Music Theory for Musicians
and Normal People

Fundamentals

TOBYRUSH.COM

What is Music Theory?

CHANCES ARE THERE'S A PIECE OF MUSIC THAT **MOVES** YOU IN A **PROFOUND WAY...**

A WAY THAT IS **FRUSTRATINGLY DIFFICULT** TO **DESCRIBE** TO SOMEONE ELSE!

LIKE OTHER FORMS OF ART, **MUSIC** OFTEN HAS THE CAPABILITY TO CREATE **EMOTIONAL REACTIONS** IN THE LISTENER THAT **TRANSCENDS OTHER FORMS OF COMMUNICATION.**

THOUGH A **SINGLE PIECE OF MUSIC** MAY ELICIT **DIFFERENT REACTIONS** FROM **DIFFERENT LISTENERS,** ANY LOVER OF MUSIC WILL TELL YOU THAT THOSE **FEELINGS** ARE **REAL!**

AND IF THEY'RE **REAL,** THEY'RE WORTHY OF **STUDY.**

SO THEN THE **BASSOON CHOIR** COMES IN LIKE **FLAMING HONEYDEW MELONS** FROM **ON HIGH**

PLEASE BRADLEY IT'S **LATE**

I'M **ALMOST DONE**

lead·ing tone (lēʹdĭŋ tōn), *n.* [music] 1. That one note where it's all, like, NNGGG and you just want it to be like AHH yeah and when they don't, you're like UGH man you need to play the

ONE OF THE **MOST VALUABLE** PARTS OF **MUSIC THEORY** IS GIVING **NAMES** TO MUSICAL STRUCTURES AND PROCESSES, WHICH MAKES THEM **EASIER** TO **TALK ABOUT!**

COMING UP WITH **TERMINOLOGY** DOESN'T JUST HELP US **TALK TO OTHERS** ABOUT MUSIC, THOUGH... IT ACTUALLY **HELPS US LEARN!**

BUT WHILE IT'S AN IMPORTANT STEP, AND A GREAT PLACE TO START, MUSIC THEORY IS **MUCH MORE** THAN JUST **COMING UP WITH NAMES FOR THINGS!**

WHEN **COMPOSERS** WRITE **MUSIC** – WHETHER IT'S A **CLASSICAL-ERA SYMPHONY** OR A BIT OF **JAPANESE POST-SHIBUYA-KEI GLITCH TECHNO** – THEY ARE NOT FOLLOWING A **PARTICULAR SET OF RULES.** IF ANYTHING THEY ARE OFTEN TRYING TO **BREAK THEM!**

SO WHILE A LOT OF PEOPLE THINK MUSIC THEORY IS ABOUT LEARNING THE **RULES** FOR **HOW TO WRITE MUSIC,** THAT'S NOT QUITE RIGHT. MUSIC THEORISTS DON'T **CREATE RULES** FOR WRITING MUSIC; THEY LOOK FOR **PATTERNS** IN MUSIC THAT IS **ALREADY WRITTEN.**

COMPOSERS **CREATE...**

...THEORISTS ANALYZE!

WHICH LEADS TO THE **MOST IMPORTANT QUESTION...** THE ONE THAT, AS YOU STUDY MUSIC THEORY, YOU SHOULD BE **CONSTANTLY ASKING YOURSELF:**

WHY?

WHY **DISSECT** MUSIC? WHAT'S THE POINT OF FIGURING OUT **RULES** THAT **COMPOSERS THEMSELVES** WEREN'T EVEN WORRIED ABOUT?

BECAUSE SOMEWHERE IN THERE IS THE REASON WHY THAT PIECE OF MUSIC **MOVES** YOU.

MAYBE IT'S IN THE **NOTES.** MAYBE IT'S IN THE **SILENCE.** MAYBE IT'S **SOMEWHERE IN BETWEEN.**

THE REASON IT MAKES YOU **CRY,** GIVES YOU **CHILLS,** REMINDS YOU OF **HOME.**

IT MAY TAKE A **LONG TIME,** OR EVEN CREATE MORE **QUESTIONS** THAN **ANSWERS.**

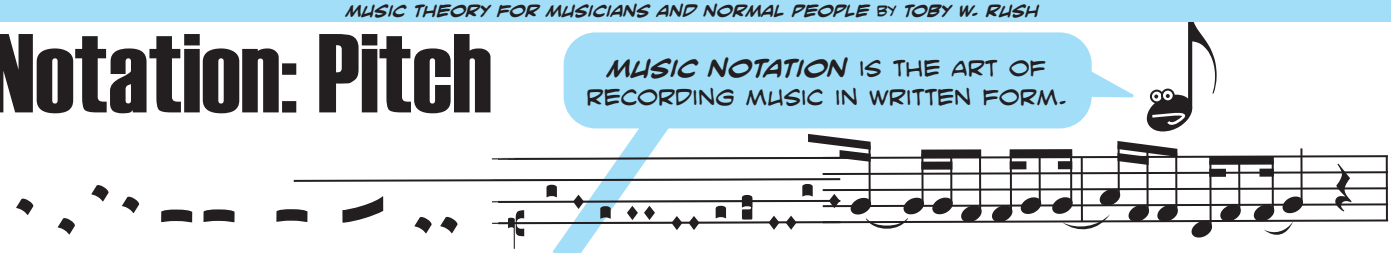
BUT MUSIC THEORISTS ARE GOING TO **FIND IT,** BECAUSE...

MUSIC THEORY IS FIGURING OUT WHAT MAKES MUSIC WORK.

AND **YOU** JUST **JOINED THE TEAM.** GRAB YOUR STUFF... **LET'S GO!**

Notation: Pitch

MUSIC NOTATION IS THE ART OF RECORDING MUSIC IN WRITTEN FORM.



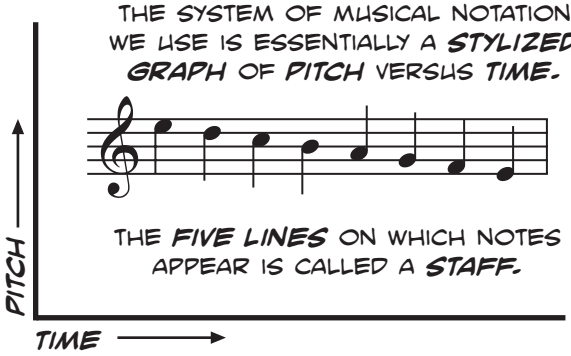
MODERN MUSIC NOTATION IS A PRODUCT OF **CENTURIES** OF TRANSFORMATION... AND IT IS NEITHER **EFFICIENT** NOR **INTUITIVE!**

PITCH IS THE HIGHNESS OR LOWNESS OF A SOUND.

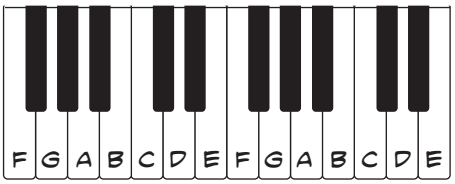
FOR EXAMPLE, A **FLUTE** HAS A **HIGH PITCH**, WHILE A **TUBA** HAS A **LOW PITCH**.

A **NOTE** IS A **WRITTEN REPRESENTATION** OF A PARTICULAR **PITCH**.

THE SYSTEM OF MUSICAL NOTATION WE USE IS ESSENTIALLY A **STYLIZED GRAPH** OF **PITCH** VERSUS **TIME**.



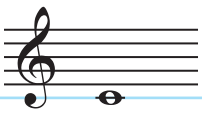
THE **FIVE LINES** ON WHICH NOTES APPEAR IS CALLED A **STAFF**.



THE **WHITE NOTES** ON THE KEYBOARD ARE LABELED WITH LETTERS FROM **A** TO **G**.

NOTATION IS BASED ON THE **PIANO KEYBOARD**; **LINES** AND **SPACES** ON THE STAFF REPRESENT THE **WHITE NOTES** ON THE KEYBOARD.

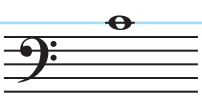
TO DISPLAY NOTES **OUTSIDE** THE STAFF, WE USE SHORTENED STAFF LINES CALLED **LEDGER LINES**.



TREBLE CLEF

ALTO CLEF

TENOR CLEF



BASS CLEF

THE **CLEF** DETERMINES WHAT NOTES EACH STAFF LINE CORRESPONDS TO. THE **FOUR MODERN CLEFS** ARE SHOWN HERE; THE NOTE DISPLAYED ON EACH STAFF CORRESPONDS TO **MIDDLE C**.

MIDDLE C IS THE **C** THAT IS CLOSEST TO THE **MIDDLE** OF THE PIANO KEYBOARD.

TO NOTATE THE **BLACK NOTES** ON THE PIANO KEYBOARD, WE USE **ACCIDENTALS**, WHICH ALTER THE NOTE BY ONE OR TWO **HALF STEPS**.

A **HALF STEP** IS THE DISTANCE BETWEEN **TWO ADJACENT KEYS** ON THE PIANO KEYBOARD, REGARDLESS OF WHAT **COLOR** THE KEYS ARE.

THE **DOUBLE SHARP** RAISES THE NOTE BY TWO HALF STEPS.

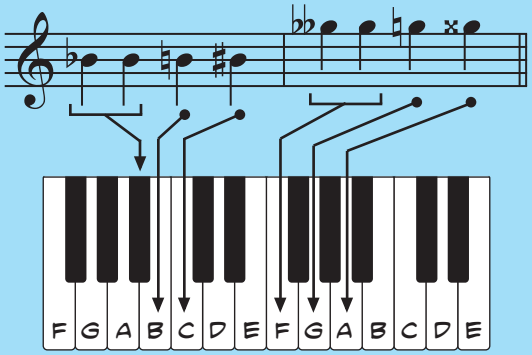
THE **SHARP** RAISES THE NOTE BY ONE HALF STEP.

THE **NATURAL** CANCELS OUT ANY PREVIOUS ACCIDENTAL.

THE **FLAT** LOWERS THE NOTE BY ONE HALF STEP.

THE **DOUBLE FLAT** LOWERS THE NOTE BY TWO HALF STEPS.

THESE SYMBOLS ARE PLACED TO THE **LEFT** OF THE NOTE THAT THEY AFFECT, AND THEY APPLY TO ALL THE NOTES ON THAT LINE OR SPACE FOR THE REST OF THE MEASURE.



