



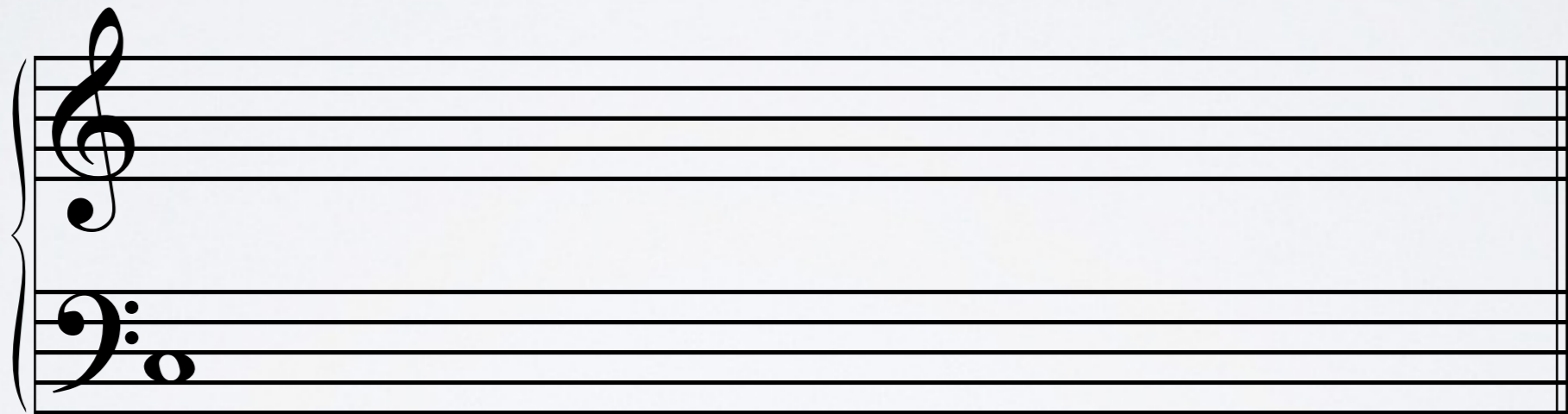
# ABC's OF THE OVERTONE SERIES

*Brass Edition*



# OVERTONE SERIES

Building the Series



1  
Partial

# OVERTONE SERIES

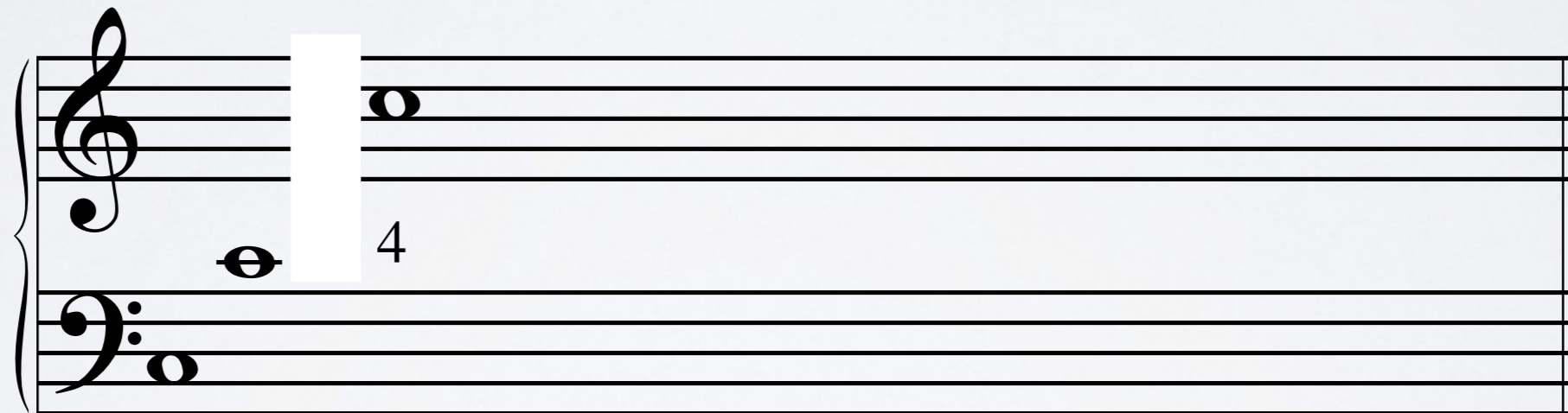
Building the Series



1 2  
Partial

# OVERTONE SERIES

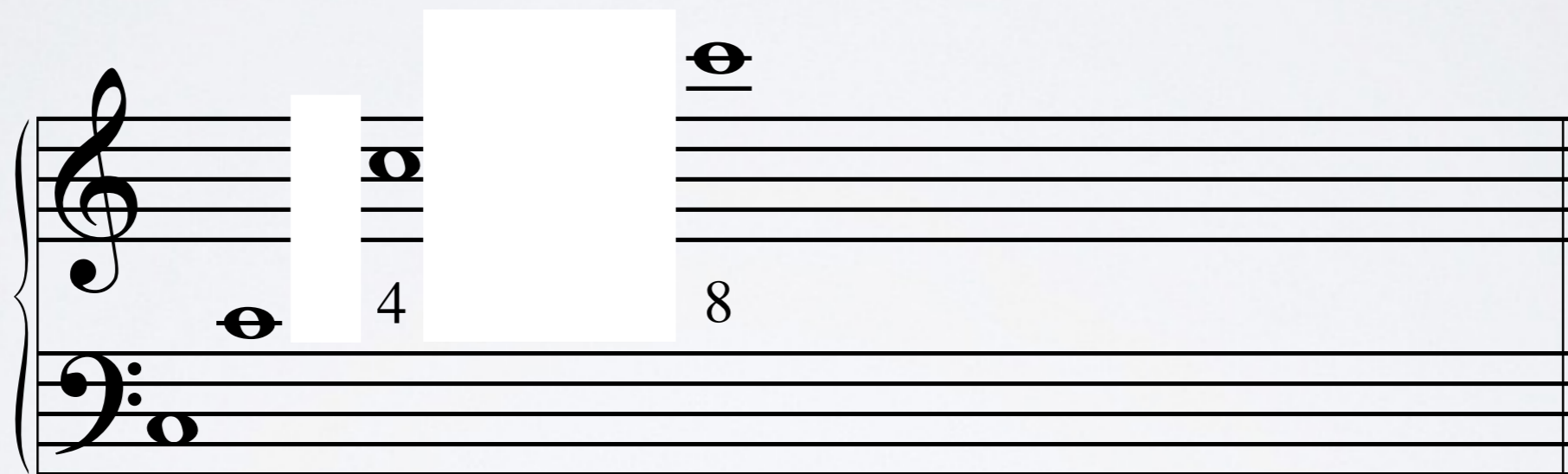
Building the Series



1 2  
Partial

# OVERTONE SERIES

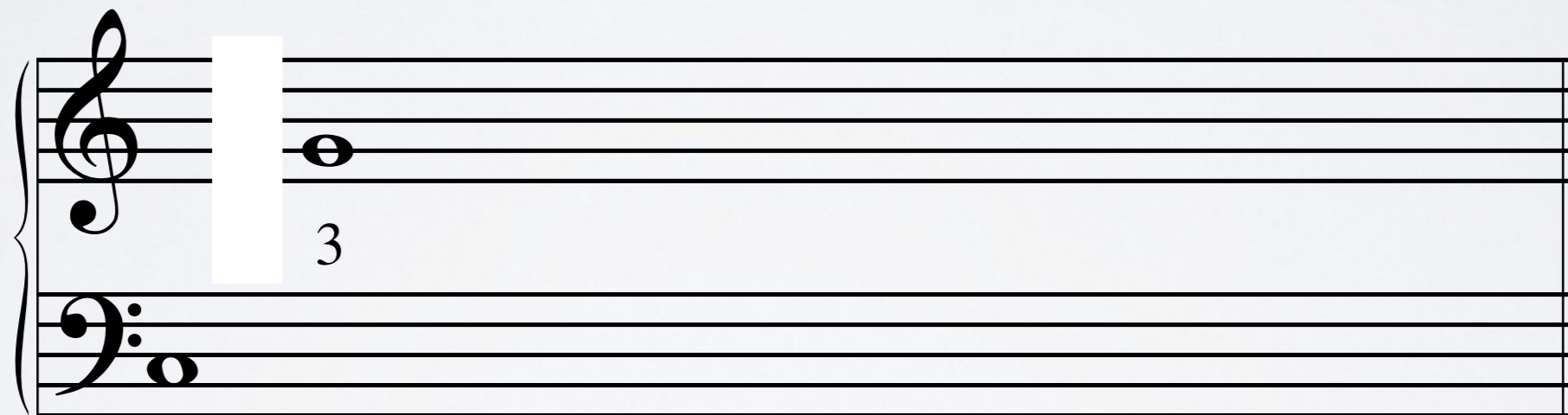
Building the Series



1 2  
Partial

# OVERTONE SERIES

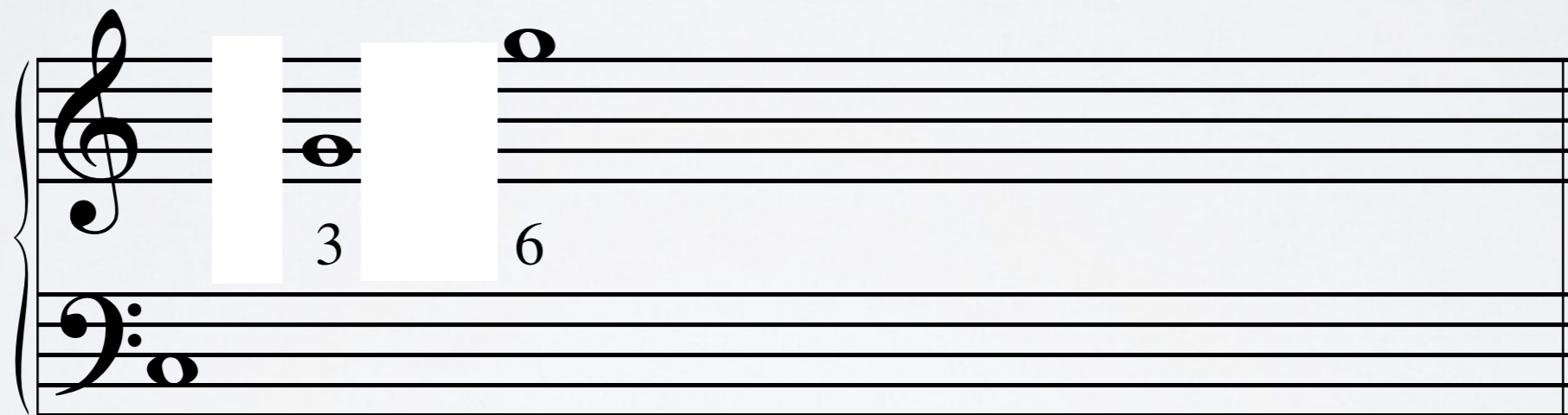
Building the Series



1 2  
Partial

# OVERTONE SERIES

Building the Series



1 2  
Partial

# OVERTONE SERIES

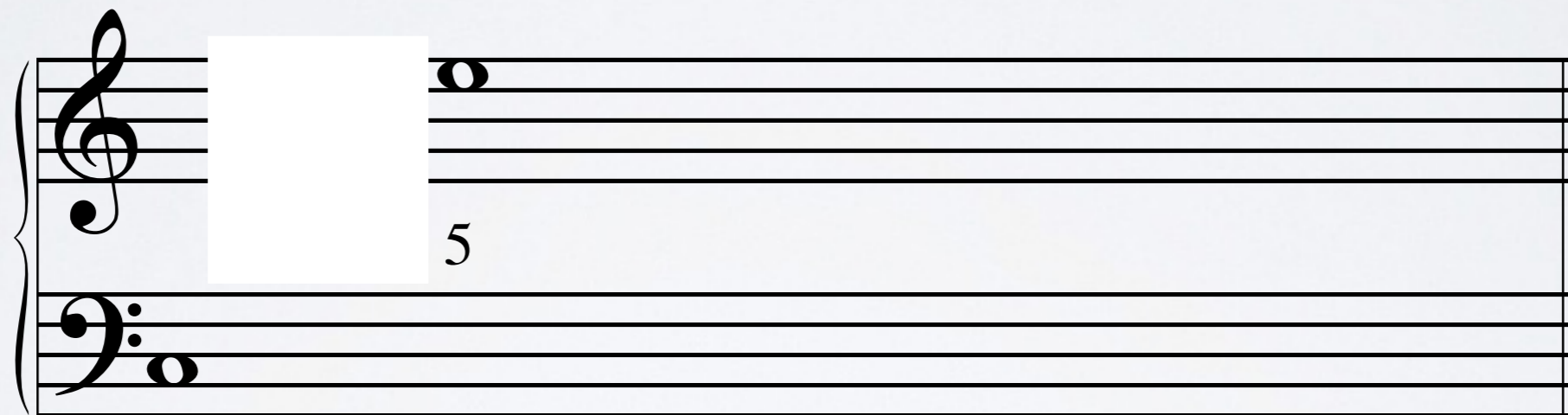
Building the Series

A musical staff with a treble clef and a bass clef. The treble clef staff has a whole note on the first line (G4), a whole note on the second line (B4), a whole note on the third space (D5), and a whole note on the fourth space (G5). The bass clef staff has a whole note on the first line (G3). Vertical bars are placed between the notes on the treble staff. The numbers 3, 6, and 12 are written below the treble staff, corresponding to the second, third, and fourth overtones respectively. The number 12 is also written below the bass staff, corresponding to the first overtone. A large white rectangular box covers the area between the second and third overtones on the treble staff.

