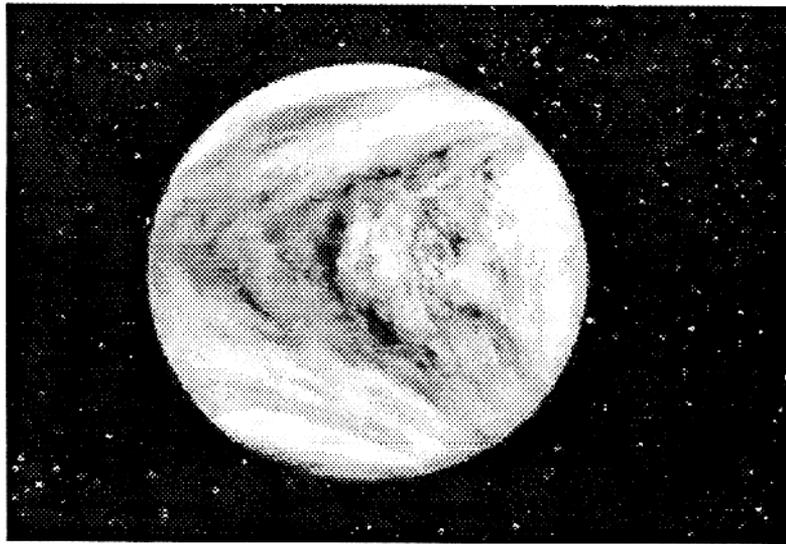


‘The Planets’ Gustav Holst



PLANETARY GUIDE

"THE PLANETS" GUSTAV HOLST PLANETARY GUIDE

Welcome to our planetary guide, we hope you enjoy your journey into space exploring "The Planets" with Gustav Holst. The Boston Symphony Orchestra's Education Advisory Committee is pleased to share this guide filled with interdisciplinary materials designed for classroom, music and art teachers. The Boston Symphony is taking a proactive approach to music education and encourages you and your colleagues to inquire about the resources available from the BSO that may facilitate your use of music in the classroom.

We would like to thank the following people for their special contributions to this curriculum packet:

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Mystic: Pluto was discovered in 1930, so when Holst wrote his suite, Neptune, discovered **in 1846, was the extreme point in** our solar system. **In astrology,** Neptune means **confusion** and mystic rapport with other worlds. Neptune is invisible to the naked eye and to Holst it speaks of distance, mystery, unanswerable questions. At the end, the music dissolves in the voices of an invisible chorus of women.

-From notes by Michael Steinberg

Arts Education Standards

This packet has been designed with the following information from the National Standards for Arts Education and the Massachusetts Arts Curriculum Frameworks as a guide:

National Standards

CORE CONCEPT: Performing, creating and responding to the arts is the fundamental process in which humans engage. Every student should know and be able to do the following:

Standard 1: Sing alone and with others, a varied repertoire of music.

Standard 2: Perform on instruments, alone and with others a varied repertoire of music.

Standard 3: Write simple melodies, variations and accompaniments.

Standard 4: Compose and arrange music within specified guidelines.

Standard 5: Read and notate music

Standard 6: Listen, analyze and describe music

Standard 7: Evaluate music and music performances

Standard 8: Understand relationships between music, the other arts, and disciplines outside the arts.

Standard 9: Understand music in relation to history and culture.

Massachusetts Arts Frameworks

CORE CONCEPT: Learning in, through and about the arts develops understanding of the creative process appreciation of the importance of creative work

Strand I: Creating and Performing

Lifelong learners:

- LS 1. Use the arts to express ideas, feelings and beliefs
- LS 2. Acquire and apply the essential skills of each art form.

Strand II: Thinking and Responding

Lifelong learners:

- LS 3. Communicate how they use imaginative and reflective thinking during all phases of creating and performing.
- LS 4. Respond analytically and critically to their own work and that of others.

Strand III: Connecting and Comparing

Lifelong learners:

- LS 5. Make connections between the arts and other disciplines.
- LS 6. Investigate the cultural and historical contexts of the arts.
- LS 7. Explore the relationship between arts, media and technology.
- LS 8. Contribute to the community's cultural and artistic life.

The Planets, Suite for large orchestra, Opus 32

Gustav Holst was born in Cheltenham, Gloucester-shire, England. He wrote *The Planets* between 1914 and 1916, beginning with *Mars* (but before the outbreak of war in August), continuing *with Venus* and *Jupiter* that fall, writing *Saturn*, *Uranus*, and *Neptune* in 1915, and finishing with *Mercury* in 1916. (Earth is not included, and Pluto had not yet been discovered when the work was composed.) The first performance of the complete suite took place in London on November 15, 1920, Albert Coates conducting.

