

# SYMPHONY SPACE-TACULAR: STAR WARS AND BEYOND!





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## Welcome to the BSO Midweeks!

On behalf of the Associate Conductor for Education, Nicholas Hersh, the members of the Baltimore Symphony Orchestra, and the BSO Education Department, we are delighted to welcome you to our 2018-2019 Midweek Concert Series. With the BSO's Midweek Concert series as the longest running education initiative at the BSO (running since February 16, 1924), and the first regular educational concert series of any orchestra in the country, we are thrilled to have you join us here at the Joseph Meyerhoff Symphony Hall.

This Midweek Concert Season, we present four concerts *Symphony Space-tacular: Star Wars and Beyond!*, *A Swingin' Nutcracker*, *Peter and the Wolf*, and *Young Person's Guide to the Orchestra*. Each concert incorporates an Arts-Integrated, STEAM-Activated approach to create a relevant, interactive, and interdisciplinary experience.

## About This Guide

On the next pages you will find the Teachers' Guide for *Symphony Space-tacular: Star Wars and Beyond!*, written by a highly skilled group of Maryland educators with specialism in Music, Drama, Science, English/Language Arts, and Visual Arts, led by award-winning curriculum writer and editor, Richard McCready.

At the start of the guide is a "Snapshot" of your concert experience. This will give you a sense of what to expect in the concert, along with some thoughts about the various curricular connections, and music we suggest you listen to in the classroom before the performance.

Beyond the Snapshot pages you will find a variety of activities, called "Missions," to signify the various directions that you can explore in order to prepare for this concert. Each Mission may be used in any order you wish. We have also highlighted the various cross-curricular links that align with each Mission so that you may jump to areas that are of particular interest to you and your students. We hope that your students try at least one activity prior to coming to the concert so they can make the most of their live experience at the Meyerhoff.

Each activity is written to encourage students' natural sense of creativity and exploration. They will be able to read the activity pages or you can read the activities with them. Some of the activities are scientific, some are movement games, some employ and encourage art skills, and some involve storytelling and role-play. You best know your students, their capabilities, and their interests. You should encourage students to try the activities that you feel most appropriate for them and for your classroom. Encourage other teachers in your building to try some of the activities as well.



These guides are designed and intended as a mere starting point for exploration, with the essential piece being the work that is created by the student, for the student. Our ultimate goal is to facilitate a strong connection between the music performed by the BSO and the everyday lives of your students, so that they may continue to take music with them wherever they go.

Please feel free to share your students' work with us at the BSO—we love to see where the ideas from these activities might take your students and all the inspired, arts-integrated work they will produce in the classroom. If you wish to share any materials with us at the BSO, please send them to [education@bsomusic.org](mailto:education@bsomusic.org).

We hope you enjoy this guide, your explorations that are yet to come, the concert experience, and sharing your creative work with us.

Warmly,

Carole Wysocki  
Director of Education & Community Engagement  
Baltimore Symphony Orchestra

Julia Perry  
Education Programs Coordinator  
Baltimore Symphony Orchestra

Morgan Daly  
Education Assistant  
Baltimore Symphony Orchestra





## *Symphony Space-tacular: Star Wars and Beyond!* Concert Program

Below is the list of pieces that will be performed on the *Symphony Space-tacular: Star Wars and Beyond!* Midweek Concerts. Please take a moment to listen to these pieces in advance of the concert on YouTube, Spotify, or iTunes.

- ❖ R. STRAUSS: *Also Sprach Zarathustra*
- ❖ HOLST: “Mars” and “Jupiter” from *The Planets*
- ❖ BEETHOVEN: Symphony No. 5, 1<sup>st</sup> Movement
- ❖ MASON BATES: *Mothership*
- ❖ JOHN WILLIAMS: Main Theme from *Star Wars*



## *Symphony Space-tacular: Star Wars and Beyond!* Snapshot for Teachers and Students

### The Last Frontier

Humans have explored the mountains, oceans, deserts, and various landscapes of Earth, searching for answers and gaining knowledge about our home, Planet Earth. Much less is known about what is out in space, leaving people to use their imaginations to guess what lies in the great beyond. Artists have created paintings, sculptures, novels, and musical scores attempting to depict what little is known about space. Today, we explore how the symphonic repertoire has interpreted space and our relationship to it.

We are starting our space journey closest to Earth. Richard Strauss composed *Also Sprach Zarathustra* in 1896, inspired by Friedrich Nietzsche's philosophical novel with the same title. It is not hard to imagine a sunrise cresting over the Earth's atmosphere when listening to the opening fanfare of this piece. Aptly titled "Sunrise" by Strauss, it's one of the most well-known themes in classical music after its use in the movie *2001: A Space Odyssey*. There is no mistaking that when Stanley Kubrick chose this opening music, his desire was to elicit the emotional response from viewers: to contemplate the vastness and possibility of the universe and to bring forward the same questions that Nietzsche proposed in 1885 about God, about humankind and about our existence here in the natural world (Marin Alsop on Npr.org).