1 2  
Partial

# OVERTONE SERIES

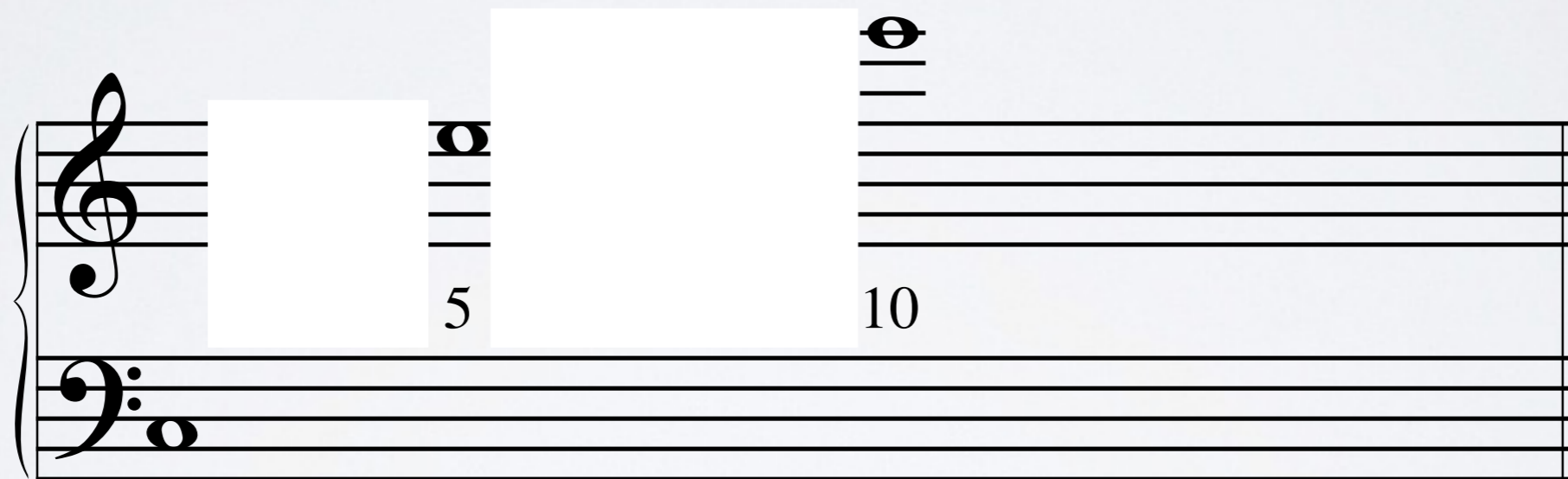
Building the Series



1 2  
Partial

# OVERTONE SERIES

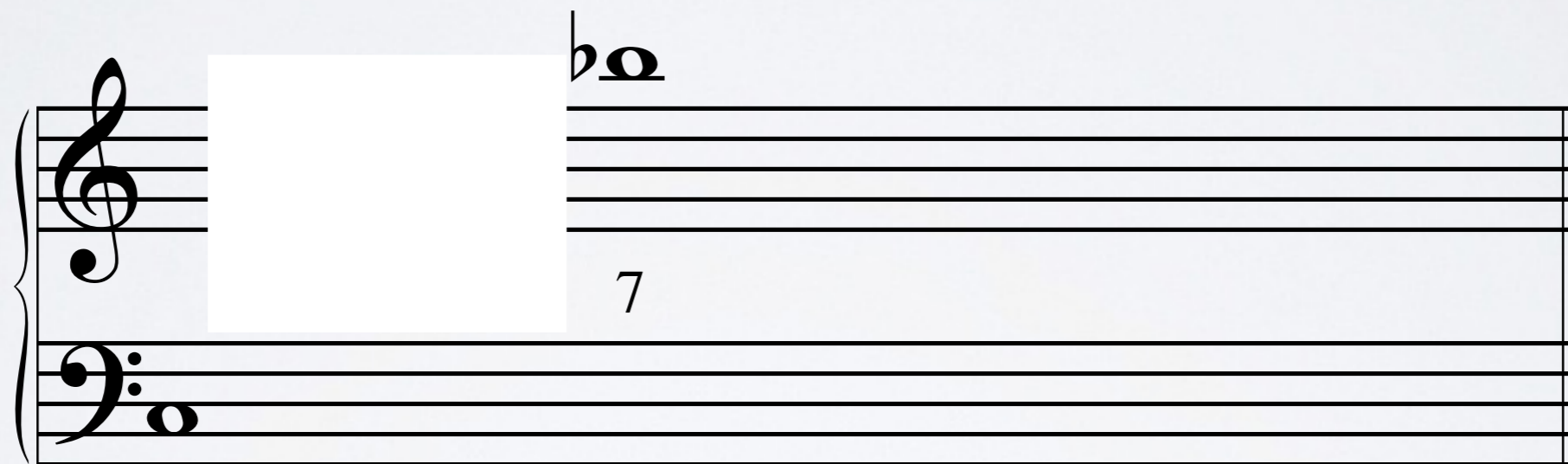
Building the Series



1 2  
Partial

# OVERTONE SERIES

Building the Series



1 2  
Partial

# OVERTONE SERIES

The image displays a grand staff with a treble clef on the upper staff and a bass clef on the lower staff. The lower staff begins with a whole note on the second line (G2), labeled with the number '1' below it. The upper staff contains two groups of notes, each labeled with a number below it: '7' and '14'. Each group consists of a whole note on the second line (G3) and a whole note on the first space (F#3), both marked with a flat symbol (b). The notes in the '7' group are positioned above the first six lines of the treble staff, while the notes in the '14' group are positioned above the last six lines. The numbers '1', '7', and '14' represent the harmonic order relative to the fundamental frequency G2.

# OVERTONE SERIES

Building the Series

A musical score on a grand staff (treble and bass clefs) illustrating an overtone series. The notes are as follows:

- Partial 1: C2 (bass clef, one ledger line below)
- Partial 2: C3 (bass clef, two ledger lines below)
- Partial 3: G2 (bass clef, two ledger lines below)
- Partial 4: F2 (bass clef, two ledger lines below)
- Partial 5: E2 (bass clef, two ledger lines below)
- Partial 6: D2 (bass clef, two ledger lines below)
- Partial 7: C3 (bass clef, two ledger lines below)
- Partial 8: B2 (bass clef, two ledger lines below)
- Partial 9: A2 (bass clef, two ledger lines below)

The notes for partials 7 through 9 are marked with a flat (b) and are underlined. The notes for partials 8 and 9 are also double-underlined. The notes for partials 3 through 6 are marked with numbers 3, 4, 5, and 6 respectively.

1 2  
Partial

# OVERTONE SERIES

Building the Series

A musical staff with a grand staff (treble and bass clefs) showing an overtone series. The notes are: 1. C2 (bass clef, one ledger line below), 2. C3 (bass clef, two ledger lines below), 3. G2 (bass clef, two ledger lines below), 4. F2 (bass clef, two ledger lines below), 5. E2 (bass clef, two ledger lines below), 6. D2 (bass clef, two ledger lines below), 7. C3 (bass clef, two ledger lines below), 8. B1 (bass clef, two ledger lines below), 9. A1 (bass clef, two ledger lines below), 10. G1 (bass clef, two ledger lines below), 11. F1 (bass clef, two ledger lines below). The notes are labeled with numbers 1 through 11 below the staff. The notes are: 1. C2, 2. C3, 3. G2, 4. F2, 5. E2, 6. D2, 7. C3, 8. B1, 9. A1, 10. G1, 11. F1. The notes are: 1. C2, 2. C3, 3. G2, 4. F2, 5. E2, 6. D2, 7. C3, 8. B1, 9. A1, 10. G1, 11. F1. The notes are: 1. C2, 2. C3, 3. G2, 4. F2, 5. E2, 6. D2, 7. C3, 8. B1, 9. A1, 10. G1, 11. F1.

1 2  
Partial

# OVERTONE SERIES

3, 6, 12 = Sharp

5, 10 = Flat

7, 14 = Very Flat

1 2

1, 2, 4, 8, 16 = OK

(sung to 3 Blind Mice)

3, 6, 12, 3, 6, 12

All are slightly sharp, all are slightly sharp  
5 & 10 are moderately flat, 5 & 10 are moderately flat  
and 7 is very flat, 7 is very flat!

# OVERTONE SERIES PART 2

THE SEVEN SERIES

# OVERTONE SERIES



C Series (open)

A musical score for the C Series (open) overtone series. It consists of two staves: a treble clef staff and a bass clef staff. The treble clef staff has a key signature of one flat (B-flat) and contains notes for the 2nd, 3rd, 4th, and 5th harmonics of C. The bass clef staff contains the fundamental note C. A green arrow points to the C note on the treble clef staff. The word "OPEN" is written below the bass clef staff.

OPEN

# OVERTONE SERIES



B Series (2nd Valve)

Musical notation for the B series overtone series. The notation is written on a grand staff with a treble clef and a key signature of one flat (Bb). The notes are as follows:

- First measure: Treble clef has a whole note chord of Bb3, Bb4, Bb5, and Bb6. Bass clef has a whole note chord of Bb1 and Bb2.
- Second measure: Treble clef has a whole note chord of Bb4, Bb5, Bb6, and Bb7. Bass clef has a whole note chord of Bb2 and Bb3.
- Third measure: Treble clef has a whole note chord of Bb5, Bb6, Bb7, and Bb8. Bass clef has a whole note chord of Bb3 and Bb4.
- Fourth measure: Treble clef has a whole note chord of Bb6, Bb7, Bb8, and Bb9. Bass clef has a whole note chord of Bb4 and Bb5.
- Fifth measure: Treble clef has a whole note chord of Bb7, Bb8, Bb9, and Bb10. Bass clef has a whole note chord of Bb5 and Bb6.
- Sixth measure: Treble clef has a whole note chord of Bb8, Bb9, Bb10, and Bb11. Bass clef has a whole note chord of Bb6 and Bb7.
- Seventh measure: Treble clef has a whole note chord of Bb9, Bb10, Bb11, and Bb12. Bass clef has a whole note chord of Bb7 and Bb8.
- Eighth measure: Treble clef has a whole note chord of Bb10, Bb11, Bb12, and Bb13. Bass clef has a whole note chord of Bb8 and Bb9.
- Ninth measure: Treble clef has a whole note chord of Bb11, Bb12, Bb13, and Bb14. Bass clef has a whole note chord of Bb9 and Bb10.
- Tenth measure: Treble clef has a whole note chord of Bb12, Bb13, Bb14, and Bb15. Bass clef has a whole note chord of Bb10 and Bb11.

