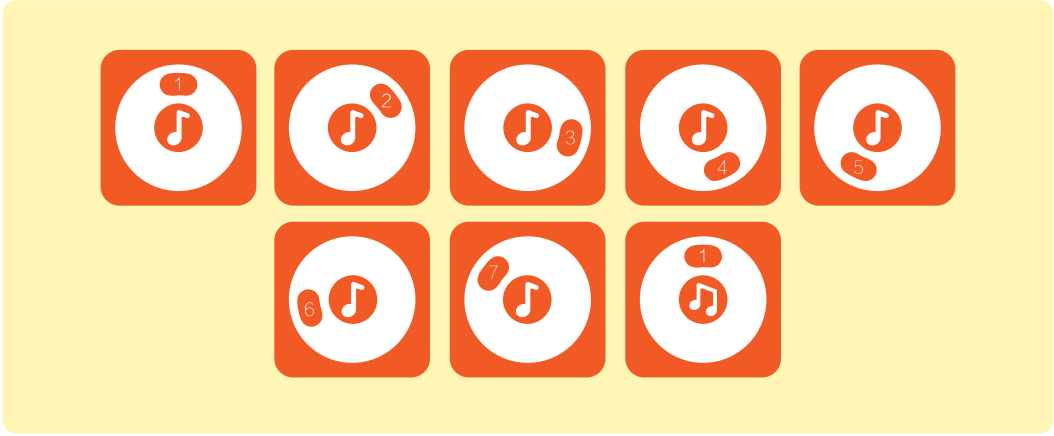
- Copy *"Interval Check Test"* worksheet
- Matatalab Music Coding Set pieces
- Charge Matatalab Command Tower and Matatabot

Activity

Students will identify musical intervals with sound and their location on the staff.

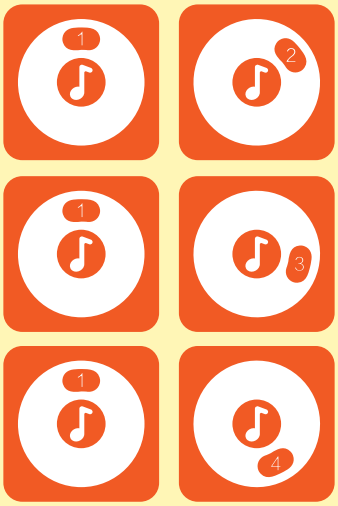


- **Review Solfege note names on the staff; Do, Re, Mi, Fa, Sol, La and Ti.**
- **Set up the music blocks with the Matatalab set.**



- **"Do" will represent Block 1; "Re" will represent Block 2; "Mi" will represent Block 3; "Fa" will represent Block 4; "Sol" will represent Block 5; "La" will represent Block 6; "Ti" will represent Block 7; "Do" will represent Block 1 with the two eighth notes.**
- **Press the Play Button.**

- **Set up the music blocks with the Matatalab set.**
- **"Do" will represent Block 1; "Re" will represent Block 2; "Mi" will represent Block 3; "Fa" will represent Block 4.**

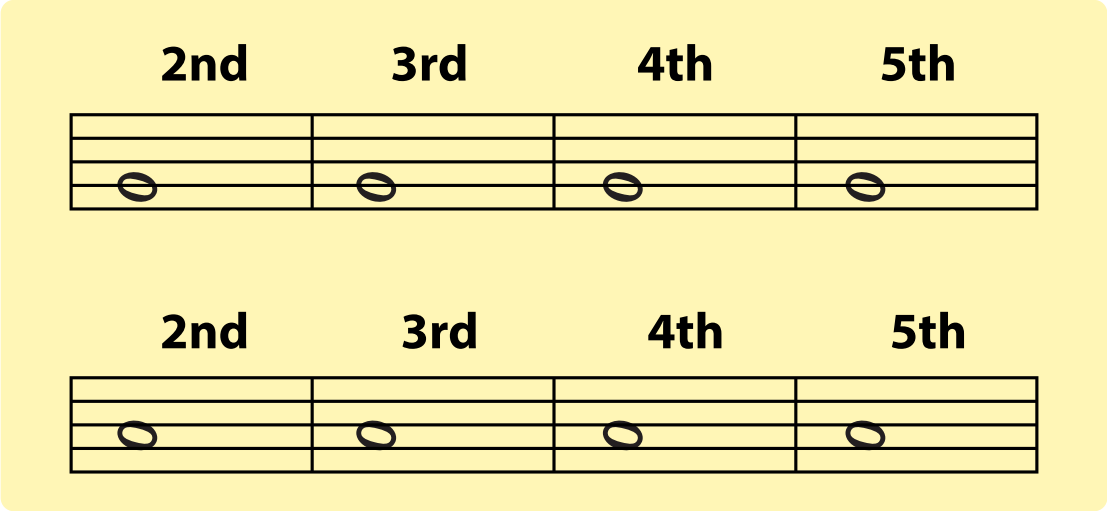


- Press the Play Button.

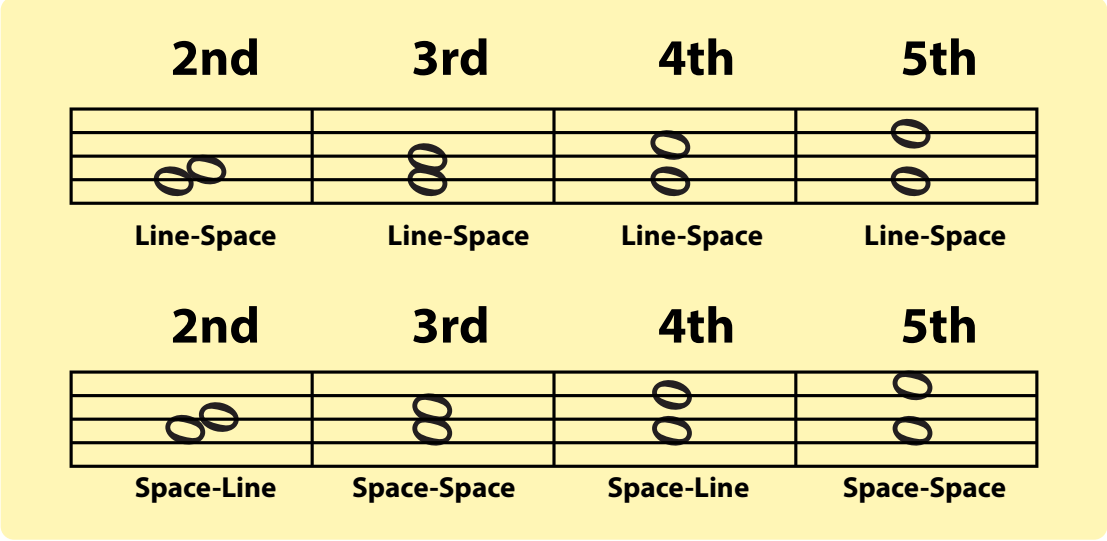
- Students will hear Do – Re; Do – Mi and Do – Fa.
- Ask the students what interval is created from each interval. ANSWER: Do – Re; SECOND Do – Mi; THIRD and Do – Fa; FOURTH.
- Students will sing Do – Re; Do – Mi and Do – Fa with the Music Blocks.
- Create different combinations with Matatalab Music Blocks for Intervals and press the play button:
  - 1-5
  - 2-4
  - 2-6
  - 3-5

Students will

Complete the Interval Worksheet. Draw a whole note (above the note) to complete the following intervals.