Moving outwards through our solar system, we come across the planets. Not unlike Strauss, Gustav Holst aimed to portray his view on the solar system with his massive orchestral and choral work, *The Planets*, written between 1914 and 1916. The contrast between the movements of the various planets is drastic, and based on the planet being described and its astrological character. For example, when we listen to the movement *Mars: the Bringer of War* in contrast to *Jupiter: the Bringer of Jollity*, listen for what musical techniques are used to portray the different planets: rhythm, instrumentation, articulation, dynamics—the list is endless!



Beethoven's most famous work, his Fifth Symphony, isn't directly related to space exploration, but was included on The Golden Record. What is that you ask? It is a record, a form of time capsule, attached to the intergalactic spacecrafts, Voyager 1 and Voyager 2, meant to be found by extraterrestrials advanced enough to play it back and to learn about life on Earth. Works by Beethoven, Bach and Stravinsky were included to describe human life on Earth. What makes this piece so descriptive of humanity? Why would this work be considered the epitome of mankind?

The electro-dance music crossover work entitled *Mothership* by Mason Bates, premiered on March 20, 2011, features live DJ elements mixed with a standard symphonic orchestra. Bates hit on the image of the orchestra as a mothership on which four visiting soloists temporarily "dock" in sequence, improvising on material that is generated by the larger ensemble. There's also a "chance" element: solo instruments are undetermined and can vary according to a particular orchestra's strengths. The piece can also be performed using written-out solos (The Kennedy Center-Youtube.com) By imagining a space station with moving parts entering and leaving, it is clear to correlate the sounds of the orchestra with space.

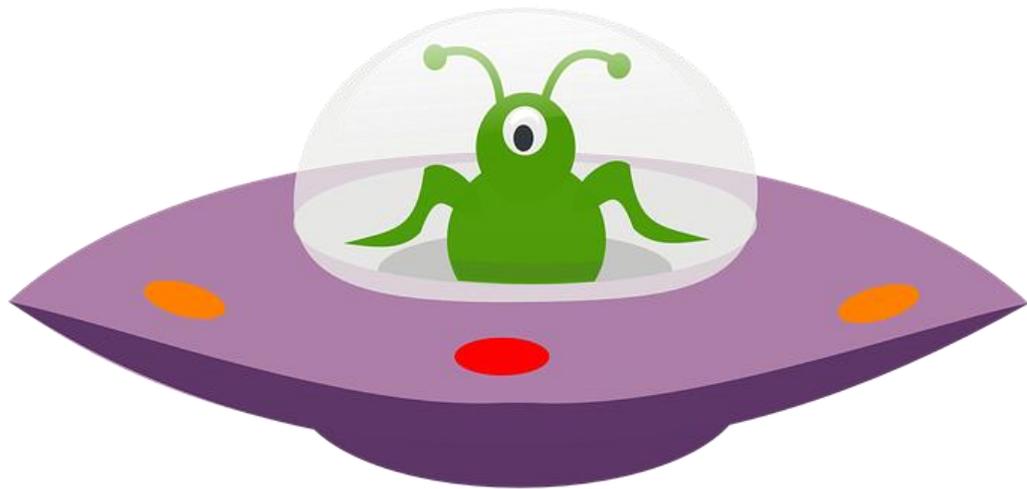
"May the Force be with you," may be the most famous line from Star Wars, but the music written by John Williams is even more recognizable. The triumphant, majestic opening theme can be paralleled to Strauss' work, played earlier in the concert. What about a brass fanfare with open intervals creates this sense of triumph? The force of sound created by this opening is sure to create a sense of the sublime, the unknown, the excitement to explore the space beyond. How does this music entice a feeling of strength and exploration? How does that translate to space?



## Mission One: Alien



When you hear the word “alien” what do you think of? Why do you have these preconceived ideas? What aliens can you think of? Where do these aliens come from? Today we are going to take a trip with the help of our imaginations and discover a new alien species.



### Activity Ideas

Close your eyes and imagine you are aboard a spaceship headed for a yet undiscovered planet. Countdown has begun... 10, 9, 8, 7, 6, 5, 4, 3, 2, 1 blastoff! You travel out of our atmosphere past beautiful planets of many bright colors. Through our solar system, through the Milky Way past nebulae and more solar systems, and finally you see a planet ahead of you. What color is the planet ahead of you? What landscape features does the planet have? Does the planet have excessive water? Are the aliens there more human-like, fish-like or bird-like, maybe? Does the planet have oxygen or do these aliens need a mask to convert the atmosphere so they can breathe? Does the planet have a lot of gravity? Are the aliens influenced by the large amount of gravity? Are they built differently, with big muscles or with shorter legs? Do the aliens on your planet live underground due to something like radiation? Do these aliens look like moles? How would they have adapted to live underground?