A green arrow points from the Bb4 note in the first measure to the Bb4 note in the second measure. Below the staff, the words "OPEN" and "2" are written under the first and second measures, respectively.

# OVERTONE SERIES



Bb Series (1st valve)

OPEN      2      1









# OVERTONE SERIES

Pitch Tendencies (valves)

The diagram illustrates the overtone series for a trumpet, showing the natural series and the effect of various valves. Above the musical notation are seven valve configurations, each with a corresponding icon: three 'ok' circles, a red triangle 's#', a blue square '\*sb', a red triangle 'm#', and a red triangle 'v#'. Below the notation are the valve numbers: OPEN, 2, 1, 12 or 3, 23, 13, and 123. The blue square '\*sb' is highlighted under the '12 or 3' valve number.

ok ok ok s# \*sb m# v#

OPEN 2 1 12 or 3 23 13 123

\* Can vary depending on the manufacturer.

# OVERTONE SERIES

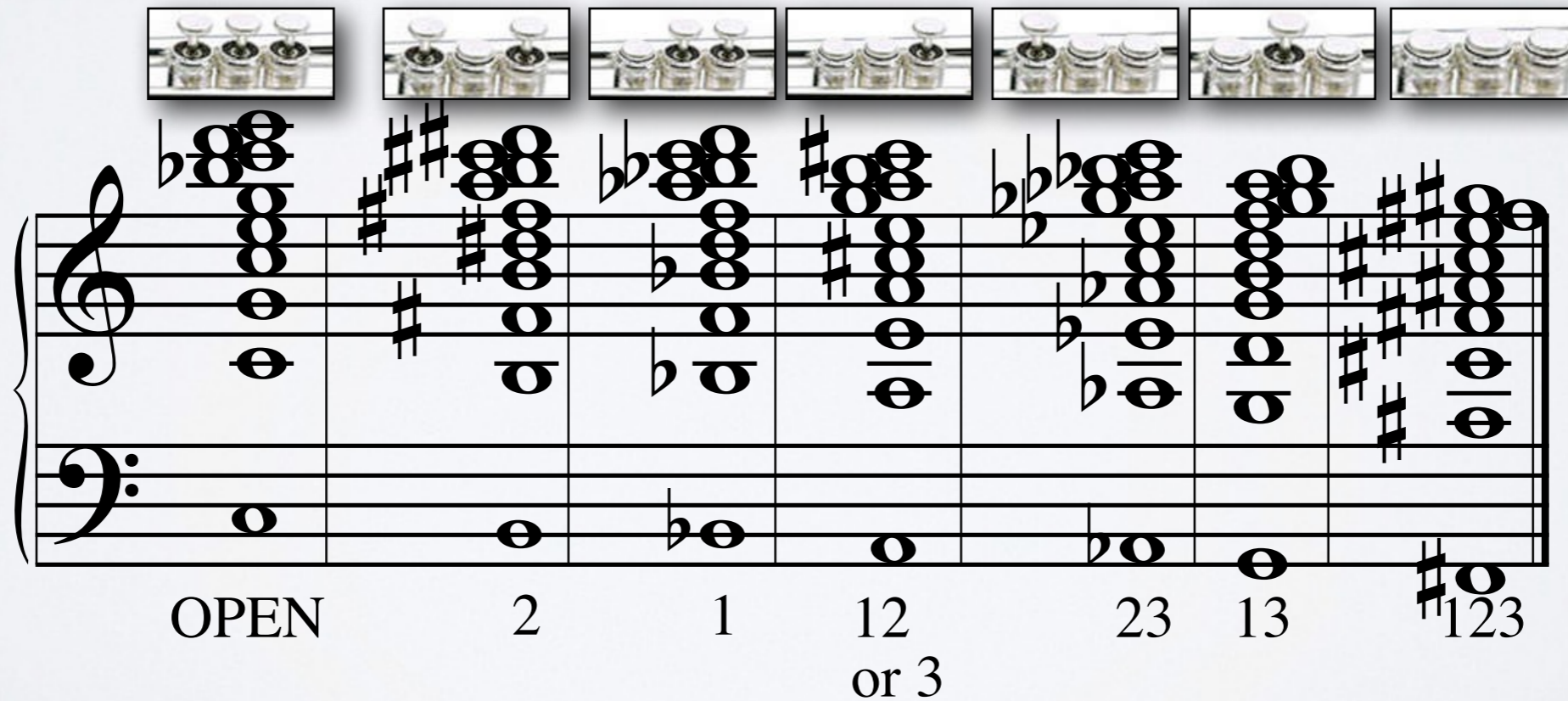
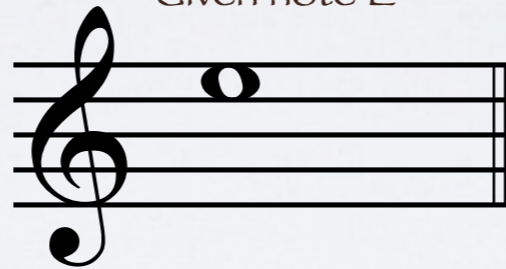
ALL POSSIBLE FINGERINGS

# OVERTONE SERIES

All possible fingerings

Given note E

Trumpet



The diagram illustrates the overtone series for the note E on a trumpet. It consists of seven columns, each representing a different overtone. Above each column is a small photograph of the trumpet's valves in a specific configuration. Below the photographs is a musical staff with three staves (treble, middle, and bass clefs) showing the notes of the overtone series and their corresponding fingerings. The fingerings are listed below the staff.

Overtone	Fingering
1 (E)	OPEN
2 (B)	2
3 (D)	1
4 (E)	12 or 3
5 (B)	23
6 (D)	13
7 (E)	#123

# OVERTONE SERIES

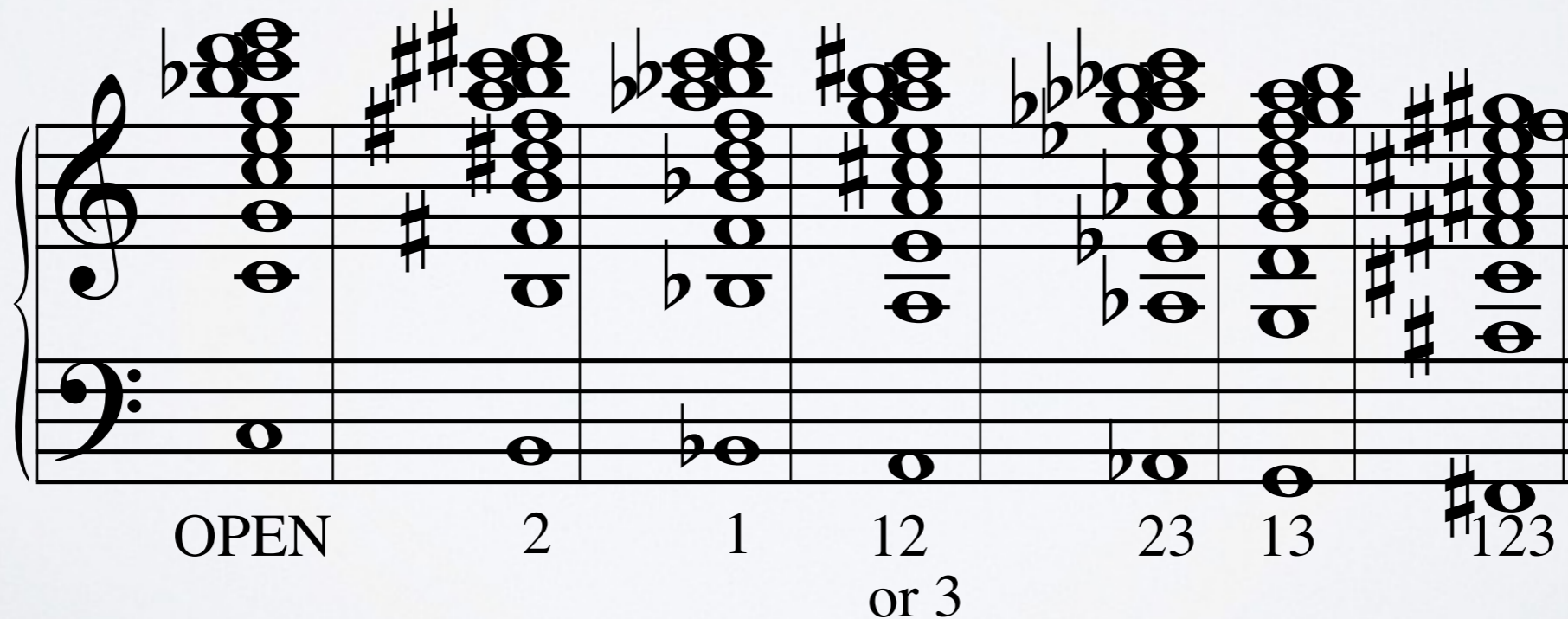
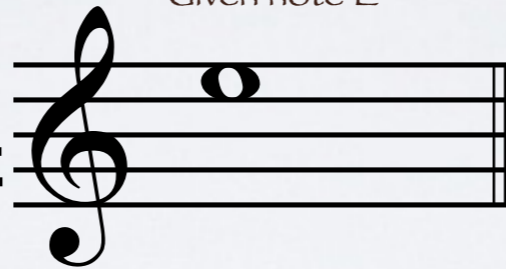
All possible fingerings