ANSWER:



Closing

Today we have identified intervals on the musical staff and their sound. Interval ear training will help develop your sense of how high or low a note is compared to another note.

Assessment

Distribute the Interval Check Test for the students to complete. Students will identify each interval with a number.

Extension

Some people like throwing things like a baseball. But how far you can throw is usually determined by arm strength or technique. You might be able to create an interval baseball game to determine which interval is closer to homebase and which is the longest interval, hitting out of the park.

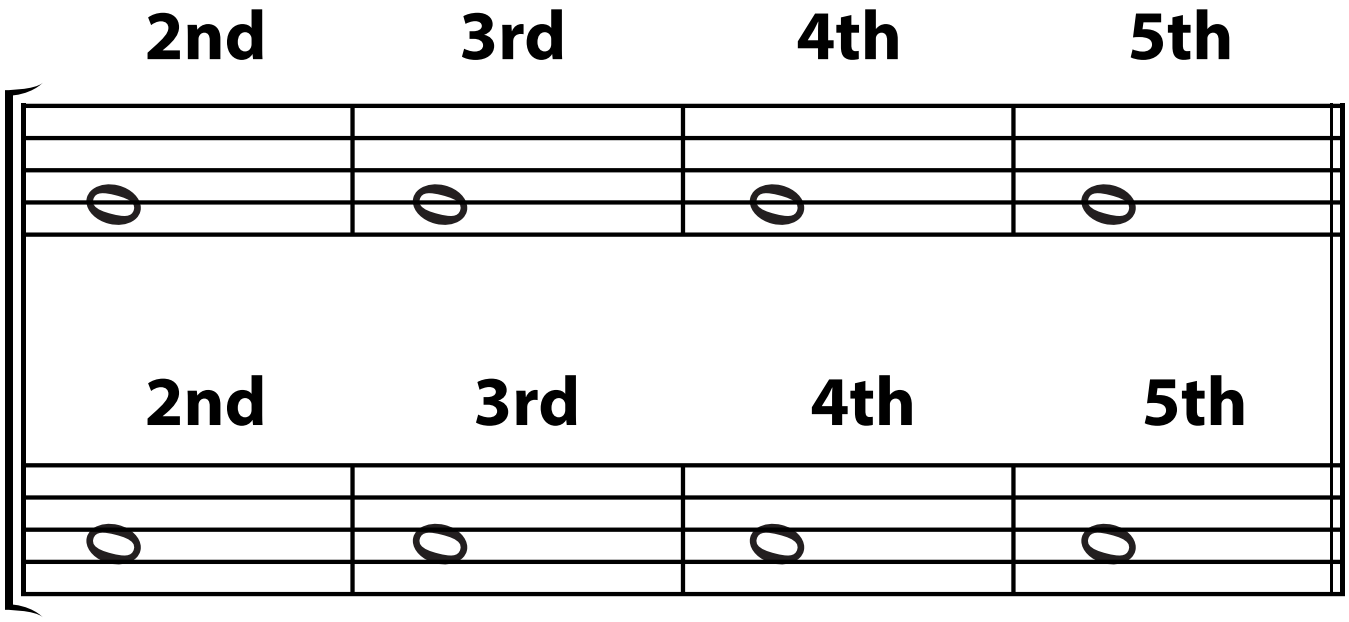
You could draw a football field. Use the yards on the field and create an interval chart based on the distance to create a first down.

Real World Connections

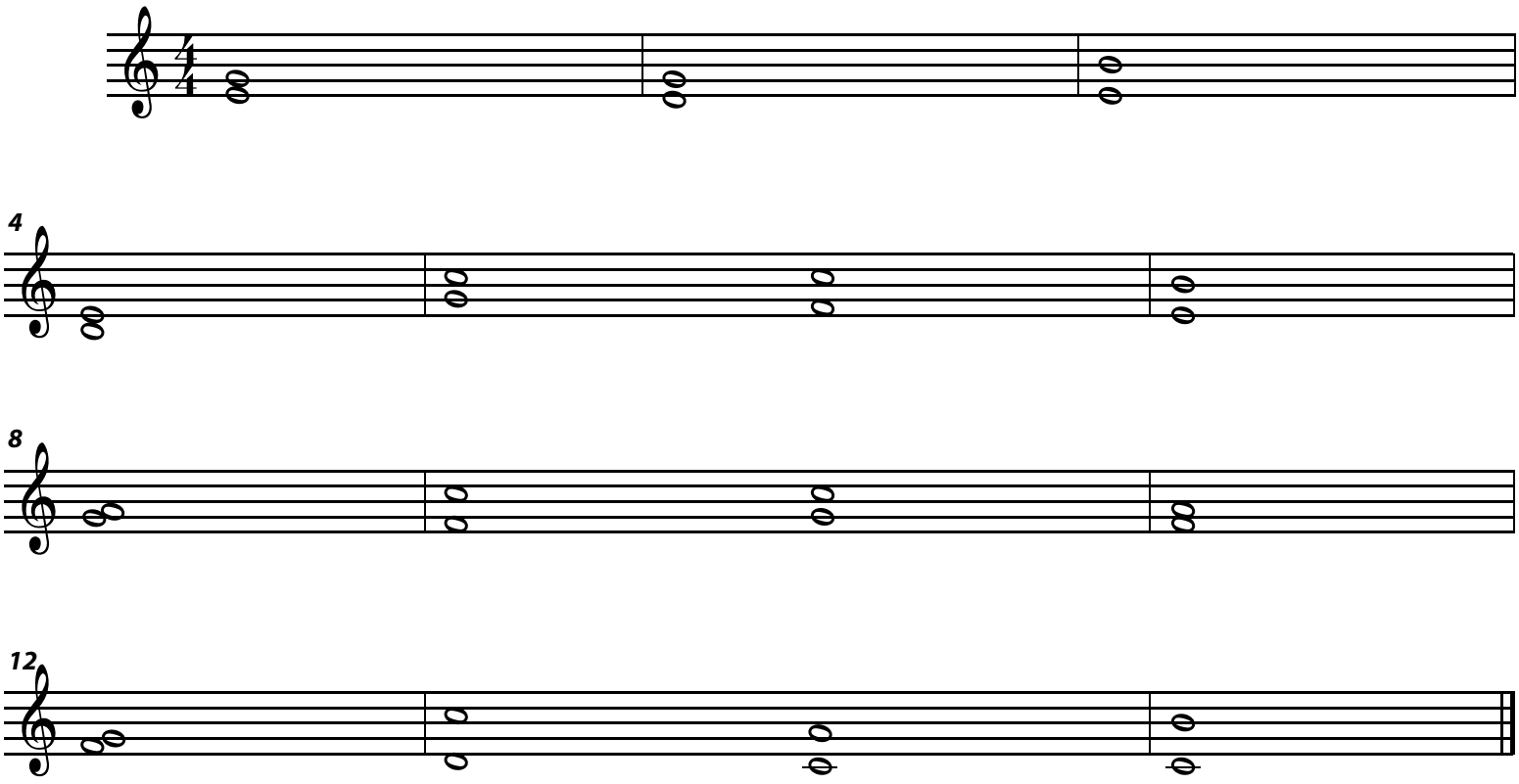
Intervals have limitations. It is based on two notes and the distance between those notes. How long does it take a person to determine if they like or dislike a song? How do you grade a song?