TWO **NOTES** WHICH HAVE THE SAME **PITCH** (FOR EXAMPLE, **F SHARP** AND **G FLAT**) ARE CALLED **ENHARMONICS**.

Notation: Rhythm

WHILE **PITCH** IS PRETTY CLEARLY NOTATED ON A VERTICAL AXIS, **NOTE LENGTH** IS INDICATED USING A SOMEWHAT ARCANE SYSTEM INVOLVING **NOTEHEADS, STEMS AND FLAGS.**

DOUBLE WHOLE NOTE

WHOLE NOTE

HALF NOTE

QUARTER NOTE

EIGHTH NOTE

SIXTEENTH NOTE

THIRTY-SECOND NOTE

SIXTY-FOURTH NOTE

ONE-HUNDRED-TWENTY-EIGHTH NOTE

IN THIS CHART, EACH SUCCESSIVE TYPE OF NOTE IS **HALF AS LONG** AS THE NOTE TO ITS LEFT. NONE OF THESE NOTES HAS A **STANDARD LENGTH;** A HALF NOTE IN ONE PIECE MAY BE THE SAME LENGTH AS AN EIGHTH NOTE IN A DIFFERENT PIECE.

NOTE LENGTHS IN A PIECE ARE INDICATED BY THE **TEMPO MARKING** AT THE BEGINNING OF A PIECE OR SECTION.

DOUBLE WHOLE REST

WHOLE REST

HALF REST

QUARTER REST

EIGHTH REST

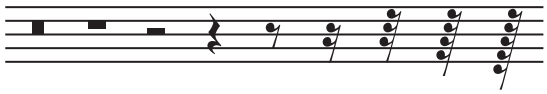
SIXTEENTH REST

THIRTY-SECOND REST

SIXTY-FOURTH REST

ONE-HUNDRED-TWENTY-EIGHTH REST

A **REST** IS A PERIOD OF **SILENCE** THE LENGTH OF WHICH CORRESPONDS TO A PARTICULAR NOTE.



USUALLY RESTS ARE PLACED ON THE STAFF AT A PARTICULAR VERTICAL POSITION AS SHOWN HERE.

THE **AUGMENTATION DOT** IS A DOT PLACED TO THE RIGHT OF A NOTEHEAD. THOUGH SMALL, THIS DOT WIELDS SOME **SERIOUS POWER:** IT ADDS HALF OF THE ORIGINAL NOTE'S LENGTH!

MULTIPLE DOTS CAN ALSO BE ADDED, EACH ONE ADDING HALF OF THE PREVIOUSLY ADDED VALUE.

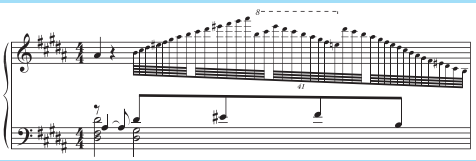
TIES ARE CURVED MARKS WHICH CONNECT TWO NOTES TOGETHER TO CREATE A **SINGLE, EXTENDED SOUND.**

TO TIE **MORE THAN TWO** NOTES TOGETHER, DRAW TIES BETWEEN **EACH NOTE;** DO NOT USE A SINGLE, EXTENDED TIE.

A **TUPLET** IS ANY NON-STANDARD DIVISION OF A NOTE. THESE ARE USUALLY WRITTEN AS A GROUP OF NOTES DELINEATED WITH A **BRACKET** AND A **NUMBER** SHOWING THE DIVISION BEING MADE.

MOST TUPLETS ARE SIMPLE DIVISIONS, LIKE THE **TRIPLETS** TO THE LEFT. BUT ANYTHING IS POSSIBLE! **CHOPIN,** FOR EXAMPLE, WOULD OFTEN **GO TO TOWN** WITH THESE THINGS.

FOR EXAMPLE, THESE AREN'T EXACTLY **QUARTER NOTES;** THEY ARE EACH A **THIRD** AS LONG AS A **HALF NOTE.**



WHA... **GAH!** CHOPIN, **NO!** **DOWN,** BOY!

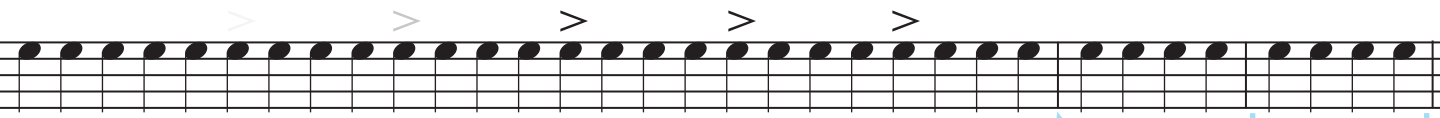
Notation: Meter

A FUNDAMENTAL FEATURE OF MOST PIECES OF MUSIC IS A ***CONSISTENT RHYTHMIC PULSE.*** THIS PULSE IS CALLED THE ***BEAT,*** AND A SINGLE PULSE IS CALLED A ***BEAT UNIT.***

THERE ARE ***TWO*** TYPES OF BEAT UNITS: THOSE CONTAINING ***TWO DIVISIONS,*** CALLED ***SIMPLE*** BEAT UNITS...

...AND THOSE CONTAINING ***THREE DIVISIONS,*** CALLED ***COMPOUND*** BEAT UNITS.

IN MUSIC, BEATS ARE ORGANIZED INTO PATTERNS OF ***ACCENTED*** AND ***UNACCENTED*** BEAT UNITS. IN FACT, IF YOU LISTEN TO A SEQUENCE OF REPEATED NOTES, YOUR BRAIN WILL PROBABLY START TO PERCEIVE THE NOTES AS GROUPS OF ***TWO, THREE,*** OR ***FOUR,*** EVEN IF NO ACCENTS ARE PRESENT!



THESE GROUPS ARE CALLED ***MEASURES,*** AND THEY ARE DELINEATED WITH ***BARLINES.***

BARLINE

MEASURE

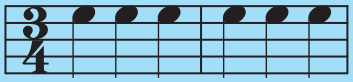
THE ORGANIZATION OF BEAT UNITS AND MEASURES IN A PIECE IS CALLED ***METER.*** METER IS DESCRIBED BY TWO NUMBERS PLACED AT THE BEGINNING OF THE PIECE: THE ***TIME SIGNATURE.***

SIMPLE TIME SIGNATURES ARE ***EASY.***

3/4

THE TOP NUMBER INDICATES THE ***NUMBER OF BEATS*** IN A MEASURE.

THE BOTTOM NUMBER INDICATES THE ***TYPE OF NOTE*** WHICH SERVES AS THE ***BEAT UNIT.***



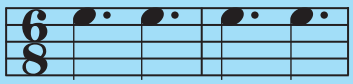
THE CODE FOR THE BOTTOM NOTE IS PRETTY EASY: 4 REFERS TO A QUARTER NOTE, 8 TO AN EIGHTH NOTE, 16 TO A SIXTEENTH NOTE, AND SO ON.

COMPOUND TIME SIGNATURES ARE KIND OF ***LYING TO YOU.***

6/8

THE TOP NUMBER INDICATES THE ***NUMBER OF DIVISIONS*** IN A MEASURE. TO GET THE NUMBER OF BEATS, DIVIDE IT BY ***THREE.***

THE BOTTOM NUMBER INDICATES THE ***TYPE OF NOTE*** WHICH SERVES AS THE ***DIVISION.*** TO GET THE ***BEAT UNIT,*** USE THE NOTE THAT IS EQUAL TO ***THREE*** OF THESE NOTES. IN A COMPOUND METER, THE BEAT UNIT IS ALWAYS A ***DOTTED NOTE!***



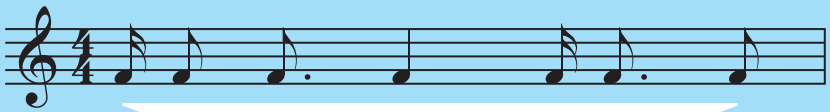
IN FACT, WOULDN'T ***THIS*** BE AN EASIER WAY TO NOTATE ***COMPOUND METERS?***

SORRY... THE ***MAN*** SAYS YOU HAVE TO DO IT THE ***OTHER WAY.***

BY LOOKING AT THE ***TOP NUMBER*** OF THE TIME SIGNATURE, YOU CAN TELL ***TWO*** THINGS ABOUT THE METER: WHETHER IT'S ***SIMPLE*** OR ***COMPOUND,*** AND HOW MANY ***BEATS*** ARE IN A ***MEASURE.***

BEATS PER MEASURE	SIMPLE	COMPOUND
2	2	6
3	3	9
4	4	12

NOTES THAT HAVE ***FLAGS*** CAN BE GROUPED TOGETHER BY USING ***BEAMS*** IN PLACE OF FLAGS.



HOWEVER, BEAMING IS ONLY USED TO GROUP NOTES ***WITHIN BEATS.*** FOR THE MOST PART, YOU SHOULDN'T ***BEAM*** NOTES ***BETWEEN*** BEATS, NOR SHOULD YOU ***TIE*** NOTES WITHIN ***BEATS.***

hey, it's kids! SPARKY THE MUSIC THEORY DOG!

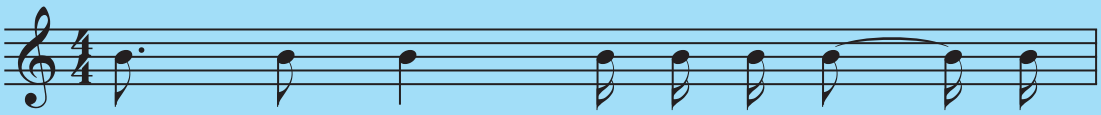
Q: Dear Sparky:
I understand that we're supposed to beam rhythms to show the organization of beats in the measure, but is there an easy way to beam complex rhythms?
--A.Y., Owatonna, MN

A: WOOF!*

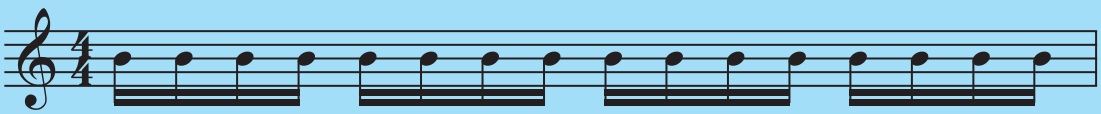
TRANSLATION:** NOTES SHOULD BE BEAMED IN GROUPS THAT ***ILLUSTRATE THE METER. FOR SIMPLE RHYTHMS, THIS IS PRETTY EASY TO DO; SIMPLY GROUP ANY NOTES THAT CAN BE BEAMED (EIGHTH NOTES AND SMALLER) INTO GROUPS THAT ARE ***EQUAL TO THE BEAT UNIT OF THE CURRENT METER.***

FOR ***COMPLEX RHYTHMS,*** HOWEVER, THINGS CAN GET COMPLICATED... WHEN A RHYTHM INCLUDES THINGS LIKE ***SYNCOPATIONS*** OR OTHER ***OFF-BEAT FIGURES,*** ILLUSTRATING THE METER MAY INVOLVE ***DIVIDING NOTES*** ACROSS BEAT UNITS WITH ***TIES.*** FORTUNATELY, THERE IS A ***STEP-BY-STEP SYSTEM*** FOR CORRECTLY BEAMING THESE COMPLICATED RHYTHMS!