Given note E

Trumpet

CHECK FOR GIVEN NOTE

**NONE**



OPEN      2      1      12  
or 3      23      13      #123

# OVERTONE SERIES

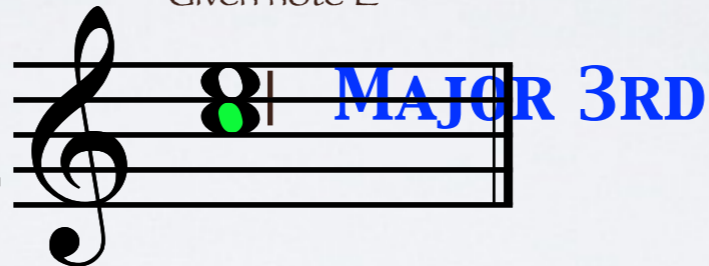
All possible fingerings

Given note E

Trumpet

CHECK FOR GIVEN NOTE

**NONE**



THINK DOWN MAJOR 3RD, CHECK FOR SERIES

**OPEN**

Diagram illustrating the overtone series for the note E on the trumpet, showing various fingerings and their corresponding notes:

- OPEN
- 2
- 1
- 12 or 3
- 23
- 13
- #123

# OVERTONE SERIES

All possible fingerings

Given note E

Trumpet

CHECK FOR GIVEN NOTE

**NONE**



THINK DOWN MAJOR 3RD, CHECK FOR SERIES

**OPEN**

THINK DOWN PERFECT 5TH, CHECK FOR SERIES

**12 OR 3**

A large musical staff showing various trumpet fingerings for the note E. The staff is divided into seven measures, each with a different key signature and fingering. A green arrow points to the fourth measure, which has a green note on the second line. Below the staff are labels for each measure: OPEN, 2, 1, 12 or 3, 23, 13, and #123.

# OVERTONE SERIES

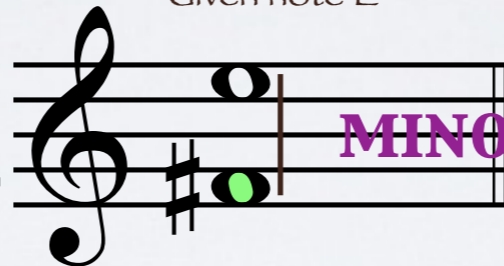
All possible fingerings

Given note E

Trumpet

CHECK FOR GIVEN NOTE

**NONE**



**MINOR 7TH**

THINK DOWN MAJOR 3RD, CHECK FOR SERIES

**OPEN**

THINK DOWN PERFECT 5TH, CHECK FOR SERIES

**12 OR 3**

THINK DOWN MINOR 7TH, CHECK FOR SERIES

**123**

OPEN      2      1      12      23      13      #123

or 3



# OVERTONE SERIES

CHOOSE PREFERRED FINGERING

# OVERTONE SERIES

CHOOSE PREFERRED FINGERING

- Least number of valves,
- Unless it involves 3rd valve,
- Or is the 7th partial

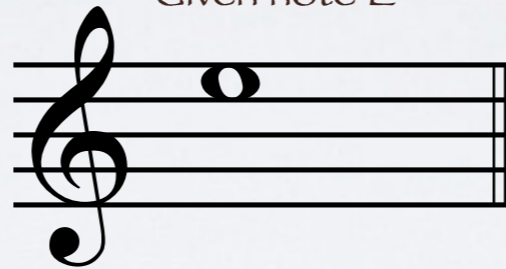
# OVERTONE SERIES

Choosing preferred fingering

Trumpet

- Least number of valves

Given note E



**OPEN**                      12 OR 3                      123

Diagram illustrating the overtone series for the note E on a trumpet, showing various fingerings for each overtone. The diagram consists of a grand staff with three systems of notes. The first system is labeled 'OPEN' in a green box. The second system is labeled '12 OR 3'. The third system is labeled '123'. Each system shows a set of notes on a treble clef staff, with a green dot on the note E. Below each system, the corresponding fingering is listed: OPEN, 2, 1, 12 or 3, 23, 13, and #123.

OPEN                      2                      1                      12 or 3                      23                      13                      #123

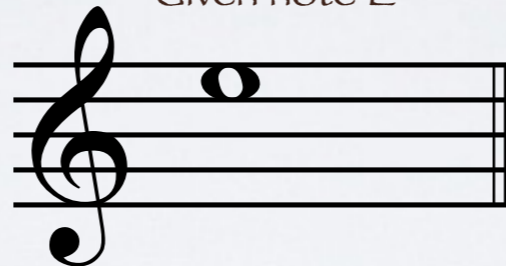
# OVERTONE SERIES

Choosing preferred fingering

## Trumpet

- Least number of valves,
- Unless it involves 3rd valve,

Given note E



A chart showing the overtone series for the note E on a trumpet. The chart consists of seven columns, each representing a different fingering. The first column is labeled 'OPEN' in a green box. The second column is labeled '2'. The third column is labeled '1'. The fourth column is labeled '12 or 3', with '12 or 3' crossed out by a red line. The fifth column is labeled '23'. The sixth column is labeled '13'. The seventh column is labeled '#123'. Each column shows a musical staff with a treble clef and a bass clef, with notes and fingerings indicated. The notes are: OPEN (E), 2 (F), 1 (G), 12 or 3 (A), 23 (B), 13 (C), and #123 (D).

# OVERTONE SERIES

Choosing preferred fingering

## Trumpet

- Least number of valves,
- Unless it involves 3rd valve,
- Or is the 7th partial