There was more to Holst's heaven and earth than what he inherited from his Swedish and English ancestors (or his Spanish great-great-grandmother who had ended up as the wife of an Irish peer in County Killamey) or what he learned at London's Royal College of Music. In his twenties, he became deeply involved in Indian philosophy and religion, and he taught himself Sanskrit so as to make his own translations of the *Rig Veda*. Between 1908 and 1912 he composed four sets of hymns from those ancient books of knowledge, and his most moving achievement is the opera *Savitri*, based on an incident in the fourth-century epic *Mahabharata*. And some time after the turn of the century, he came into the thrall of astrology, something of which he was reluctant to speak, though he admitted that casting horoscopes for his friends was his "pet vice." The *Planets* are astrological. "As a rule I only study things that suggest music to me," Holst once wrote; ". . . recently the character of each planet suggested lots to me." And for the 1920 premiere, Holst provided this note: "These pieces were suggested by the astrological significance of the planets; there is no programme music in them, neither have they any connection with the deities of classical mythology bearing the same names. If any guide to the music is required the subtitle to each piece will be found sufficient, especially if it be used in a broad sense. For instance, Jupiter brings jollity in the ordinary sense, and also the more ceremonial type of rejoicing associated with religions or national festivities. Saturn brings not only physical decay, but also a vision of fulfillment. Mercury is the symbol of mind."

I. Mars, the Bringer of War: The association of Mars and war goes back as far as history records. The planet's satellites are Phobos (fear) and Deimos (terror), and its symbol combines shield and spear. **II. Venus, the Bringer of Peace:** After the moon, Venus is the brightest object in our night sky. The identification with Ishtar, Aphrodite's Babylonian predecessor, goes back to at least 3000 B.C. According to Noel Jan Tyl in *The Planets: Their Signs and Aspects*, "when the disorder of Mars is past, Venus restores peace and harmony." **III. Mercury, the Winged Messenger:** Hermes, god of cattle, sheep, and vegetation, deity of dreams, and conductor of the dead, first assumes the role of messenger in the *Odyssey*. Mercury, his Roman counterpart, was primarily a god of merchandise and merchants. To astrologers, Mercury is "the thinker." The composer makes this a virtuosic scherzo, unstable, nervously changeable in meter and harmony—in a word, "mercurial." **IV. Jupiter, the Bringer of Jollity:** The most massive of planets, named for the light-bringer, the rain-god, the god of thunderbolts, of the grape and the tasting of new wine, of oaths, treaties, and contracts, and from whom we take the word "jovial." Holst gives us an unmistakably English Jupiter, and in 1921 he took the big tune in the middle and set to it as a unison song with orchestra the words "I vow to thee, my country." **V. Saturn, the Bringer of Old Age:** Saturn was the outermost of the planets known in ancient times, and the god is traditionally portrayed as an old man. To quote Tyl again, Saturn is "man's time on earth, his ambition, his strategic delay, his wisdom toward fulfillment, his disappointment and frustrations." This movement was Holst's own favorite. **VI. Uranus, the Magician:** Uranus was the first planet discovered in the age of the telescope, specifically in 1781 by Sir William Herschel, who wanted to name it for George III. In astrology, Uranus rules invention, innovation, and astrology itself. **VII. Neptune, the**

'THE PLANETS'

INTERDISCIPLINARY PROJECT

MUSIC AND SCIENCE

TEACHER DIRECTIONS

Gustav Holst's "The Planets" offers an excellent opportunity for collaboration between music and science teachers. Following are some basic ideas for developing an interdisciplinary project.

Music Teacher

1. Introduce students to the orchestral instruments that Holst uses in his composition
2. Background of the compose
3. Look at the score and answer prepared worksheets

Science Teacher

1. Introduce the planets in the composition "The Planets"
2. Provide the students with scientific information about the above mentioned planets
3. Discuss with the students the idea of sound and having a symphony concert in space
4. Have each student design a poster with information about one of the planets discussed in this unit.

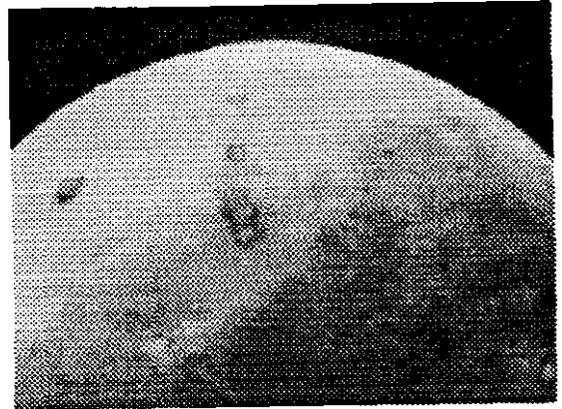
***Background**

"The Planets" by Gustav Holst was introduced to the public over a period of four years (1916-1920), so that by the 1920 performance of the complete suite some of the movements were old familiar friends.

Based on astrological significance; a means of emphasizing the human aspect. It is about human character, for which planetary influence is but the ruling metaphor. The movements are a series of mood pictures, each acting as a foil to the others, and there is a musical variation process which links the movements together in their specified order. Thus, the entire composition is a single human experience in which planetary influence and relationship point to the psychological journey

Name: _____

MARS, the Bringer of War



1. Using the first page of the score, name the instruments that perform this movement.
(List from the bottom to the top, name only.)