Now let's make a collage of the alien you have envisioned.

1. Select a piece of construction paper to build the body of your alien out of.
2. Fold your paper in half hotdog style.
3. Draw half of your alien with the interior of your alien along the fold. How many heads, arms, legs, tentacles, and antenna does your alien have? What other things does your alien need?
4. Cut out and open your alien.
5. Use scrap paper to give your alien details such as eyes, a nose, a mouth, ears, scales, feathers, nails, tails, clothes or a mask. What else can you think of that your alien may need?
6. Glue the parts on as you go so you do not lose any of your special features.

After you have built your alien write a short description about the planet your alien lives on and the special way your alien has adapted to live on this planet. Don't forget to give your alien a special alien name!



## Curriculum Connections

### Fine Arts Standards

- ❖ **Creating**
  - 1: Generate and conceptualize artistic ideas and work.
  - 2: Organize and develop artistic ideas and work.
  - 3: Refine and complete artistic work.

### Mathematics Practices

- ❖ M1: Make sense of problems and persevere in solving them.
- ❖ M5: use appropriate tools strategically.
- ❖ M6: Attend to precision.

### Science Practices

- ❖ S1: Asking questions (for science) and defining problems (for engineering).



## Mission Two: Circular Sound and Movement



Over time, the International Space Station has been built with additions from many countries to make a very large spacecraft that orbits Earth. Let's use creative movement to make our very own moving space station!



### Activity Ideas

Listen to the piece "Jupiter" from Holst's *The Planets*. Start with one student standing in the middle of the group and making a repetitive circular shape movement to complement the music heard. As the piece continues and students are ready, they can physically join together to add a new circular movement that adds to the "space station". Try to find ways to cooperate as a group and move respectfully and creatively around each other. *Challenge: Can your space station have stationary circular movements as well as the ability to travel AROUND the room in an orbit (without any collisions)?*

Try making a new space station while listening to "Mars" from Holst's *The Planets*. Think about the different mood created in this musical piece. How do your movements reflect what is heard in the music?

A short musical pattern that is consistently repeated is called an **ostinato**. Allow students to use instruments in order to play ostinato patterns that could be played while the space station is being assembled. Encourage students to add a movement that represents their ostinato in an expressive and creative way!



## Resources

- ❖ Click here to learn more about the International Space Station  
<https://www.nasa.gov/audience/forstudents/k-4/stories/nasa-knows/what-is-the-iss-k4.html>
- ❖ Click here to see a “Machine” theater game as a demonstration of how the group can “join together” in order to make a space station for this activity  
<https://www.youtube.com/watch?v=LSVGvaZNc10>
- ❖ “An ostinato is a pattern that repeats” - Watch this video to learn more about ostinato  
[https://www.youtube.com/watch?v=0VksrMqE\\_4c](https://www.youtube.com/watch?v=0VksrMqE_4c)



## Curriculum Connections

### Fine Arts Standards

- ❖ **Creating**
  - 1: Generate and conceptualize artistic ideas and work.
- ❖ **Performing/Presenting/Producing**
  - 6: Convey meaning through the presentation of artistic work.
- ❖ **Responding**
  - 7: Perceive and analyze artistic work.
- ❖ **Connecting**
  - 11: Relate artistic ideas and works with societal, cultural and historical context to deepen understanding

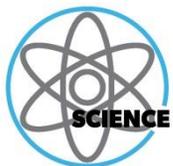
### Science Practices

- ❖ S2: Developing and using models.



## Mission Three: No Sounds in Space!

Students will learn to communicate to the mothership (or any other aliens) using their non-auditory senses, e.g. sight, touch. Remember - sound does not travel through space!



### Activity Ideas

Patterns of sound can be matched with sight and touch. There are many unknown languages to communicate with the mothership so you must find one so you can be safely identified as a friend!

1. Research and learn sign language to be able to communicate to the mothership without sound. Learn to communicate HELLO using American Sign Language. You may add “my name is \_\_\_\_\_” using American sign language.
2. Communicate your own HELLO to an alien using your own special inaudible handshake/greeting. Be able to identify others by their own special handshake/greeting.
3. Communicate HELLO using MORSE CODE. Research the alphabet to spell out your greeting. Convert the dits and dahs into light flashes or vibrations on the wall. Turn off the lights and see if you can understand the flashes or feel the vibrations!
4. Challenge: Consider creating your own FLASH code using light of different colors. Use letters of the alphabet or consider using flashes and colors to match to tones or musical notes to standardize your “universal” language!