FOR EXAMPLE, LET'S TAKE THIS RHYTHM, WHICH IS WRITTEN WITHOUT BEAMING.

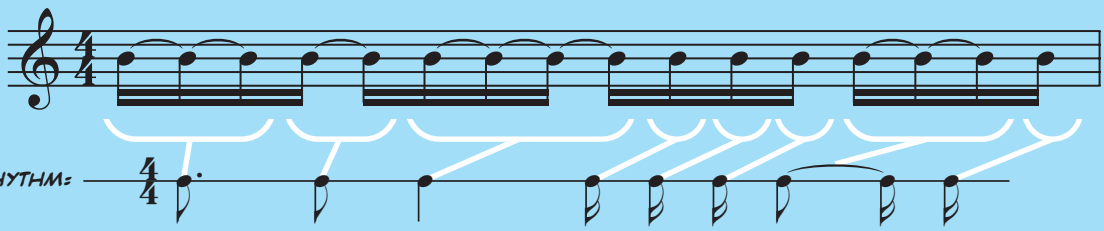


STEP 1: FIND THE SMALLEST NOTE VALUE USED, AND FILL A COMPLETE MEASURE WITH THIS TYPE OF NOTE, BEAMED IN GROUPS THAT ARE EQUAL TO A BEAT UNIT IN THE CURRENT METER.



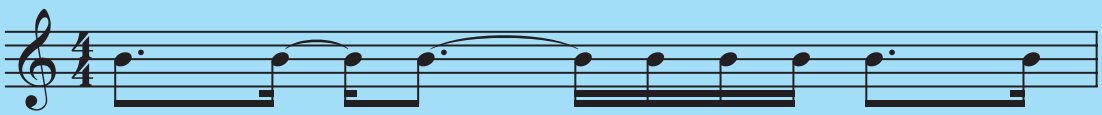
STEP 2: ADD TIES BETWEEN INDIVIDUAL NOTES TO RECREATE THE ORIGINAL RHYTHM. MAKE SURE THAT EACH TIED GROUP CORRESPONDS TO A NOTE IN THE RHYTHM YOU STARTED WITH!

YES, I KNOW IT LOOKS WEIRD... BUT WE'RE NOT DONE YET!



STEP 3: FIND ***EVERY*** GROUP OF TWO OR MORE NOTES THAT ARE ***BOTH TIED TOGETHER AND BEAMED TOGETHER,*** AND REPLACE THEM WITH A ***SINGLE NOTE*** OF ***EQUIVALENT VALUE.***

IF YOU HAVE NOTES THAT ARE TIED ***OR*** BEAMED, BUT NOT ***BOTH,*** THEN LEAVE THEM ***ALONE!***

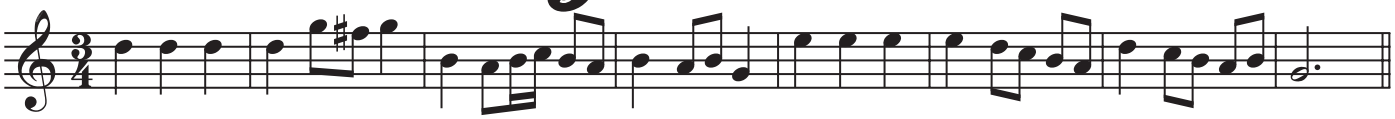


A ***CORRECTLY BEAMED RHYTHM*** MAY INCLUDE ***TIES,*** BUT IT WILL ***VERY CLEARLY*** SHOW THE ***BEATS*** IN THE MEASURE... WHICH, IN TURN, MAKES IT ***EASIER FOR THE PERFORMER TO READ!***

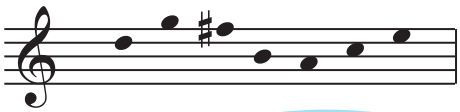
DOING STUFF THE SPARKY WAY IS ALWAYS FUN!

The Major Scale

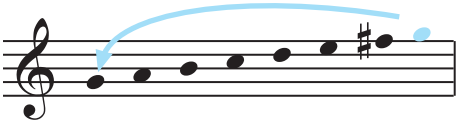
ONE OF THE REASONS THAT A PARTICULAR PIECE OF MUSIC ***SOUNDS THE WAY IT DOES*** HAS TO DO WITH THE ***GROUP OF NOTES*** THE COMPOSER DECIDED TO USE.



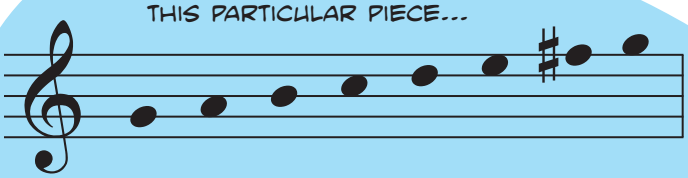
TAKE ***THIS MELODY,*** FOR EXAMPLE...
LET'S FIRST REMOVE ALL THE ***DUPLICATE NOTES,*** REGARDLESS OF WHICH ***OCTAVE*** THEY'RE IN.



NEXT, LET'S PUT THE NOTES IN ***ALPHABETICAL ORDER,*** STARTING ON THE NOTE THAT THE MELODY SOUNDED LIKE IT WAS ***CENTERING*** ON.



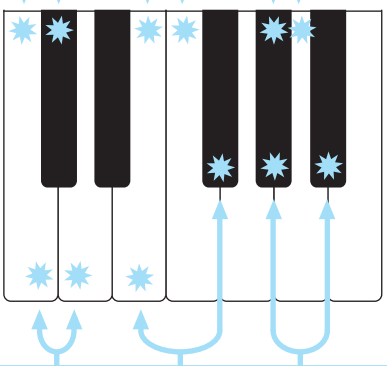
WHAT WE END UP WITH IS THE ***"PALETTE"*** FOR THIS PARTICULAR PIECE...



LIKE THE ***BOARD*** ON WHICH A PAINTER HOLDS THE ***BITS OF PAINT*** BEING USED IN THE PAINTING BEING CREATED.

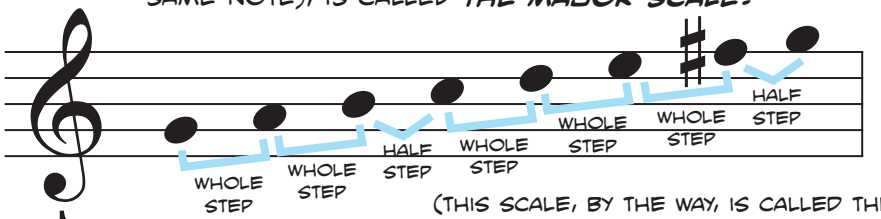
THERE ARE ACTUALLY MANY DIFFERENT ***TYPES*** OF SCALES, EACH WITH A DIFFERENT PATTERN OF ***WHOLE STEPS*** AND ***HALF STEPS.***

A ***HALF STEP*** IS THE DISTANCE BETWEEN ***TWO ADJACENT KEYS*** ON THE ***PIANO KEYBOARD,*** REGARDLESS OF ***COLOR.***



IN MUSIC, THIS "PALETTE" IS CALLED A ***SCALE.*** THOUGH WE USUALLY WRITE SCALES FROM ***LOW*** TO ***HIGH,*** THE ORDER IS ACTUALLY ***UNIMPORTANT;*** IT'S THE ***NOTES*** CONTAINED IN THE SCALE THAT HELP MAKE A PIECE SOUND THE WAY IT DOES.

THIS PARTICULAR ARRANGEMENT, WHERE HALF STEPS OCCUR BETWEEN STEPS ***THREE AND FOUR*** AND BETWEEN STEPS ***SEVEN AND EIGHT*** (OR BETWEEN SEVEN AND ***ONE***, SINCE EIGHT AND ONE ARE THE SAME NOTE), IS CALLED ***THE MAJOR SCALE.***

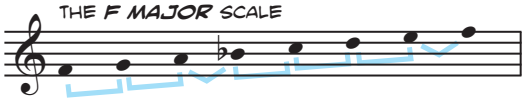


A ***WHOLE STEP*** IS THE EQUIVALENT OF ***TWO HALF STEPS.***

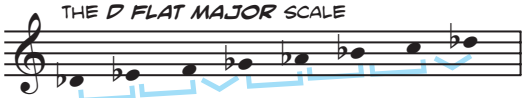
(THIS SCALE, BY THE WAY, IS CALLED THE ***G MAJOR SCALE,*** BECAUSE IT STARTS ON ***G.***)

KNOWING THIS FORMULA, YOU CAN CREATE A MAJOR SCALE ON ***ANY NOTE!***

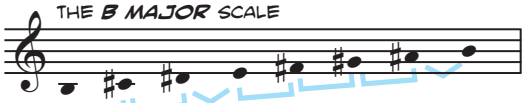
THE ***F MAJOR*** SCALE



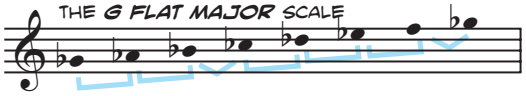
THE ***D FLAT MAJOR*** SCALE



THE ***B MAJOR*** SCALE



THE ***G FLAT MAJOR*** SCALE



BUT REMEMBER... WITH ***GREAT POWER*** COMES ***GREAT RESPONSIBILITY!***

Key Signatures

IF YOU START WRITING **MAJOR SCALES** AND PAY ATTENTION TO THE **ACCIDENTALS** THAT OCCUR, YOU ARE GOING TO START NOTICING A **PATTERN...**