- | | |
|------------|-----|
| a. | o. |
| b. | p. |
| c. | q. |
| d. | r. |
| e. | s. |
| f. | t. |
| g. | u. |
| h. | v. |
| i. | w. |
| j . | x. |
| k. | y. |
| l. | z. |
| m. | aa. |
| n. | |

2. What is the key signature?

I. MARS, the Bringer of War

Allegro

2 Piccolos
2 Flutes
2 Oboes
English Horn
Bass Oboe
3 Clarinets in B \flat
Bass Clarinet in B \flat
3 Bassoons
Double Bassoon
6 Horns in F (I II III, IV V VI)
4 Trumpets in C (I II, III IV)
2 Tenor Trombones
Bass Trombone
Tenor Tuba in B \flat
Bass Tuba
6 Timpani (two players) (I, II)
Side Drum
Cymbals
Bass Drum
Gong
Harp I
Harp II
Organ
1st Violins
2nd Violins
Violas
Violoncellos
Doublebasses

wooden sticks
col legno
p
mp
pp
poco (mf)

Allegro

MERCURY, the Winged Messenger



Using the first page of the score answer the following questions:

1. What is the time signature?
2. What is the tempo?
3. Write out the rhythm of the violoncellos in measure one (call this motif A).
4. Write out the rhythm of the bass clarinet in measure seven (call this motif B).
5. Write out the rhythm of the harp II in measure 10, 11 and 12 (call this motif C).
6. What kind of movement does motif C portray (is it possibility; skipping across the stars? What is your suggestion?).
7. Which instruments play motif C in measure 16 and 17?
8. Write out the rhythm of the celesta in measure 38 and 39 (call this motif D).

II. VENUS, the Bringer of Peace

Adagio in C major

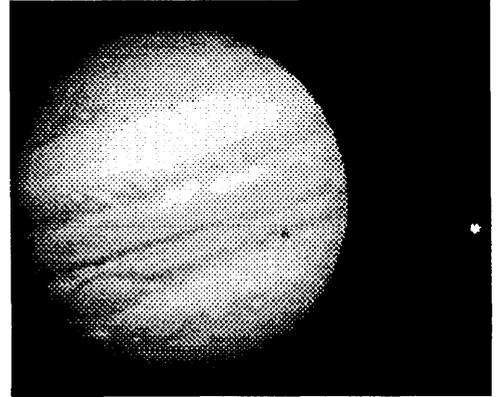
Adagio

The musical score is arranged in a standard orchestral format. It features the following parts and staves:

- 4 Flutes:** Staves I and II (I II) and III and IV (III IV). The first two flutes (I II) play a melodic line starting with a *p* dynamic, while the second two (III IV) provide harmonic support.
- 3 Oboes:** Staff V. They play a melodic line with a *p* dynamic, followed by a *pp* section.
- English Horn:** Staff VI. It remains mostly silent throughout this section.
- 3 Clarinets in Bb:** Staff VII. They play a melodic line with a *p* dynamic.
- Bass Clarinet in Bb:** Staff VIII. It remains mostly silent.
- 3 Bassoons:** Staff IX. They play a melodic line with a *p* dynamic.
- Double Bassoon:** Staff X. It remains mostly silent.
- 6 Horns in F:** Staves XI, XII, and XIII (I II, III IV, V VI). They play a melodic line with a *p* dynamic.
- Glockenspiel:** Staff XIV. It remains mostly silent.
- Celesta:** Staff XV. It remains mostly silent.
- Harp I:** Staff XVI. It remains mostly silent.
- Harp II:** Staff XVII. It remains mostly silent.
- 1st Violins:** Staff XVIII. They play a melodic line with a *p* dynamic.
- 2nd Violins:** Staff XIX. They play a melodic line with a *p* dynamic.
- Violas:** Staff XX. They play a melodic line with a *p* dynamic.
- Violoncellos:** Staff XXI. They play a melodic line with a *p* dynamic.
- Doublebasses:** Staff XXII. They play a melodic line with a *p* dynamic.

Adagio

JUPITER, the Bringer of Jollity



Using the first page of the score answer the following questions:

1. What is the tempo?
2. What is the time signature?
3. Measures one to sixty-four is the introduction. Does this section contain motifs or themes?
How many?
4. Measures 65 to 87 is called section I. Does it contain motifs or themes? How many?
5. Measure 87 to 107 is called a transition. Does it contain motifs or themes?
6. What is the time signature at measure 108?
7. Measures 108 to 154 is called section II. Does it contain motifs or themes? How many?
8. What is the time signature at measure 156?



VENUS, the Bringer of Peace

Using the first page of the score answer the following questions=

1. What is the key signature?
2. What is the letter name of the first note?
3. What is the letter name of the last two notes, measure 141, with the fermatas over them?
4. What is the tempo?
5. What is the time signature?
6. What is a Celesta?
7. Write out the rhythm in measure one, the french horn part (call this motif A).
8. What is the time signature at measure 20? measure 21?
9. Which instrument plays motif A at measure 21?