Can intervals be heard in a concert? How is an interval created with the percussion section in an orchestra?

Interval Worksheet



Interval Check Test



Matatalab
Lesson 8
Musical Dictation

Overview and Introduction

Have you ever written down what someone has said? Maybe someone gave you a phone number, address or grocery list to write down. This method is call Dictation; the speaking or reading aloud of words for someone else to write down. Today we will use Musical Dictation to hear two notes and write what interval is heard.

Learning Objectives

- Identify the Solfege pitches.
- Identify aural pitch patterns.
- Write Solfege pitches.

Standards

K-2: MU:Cr1. 1.Ka, MU:Cr1. 1.1a, MU:Cr1. 1.2a
3-5: MU:Cr1. 1.3a, MU:Cr1. 1.4a, MU:Cr1. 1.5a

Time

60 minutes

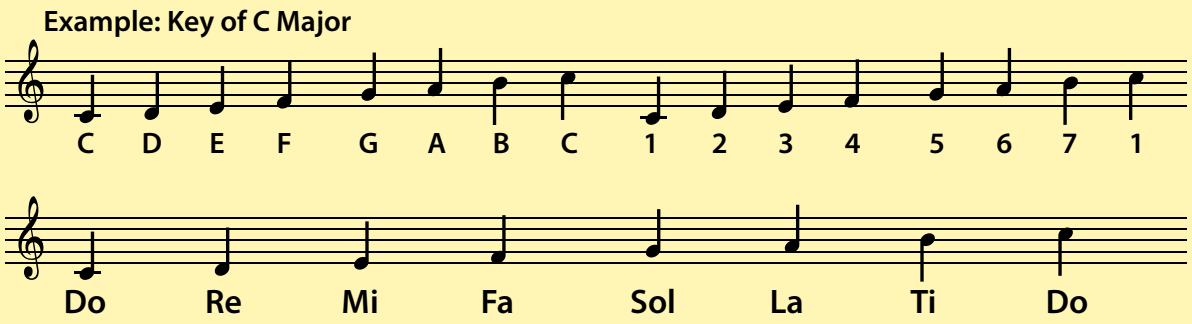
Materials

- Staff Notes and Worksheets
- Pencils
- Matatalab Coding Set
  - Command Tower
  - Control Board
  - Matatabot
  - Matatalab Music Blocks

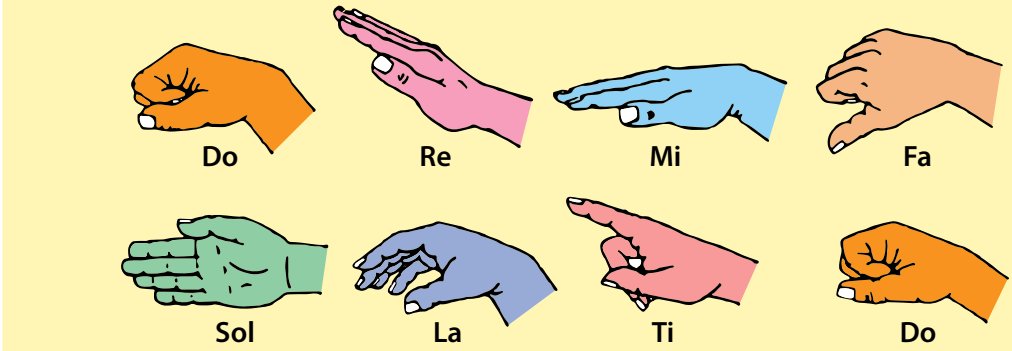
Teacher Set-Up and Preparation

- Paper
- Matatalab Music Coding Set pieces
- Charge Matatalab Command Tower and Matatabot

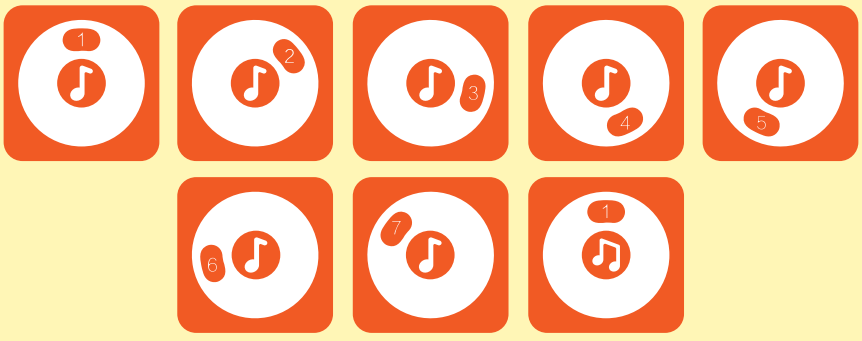
Activity



- Review Solfege note names on the staff; Do, Re, Mi, Fa, Sol, La, Ti and Do.
- Review Solfege hand signs; Do, Re, Mi, Fa, Sol, La, Ti and Do.
- Sing Solfege with hand signs.



- Set up the music blocks with the Matatalab set.



- "Do" will represent Block 1; "Re" will represent Block 2; "Mi" will represent Block 3; "Fa" will represent Block 4; "Sol" will represent Block 5; "La" will represent Block 6; "Ti" will represent Block 7; "Do" will represent Block 1 with the two eighth notes.

- Press the Play Button.

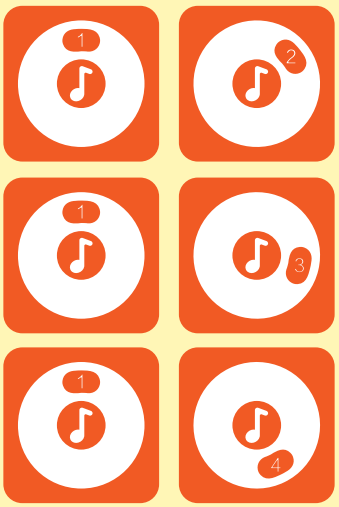
- Students will sing Do, Re, Mi, Fa, Sol, La, Ti and Do with the blocks.
- Setup block "1", "2," "3". Remind the students that "Do" will represent Block 1; "Re" will represent Block 2; "Mi" will represent Block 3. Play each block separately and then together.
- Press the Play Button.

- Students will hear the 3 pitches corresponding to each block (Do, Re, Mi).
- Ask the students what they heard. Play the 3 pitches again and ask the students to write down what they heard in Solfege (Do, Re, Mi).
- Ask students to use the Solfege hand signs and practice dictation with the Do, Re and Mi.

Students will

Write the Solfege words for the Do, Re, Mi pitches as they are played. The pitches can be played individually and in patterns as identified below:

- Students will not see the patterns and blocks.
- Play the Interval example below and ask the students to write in Solfege what they hear.