FOR EXAMPLE LOOK AT THE FLAT KEYS, STARTING WITH THE KEY THAT HAS **ONE FLAT,** ALL THE WAY THROUGH THE KEY WITH **SEVEN FLATS:** THE FLATS ACCRUE IN A **SPECIFIC ORDER.** SAME WITH THE **SHARP KEYS!**

SO IF YOU LOOK FOR A KEY THAT HAS ONLY A **D FLAT,** YOU WON'T FIND IT: IF A KEY HAS A **D FLAT,** IT MUST ALSO HAVE A **B FLAT, AN E FLAT** AND AN **A FLAT!**

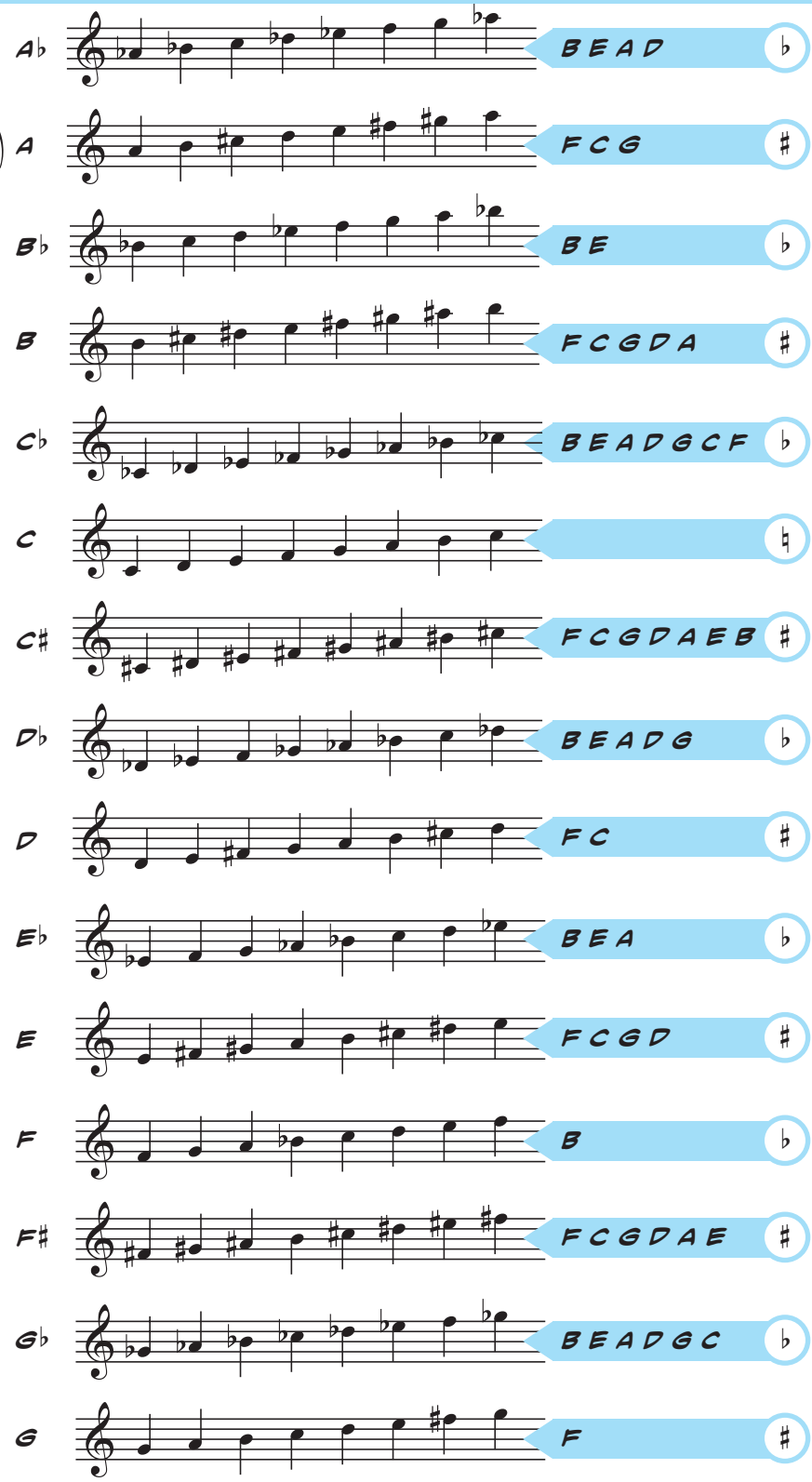
SINCE WRITING AN ENTIRE PIECE IN **C SHARP MAJOR** WOULD HAVE BEEN A SURE-FIRE WAY TO GET **CARPAL TUNNEL SYNDROME** WITH ALL THE SHARPS INVOLVED, COMPOSERS PRETTY QUICKLY CAME UP WITH A WAY TO SIMPLIFY THINGS: **KEY SIGNATURES.**

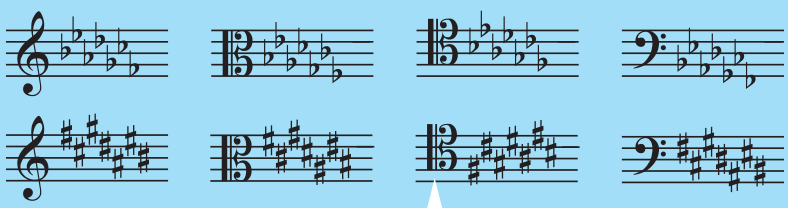
A **KEY SIGNATURE** IS A GROUP OF **ACCIDENTALS** PLACED AT THE BEGINNING OF EVERY LINE OF MUSIC, JUST TO THE RIGHT OF THE CLEF, THAT INSTRUCTS THE PERFORMER TO APPLY THOSE ACCIDENTALS TO **EVERY CORRESPONDING NOTE** IN THE PIECE UNLESS SPECIFIED OTHERWISE.

FOR EXAMPLE, **THIS** KEY SIGNATURE INDICATES THAT EVERY **F, C,** AND **G** IN THE PIECE SHOULD BE **SHARPED, REGARDLESS OF OCTAVE!**

OH, AND **ANOTHER THING:** THE ACCIDENTALS HAVE TO BE PLACED IN THE **CORRECT ORDER,** AND THEY NEED TO FOLLOW A **PARTICULAR PATTERN** OF **PLACEMENT** THAT **VARIES** SLIGHTLY DEPENDING ON THE **CLEF** BEING USED! IF YOU DEVIATE FROM THIS, YOU, AS A COMPOSER, WILL BE **MOCKED!**

TENOR CLEF SHARPS! WHAT'S YOUR **PROBLEM?** YOU NEED TO **CONFORM!**





HA HA... **NEVER!**

The Circle of Fifths

THEORISTS FIND IT **CONVENIENT** TO ORGANIZE ALL THE POSSIBLE **KEY SIGNATURES** INTO A **CHART** THAT SHOWS THEIR RELATIONSHIP TO ONE ANOTHER.

THIS CHART, CALLED **THE CIRCLE OF FIFTHS,** DISPLAYS EACH KEY AS A **SPOKE** ON THE CIRCLE, BEGINNING WITH **C MAJOR** AT THE **TOP** AND **ADDING ACCIDENTALS,** ONE AT A TIME, TO THE KEY SIGNATURES AROUND THE PERIMETER.

WE'LL **RETURN** TO THIS CHART AS WE CONTINUE LEARNING ABOUT HOW COMPOSERS USE **KEYS.**

C 0
G 1♯
D 2♯
A 3♯
E 4♯
B 5♭ 7♯
F♯ 6♯ 6♭
C♭ 7♭
F 1♭
B♭ 2♭
E♭ 3♭
A♭ 4♭
D♭ 5♭
G♭

AS YOU MOVE **CLOCKWISE** AROUND THE CIRCLE, YOU ADD **SHARPS** TO THE KEY SIGNATURE. AS YOU MOVE **COUNTERCLOCKWISE** AROUND, YOU ADD **FLATS** TO THE KEY SIGNATURE.

TO DETERMINE THE **KEY SIGNATURE** FOR A KEY, LOOK TO SEE WHICH **"SPOKE"** OF THE CIRCLE IT'S ON TO DETERMINE HOW MANY **FLATS** OR **SHARPS** IT HAS, AND ADD **ACCIDENTALS** TO THE KEY SIGNATURE APPROPRIATELY.

WHEN ADDING **FLATS** TO A KEY SIGNATURE, ADD THEM IN **THIS** ORDER:

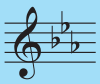
♭ →

BEADGCF

← ♯

WHEN ADDING **SHARPS,** USE THE **REVERSE** OF THE ORDER ABOVE.

FOR EXAMPLE, **E FLAT MAJOR** HAS **THREE FLATS,** SO IT SHOULD LOOK LIKE **THIS:**

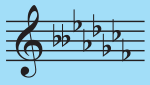


THE KEYS DOWN HERE LINE UP **ENHARMONICALLY...** FOR EXAMPLE, THE KEY OF **D FLAT MAJOR** WILL SOUND JUST LIKE THE KEY OF **C SHARP MAJOR.**

NOTICE HOW THAT **BEADGCF** PATTERN POPS UP **ALL OVER** THE CIRCLE OF FIFTHS?

WEIRD!

SO COULD YOU **CONTINUE** THE **ENHARMONIC** DEAL AND HAVE THE KEY OF **F FLAT MAJOR?** YES, IF YOU WANT A **DOUBLE FLAT** IN YOUR **KEY SIGNATURE:**



NOOOOO!

Diatonic Intervals

AN **INTERVAL** IS THE **DISTANCE** IN **PITCH** BETWEEN TWO NOTES.

THE MOST BASIC WAY WHICH WE **IDENTIFY** DIFFERENT INTERVALS IS BY **COUNTING THE STEPS** BETWEEN THE TWO NOTES.