## Resources

- ❖ Communicate HELLO my name is \_\_\_\_\_ using American sign language  
<https://www.youtube.com/watch?v=Raa0vBXA8OQ>
- ❖ Communicate HELLO my name is \_\_\_\_\_ using Morse code  
[https://www.youtube.com/watch?v=\\_J8YcQETyTw](https://www.youtube.com/watch?v=_J8YcQETyTw)
- ❖ Communicate your own HELLO to an alien using a handshake!  
<https://www.youtube.com/watch?v=VctaUNJpT6U>



## Curriculum Connections

### Fine Arts Standards

- ❖ **Creating**
  - 1: Generate and conceptualize artistic ideas and work.
  - 2: Organize and develop artistic ideas and work.
- ❖ **Performing/Presenting/Producing**
  - 4: Analyze, interpret, and select artistic work for presentation.
- ❖ **Responding**
  - 7: Perceive and analyze artistic work.

### Science Practices

- ❖ S3: Planning and carrying out investigations.
- ❖ S4: Analyzing and interpreting data.



## Mission Four: I'm a Nebula



A nebula is an interstellar cloud of dust. The beautiful colors that can be seen in a nebula come from the star in the middle of the nebula radiating light through the elements floating through the gas and dust within the clouds. Imagine if you were a nebula! What colors would the different parts of your life be?



### Activity Ideas

1. On a piece of black construction paper use chalk pastel to create a self-portrait nebula. Ask yourself important questions like: Who is important to me? How does this person make me feel? What color represents this feeling and this person?
2. Be sure to choose colors that represent the important people, places and things in your life. For example, if you have a happy relationship with your sister maybe you would choose yellow to represent her.



3. Turn your chalk pastel on its side and make cloud shapes starting in the center of your paper. Use a paper towel wrapped around your finger to smear the chalk pastel so it has the look of a cloud-like texture. Add a ring of a new color around the cloud. Again use the paper towel to smear the color. Be sure to use analogous colors - colors that are next to each other on the color wheel so that the colors will mix to make a new color. Make more clouds and have them connect to each other.
4. Now use a white chalk pastel and make white dots on your paper. Place an X on each dot creating a star. Use the paper towel and smear away from the center of the dot. This will make the stars look like they are twinkling. Make some bigger and some smaller. The larger stars will appear closer and the smaller stars will appear further away.
5. Make sure to fill your composition, your paper to the edges. Add some long lines coming out of the middle of your nebula. Smear those with your paper towel to give them a more distant space look. Add a small amount of a color of your choice around the edges of your circles to give your stars a little bit of a 3-dimensional look.
6. Blend and smear until you are happy with your final product. Remember in art there are no wrong answers.



## Resources

- ❖ Click here to see and learn more about nebulae  
<https://www.nasa.gov/subject/6893/nebulae/>
- ❖ Click here to learn more about analogous colors  
<https://www.thespruce.com/understanding-analogous-colors-1973820>



## Curriculum Connections

### Fine Arts Standards

- ❖ **Creating**
  - 1: Generate and conceptualize artistic ideas and work.
  - 2: Organize and develop artistic ideas and work.
- ❖ **Performing/Presenting/Producing**
  - 6: Convey meaning through the presentation of artistic work.
- ❖ **Connection**
  - 10: Synthesize and relate knowledge and personal experiences to make art.

### Mathematics Practices

- ❖ M1: Make sense of problems and persevere in solving them.
- ❖ M5: Use appropriate tools strategically.

### Social Studies Practices

- ❖ SS1: Developing questions and planning inquiry.



## Mission Five: TV Talk Show



Suppose you got a chance to interview some of the ancient Roman gods of mythology, like Jupiter (Zeus) or Mars (Ares)... what would you ask them? What do you want to know from them?



### Activity Ideas

1. Choose some gods or goddesses from Roman or Greek mythology that you might like to know more about.
2. Write down some simple questions you might to ask them.
3. Create a television 'talk show' set for a 15 minute show.
4. Decide who will be the host asking the questions and who will be the gods and goddesses.
5. Create your own TV Talk Show with your gods. Video it if you can, so you can share it with others.
6. Each person can get a chance to either host or be a god/goddess.



## Resources

- ❖ List of Gods and Goddesses from Ancient Greek and Roman mythology  
<http://rome.mrdonn.org/romangods/12gods.html>



## Curriculum Connections

### Fine Arts Standards

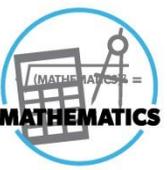
- ❖ **Creating**
  - 1: Generate and conceptualize artistic ideas and work.
  - 2: Organize and develop artistic ideas and work.
- ❖ **Performing/Presenting/Producing**
  - 6: Convey meaning through the presentation of artistic work.

### English Language Arts Practices

- ❖ E1: They demonstrate independence.
- ❖ E2: They build strong content knowledge.
- ❖ E3: They respond to the varying demands of audience, task, purpose, and discipline.



## Mission Six: Speaking Alien



In the movie *Close Encounters of the Third Kind*, there are five tones used to communicate with the Mothership.