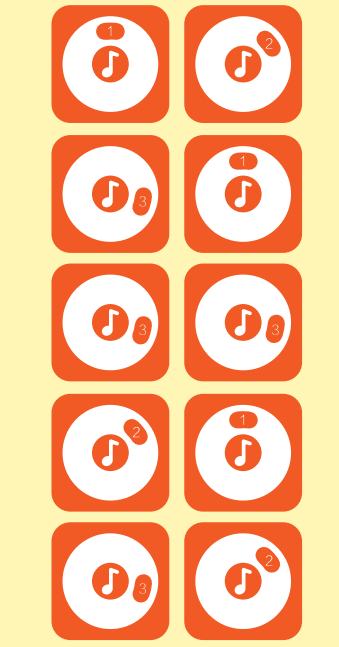


Closing

Today we have learned that music dictation can be used to identify pitches with Solfege. It is important to listen and understand how the hand signs can help us to identify pitch.

Assessment

Listen to the following 5 patterns (intervals) and write the Solfege answers **(Play each block pattern 2 times).**



Extension

Create a puppet show where the language is limited to Do, Re, Mi, Fa, Sol, La, Ti and Do. The characters must sing the words to communicate. You will need to create the meaning of each Solfege word. The puppet show should be limited to two characters.

Imagine you are an artist. Set up the Matatalab music blocks and create a pattern. Play the pattern and draw a picture that you feel will work with the pitches that were played. Explain your picture.

Real World Connections

Imagine that you were in a music class and told to write down the differences between classical music and rap music. How would you start? What do you like about classical music? What do you like about rap music? How does classical and rap music make you feel?

Matatalab
Lesson 9
Identify Matatalab Music Kit

Overview and Introduction

We have heard pitches created by the Matatalab music blocks. We will hear and identify how to change pitch with the blocks.

Learning Objectives

- Students will identify Matatalab pitch blocks.
- Students will identify Matatalab block pitches on the staff.

Standards

K-2: MU:Cr1. 1.Ka, MU:Cr1. 1.1a, MU:Cr1. 1.2a
3-5: MU:Cr1. 1.3a, MU:Cr1. 1.4a, MU:Cr1. 1.5a

Time

60 minutes

Materials

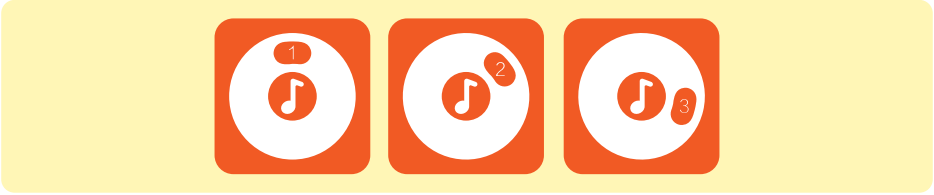
- Staff Notes and Worksheets
- Pencils
- Matatalab Coding Set
  - Command Tower
  - Control Board
  - Matatabot
  - Matatalab Music Blocks

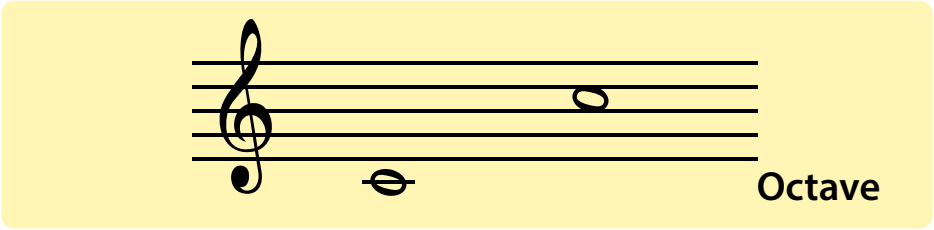
Teacher Set-Up and Preparation

- Copy ***"Solfege Hand"*** diagram
- Matatalab Music Coding Set pieces
- Charge Matatalab Command Tower and Matatabot

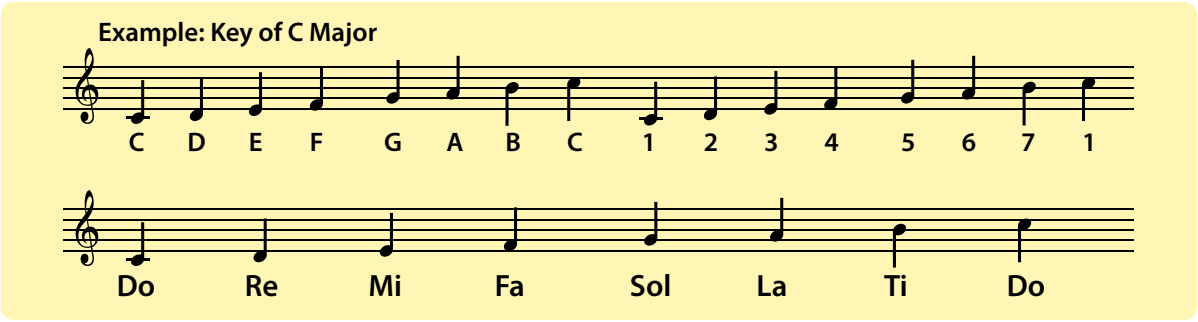
Activity

- This is a music block. The pitch can be changed by turning the orange dial to the left or right. These blocks are the lower octave. An octave is a series of eight notes occupying the interval between and including two notes.

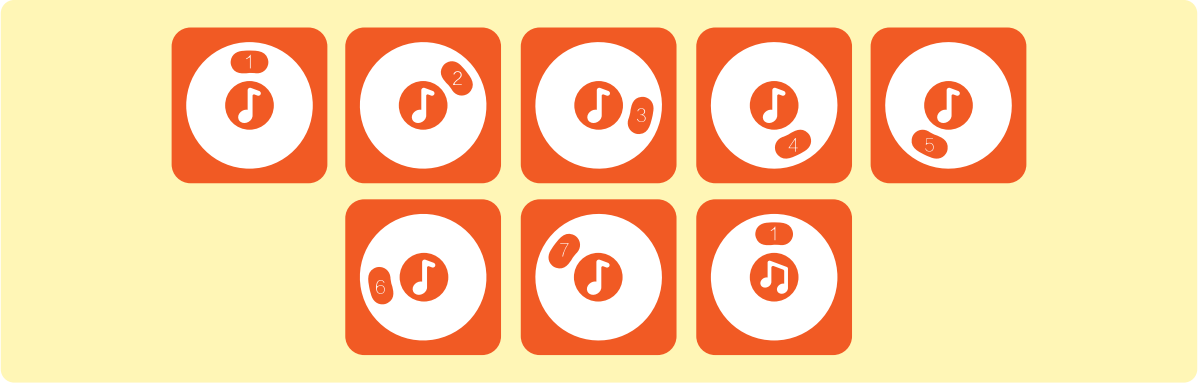




- These are the letter names of notes on the staff, the number that is identified on the block and the Solfege.