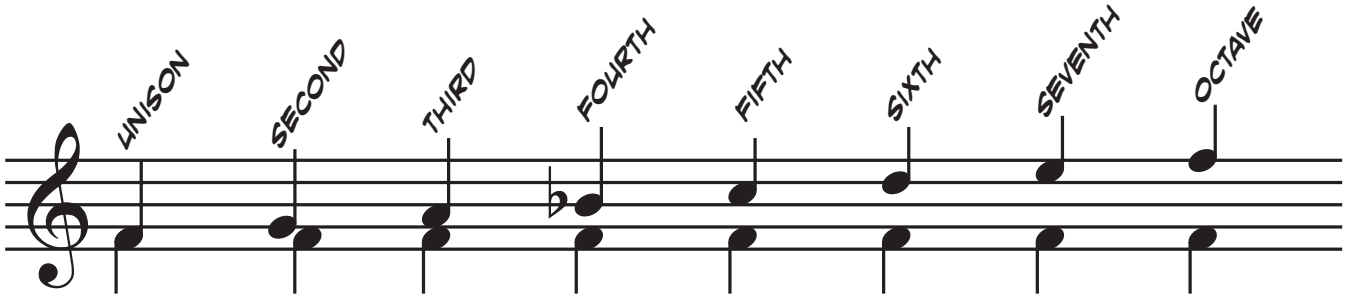
SPECIFICALLY, WE COUNT **SCALE DEGREES,** BUT THE **EASIEST** WAY TO DO IT IS TO COUNT **LINES AND SPACES** ON THE **STAFF.**

WHEN COUNTING, BEGIN WITH THE **BOTTOM NOTE** AS **ONE** AND COUNT UNTIL YOU REACH THE **TOP NOTE.**

THIS INTERVAL IS A **SEVENTH!**

WHEN COUNTING THE **LINES** AND **SPACES,** WE CAN SAFELY **IGNORE** ANY **ACCIDENTALS.**

THIS INTERVAL IS ALSO A **SEVENTH...** WE'LL DISCUSS HOW IT'S **DIFFERENT** VERY **SOON!**



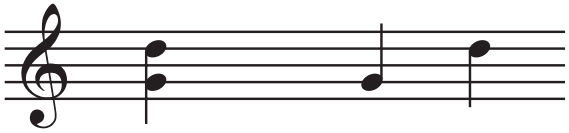
TWO NOTES ON THE SAME LINE OR SPACE IS CALLED A **UNISON.**

THAT'S **LATIN** FOR **"ONE SOUND"!**

AND **THAT'S** LATIN FOR **"EIGHT"!**

THE DISTANCE FROM A NOTE TO THE NEXT CLOSEST NOTE WITH THE SAME LETTER NAME IS CALLED AN **OCTAVE.**

WHEN WE ARE TALKING ABOUT INTERVALS WE SOMETIMES DISCUSS **HARMONIC INTERVALS** AND **MELODIC INTERVALS.**



A HARMONIC INTERVAL IS SIMPLY TWO NOTES PLAYED **SIMULTANEOUSLY;** A MELODIC INTERVAL IS **ONE NOTE PLAYED AFTER THE OTHER.**

AND WHEN YOU **SWAP** THE TWO NOTES (MOVE THE LOWER NOTE **UP** BY AN **OCTAVE** SO IT BECOMES THE **HIGHER** NOTE), THAT IS CALLED **INVERTING** THE INTERVAL.

IT'S HELPFUL TO REMEMBER THAT **SECONDS** ALWAYS INVERT TO **SEVENTHS, THIRDS** TO **SIXTHS,** AND SO FORTH...

THE FACT THAT EACH OF THESE PAIRS ADD UP TO **NINE** IS KNOWN TO THEORISTS AS **"THE RULE OF NINES."**

THE RULE OF NINES

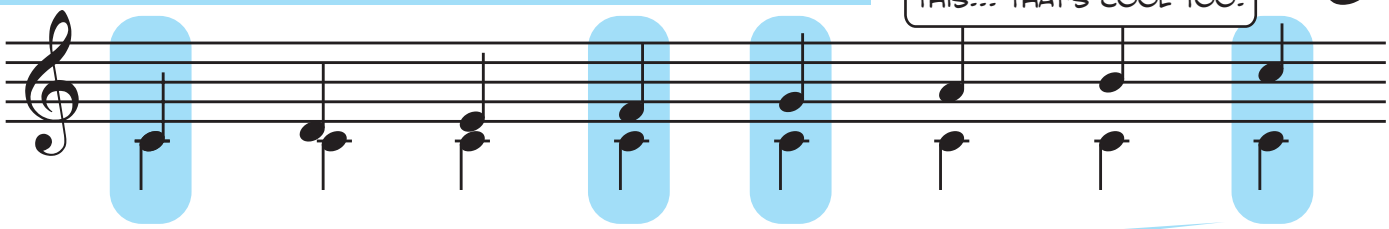
2ND	7TH
3RD	6TH
4TH	5TH
5TH	4TH
6TH	3RD
7TH	2ND

Perfect Intervals

THE **DISTANCE** OF AN INTERVAL IS **ONE** PART OF ITS NAME, BUT THERE'S **MORE:** EVERY INTERVAL HAS ANOTHER QUALITY TO IT, WHICH WE'LL CALL **INFLECTION.**

INFLECTION IS A BIT **HARDER** TO UNDERSTAND, PARTLY BECAUSE IT DEPENDS ON THE **TYPE** OF INTERVAL. SO LET'S START BY LOOKING AT **UNISONS, FOURTHS, FIFTHS** AND **OCTAVES.**

SOME THEORISTS USE THE TERM **QUALITY** FOR THIS... THAT'S COOL TOO.



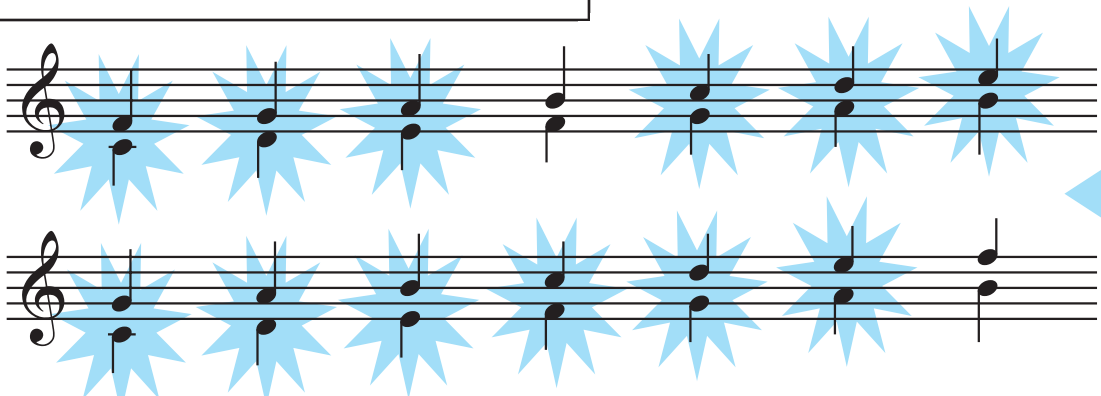
UNISONS AND OCTAVES

ARE THE EASIEST TO LABEL: IF THE TWO NOTES ARE THE **SAME** (FOR EXAMPLE, **B FLAT** AND **B FLAT**), THEN THE INFLECTION IS **PERFECT:** SUCH AN INTERVAL IS CALLED A **PERFECT UNISON** OR A **PERFECT OCTAVE.**

FOURTHS AND FIFTHS

REQUIRE A LITTLE MORE **EXPLAINING.**

IF YOU LOOK AT ALL THE FOURTHS AND FIFTHS YOU CAN CREATE USING ONLY THE **WHITE NOTES** ON THE PIANO KEYBOARD (IN OTHER WORDS, USING ONLY NOTES **WITHOUT ACCIDENTALS**):



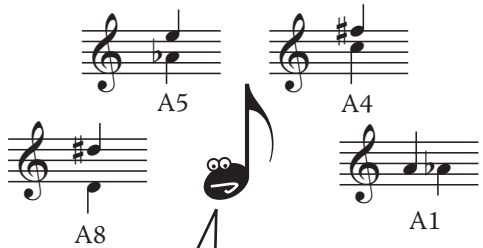
EACH ONE IS **PERFECT** EXCEPT FOR THOSE WHICH USE **F** AND **B!**

WAIT... WHY ARE THE **B** TO **F** INTERVALS **DIFFERENT?**

WELL, IF YOU WERE TO COUNT THE **HALF-STEPS** THAT MAKE UP EACH INTERVAL, YOU'D NOTICE THAT ALL THE OTHER ONES ARE **EQUAL IN SIZE,** BUT THE B TO F INTERVALS ARE NOT: **F** TO **B** IS A HALF-STEP **LARGER** THAN A PERFECT FOURTH, AND **B** TO **F** IS A HALF-STEP **SMALLER** THAN A PERFECT FIFTH.

WHICH RAISES THE **QUESTION:** IF THE INTERVAL IS NOT **PERFECT,** THEN WHAT **IS** IT?

AN INTERVAL THAT IS A HALF-STEP **LARGER** THAN PERFECT IS CALLED AN **AUGMENTED** INTERVAL.

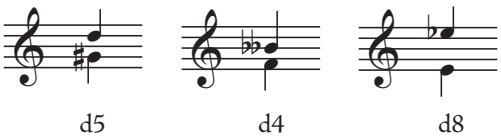


YOU CAN GO **FURTHER,** TO **DOUBLY AUGMENTED** AND **DOUBLY DIMINISHED** INTERVALS, BUT... DO YOU REALLY **WANT** TO?

A AUGMENTED

P PERFECT

d DIMINISHED



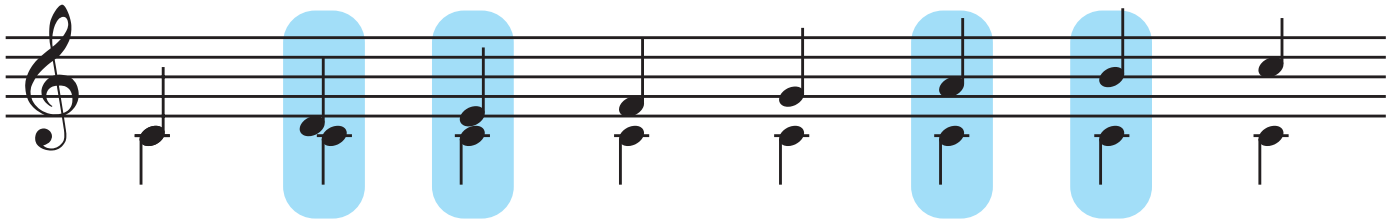
AND THERE'S **NO SUCH THING** AS A **DIMINISHED UNISON...**

JUST LIKE TWO THINGS CAN'T BE **NEGATIVE TWO FEET** AWAY FROM EACH OTHER!