<https://www.youtube.com/watch?v=S4PYI6TzqYk>

See the visual representation of the pitches used by clicking on this short video link (*Warning: Please turn the speakers down as this clip can sometimes play very loudly!*) <https://www.youtube.com/watch?v=kpsEqINeMS4>

Create and use a similar pattern of pitches to communicate with each other (or with the Mothership).

### Activity Ideas

#### Mission One: Create a Signal

Create and perform your own special signals to communicate to the Mothership. Be sure to think about how many pitches you want to use in your patterns. Even though the movie uses pitches from a **pentatonic scale** (a group of five notes within an octave. Example: *do, re, mi, sol, la*), you can use an original set of tones!



*Sing it!*

Use your voice to sing a short melodic pattern. What shapes can your mouth make to communicate your message clearly? Try experimenting with high and low pitches.

*Play it!*

Choose a melodic instrument to play a short musical pattern. Would you rather have melodic movement that uses stepwise movement or skips and leaps? Feel free to experiment with a variety of short and long sound durations.

*Draw it!*

Use colored pencils or crayons to represent the sound effects or pitches of your choice. How can you make a visual that portrays the sounds that you want the performers to evoke? After you draw it, share it with a friend to see if they can interpret your signal!

**Mission Two: Call & Response**

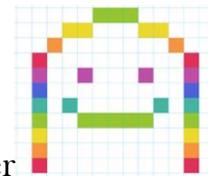
Now that you have experimented with sending your signal to the Mothership, work with a friend in order to perform **call and response form**. Decide who will “call” the Mothership with their original signal, and then the second person sends their “response” from the Mothership by replying with their own original idea.

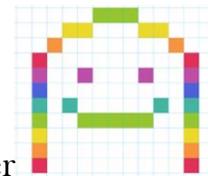
*Challenge: Using the same chosen tone set, see if you can turn it into a musical conversation by changing the order of pitches or rhythmic durations for as many musical phrases possible! Congratulations, you can now **improvise!***



## Resources

- ❖ Check out this scene from *Close Encounters of the Third Kind* to see how they communicate using pitches.  
<https://www.youtube.com/watch?v=S4PYI6TzqYk>
- ❖ Click here to see a visual representation of the pitches used in the movie.  
<https://www.youtube.com/watch?v=kpsEqINeMS4>
- ❖ Use your computer to access a virtual piano.  
<http://virtualpiano.eu/>
- ❖ This Google Doodle for Robert Moog's 78th birthday can be used as a virtual instrument that can be used to create melodic patterns. Change the mixer, oscillators, and filter in order to create a "space-like" sound!  
<https://www.google.com/doodles/robert-moogs-78th-birthday>
- ❖ Learn more about **call and response form** with this demonstration video using piano and drums.  
<https://www.youtube.com/watch?v=pxg4AP1MKDk>
- ❖ Chrome Music Lab is a free tech tool to create musical ideas!



Our favorites include: Melody Maker  or Song Maker 

<https://musiclab.chromeexperiments.com/Experiments>



## Curriculum Connections

### Fine Arts Standards

- ❖ **Creating**
  - 1: Generate and conceptualize artistic ideas and work.
  - 3: Refine and complete artistic work.
- ❖ **Performing/Presenting/Producing**
  - 5: Develop and refine artistic work for presentation.
- ❖ **Responding**
  - 8: Interpret intent and meaning in artistic work
- ❖ **Connecting**
  - 11: Relate artistic ideas and works with societal, cultural and historical context to deepen understanding.

### Math Practices

- ❖ M5: Use appropriate tools strategically.

### Science Practices

- ❖ S4: Analyzing and interpreting data.



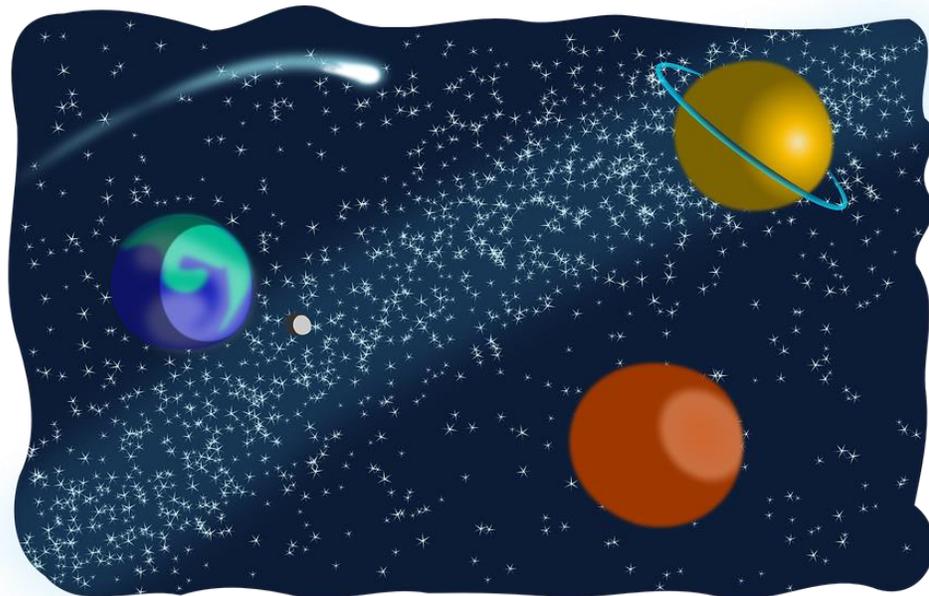
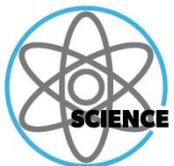
## Mission Seven: Math with Mars and Jupiter