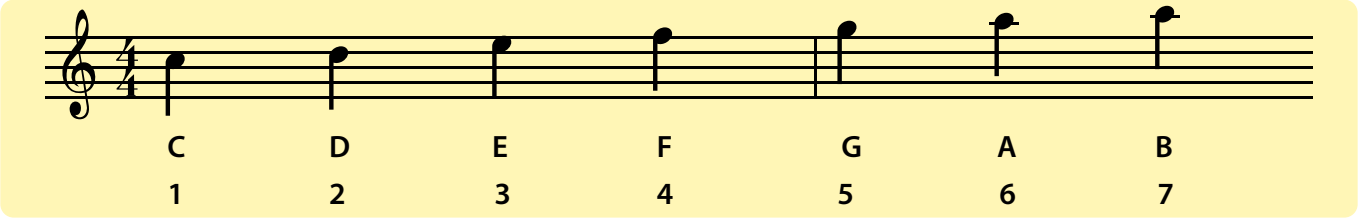


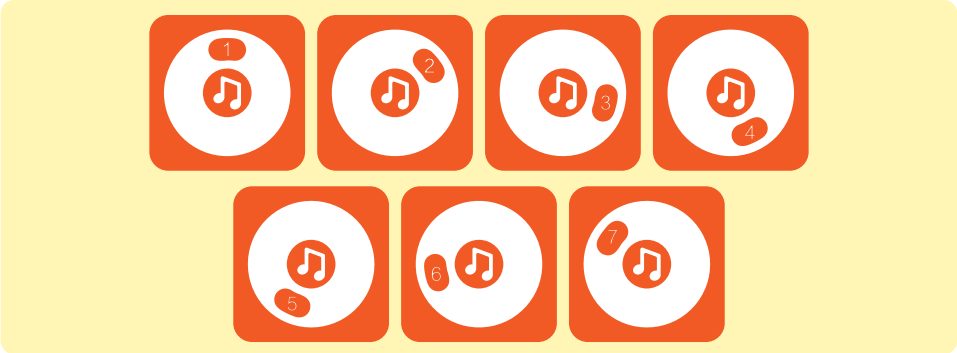
- This is the set up for the Matatalab blocks identified on the staff with the numbers. Place the blocks on the Control Board and hit the Play button.



- This is the higher octave block. Can you tell the difference? It has two eighth notes in the center of the block. The lower octave has one eighth note.

- This is the notation and music block set up for the higher octave music blocks:





- Place the blocks on the Control Board and hit the Play button.

Can you hear the difference?

Students will

- Identify the note on the staff with the music block number. For example, the block that has two eighth note and is turned to 3 is an "E".
- Students will identify high and low pitches.
- Students will identify music block relationships to the staff note letter names.
- Sing notes with Solfege hand signs.

Closing

Today we have learned how music block pitches are created and their location on the music staff. We also identified the meaning of the word octave.

Assessment

- Define Octave.
- How many notes are identified in the lower octave blocks?
- How many notes are identified in the higher octave blocks?

Extension

Some toys come with instruction manuals. The manual is used to help us identify the parts and how they are used. Create a manual for the Matatalab music kit. You should think about drawing the parts with bright colors. Explain to another student how each part works.

Develop a Matatalab music game. Define the rules for the game and explain them to another student. How would you create new music parts for the kit?

Real World Connections

Companies create products everyday for consumer use. How do companies inform the public on new music products? How would you make sure that the product is liked by people? How would you determine the price of the music product? Where can people purchase the product?

Music recordings are purchased via the Internet. The purchase of music on a CD is slowly going away. Why? Are CD recordings more profitable than recordings purchased from the Internet? Why?

Matatalab
Lesson 10
Identify Matatalab Block Pitches

Overview and Introduction

In our previous lesson we identified the music blocks and demonstrated how to change the pitch. Today we will review the positions and listen to the pitches as they appear on the staff.

Learning Objectives

- Identify and define the staff.
- Identify Matatalab block on the staff.
- Identify and define an octave.

Standards

K-2: MU:Cr1. 1.Ka, MU:Cr1. 1.1a, MU:Cr1. 1.2a
3-5: MU:Cr1. 1.3a, MU:Cr1. 1.4a, MU:Cr1. 1.5a

Time

60 minutes

Materials

- Staff Notes and Worksheets
- Pencils
- Matatalab Coding Set
  - Command Tower
  - Control Board
  - Matatabot
  - Matatalab Music Blocks

Teacher Set-Up and Preparation

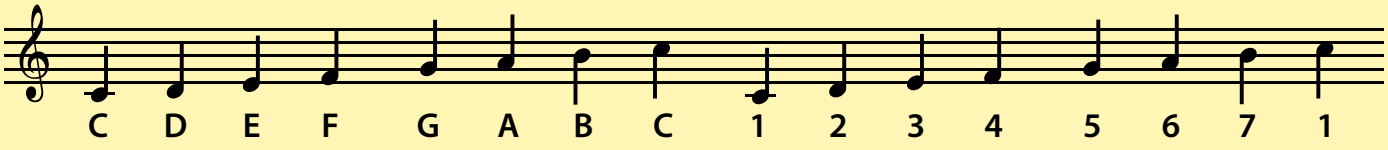
- Copy *"Matatalab Block Pitches"* worksheet
- Matatalab Music Coding Set pieces
- Charge Matatalab Command Tower and Matatabot

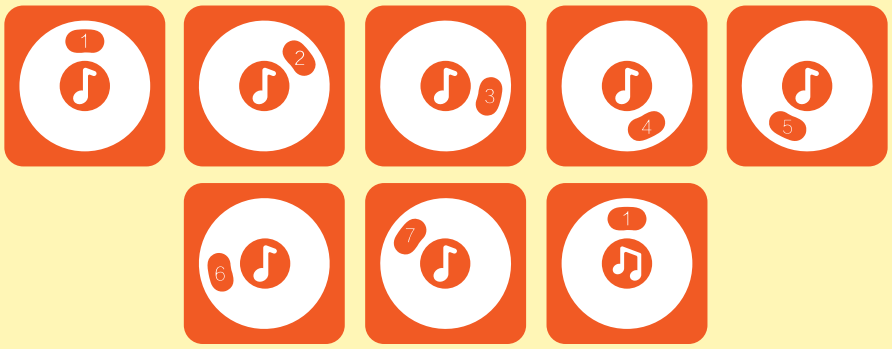
Activity

There is a relationship with notes and the staff. Students will identify pitch blocks and their location on the staff. Let's review what the definition of a staff is. A staff has 5 horizontal lines and four spaces. We count the lines and the spaces from "bottom to top."