IV. JUPITER, the Bringer of Jollity

Allegro giocoso

2 Piccolos

2 Flutes

3 Oboes

English Horn

3 Clarinets in B \flat

Bass Clarinet in B \flat

3 Bassoons

Double Bassoon

I II

Soli a 2

6 Horns in F III IV

Soli a 2

f molto pesante

V VI

Soli a 2

f molto pesante

f molto pesante

I II

4 Trumpets in C III IV

III IV

2 Tenor Trombones

Bass Trombone

Tenor Tuba in B \flat

Bass Tuba

6 Timpani
(two players)

I

II

Triangle

Tambourine

Cymbals

Bass Drum

Glockenspiel

2 Harps

1st Violins

div.

2nd Violins

div.

sempre staccato

sempre staccato

Violas

Violoncellos

f molto pesante

Doublebasses

f molto pesante

Allegro giocoso

'THE PLANETS'

INTERPLANETARY LISTENING GUIDE

Mars, the Bringer of War

Venus, the Bringer of Peace

Mercury, the Winged Messenger

Jupiter, the Bringer of Jollity

TEACHER DIRECTIONS

The suggested listening activities are designed to focus listening and to stimulate students to use both analytical and imaginative thinking. In addition, teachers may wish to encourage students to translate what they have heard into some type of tangible art work. It is not necessary to use all of the activities suggested for each planet in order to provide a valid learning experience. However, activation of both the left and right brain hemispheres will make the music more meaningful and memorable for children.

☆Predictive Thinking☆

Before listening to the music for each planet, reveal the title and ask the students to predict what they think the music will sound like. They should be encouraged to use musical terms when writing their predictions. After listening, have the students report on how accurate their predictions were. Do they feel that the composer, Gustav Holst, captured each planet's traits in his music?

☆Analytical Thinking☆

First Listening - Each worksheet is designed to focus attention on the component elements within each piece. Students are given freedom to write down events in the movement which impress them aurally. Encourage use of musical **vocabulary**- Be sure students clearly understand the task demanded by each analytical listening task before playing the music. **Do not interrupt the music once it is started.** The teacher should work on the sheets with the students to develop an "answer key".

Second Listening - After the completion of the analysis task, in an ensuing class, the teacher may provide another opportunity for analytical listening. This time the students should "check their answers" from the first listening as the music plays. This second playing will help them to correct errors, and it will help to reinforce elements which they noticed during the first listening.

☆Imaginative Thinking☆

Setting the Scene for Imaginative Listening - The classroom environment must be made

conducive to this type of listening so that creative thinking is stimulated. Some ideas for creating room ambiance:

- ☆ stick up some "glow in the dark" stars and planets on the ceiling and turn out the lights (after safety and behavior rules have been reviewed).
- ☆ punch pin holes in an opaque piece of paper, and place the paper on an overhead projector. ~~Throw the projected image out of focus.~~ A starry effect will be achieved. Moving your fingers in front of the projection beam element will create a "shimmery" effect.

~~Students~~ Students should be given the chance to listen to the music in a manner which **activates** their right brain hemispheres. They should be allowed to get into a physically comfortable position which could mean lying on the carpet with eyes closed. Provide them with the stimulus suggested in the lesson plan, and play **the music**. Do not ~~interrupt~~ **rupt the listening**.

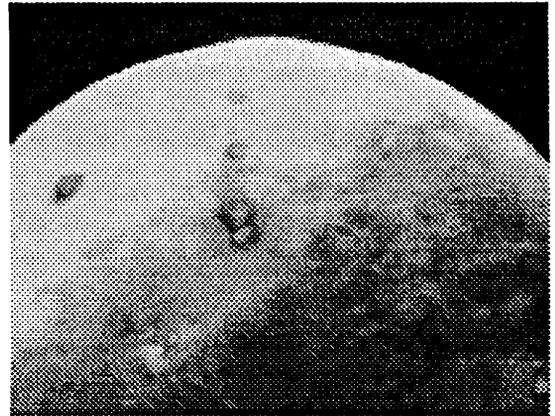
Fourth Listening The next time **students listen imaginatively, they can be encouraged** to show what they imagined through an artistic medium. They may write a poem, draw, or create a choreography. ~~Disruptive application stages~~ **music should be playing in the background.**

Some type of presentation of the created works should be encouraged. As students present or display their works, the music should be playing. The teacher and students in the "audience" should give feedback on how well the creators captured the essence of the **music** in their work.

Enrichment. Extension. Integration

After experience the above listening **activities, students** can be shown portions of the following videotape which contains the music by Holst and NASA photographs from Voyager and other space probes as well as scientific animation of the planets and their satellites.