AN INTERVAL THAT IS A HALF-STEP **SMALLER** THAN PERFECT IS CALLED A **DIMINISHED** INTERVAL.

Imperfect Intervals

WE'VE TALKED ABOUT **UNISONS, FOURTHS, FIFTHS** AND **OCTAVES**, BUT WHAT ABOUT THE REST? ARE THESE OTHER INTERVALS SOMEHOW **IMPERFECT?**



WELL, YES, BUT NOT BECAUSE THEY ARE SOMEHOW **INFERIOR** TO PERFECT INTERVALS... **SECONDS, THIRDS, SIXTHS** AND **SEVENTHS** JUST WORK A LITTLE **DIFFERENTLY!**

AUGMENTED

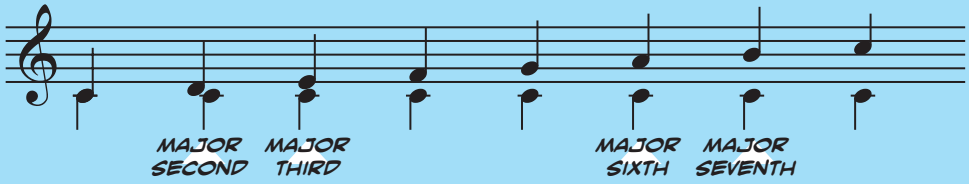
MAJOR

MINOR

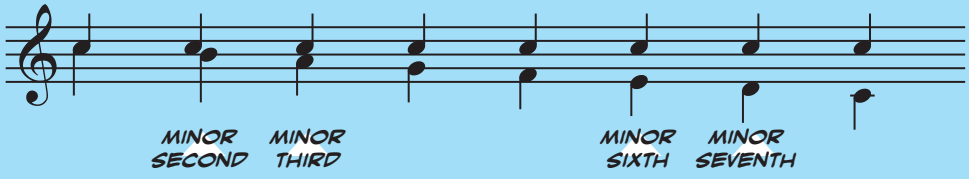
DIMINISHED

FOR ONE THING, THE **INFLECTION** FOR THESE INTERVALS IS NEVER **PERFECT;** IT WILL BE EITHER **MAJOR** OR **MINOR.** MINOR INTERVALS ARE A HALF-STEP SMALLER THAN MAJOR INTERVALS. LIKE PERFECT INTERVALS, THOUGH, THEY CAN ALSO BE **AUGMENTED** OR **DIMINISHED;** AUGMENTED INTERVALS ARE A HALF-STEP LARGER THAN MAJOR, AND DIMINISHED INTERVALS ARE A HALF-STEP SMALLER THAN MINOR.

HOW DO WE KNOW IF AN INTERVAL IS **MAJOR** OR **MINOR?** WE CAN ACTUALLY USE THE **MAJOR SCALE** TO FIND OUT. NOTICE THAT, IN THE MAJOR SCALE, INTERVALS FROM THE **TONIC** UP TO ANOTHER SCALE DEGREE ARE **MAJOR.**

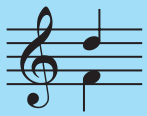


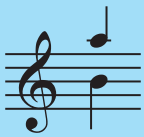
LIKEWISE, INTERVALS FROM THE TONIC **DOWN** TO ANOTHER SCALE DEGREE ARE **MINOR.**



KNOWING THIS, WHEN YOU ARE CONFRONTED WITH A **SECOND, THIRD, SIXTH** OR **SEVENTH,** YOU CAN FIND ITS INFLECTION BY THINKING ABOUT THE KEY SIGNATURE OF THE TOP AND/OR BOTTOM NOTE.

WE KNOW THIS IS A **MAJOR SIXTH** BECAUSE **D,** THE TOP NOTE, IS IN THE KEY OF **F MAJOR** (THE BOTTOM NOTE).

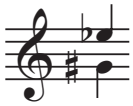




AND THIS IS A **MINOR SEVENTH** BECAUSE **B,** BOTTOM NOTE, IS IN THE KEY OF **A MAJOR** (THE TOP NOTE).

IF THE **TOP NOTE** IS IN THE MAJOR KEY OF THE **BOTTOM NOTE,** THE INTERVAL IS **MAJOR.** IF THE **BOTTOM NOTE** IS IN THE MAJOR KEY OF THE **TOP NOTE,** THE INTERVAL IS **MINOR.**

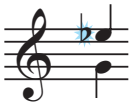
WHEN THE NOTES OF THE INTERVAL HAVE **ACCIDENTALS,** THE ASSOCIATED KEY SIGNATURES CAN BE MORE **COMPLICATED...** SO IT'S EASIEST TO **TEMPORARILY IGNORE** THE ACCIDENTALS, DETERMINE THE INTERVAL, AND THEN **ADD THE ACCIDENTALS BACK ONE AT A TIME** AND TRACK HOW THE INTERVAL CHANGES!



ACK! WHAT IS **THAT?** LET'S FIRST HIDE THE ACCIDENTALS...

M6

E IS IN THE KEY OF **G,** SO WE KNOW THIS IS A **MAJOR** SIXTH.



m6

ADDING BACK THE **FLAT** MAKES THE INTERVAL **SMALLER,** SO IT'S NOW A **MINOR** SIXTH...

d6

ADDING BACK THE **SHARP** MAKES IT EVEN **SMALLER...** A **DIMINISHED SIXTH!**

hey, it's kids! SPARKY THE MUSIC THEORY DOG!

Q: Dear Sparky:
Since we are supposed to use different approaches for identifying perfect and imperfect intervals, can you summarize them all into one system?

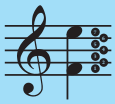
--I.M., Staten Island, NY

A: WOOF!*

TRANSLATION:** THE FOLLOWING CHART SHOWS AN APPROACH FOR ***IDENTIFYING ANY INTERVAL. A SIMILAR APPROACH CAN BE USED WHEN YOU NEED TO ***WRITE*** A PARTICULAR INTERVAL ABOVE OR BELOW A ***GIVEN NOTE:*** FIRST, ADD A NOTE ABOVE OR BELOW THE GIVEN NOTE AT THE CORRECT ***DISTANCE,*** THEN FOLLOW STEPS 2 THROUGH 4 OF THIS CHART TO ***IDENTIFY*** IT. THEN, IF NECESSARY, ***ALTER*** THE NOTE YOU ADDED WITH AN ***ACCIDENTAL*** TO CREATE THE INTERVAL CALLED FOR.

STEP 1:

DETERMINE THE ***DISTANCE*** OF THE INTERVAL BY COUNTING ***LINES*** AND ***SPACES.***



COUNT THE ***BOTTOM NOTE*** AS ***ONE***, AND CONTINUE UNTIL YOU REACH THE ***TOP NOTE.***

STEP 2:

COVER UP ALL ***ACCIDENTALS.***

STEP 3:

DETERMINE THE ***INFLECTION*** OF THE INTERVAL IN FRONT OF YOU (THE ONE WITHOUT ACCIDENTALS!) AS FOLLOWS:

IF IT IS A ***UNISON*** OR ***OCTAVE:***

THE INTERVAL SHOWN IS A ***PERFECT UNISON*** OR ***PERFECT OCTAVE.***

REALLY. IT ***JUST IS.***

IF IT IS A ***FOURTH*** OR ***FIFTH:***

IF THE INTERVAL USES THE NOTES ***F*** AND ***B,*** IT IS EITHER AN ***AUGMENTED FOURTH*** OR A ***DIMINISHED FIFTH.***

OTHERWISE, THE INTERVAL IS ***PERFECT.***

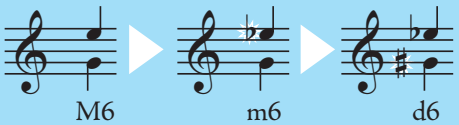
IF IT IS A ***SECOND, THIRD, SIXTH*** OR ***SEVENTH:***

IF THE ***TOP NOTE*** IS IN THE MAJOR KEY OF THE ***BOTTOM NOTE,*** THE INTERVAL IS ***MAJOR.***

IF THE ***BOTTOM NOTE*** IS IN THE MAJOR KEY OF THE ***TOP NOTE,*** THE INTERVAL IS ***MINOR.***

STEP 4:

ADD THE ***ORIGINAL ACCIDENTALS*** BACK, ***ONE AT A TIME,*** AND TRACK HOW THE INTERVAL CHANGES INFLECTION.



REMEMBER: ACCIDENTALS CAN ***NEVER*** AFFECT THE ***DISTANCE*** OF AN INTERVAL... ALL THEY CAN EVER DO IS CHANGE THE ***INFLECTION!***

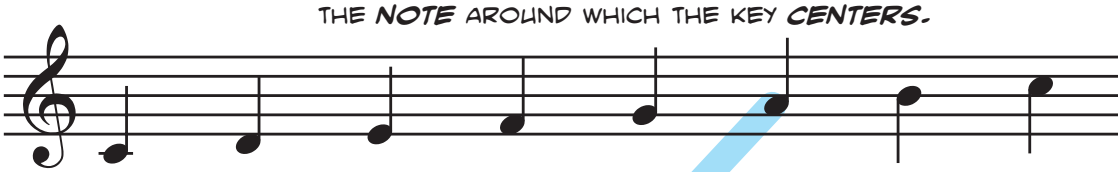
THIS METHOD MAY SEEM ***COMPLICATED*** AT FIRST, BUT IT BECOMES ***EASIER*** AND ***FASTER*** WITH ***PRACTICE...*** AND IT GIVES YOU THE ***CORRECT ANSWER EVERY TIME!***

DOING STUFF THE SPARKY WAY IS ALWAYS FUN!