Given note E

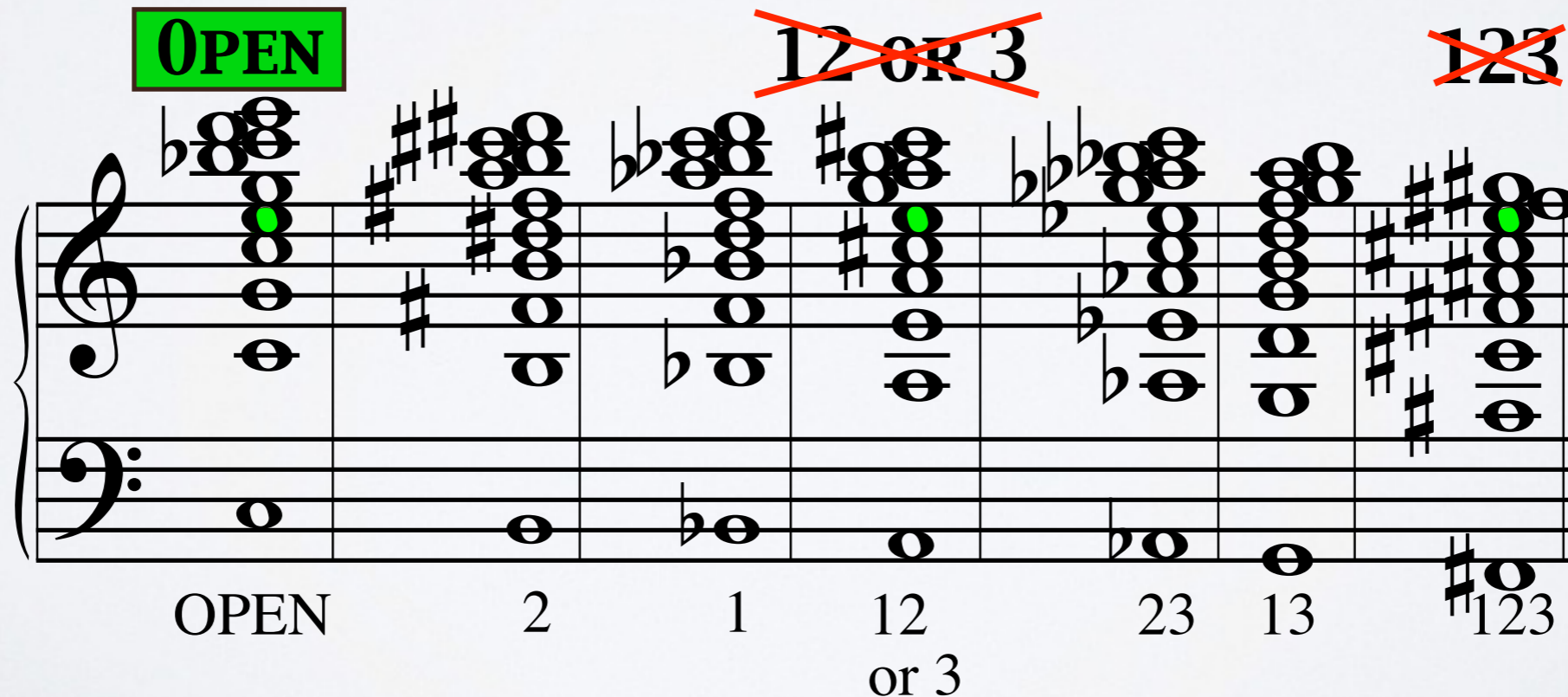
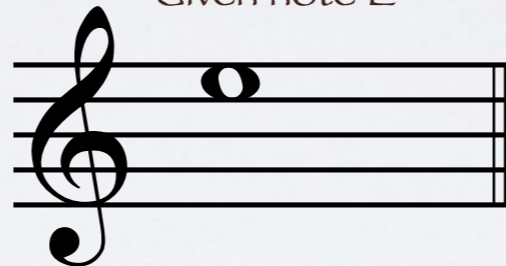


Diagram illustrating the overtone series for the note E on a trumpet. The series is shown on a grand staff (treble and bass clefs). The notes are labeled with their corresponding fingerings:

- OPEN (highlighted in green)
- 2
- 1
- 12 or 3
- 23
- 13
- ~~123~~ (crossed out in red)

# OVERTONE SERIES

When should I use 7th and 9th Partial?

The image displays a musical staff with three systems of notes, each representing an overtone series for a specific fret. The notes are arranged in a way that shows the relationship between the fundamental frequency and its overtones. A green arrow points to the 7th and 9th partials of the final series.

Labels below the staff indicate the frets for each series:

- OPEN
- 2
- 1
- 12 or 3
- 23
- 13
- #123

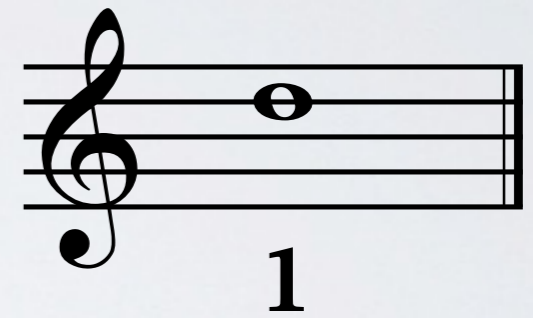
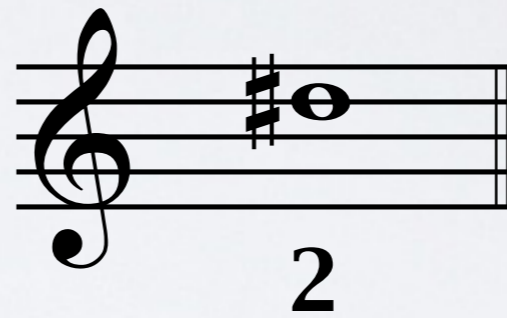
# OVERTONE SERIES

PITCH TENDENCY (PARTIALS + VALVES)

# OVERTONE SERIES

Pitch Tendencies (partials + valves)

Trumpet



OPEN      2      1      12      23      13      #123

or 3

# OVERTONE SERIES

Pitch Tendencies (partials + valves)

Trumpet

5, 10 = Flat

Musical staff showing the trumpet in the OPEN position. The note is a whole note on the second line of the treble clef.

**OPEN**

Musical staff showing the trumpet in the 2nd valve position. The note is a whole note on the second line of the treble clef with a sharp sign (#).

**2**

Musical staff showing the trumpet in the 1st valve position. The note is a whole note on the second line of the treble clef.

**1**

5th partials = flat  
valves = ok

overall pitch = flat

Detailed chart of the overtone series for the trumpet. It consists of two staves: a treble clef staff for partials 2-5 and a bass clef staff for partials 1-5. The notes are grouped by valve position: OPEN, 2, and 1. The 5th partials are highlighted with green dots and labeled with red numbers 5, 4, 3, 2, 1. A blue box labeled '5, 10 = Flat' has arrows pointing to the 5th partials of the OPEN, 2, and 1 positions. Below the chart, the valve positions are listed: OPEN, 2, 1, 12 or 3, 23, 13, and #123.