Voyage to the Outer Planets and Beyond
Isaac Asimov, host
Allied Artists Entertainment Group, 1993
Catalog #1016



MARS, the Bringer of War

Using the title and what you already know about Mars, **PREDICT** how you think this music will sound before you listen:

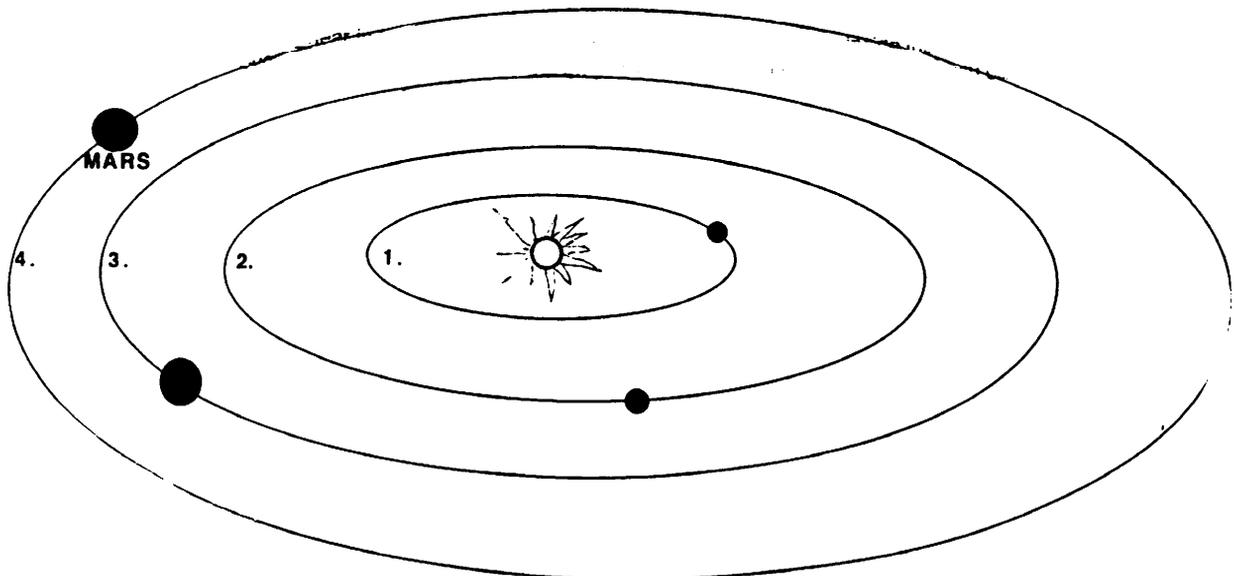
Using your analytical brain

Practice clapping the following **REPEATED RHYTHM PATTERN** as you speak the words:

Fourth from the sun is pla - net Mars

Listen for this **REPEATED RHYTHM PATTERN** throughout this exciting piece!

As you listen, write four things you hear in the music that makes an impression on you. Write inside the numbered planet orbits. Notice **BIG CHANGES** that occur in the music and describe them. Use musical vocabulary as much as you can.



Using your Imaginative Brain

Before you listen to "Mars" again, get into a relaxed position and close your eyes.

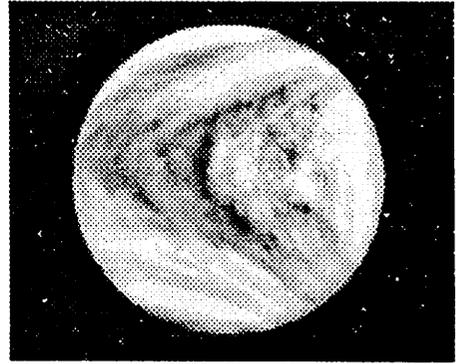
Teacher reads: "Imagine that the backs of your eyelids are movie screens. When the music starts, use your imagination to create your own mental movie about "Mars" on your "eyelid screens". Use the music as a soundtrack for the mental pictures which come to mind as you listen. Let the music take you to "Mars". What images form in your mind when the music is loud, soft, forceful, mysterious, pounding?"

Enjoy producing and directing your own awesome **"Mars Mind Movie!"**

Choose a new way to show others some of the images or moods you imagined as you listened to the music and created your very own original and unique **"Mars Mind Movie."**

While listening to the music again, you might choose to:

- ☆ create an **art work** representing some aspect of the planet brought to mind by the music
- ☆ create a **choreography** which captures a mood expressed in the music
- ☆ create a written description, story or a poem about a strong image that came to mind as you listened.



VENUS, the Bringer of Peace

Using the title and what you already know about Venus, **PREDICT** how you think this music will sound before you listen:

Using your analytical brain

Venus, the second planet from the sun, is the brightest planet in the solar system. It is named after the Roman goddess of love. Venus is sometimes called the morning or evening star because it is so bright. Venus is bright because it is covered by white clouds which reflect the sun. These clouds hide the planet's surface, and so the planet seems mysterious to us.

While you listen to this music about the planet Venus, color in the stars which describe things you hear in the music:



French horn plays alone



loud brass and percussion



soft dynamics



flutes play "glittery" melodies



soft melody on violin



ends on quiet high pitch



ends with drums and cymbals



legato (smooth) tones in melody



bells and celeste

Bonus: What famous constellation is formed by the stars you colored in? B _ _ _ _ _
Connect the stars to outline the constellation.

Using your Imaginative Brain

Before you listen to "Venus" again, get into a relaxed position and close your eyes.