The Minor Scales

THERE ARE ACTUALLY TWO THINGS THAT DEFINE A **KEY:** THE **KEY SIGNATURE** IS THE MOST OBVIOUS ONE, BUT ANOTHER IMPORTANT PART OF A KEY IS THE **TONIC...** THE **NOTE** AROUND WHICH THE KEY **CENTERS.**

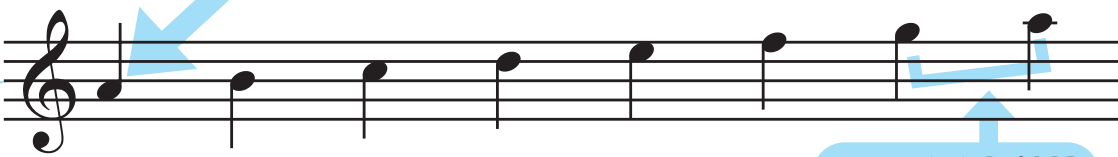
THIS KEY IS DEFINED BY A KEY SIGNATURE OF **NO SHARPS AND FLATS,** BUT ALSO BY THE FACT THAT IT CENTERS AROUND **C.**



BUT WHAT IF WE **CHANGE** THE **TONIC?** WHAT IF WE USE THE SAME NOTES FOR THE KEY SIGNATURE, BUT CHANGE THE **NOTE THAT THE KEY IS CENTERED AROUND?**

IF WE CENTER THE KEY AROUND THE **SIXTH SCALE DEGREE** OF THE MAJOR SCALE, WE GET A NEW SCALE: THE **MINOR SCALE.**

THE NATURAL MINOR SCALE

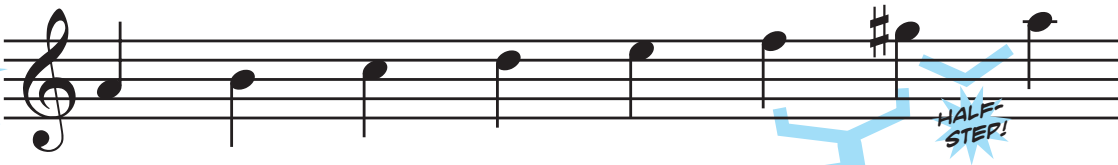


THE THING IS, **COMMON PRACTICE PERIOD** COMPOSERS WEREN'T ALL THAT CRAZY ABOUT THIS SCALE, BECAUSE IT LACKS SOMETHING THE **MAJOR SCALE** HAS: A HALF-STEP FROM **SEVEN** TO **ONE.**

THE **WHOLE STEP** HERE DIDN'T HAVE THE **TENSION** THEY LIKED GOING INTO THE **TONIC!**

SO HERE'S WHAT THEY DID: THEY **RAISED** THE LEADING-TONE BY A **HALF-STEP** WITH AN **ACCIDENTAL.** THIS GAVE THEM THE **TENSION** THEY WERE LOOKING FOR!

THE HARMONIC MINOR SCALE

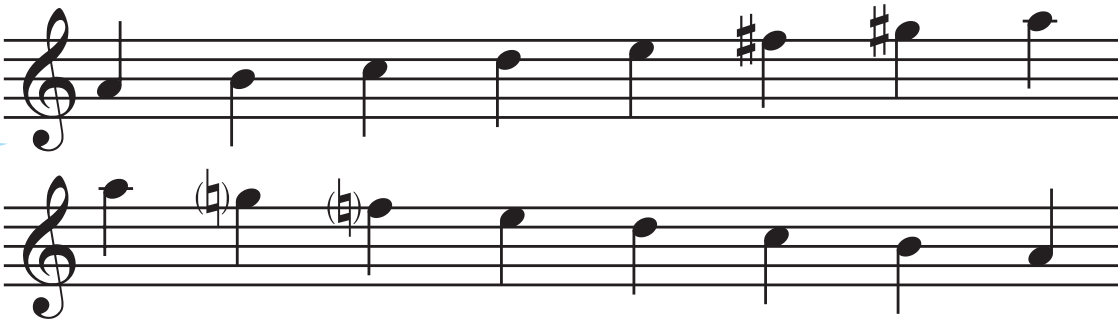


THIS SCALE IS GREAT FOR BUILDING **CHORDS,** SO WE REFER TO IT AS THE **HARMONIC MINOR SCALE.** HOWEVER, COMPOSERS DIDN'T USE IT FOR WRITING **MELODIES,** BECAUSE IT HAD A **PROBLEM:** AN **AUGMENTED SECOND** BETWEEN THE **SIXTH** AND **SEVENTH SCALE DEGREES.**

SO, FOR **MELODIES,** THEY MADE ANOTHER CHANGE: THEY ADDED **ANOTHER ACCIDENTAL** TO RAISE THE **SIXTH SCALE DEGREE** BY A HALF-STEP.

NOW WE ONLY HAVE **WHOLE STEPS** AND **HALF-STEPS!**

THE MELODIC MINOR SCALE



NOW, REMEMBER... THE REASON WE **RAISED** THE **LEADING TONE** IN THE FIRST PLACE WAS TO CREATE TENSION FROM THE **SEVENTH SCALE DEGREE** TO **TONIC.** BUT IN A MELODY, IF THE SEVENTH SCALE DEGREE IS FOLLOWED BY THE **SIXTH SCALE DEGREE,** WE DON'T NEED THAT TENSION, SO WE DON'T NEED TO RAISE THE LEADING-TONE AT ALL.

THE WAY WE ILLUSTRATE THIS IS BY DIFFERENTIATING BETWEEN **ASCENDING MELODIC MINOR** AND **DESCENDING MELODIC MINOR;** FOR DESCENDING MELODIC MINOR, WE DON'T RAISE **ANYTHING!**

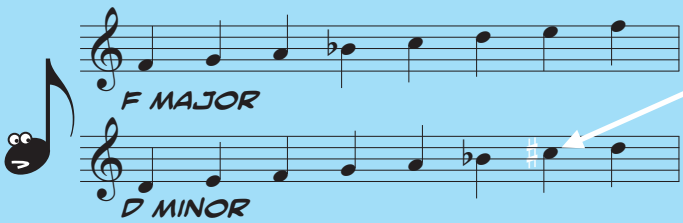
hey, it's kids! SPARKY THE MUSIC THEORY DOG!

Q: Dear Sparky:
What does it mean when music theorists talk about "relative minor" and "parallel minor"? In what ways can major and minor keys be connected?
-M.T., Canton, OH

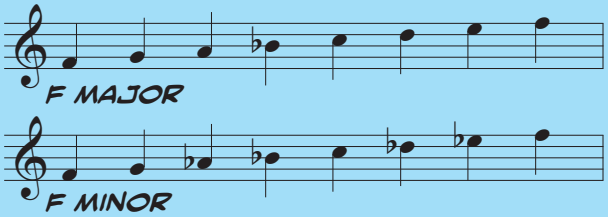
A: WOOF!*

TRANSLATION:** WHEN TWO KEYS THAT HAVE THE SAME ***KEY SIGNATURE BUT DIFFERENT ***TONIC NOTES,*** WE SAY THEY'RE ***RELATED.***

SINCE D MINOR HAS THE SAME ***KEY SIGNATURE*** AS F MAJOR, WE SAY THAT D MINOR IS THE ***RELATIVE MINOR*** OF F MAJOR.



SURE, D MINOR MIGHT USE A ***C SHARP*** AS A ***RAISED LEADING-TONE,*** BUT WE DON'T CONSIDER THAT AS PART OF THE ***KEY SIGNATURE.***



PARALLEL KEYS, ON THE OTHER HAND, ARE KEYS THAT HAVE THE SAME ***TONIC NOTE,*** BUT DIFFERENT ***KEY SIGNATURES.***

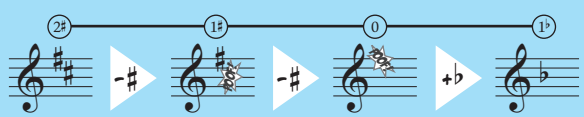
SO ***F MINOR*** IS THE ***PARALLEL MINOR*** OF ***F MAJOR!***

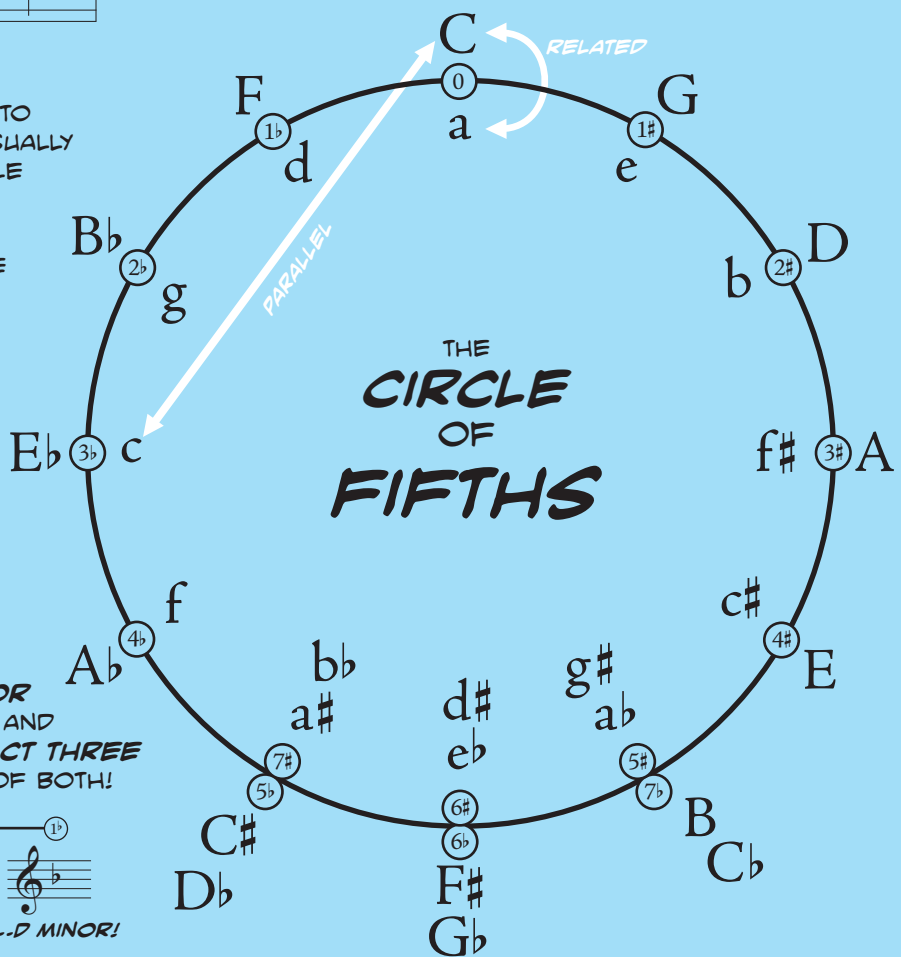
IT'S CONVENIENT TO ADD MINOR KEYS TO THE ***CIRCLE OF FIFTHS;*** THEY'RE USUALLY PLACED ON THE ***INSIDE*** OF THE CIRCLE IN ***LOWER CASE.***

BECAUSE ***RELATIVE KEYS*** SHARE THE SAME ***KEY SIGNATURE,*** THEY ALSO SHARE THE SAME ***POSITION*** ON THE CIRCLE OF FIFTHS!

