



Using Arts Integration Resource Package: Sample Lesson Plans

This document provides a sampling of lesson plans utilizing Arts Integration strategies across the curriculum in a variety of ways. Additional Arts Integration activity ideas and lesson plans related to specific curriculum areas are available with many of our Curriculum Topic Resource Packages. Arts Integration lesson plans are also available as a Teacher Tool with many individual videos on our website.

Sample Lesson 1: Linking Music to Cultural Experiences

Type of Teacher Tool: Whole Class, Small Group, and/or Individually

Targeted Grade Level(s): 5-8, 9-12

Targeted Curriculum Areas: Social Studies, Culture, Music

Learning Objectives:

The learner will:

1. Engage in critical and creative thinking
2. Engage in interdisciplinary activities connecting music activities to cultures
3. Create musical compositions (raps and/or songs) that relate to specific cultures. Students can compose independently or in small groups.

National Standards:

1. Social Studies GLE/Component 5 TS7A.a. Identify, select, analyze, and evaluate resources to create a product of social science inquiry
2. Social Studies GLE/Component 5.R16.D.a. Analyze the preservation of cultural life, celebrations, traditions, and commemorations over time.
3. Social Studies Indicator/Proficiency 6-8.AH.2.G.A Analyze diverse cultures to explain the ways they adapted to their various environments
4. National Arts Standards AS#11 Relate artistic ideas and works with societal, cultural and historic context to deepen understanding

Resources/Materials Needed:

1. Video from Educate.Today website page where this Teacher Tool was found
2. Rhyming dictionaries
3. Rhythm instruments and keyboard (optional)

Teacher Instructions:

1. Choose a culture to study and view videos applicable from Educate.Today, such as the one on the website page where this Teacher Tool was found
2. Student(s) should write down interesting information they learn about the culture as they view the video and also notes about the people speaking in the video or artifacts shown.
3. Have students expand their study of the culture discussed in the video with their own research on the Internet and/or through other sources.
4. After viewing the video and completing their additional research, students should use the information from their notes to create lyrics to be used in the musical composition. Lyrics should reflect, explain, and/or illuminate specific concepts, events, people, locations of the culture being studied
5. Using their lyrics student(s) develop a musical composition choosing the genre, form, rhythm, meter, and other musical elements necessary for a composition. Instruments may be chosen as needed. The genre and form could be related to the culture studied or separate from that culture. **Note:** Rap may be the easiest genre to develop for many students.

Assessment/Evaluation Option

1. Perform musical compositions as a class. Analyze and evaluate both the musical elements and cultural accuracies.

Extension Activity:

1. Compile musical compositions (raps and/or songs) created by the students into a program to be presented to audiences. Enhance with video footage and other visuals, props, costumes, dances, and games representative of the culture studied.

Sample Lesson 2: Roller Coaster Rhythms

Type of Teacher Tool: Whole Group

Targeted Grade Level(s): 5-8/9-12

Targeted Curriculum Areas: Engineering/Music

Learning Objectives:

The learner will:

1. explore methods to design and build roller coasters
2. engage in critical thinking and creative thinking.
3. collaborate in creating an original song about roller coasters.

NATIONAL STANDARDS

Next Generation Science Standards

Middle School Physical Science • MS-PS3-1. Construct and interpret graphical displays of data to describe the relationships of kinetic energy to the mass of an object and to the speed of an object.

Structure and Function • High School: Investigating or designing new systems or structures requires a detailed examination of the properties of different materials, the structures of different compounds, and connections of components to reveal its function and/or solve a problem.

Fine Arts Music Creating

MU:Cr1.1.5b Generate musical ideas (such as rhythms, melodies, and accompaniment patterns) within specific related tonalities, meters, and simple chord changes

MU:Cr2.1.T.1a Select melodic, rhythmic, and harmonic ideas to develop into a larger work using digital tools and resources.