Living on Mars and Jupiter is very different than on Earth. The force of gravity on Mars is less than  $\frac{1}{2}$  that of Earth, but Jupiter's is  $2\frac{1}{2}$  times greater than Earth. For example, if you weighed 100 pounds on Earth you would weigh only 38 pounds on Mars but over 250 pounds on Jupiter. So this means you can dunk a basketball on Mars, but you may have trouble standing up on Jupiter!



Danger! You would not be able to breathe on either planet. There is not enough oxygen in their atmospheres. You would need a space suit. You would freeze on Mars overnight without a space suit at minus 81 degrees. Worse on Jupiter at minus 234 degrees. Mars has 2 small moons. Mars is small too - about  $\frac{1}{2}$  the size of the Earth. Jupiter has over 53 moons. Jupiter is **HUGE** - How many Mars could fit inside Jupiter?





## Activity Ideas

How can you compare the relative sizes of these two planets? **MODEL IT!** Your job is to estimate how many marbles can fill a round container the size of a basketball. You can guess by estimation. Next try to use some math! Measure the diameter of a marble. Measure the diameter of a basketball. Use inches. Remember that the radius is  $\frac{1}{2}$  the diameter. Use the formula for the volume of a sphere:  $V = \frac{4}{3} \pi r^3$ , where  $V$ =volume and  $r$ =radius.

Radius of marble= \_\_\_\_\_

Radius of basketball= \_\_\_\_\_

Volume of marble= \_\_\_\_\_

Volume of basketball= \_\_\_\_\_

How do you compare the volume of a basketball to a marble? See how many marbles fit into the basketball. Use division! Did you get a number? That is a good model of how many Mars can fit into Jupiter. So now let's try to find the real answer. Use miles.

Radius of Mars= 2,106 miles

Radius of Jupiter= 43,441 miles

Volume of Mars = \_\_\_\_\_

Volume of Jupiter= \_\_\_\_\_

So how many Mars can fit into Jupiter? \_\_\_\_\_ Whoa!



## Resources

- ❖ What if our moon were replaced by some of the planets?

[https://www.youtube.com/watch?v=usYC\\_Z36rHw](https://www.youtube.com/watch?v=usYC_Z36rHw)

- ❖ Top 10 facts about Jupiter and Mars

<https://www.youtube.com/watch?v=BZnDB5VJiT8>

<https://www.youtube.com/watch?v=Prj5uxZOd2s>



## Curriculum Connections

### Fine Arts Standards

- ❖ **Creating**
  - 1: Generate and conceptualize artistic ideas and work.
  - 2: Organize and develop artistic ideas and work.

### Math Practices

- ❖ M1: Make sense of problems and persevere in solving them.
- ❖ M2: Reason abstractly and quantitatively.

### Science Practices

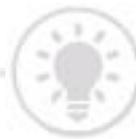
- ❖ S3: Planning and carrying out investigations.
- ❖ S4: Analyzing and interpreting data.



## Mission Eight: Sunrise Soundscapes



Imagine waking up early enough to see a beautiful sunrise. How would this SOUND to you?



### Activity Ideas

#### *Listen*

Listen to the opening of “Also Sprach Zarathustra” by Richard Strauss (<https://www.youtube.com/watch?v=ETveS23djXM>). Do you hear a sunrise or a sunset portrayed in the music? Describe what you hear in the music in order to justify your answer. Now, grab some yellow and orange scarves or decorate a paper plate as the sun and create a movement piece to accompany the music. Collaborate with a friend in order to expand the movements into something even **BIGGER** than before!

*Imagine*

Draw a picture of the most beautiful sunrise. Think about the landscape that surrounds the rising sun. Perhaps it is a salty ocean with large crashing waves, or a peaceful lake with mountains in the background. The location of your sunrise can be anywhere you can imagine!