PARALLEL KEYS HAVE DIFFERENT KEY SIGNATURES, BUT SEEING THEM ON THE CIRCLE OF FIFTHS ILLUSTRATES THEIR ***CONSISTENT KEY RELATIONSHIP:*** MINOR KEYS ALWAYS APPEAR ***THREE DEGREES COUNTERCLOCKWISE*** FROM THEIR PARALLEL MAJOR KEY.

SO TO FIND THE KEY SIGNATURE FOR A ***MINOR KEY,*** START WITH THE ***MAJOR*** KEY SIGNATURE WITH THE SAME TONIC AND EITHER ***ADD THREE FLATS, SUBTRACT THREE SHARPS,*** OR SOME ***COMBINATION*** OF BOTH!





DOING STUFF THE SPARKY WAY IS ALWAYS FUN!

Dynamics and Articulations

MUSIC IS MADE UP OF A LOT MORE THAN **PITCH** AND **RHYTHM!**

DYNAMICS ARE SYMBOLS THAT SHOW **HOW LOUD** TO PLAY OR SING.

fff	***ff***	***f***	***mf***	***mp***	***p***	***pp***	***ppp***	***n***
FORTISSISSIMO VERY VERY LOUD	**FORTISSIMO** VERY LOUD	**FORTE** LOUD	**MEZZO FORTE** MEDIUM LOUD	**MEZZO PIANO** MEDIUM SOFT	**PIANO** SOFT	**PIANISSIMO** VERY SOFT	**PIANISSISSIMO** VERY VERY SOFT	**NIENTE** INAUDIBLE

NOTATED MUSIC USES **ITALIAN TERMS** TO SHOW **RELATIVE VOLUME.**

SPECIFIC INTERPRETATION IS LEFT TO THE **PERFORMER!**

GRADUAL DYNAMIC CHANGES ARE INDICATED WITH **HAIRPIN SYMBOLS** OR THE ITALIAN TERMS **CRESCENDO** (INCREASE VOLUME) OR **DIMINUENDO** (DESCREASE VOLUME).

DYNAMICS ARE USUALLY PLACED **BELOW THE STAFF** ON INSTRUMENTAL PARTS, AND **ABOVE THE STAFF** FOR VOCAL PARTS... TO STAY OUT OF THE WAY OF THE **LYRICS!**

ARTICULATIONS ARE SYMBOLS THAT SHOW HOW TO TREAT SPECIFIC NOTES.

ACCENT	>	WITH ADDITIONAL EMPHASIS
STACCATO	•	SHORT AND DETATCHED
TENUTO	–	EMPHASIZED AND HELD FOR FULL VALUE
MARCATO	∧	SHORT AND ACCENTED
STACCATISSIMO	▾	VERY SHORT AND FORCEFUL
SFORZANDO	*sfz*	SUDDENLY LOUD AND ACCENTED
FERMATA	𝄐	HOLD LONGER THAN INDICATED
TREMOLO	𝅘𝅥𝅯𝅘𝅥𝅯	RAPIDLY ALTERNATE BETWEEN TWO NOTES
UP BOW	V	(BOWED INSTRUMENTS) START AT TIP OF BOW
DOWN BOW	⊓	(BOWED INSTRUMENTS) START AT FROG OF BOW
TRILL	*tr*	RAPIDLY ALTERNATE TWO ADJACENT NOTES
ARPEGGIO	≀	"ROLL" CHORD: NOTES ADDED SEPARATELY

OTHER SYMBOLS AFFECT **GROUPS OF NOTES...**

ALL' OTTAVA: PLAY THE NOTES AN OCTAVE HIGHER OR LOWER, DEPENDING ON WHERE THE SYMBOL IS. (TWO OCTAVES IS 15^{ma}, AND THREE OCTAVES IS 22^{ma}!)

PEDALING: ON THE PIANO, THIS SYMBOL INDICATES WHEN THE **DAMPER PEDAL** SHOULD BE HELD DOWN, ALLOWING THE PIANO STRINGS TO RING FREELY. OLDER SCORES USE Ped. FOR **DOWN** AND ✻ FOR **UP.**

AND THEN THERE'S **THIS THING...**

IN MOST MUSIC IT'S A **SLUR,** GROUPING NOTES WHICH SHOULD BE PLAYED **SMOOTHLY** AND **CONNECTED!**

IN VOCAL PARTS, IT SHOWS **MELISMAS:** GROUPS OF NOTES SUNG ON A **SINGLE SYLLABLE!**

A **SIMPLE SHAPE** WITH A **BUNCH** OF **DIFFERENT USES!**

FOR BOWED STRINGS LIKE VIOLIN, IT'S A **BOW MARKING,** SHOWING NOTES THAT SHOULD BE PLAYED WITHOUT SWITCHING THE BOW'S **DIRECTION.**

IN ANY SCORE, IT CAN ALSO BE USED ON **LARGER GROUPS** OF NOTES, WHERE IT SERVES AS A **PHRASE MARKING...** HELPING THE PERFORMER SEE THE OVERALL SHAPE OF THE MUSIC!

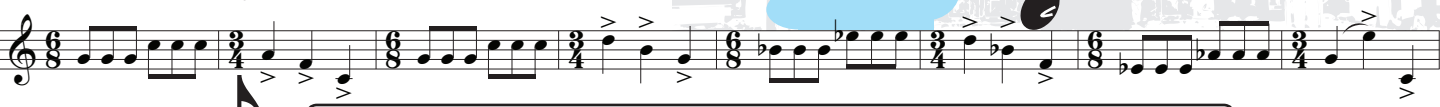
Complex Meter

SIMPLE METERS AND **COMPOUND METERS** ARE BOTH USED QUITE A BIT IN THE COMMON PRACTICE PERIOD, BUT THEY WERE RARELY FOUND **TOGETHER**... MOST PIECES EXCLUSIVELY USED **ONE OR THE OTHER!**

COMPOUND METER, COMPOUND METER, WHEREFORE ART THOU **COMPOUND?**

ON THE RARE OCCASION THAT THEY WERE COMBINED, IT WAS GENERALLY AS **MIXED METER**, WHEN THE METER CHANGES FROM ONE MEASURE TO THE NEXT.

UH, BECAUSE OF THIS **DOT**...?



CONSISTENT ALTERNATIONS LIKE THIS ARE OFTEN WRITTEN WITH **TWO TIME SIGNATURES** AT THE BEGINNING, LIKE THIS: $\frac{6}{8}\ \frac{3}{4}$

BUT **TWENTIETH-CENTURY COMPOSERS** - ESPECIALLY THOSE WHO WERE WORKING IN A STYLE CALLED **PRIMITIVISM**, WHICH FEATURED **PRIMAL, UNPREDICTABLE RHYTHMS** - WOULD TAKE THE **COMBINATION** OF **SIMPLE** AND **COMPOUND RHYTHMS** TO THE **NEXT LEVEL!**

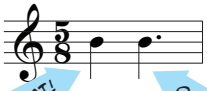
SIMPLE METER

BEAT UNIT DIVISIBLE BY **TWO**

BEAT SHOWN BY **UNDOTTED NOTE**

COMPLEX METER

INCLUDES **SIMPLE** AND **COMPOUND** BEATS



SIMPLE BEAT!

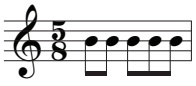
COMPOUND BEAT!

COMPOUND METER

BEAT UNIT DIVISIBLE BY **THREE**

BEAT SHOWN BY **DOTTED NOTE**

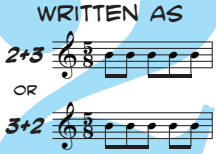
IN THESE METERS, THE BEATS WILL BE **UNEVEN!** THE NOTE THAT SERVES AS THE **DIVISION** OF THE BEAT REMAINS **CONSTANT** THROUGHOUT THE MEASURE.



SO THESE **EIGHTH NOTES** SHOULD ALL BE THE **SAME LENGTH!**

LIKE **COMPOUND METERS**, THE **TIME SIGNATURE** FOR COMPLEX METERS IS BASED ON THE **DIVISION** OF THE BEAT. BUT, IN FACT, THESE METERS STILL HAVE **TWO, THREE** OR **FOUR** BEATS PER MEASURE!

$\frac{5}{8}$ CAN BE WRITTEN AS



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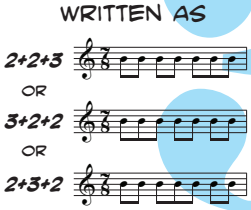

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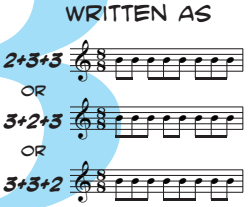

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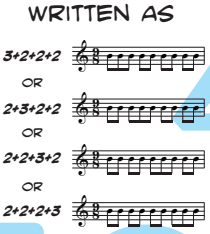

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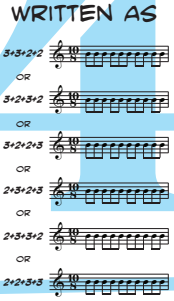
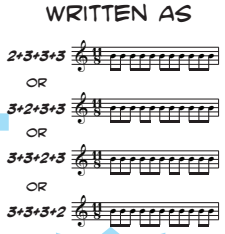


$\frac{11}{8}$ CAN BE WRITTEN AS



OF COURSE, WHILE USING **8** FOR THE **BOTTOM NUMBER** IS MOST COMMON IN **MODERN SCORES**, **ANY NOTE** CAN BE USED AS THE DIVISION!

LIKE $\frac{7}{16}$...

OR $\frac{11}{2}$!