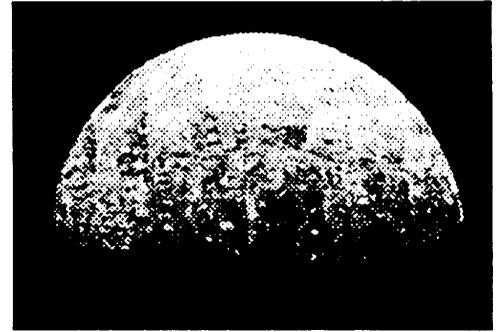
Teacher reads: "Imagine the clouds that cover Venus completely and hide its surface from view. Use your imagination to fly into those clouds. As you listen to the music inspired by "Venus," create an animated film in your mind. Fill your imaginary film with the textures, shapes, colors, smells, temperatures you experience as you fly through the Venus clouds. See how the cloud material moves as you penetrate the layers. Use all of your senses to create your mental film."

Choose a new way to show others some of the images you imagined as you flew through the Venus cloud cover.

Using colored chalks, show the colors, shapes, textures, and layers of the clouds of Venus.

When your art work is completed, display it. View your work and that of your classmates while listening to the music again.

Name: _____

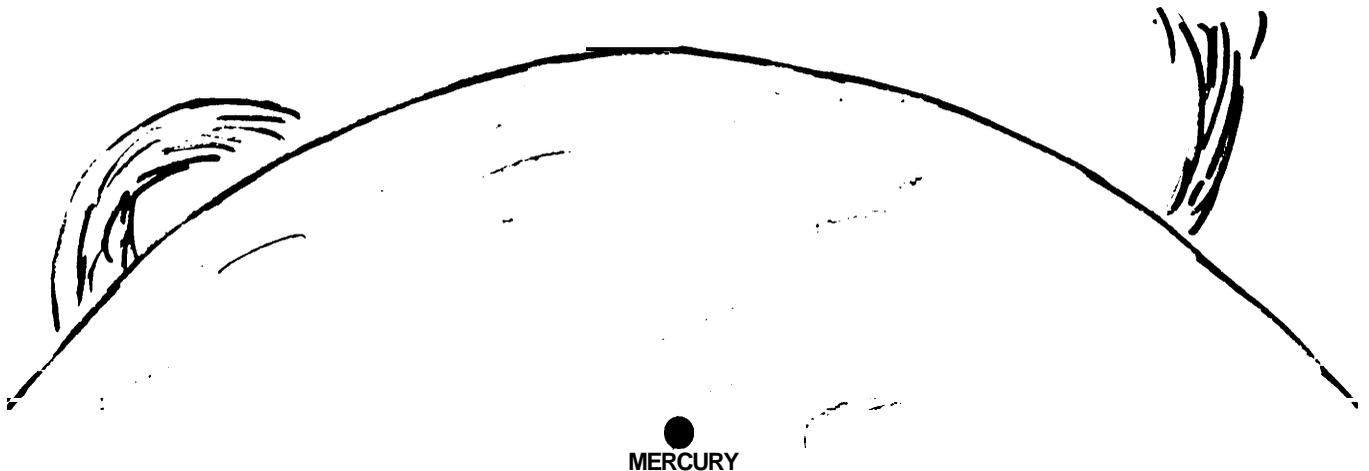


MERCURY, the Winged Messenger

Using the title and what you already know about Mercury, **PREDICT** how you think this music will sound before you listen:

Using your analytical brain

Mercury is the smallest planet in the solar system and the planet closest to the sun. It is named after the Roman god who was the swift-footed messenger. This planet takes only 88 earth days to travel around the sun. So the year on Mercury is very short by our standards, and it passes swiftly. Your mission is to listen to this music inspired by Mercury **and to fill up the sun with as many words as come to mind** to describe the music. Write your descriptive words while you listen. Use as many music terms as you can.



Using your Imaginative Brain

Before you listen to "Mercury" again, get into a relaxed position and close your eyes.

Teacher reads: “Mercury does not spin on its axis as the Earth does. Therefore one side of Mercury is always facing the sun. The temperature on the lighted side gets very, very hot indeed!”

As you listen to the music, imagine if you landed on the hot surface of Mercury, got out of your space craft, and stepped on the surface. How would it feel? Watch yourself move around on that very hot surface. Let the music help you envision how your movements would look. Do your movements match the quality of the music?"

Choose a movement that you saw in your imagination while listening. Pick a partner with whom you can work productively. Perform your original movement for your partner. Then watch as your partner performs his/her original movement for you. Discuss how your movement show the qualities of the music as well as the hot temperature. Learn each other's movements and practice them until you can perform as a duet to the music.

Then make up a new “Mercury movement” with your partner and practice until you both can perform it with confidence.

Create a short movement choreography using these three movements. Try different combinations, practice this until you can perform it with confidence. Then perform the movement choreography for someone else, explaining how you came up with the ideas by listening to the music. Make sure your movements fit the music.

Using your Imaginative Brain

Before you listen to "Jupiter" again, get into a relaxed position and close your eyes.