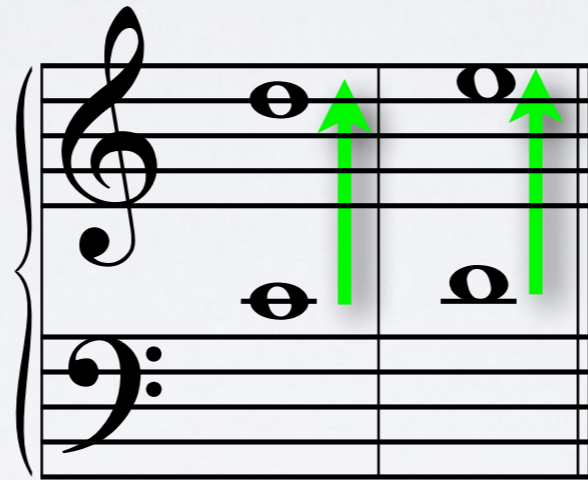
PARTIAL WORKER

# OVERTONE SERIES

TRUMPET RELATED TO OTHER BRASS

# OVERTONE SERIES

B.C. Baritone to Trumpet

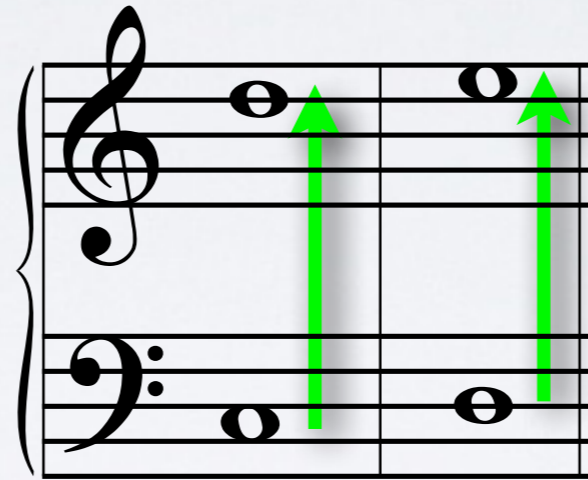


**1 OPEN**

Go up Major 9th,  
then think trumpet fingerings

# OVERTONE SERIES

Tuba to Trumpet

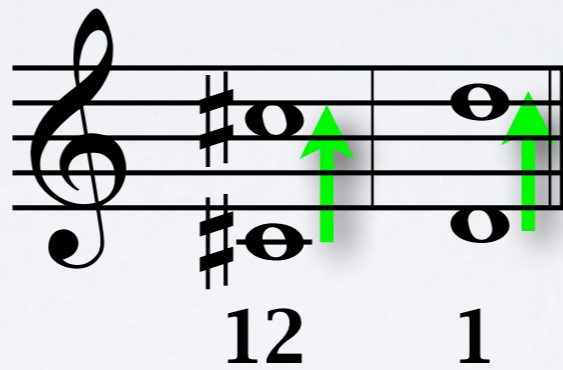


**1    OPEN**

Go up two Octaves + Major 2nd,  
then think trumpet fingerings

# OVERTONE SERIES

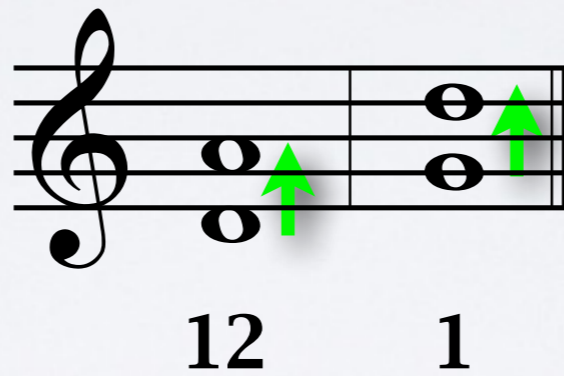
Horn (F side) to Trumpet



Go up Octave,  
then think trumpet fingerings

# OVERTONE SERIES

Horn (Bb side) to Trumpet



Go up perfect 5th,  
then think trumpet fingerings

# Overtone Series

Trombone & Trumpet Relationship

The diagram illustrates the overtone series for both Trumpet and Trombone. The Trumpet staff (top) shows notes with fingerings: open, 2, 1, 12 or 3, 23, 13, 123. The Trombone staff (bottom) shows notes labeled 1st through 7th.

Instrument	1st	2nd	3rd	4th	5th	6th	7th
Trumpet	open	2	1	12 or 3	23	13	123
Trombone	1st	2nd	3rd	4th	5th	6th	7th

# BRASS PITCH PROBLEMS

## Air for Band - 2 measures before letter E

3rd partials = #  
valves = #  
Overall pitch = #

Trumpet 1 & 2

Trumpet 3

Horn 1 & 2

Trombone 1 & 2

Trombone 3

Euphonium

Tuba

The image shows a musical score for a brass section. The instruments listed are Trumpet 1 & 2, Trumpet 3, Horn 1 & 2, Trombone 1 & 2, Trombone 3, Euphonium, and Tuba. The score is written in 2/4 time with a key signature of one flat (B-flat). Annotations include: a red triangle with a '#' symbol above the text '3rd partials = #' and 'valves = #', and another red triangle with a '#' symbol above the text 'Overall pitch = #'. Green arrows point from the right side of the score to specific notes in the Trumpet 1 & 2, Trumpet 3, and Horn 1 & 2 parts. A yellow highlight covers the Horn 1 & 2 part for the first two measures. The number '13' is written in red below the Trumpet parts.

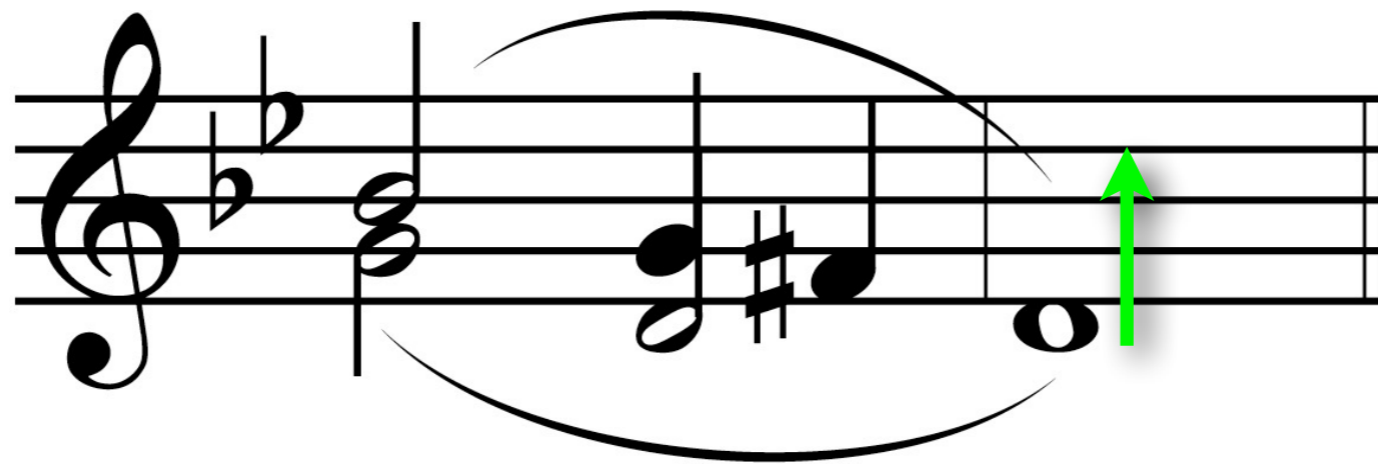
# BRASS PITCH PROBLEMS

## **Air for Band - 2 measures before letter E**

### Horn (F side) to Trumpet

Go up octave,  
then think trumpet fingering

Horn 1 & 2



# BRASS PITCH PROBLEMS

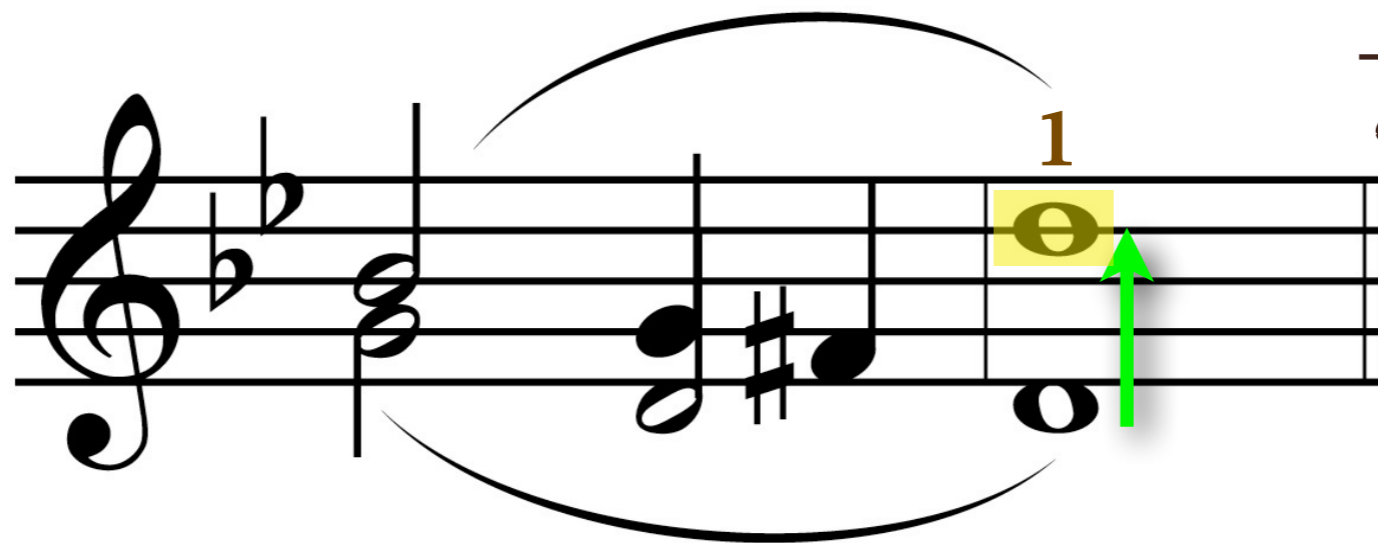
## Air for Band - 2 measures before letter E