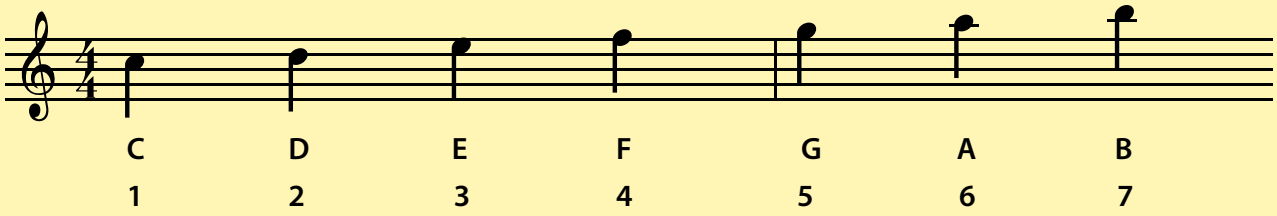
The Staff (or Stave)

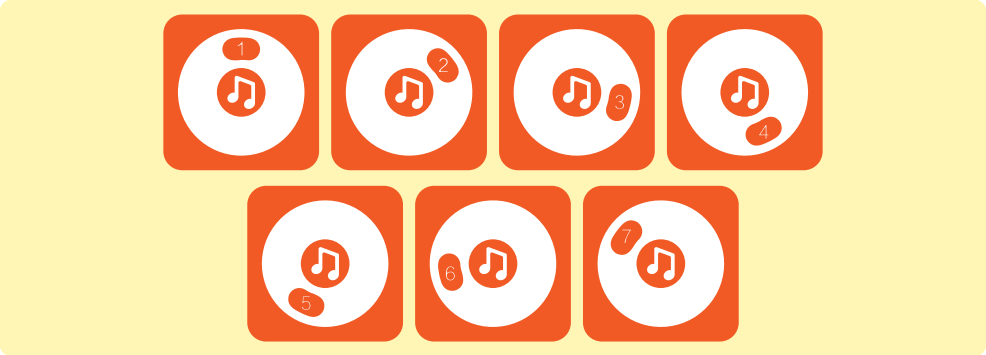
Notice that there are two C's. One is below the staff and the other C on the third space within the staff. One lower and one higher. This is an example of an octave. See the relationship with the blocks and notes on the staff.





See the relationship with the blocks and notes on the staff.





- Place the blocks on the Control Board and play both music block examples. What is different?

Students will

- Complete the *Matatalab Block Pitches* worksheet (at end of lesson). Write the note name with the music block number and identify the lower and higher octave.
- Sing notes with Solfege hand signs.

Closing

Today we have learned how music block pitches are located on the music staff. We also defined the word staff.

Assessment

- Do we count the lines on the staff from bottom to top or top to bottom?
- What is the letter name of the note on the fifth line?
- How many octaves did you hear today?

Extension

Think about the way you listen to music and the shapes of instruments that create music. A CD or album is a circle, a keyboard is a rectangle, a clarinet is a long tube. How does the shape of the instrument affect the way it sounds? You could make a music listening device in the shape of a circle, square, triangle or whatever interests you.

We all have families and relationships. Create interview questions that will identify the relationships with Matatalab music notes and the staff. You could create questions that identify why music note "C" is not friendly with music note "E". You could create a family story with the notes as characters. Are some notes more dramatic? Who is serious? Be creative!

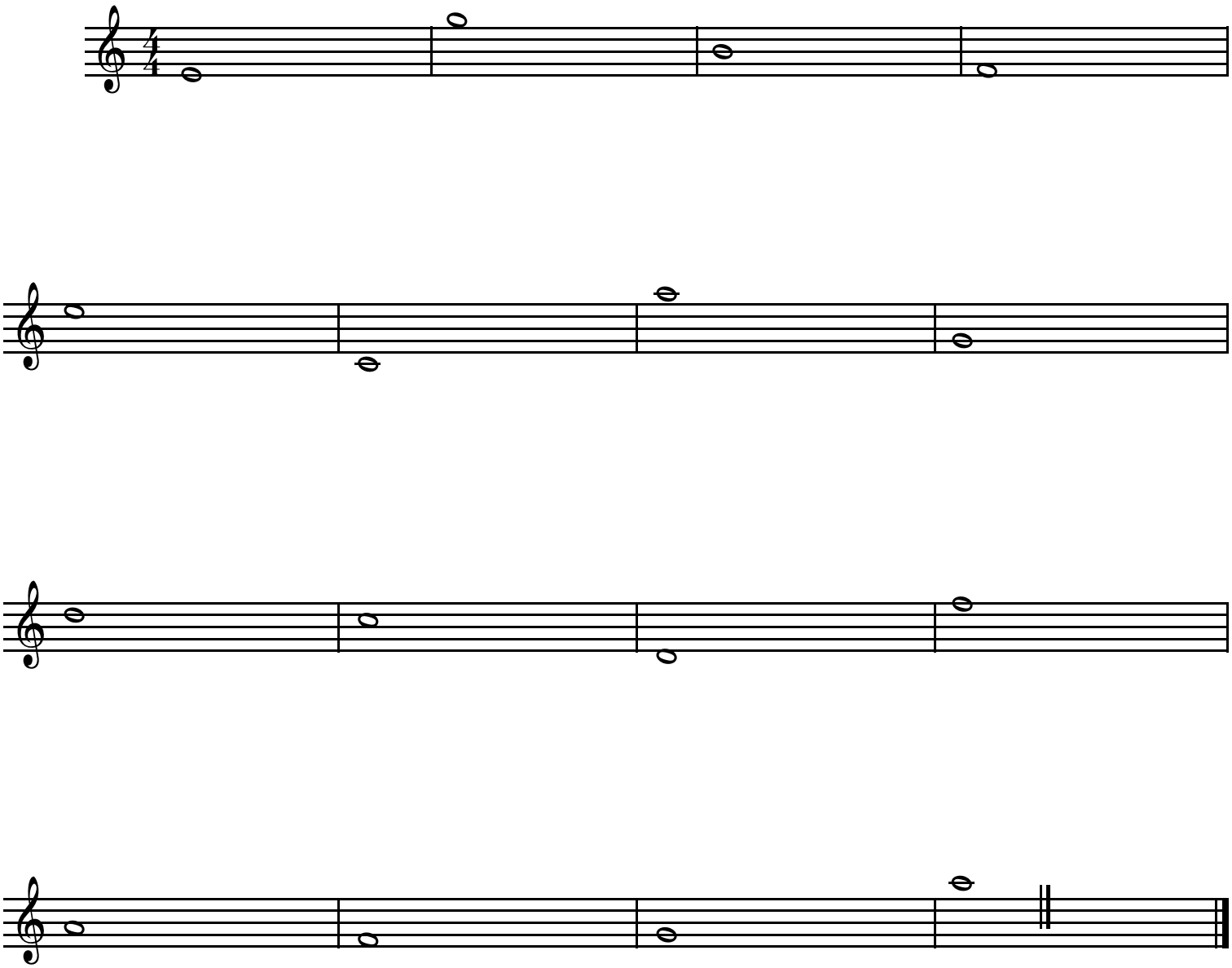
Real World Connections

What is the relationship of the staff with a music note? Can a staff function without notes? Can notes function without a staff? How does the staff and notes help a musician?

What is the relationship between music and people? Can music influence human behavior? Please explain your answer. How many songs are on your playlist? How often do you add music to your playlist?

Matatalab Block Pitches

Write the number of the block to creat the pitch. Write an "L" or a "U" to identify the lower or higher octave.



Matatalab
Lesson 11
Compose and Play MatataLab Intervals

Overview and Introduction

An interval is the distance between two notes. We count from the bottom note to the top note without missing any lines and spaces. Today you will make intervals with the Matatalab music blocks.

Learning Objectives

- Identify intervals on the staff.
- Identify how to create intervals with Matatalab music blocks.