Teacher reads: "Jupiter is a giant planet with an atmosphere that extends thousands of miles into space. These clouds are made up of gases which would be poison for us to breathe, yet they are beautiful to see from a safe distance. Jupiter's atmosphere extends out thousands of miles into space from its rock and ice core. The atmosphere looks like bands of slightly different colors. On one band is a huge red spot which is over twice the size of Earth."

As you listen to the music, imagine yourself at  where the first picture of Jupiter's atmosphere from a deep space probe are just coming in on your video screen. You alone are in control of the zoom lens on the probe camera circling Jupiter thousands of miles away from Earth. Examine Jupiter's cloud bands and especially focus on the giant red spot as you listen to the music. Zoom in from different angles. Take some still photographs as well.

Show others what you imagined by producing one close up "photograph" of Jupiter's cloud bands and giant red spot through a drawing while you listen to the music again. Let the music inspire you.

'THE PLANETS'

CREATIVE WRITING ACTIVITIES

Mars, the Bringer of War
Venus, the Bringer of Peace
Mercury, the Winged Messenger
Jupiter, the Bringer of Jollity

TEACHER DIRECTIONS

The following lesson sparks are designed to help students develop creative responses to the music of Gustav Holst.

- ☆ About **Gustav Holst's "The Planets,"** it has been said that each movement is a portrait of one particular aspect of personality. Identify a particular aspect of your personality, like outgoing, talkative, aggressive, confident, introverted, silent, assertive, shy/timid, or insecure, and create a free verse poem describing how you express that trait.
- ☆ The planets often inspire artists. How do you imagine the scenery looks on each one? Artistically render each of your imaginary settings and write a detailed description of them.
- ☆ As you listen to each of the movements from **Holst's "The Planets,"** record your immediate images. Then create a series of haiku poems that incorporate some of your images. (Note: A haiku poem is a three line non-rhyming poem which follows a 5-7-5 syllable pattern. The first line has five syllables, the second has seven, and the third has five).
- ☆ Research and gather facts about each of the planets. Then create acrostic poems for each of them that include descriptive facts about them.

Example: About the same size as Earth
Has canals
Bringer of War
Close to US

- ☆ Gustav Holst's inspiration for **his** symphonic suite "**The Planets**" was the astrological significance of the planets. Using the names of the planets: Mars, Venus, Mercury, Jupiter, Saturn, Uranus, and Neptune, create a date span and an original horoscope reading for all who fall under each sign.
- ☆ What if.. **Mars, the Bringer of War,** knocked on your door with a message, what would it say? Write a detailed description of the message's content.

- ☆ What if.. **Venus, the Bringer of Peace**, appeared on your doorstep with a peaceful message, what would it say? Incorporate her “proclamation of peace” into a repeat-a-line poem in which every other line reads: **“Venus, the Bringer of Peace”**.

Example: Line 1: Venus, the Bringer of Peace

Line 2: _____

Line 3: Venus, the Bringer of Peace

Line 4: _____

Line 5: Venus, the Bringer of Peace

Line 6: _____

Line 7: Venus, the Bringer of Peace

- ☆ Holst was inspired by the astrological significance of the planets. Each of the **movements** identifies the planets in the following ways:

Mars, the Bringer of War

Venus, the Bringer of Peace

Mercury, the Winged Messenger

Jupiter, the Bringer of Jollity

Saturn, the Bringer of Old Age

Uranus, the Magician

Neptune, the Mystic

Artistically render how you imagine each of them to look, and write a detailed description or a poem about each of them.

- ☆ Close encounters of a Martian kind. What if Martians landed on Earth, and you had a chance to interview them, what questions would you ask? Create a **list** of questions you would ask them, as well as how you imagine they might answer them.
- ☆ Mercury and Saturn cars have already been designed. Create artistic drawings of how a Venus, Jupiter, Mars, Uranus, and Neptune car might look. Then create print advertisement for each one of them using **Holst's "The Planets"** for background music for them.
- ☆ Write your perceptions of life on other planets. Such life may not be similar to **life as** you know it, but it does not necessarily have to be antagonistic to our race. How do you imagine life to be like on Jupiter or Mars, for example? Create a short story in which you include your perception.
- ☆ **Artistically** render how you imagine aliens from each of the planets might look. Then create a rebus (a story with some words and some pictures for words) which includes your drawings of aliens.
- ☆ You have become a world famous planetary geographer. It is your mission to make maps, charts, graphs, and written accounts of each of the planets to inform earthlings about the planets. Create a portfolio of your work to present to the President of the United States.