### Horn (F side) to Trumpet

Go up octave,  
then think trumpet fingering

5th partials = flat  
valves = ok  
overall pitch = flat

Horn 1 & 2



# BRASS PITCH PROBLEMS

## Air for Band - 2 measures before letter E

Trumpet 1 & 2

Trumpet 3

Horn 1 & 2

Trombone 1 & 2

Trombone 3



Euphonium

Tuba

Overall pitch = 

Overall pitch = 

Overall pitch = 

13

13

1



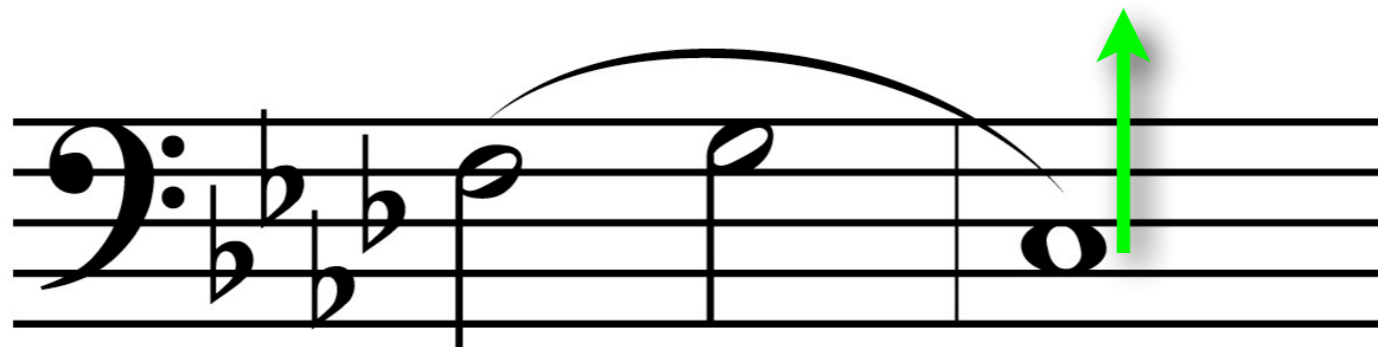
# BRASS PITCH PROBLEMS

**Air for Band - 2 measures before letter E**

## B.C. Baritone to Trumpet

Go up M9th,  
then think trumpet fingering

Euphonium



# BRASS PITCH PROBLEMS

## Air for Band - 2 measures before letter E

### B.C. Baritone to Trumpet

Go up M9th,  
then think trumpet fingering

Trumpet

Euphonium

3rd partials = #

valves = #

overall pitch = #

# BRASS PITCH PROBLEMS

## Air for Band - 2 measures before letter E

Trumpet 1 & 2 Overall pitch = #

Trumpet 3 Overall pitch = #

Horn 1 & 2 Overall pitch = flat

Trombone 1 & 2

Trombone 3

Euphonium Overall pitch = #

Tuba

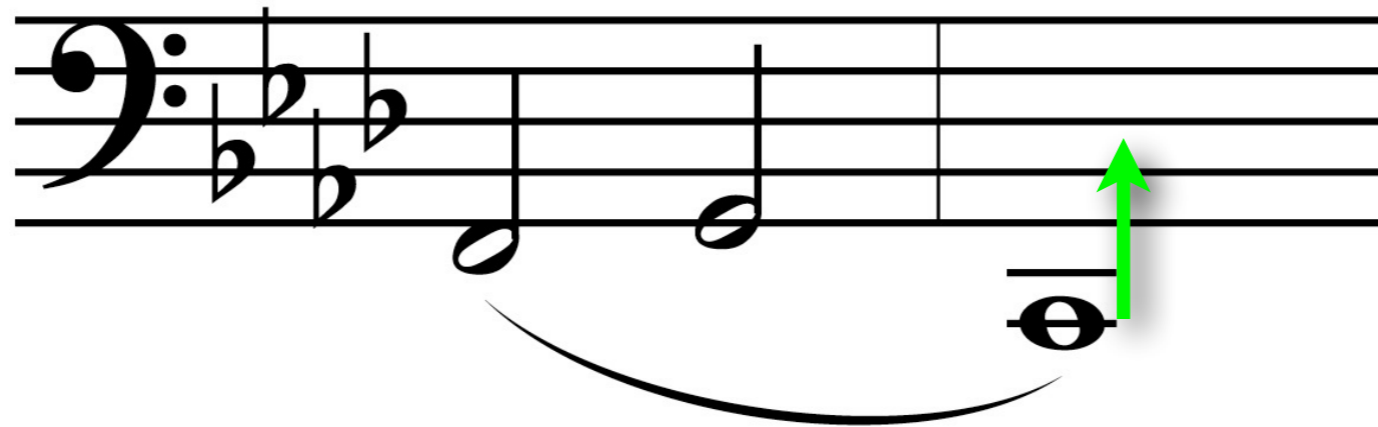
# BRASS PITCH PROBLEMS

## **Air for Band - 2 measures before letter E**

### Tuba to Trumpet

Go up two octaves + M2nd,  
then think trumpet fingering

Tuba



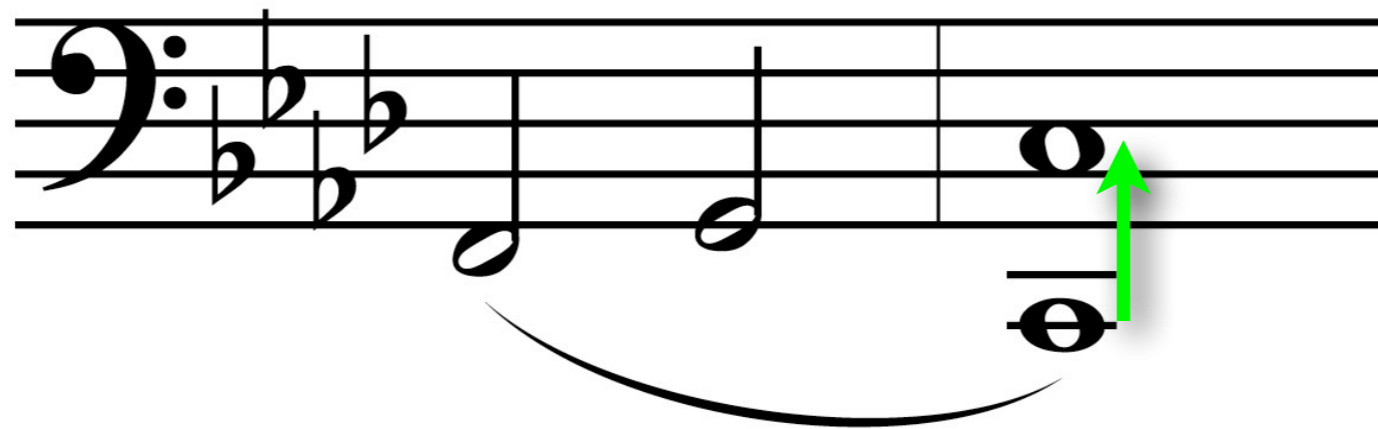
# BRASS PITCH PROBLEMS

## **Air for Band - 2 measures before letter E**

### Tuba to Trumpet

Go up two octaves + M2nd,  
then think trumpet fingering

Tuba



# BRASS PITCH PROBLEMS

## Air for Band - 2 measures before letter E

### Tuba to Trumpet

Go up two octaves + M2nd,  
then think trumpet fingering

Trumpet

The image shows two staves of musical notation. The top staff is for the Trumpet, in treble clef with a key signature of two flats (B-flat and E-flat). The bottom staff is for the Tuba, in bass clef with the same key signature. The Tuba part consists of four measures of music. The final note of the Tuba part is a whole note on the second line of the staff (G2). A yellow box highlights this note, and a red number '13' is written below it. A green arrow points from this note up to the trumpet staff. The trumpet staff is empty, indicating the pitch transfer.

3rd partials = #

valves = #

overall pitch = #

# BRASS PITCH PROBLEMS

## Air for Band - 2 measures before letter E

Trumpet 1 & 2 Overall pitch = #

Trumpet 3 Overall pitch = #

Horn 1 & 2 Overall pitch = flat

Trombone 1 & 2

Trombone 3

Euphonium Overall pitch = #

Tuba Overall pitch = #



# Overtone Series

**American Band College**

## VIDEO SERIES



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