Standards

K-2: MU:Cr1. 1.Ka, MU:Cr1. 1.1a, MU:Cr1. 1.2a
3-5: MU:Cr1. 1.3a, MU:Cr1. 1.4a, MU:Cr1. 1.5a

Time

60 minutes

Materials

- Staff Notes and Worksheets
- Pencils
- Matatalab Coding Set
  - Command Tower
  - Control Board
  - Matatabot
  - Matatalab Music Blocks

Teacher Set-Up and Preparation

- Copy *"interval"* worksheet.
- Matatalab Music Coding Set pieces
- Charge Matatalab Command Tower and Matatabot

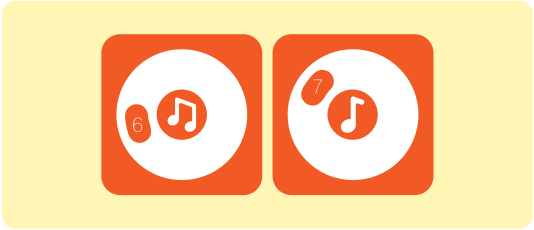
Activity

- Students will review, compose and identify intervals aurally with a partner.
- Remind the students that an interval is the distance between two notes.
- Sing "Do, Re, Mi, Fa, Sol, La and Ti" with Solfege hand signs.
- Sing any two Solfege notes with hand signs with a partner and identify the interval.

Students will

Complete the worksheet. Write the interval number in the blank. The first four are examples. Interval Worksheet (Page 66).

- Circle 6 intervals and get the blocks that represent the notes on the staff from the Matatalab set of music blocks. This is an example for the 7 interval "B" and "A"
- Play the interval for the class or another student and see if they can identify the interval.



Closing

Today we have created intervals with the Matatalab music blocks.

Assessment

- How do we identify intervals?
- Can two intervals sound the same?
- Are intervals lower and higher notes?
- How many intervals did you create today?

Extension

Intervals are made up of two notes. You could create a game that will use two words. One word will sound higher and another word will sound lower. You could develop a game with a ball. You could have it bounce high and low to represent an interval.

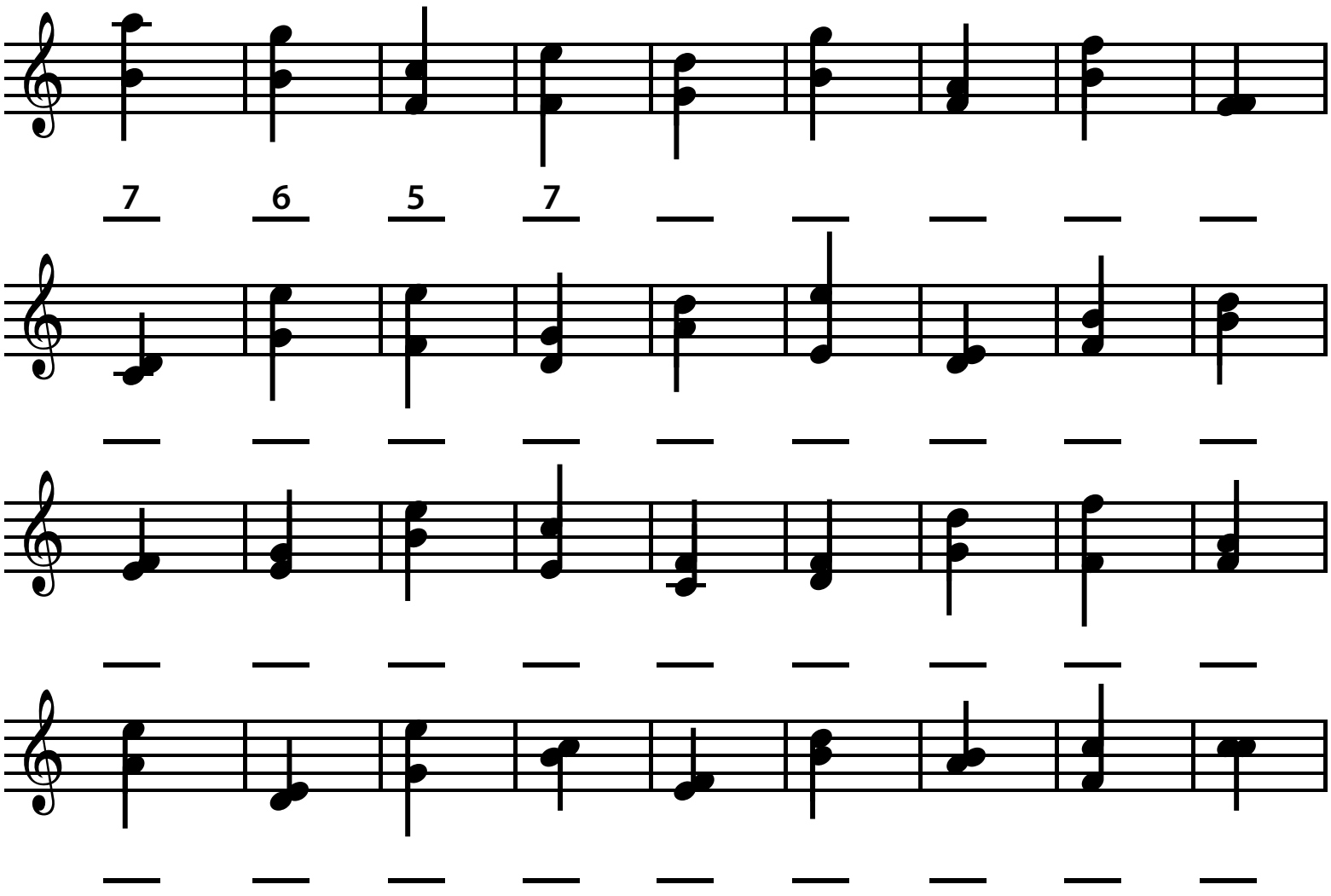
Create a game using your hands. Since intervals are made up of two notes, create a game to show the pitches with the use of the Matatalab music blocks.

Real World Connections

An interval is made up of two notes. What are some things that go together in pairs? What are the similarities? What are the differences? Do they work together for one common goal?

Can two different sounds have the same name? How do we identify a "good" singer? How do we identify a "bad" singer? Can a "good" and "bad" singer be in the same group?

Interval Worksheet



Matatalab
Lesson 12
Compose Matatalab Melodies with Lyrics

Overview and Introduction

How are music songs created? Music can be instrumental or vocal. A composer is a person who writes music. Today we are going to compose music with the use of Matatalab music blocks. This can be a group or individual project.