- ☆ **Holst's "The Planets"** inspires space travel. Design a space mobile for space travel using recycled materials, and then create a TV or radio ad to sell your vehicle, being certain to use **"The Planets"** as background music for your ad.
- ☆ While traveling in space, imagine you have crashed in a hostile environment. Brainstorm all the possible adverse elements of this environment. Then work in a group to create a mural showing this hostile world into which you have crashed. Your mural should be a big picture and not a series of pictures, and it should show you entering this hostile environment. It also should show the setting and all the hostile elements which are facing you. Finally, create a skit that takes place in this environment using your mural for scenery.
- ☆ Read poems and/or song lyrics about space, like those found in **Shel Silverstein's "Moon Catchin' Net"** from ***A Light in the Attic***. Create your own original poetry about space or lyrics to songs about space. You might use familiar tunes to create your songs.
- ☆ Study a legend. Write your own legend about how a planet came to be.
- ☆ Design a **Big Book** for little children that tells the story of Man and Flight.
- ☆ Numerous career opportunities are related to space travel. Research some possibilities and then create a career poster alerting others to the numerous careers available.
- ☆ Research what an astronomer does. Then imagine you have the opportunity to interview one. Create a list of ten questions you would like an astronomer to answer. Using your research, answer the ten questions, and then role-play your interview with an astronomer. Have a friend play the part of the astronomer. Videotape your interview and share it with the class.
- ☆ Collect as many facts about space as you can. Then use this information in an original science fiction story. Read your story to the class with strains of **Holst's "The Planets"** playing in the background.

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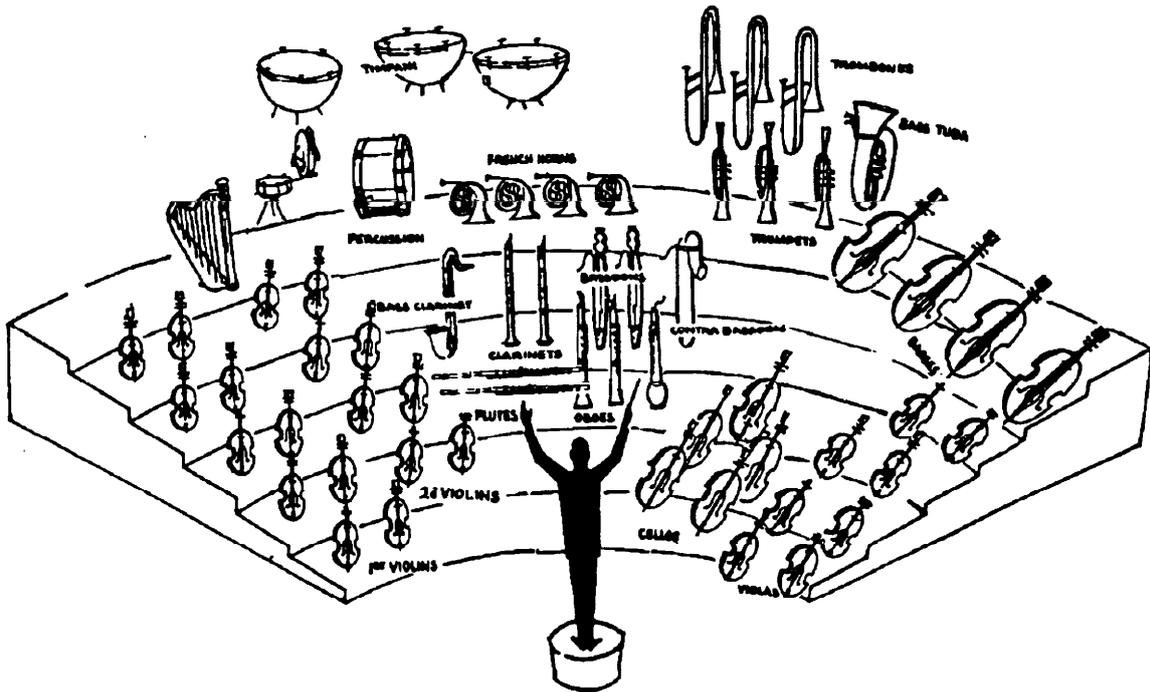
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What Is a Symphony Orchestra?



A symphony orchestra is a large group of musicians, including string players, woodwind players, brass players, and percussion players, assembled together for a performance.

The term “symphony” is often used by itself to refer to a symphony orchestra. We often use this shorthand method in calling the Boston Symphony Orchestra “the Boston Symphony,” or sometimes just “the Symphony.” The term also refers to a composition that requires the large orchestral forces of a symphony orchestra.

The term “orchestra” derives from a Greek work for the space between the stage and the audience in Greek theatres. With the development of European opera in the seventeenth century, the instrumentalists who accompanied the singers sat in this area. Over time, **this group** of musicians became known as the orchestra.

The modern symphony orchestra typically consists of the following four families of instruments:

Strings-violin, viola, cello, double bass, harp
Woodwinds-flute, oboe, clarinet, bassoon, contrabassoon
Brass-trumpet, horn, trombone, tuba
Percussion-timpani (kettledrums), bass drum, snare drum,
triangle, cymbals, piano

Each group of instruments in a family has a leader, or principal player, who keeps the section together and plays the solos written for his or her instrument. The leader of the first violins is called the concertmaster. The orchestra is usually arranged so that the larger and louder instruments are in the back (see Orchestra Diagram). Since the string instruments are softer, they are in front, and there are more players in the string sections to balance the sounds of the woodwinds and brasses.