*Create*

Click on this link to see video footage of an actual sunrise:

<https://mpt.pbslearningmedia.org/resource/ess05.sci.ess.eiu.riseset/observe-sunrise-and-sunset/#.W0ahhExFw2w>

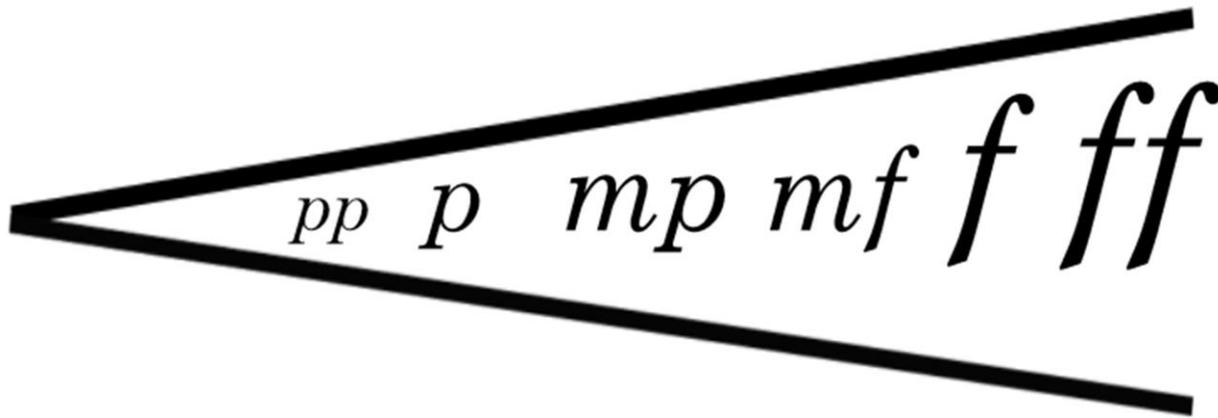
What environmental sounds would you hear to accompany the beautiful sights of the sunrise? Create these sounds using your voice or any environmental sounds that you can tap, shake, or scrape!

How can you explore the various **timbres** (tone qualities) of musical instruments that can represent the change from dark to light?

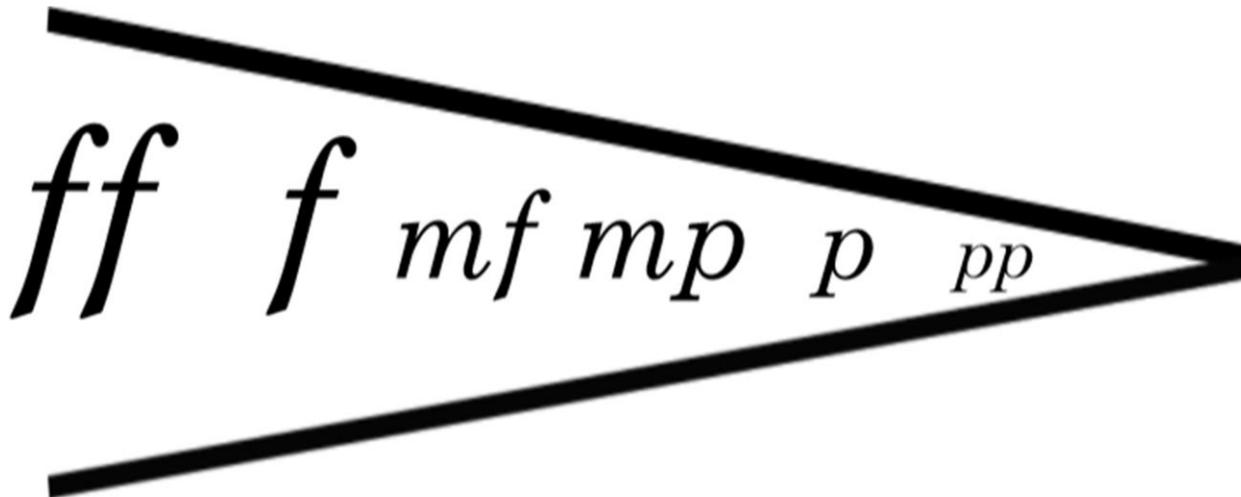
Use the **dynamics** (volumes) below to practice playing your instruments or adding your sunrise sound effects:



Crescendo - sunrise



Decrescendo - sunset





## Resources

- ❖ Not a morning person? Click here to see the sunrise (and even stay tuned to see the sunset)  
<https://mpt.pbslearningmedia.org/resource/ess05.sci.ess.eiu.risaset/observe-sunrise-and-sunset/#.W0ahhExFw2w>
- ❖ Click here to see the opening of the movie *2001: A Space Odyssey* using the music of Strauss and the image of a sunrise  
<https://www.youtube.com/watch?v=e-QFj59PON4>



## Curriculum Connections

### Fine Arts Standards

- ❖ **Creating**
  - 1: Generate and conceptualize artistic ideas and work.
- ❖ **Responding**
  - 7: Perceive and analyze artistic work.