Learning Objectives

- Students will compose an original melody with lyrics
- Write the Matatalab pitches on the staff
- Present a musical presentation

Standards

K-2: MU:Cr1. 1.Ka, MU:Cr1. 1.1a, MU:Cr1. 1.2a
3-5: MU:Cr1. 1.3a, MU:Cr1. 1.4a, MU:Cr1. 1.5a

Time

60 minutes

Materials

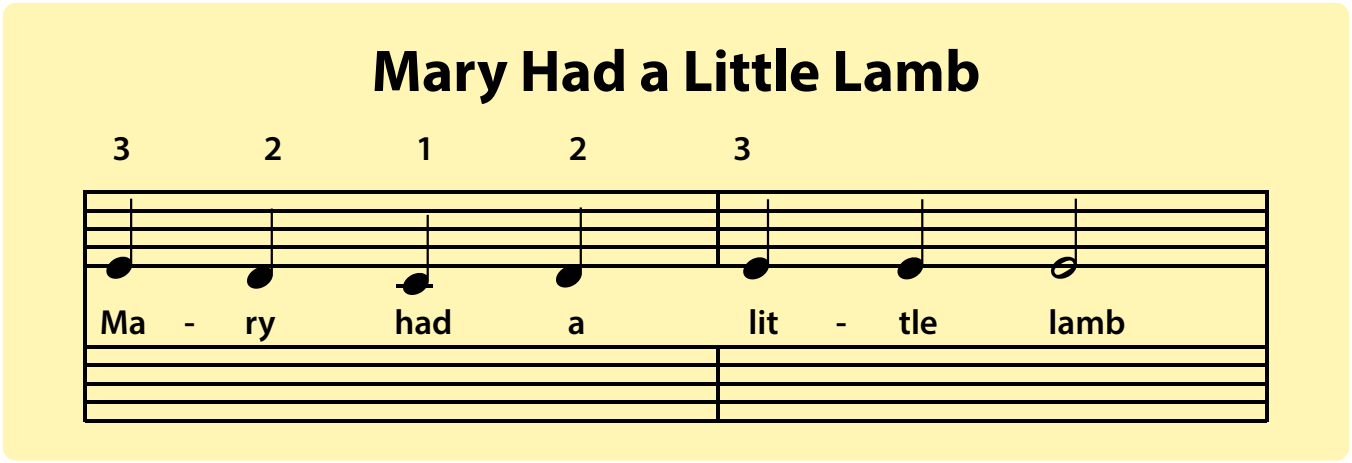
- Staff Notes and Worksheets
- Pencils
- Matatalab Coding Set
  - Command Tower
  - Control Board
  - Matatabot
  - Matatalab Music Blocks

Teacher Set-Up and Preparation

- Copy *"Staff Paper"* worksheet
- Matatalab Music Coding Set pieces
- Charge Matatalab Command Tower and Matatabot

Activity

- *Some composers start with the melodies or lyrics. Some composers use music as a starting point to compose a song. How many of you know the song "Mary Had a Little Lamb"? Let's sing the song together. This is how the song is written with music:*

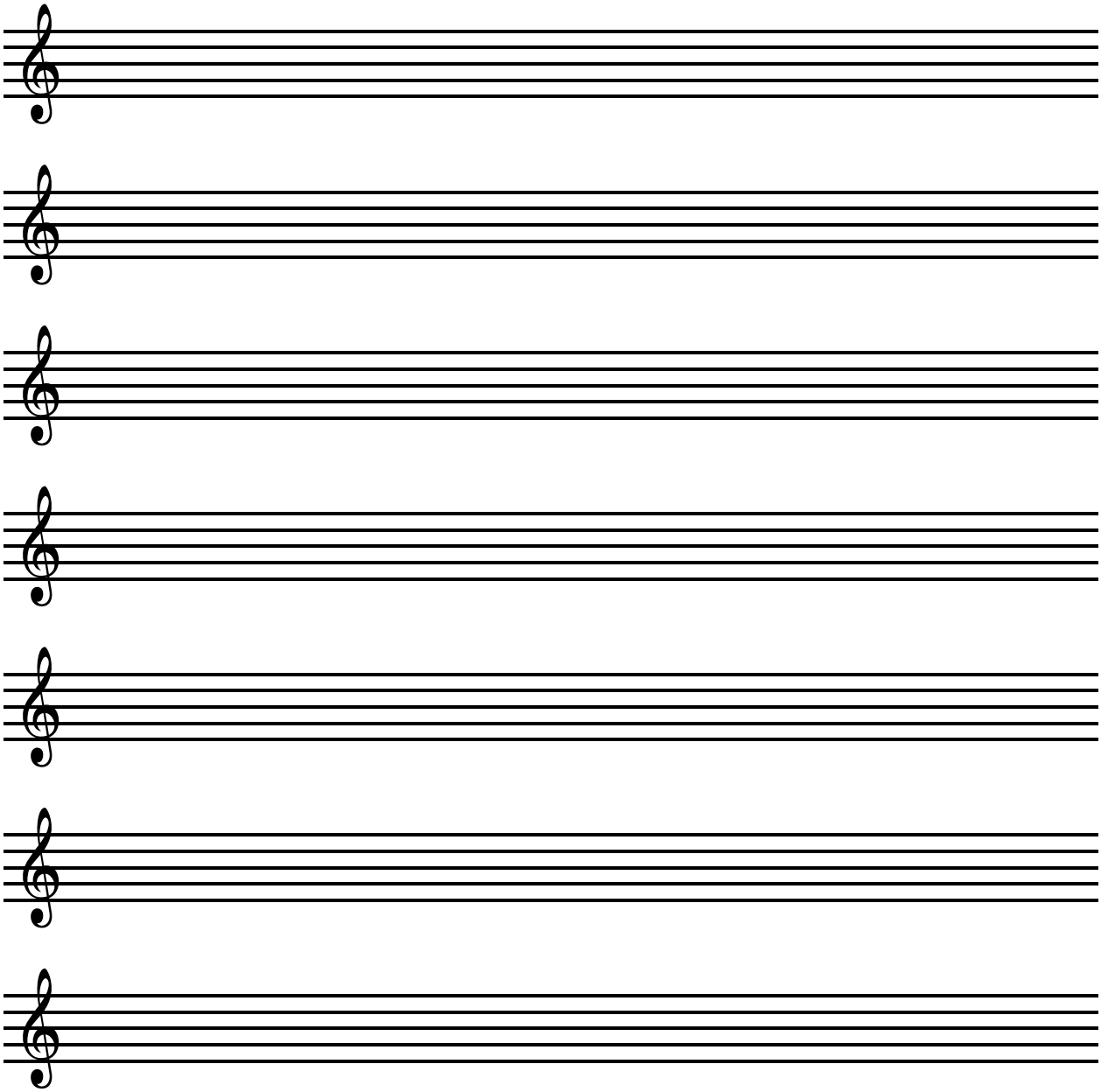


This is how the song is set up with Matatalab music blocks:

Let's set this up and hear the melody. Notice how the music notes on the staff match the blocks.

Students will

- Create group or individual compositions.
- Create melodies with or without lyrics.
- Students will create the melodies with Matatalab music blocks.
- Students will write the music notes and lyrics on the Treble Clef Staff paper that match the block pitch.
- Students will present their compositions to the class.



Closing

Today we have composed original compositions with or without lyrics. We presented the compositions in class individually and with groups.

Assessment

- What is a composer?
- What are lyrics?
- Did you use intervals in your composition?

Extension

Create a music video based on the title of your original song. You may want to do this individually or with a group. You may want to create instruments to help identify the music in your video.

Some songs have good music but the lyrics are hard to understand. You could find a song and rewrite the lyrics and perform it. Using the Matatalab music blocks, make an audio recording of part of your new song. You could create a game show with music for the audience to identify the song.

Real World Connections

How does music get played on the radio? Where is a recording created? How is a recording made? How much money does it take to make a recording?

Who makes the decision for a song to be played on the radio? Why do musicians do concerts if the songs are played on the radio? How many ways can someone have their music played for the public?

Staff Worksheet