### Science Practices

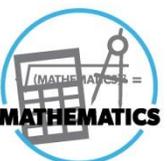
- ❖ S8: Obtaining, evaluating, and communicating information.

### English Language Arts Practices

- ❖ E2: They build strong content knowledge.
- ❖ E5: They value evidence.



## Mission Nine: The Golden Record



Imagine you could send a message to an alien from another planet. What would you tell them about life on Earth? What images would you show them? Make your own “Golden Record” of what you would launch into space for aliens to find!



### Activity Ideas

In 1977, a spacecraft called Voyager 1 was sent into space to explore our solar system. Although there were no people on board, Voyager 1 carried “The Golden Record”, a collection of images, sounds, music, and greetings in 55 languages to inform whomever may find it about life on Earth. One of the pieces of music was Beethoven’s Fifth Symphony, which you will hear at the concert.

Imagine NASA has asked you to create “The Golden Record”. What would you want aliens to know about Earth? Would you show them your house, a football field, your school, a violin, your best friend? Would you send them pop music, jazz, country, R&B, classical? Would you send them sounds of birds, car horns, sizzling bacon, or splashing water? What would you say to them? What language? Use the handout on the next page to plan your Golden Record.





**Think beyond!**  
List anything else you think  
should be included in the  
corners of this page

A large graphic of a vinyl record with many concentric rings. At the top of the record, there are three labels: "Sounds:", "Music:", and "Greetings:". In the center of the record, the text "The Sounds of Earth" is written in a serif font. Below this text is a small black circle representing the center hole, and further down is a line for the artist's name: "By: \_\_\_\_\_".

Put your ideas in each of the rings of the vinyl record. Use the back of this paper to draw any images you want to include in your record.

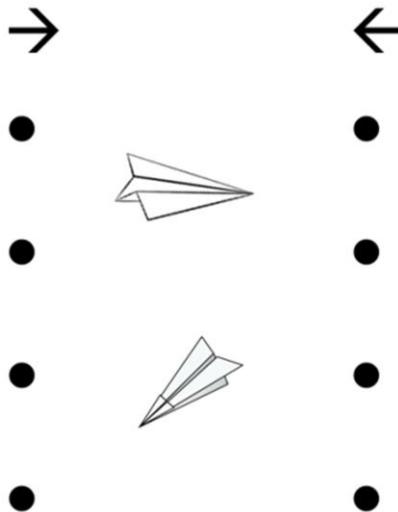


**Next Steps**

Record these sounds, record yourself saying your greetings, compile a playlist of these important songs, put your images into a PowerPoint presentation, anything you can imagine!

**Fun with Friends!**

Have everyone take their plan for their golden record and make it into a paper plane. Make two lines, spread out, and face each other. Fly your paper airplane across the room! Once all planes have landed, pick up a friend's golden record and unfold it carefully. Could you guess whose record it was if their name was not on it?





## Resources

- ❖ Website with information about Voyager 1 & its mission for travelling life beyond our solar system  
[https://kids.kiddle.co/Voyager\\_1](https://kids.kiddle.co/Voyager_1)
- ❖ NASA's website with all of the music, images, sounds, and greetings that were on the Voyager 1 ship.  
<https://voyager.jpl.nasa.gov/golden-record/whats-on-the-record/>
- ❖ Website with information about the Golden Record  
[https://kids.kiddle.co/Voyager\\_Golden\\_Record](https://kids.kiddle.co/Voyager_Golden_Record)



## Curriculum Connections

### Fine Arts Standards

- ❖ **Creating**
  - 1: Generate and conceptualize artistic ideas and work.
  - 2: Organize and develop artistic ideas and work.
  - 3: Refine and complete artistic work.
- ❖ **Performing/Presenting/Producing**
  - 5: Develop and refine artistic work for presentation.
  - 6: Convey meaning through the presentation of artistic work.
- ❖ **Responding**
  - 8: Interpret intent and meaning in artistic work.
  - 9: Apply criteria to evaluate artistic work.
- ❖ **Connecting**
  - 10: Synthesize and relate knowledge and personal experiences to make art.
  - 11: Relate artistic ideas and works with societal, cultural and historical context to deepen understanding.

### English Language Arts Practices

- ❖ E1: They demonstrate independence.
- ❖ E3: They respond to the varying demands of audience, task, purpose, and discipline.
- ❖ E4: They comprehend as well as critique.
- ❖ E6: They use technology and digital media strategically and capably.

### Mathematics Practices

- ❖ M3: Construct viable arguments and critique the reasoning of others.
- ❖ M5: Use appropriate tools strategically.
- ❖ M7: Look for and make use of structure.
- ❖ M8: Look for and express regularity in repeated reasoning.

### Science Practices

- ❖ S2: Asking questions (for science) and defining problems (for engineering).
- ❖ S8: Obtaining, evaluating, and communicating information.



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