Resources/Materials Needed:

Various construction materials (paper, tape, balsa wood)

Assorted percussion instruments (cow bell, sand block, claves, drum sticks)

Videos listed below:

Physics-9 The Science Behind Roller Coasters

Engineering videos-19,-20,-21,-22,-23,-24,-25,-26,-27,-28,-29,-30,-31,-32,-33,-34,-35,-36,-37,-38

Teacher Instructions:

1. Have the class watch the video “Physics 9: The Science behind Roller Coasters” to learn about the science and engineering behind roller coaster design then discuss major concepts learned.
2. As you view the video above and the ones in small groups below, identify and record different rhythms of roller coasters heard in any of the videos.
3. Split the class into five groups and have each group watch four additional engineering videos about roller coasters, their design, materials used in building the, and additional science and engineering concepts involved with them.

Groups 1 Engineering videos 19,20,21,22

Groups 2 Engineering videos 23,24,25,26

Groups 3 Engineering videos 27,28,29,30

Groups 4 Engineering videos 31,32,33,34

Groups 5 Engineering videos 35,36,37,38

4. After viewing the videos, list the types of materials that are employed in building a roller coaster.

5. Using percussion instruments listed above plus any additional instruments of their own and information learned about roller coaster design, materials, and engineering principles from watching the videos, have students create an instrumental song that incorporates the sounds and rhythms of a roller coaster ride and its passengers.

Assessment/Evaluation Option

1. Student discussion explaining reasons for the rhythmic approach taken in their song.
2. Oral critique of the practicality of the accuracy of the rhythms in roller coasters.

Sample Lesson 3: Eyes and Ears Drama

Type of Teacher Tool: Small Group Activity

Targeted Grade Level(s): Grades 3-6

Targeted Curriculum Areas: Science, Language Arts, Drama

Learning Objectives:

The learner will:

1. engage in critical and creative thinking.
2. engage in interactive activities and discussion about the human senses of sight and hearing and how our eyes and ears operate
3. develop an answer for themselves to the question: “How can we better understand our senses of sight and hearing and the impact they make on our lives?”

National Standards:

1. English/Language Arts, Science and Literacy in History/Social Studies
Grades 3-6 College and Career Readiness Anchor Standards for Speaking and Listening
4. Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience.
2. National Core Arts Standards Theatre Grades 6
THCr2-6 b Contribute ideas and accept and incorporate the ideas of others in preparing or devising drama/theatre work.

Resources/Materials Needed:

Anatomy 1: Explore! The Human Body: Eyes and Ears Program 1

Anatomy 2: Explore! The Human Body: Eyes and Ears Program 2

Anatomy 3: Brain Speed

Anatomy 4: The Human Eye

Anatomy 5: How Eyes See Color

Teacher Instructions:

1. Have the group watch and discuss Anatomy videos 1 or 2 and 3, 4, and 5
2. Have the group develop ideas for a play in which an eye and an ear argue with the brain about which is the most important sense for a human being.

Extension Activity Options:

1. Have the group write and perform the play for a class.

Assessment/Evaluation Options:

1. Have the students develop a list of criteria for selecting the ideas that best explain the value of the eyes and ears.
2. Assess the dramatic structure, character development, and dialogue of the play scene created

Extension Activity Assessment:

1. Have the class discuss the content of the play performed and which sense was best represented.

Sample Lesson 4: Expressing Understanding Through a Graphic Novel

Type of Teacher Tool: Whole Class and Individual Activity

Targeted Grade Level(s): 5-8, 9-12

Targeted Curriculum Areas: Visual Arts, Language Arts, curriculum area of chosen video

Learning Objectives:

The learner will:

1. select and organize visual images.
2. create a graphic novel that demonstrates an understanding of information learned.

National Standards:

Visual Art VA: Cr2.38A

Select, organize, and design images and words to make visually clear and compelling presentations

Additional applicable standards from other curriculum areas can be determined by the video(s) chosen for this activity. Those additional State and National Standards related to the content of our videos listed below for this lesson are provided on the Educate.Today page where you find the video.

Resources/Materials Needed:

4. Video from Educate.Today website page where this Teacher Tool was found
5. Paper, colored pencils, or a digital tool (tablet, computer, phone)

Teacher Instructions:

3. Decide if you wish students to create their graphic novels from the same video(s) you show the class as a whole or if you wish students to independently view videos you have chosen.
4. Have the class as a whole or individual students watch and discuss the video from the Educate.Today web page where this Teacher Tool was found and any additional videos from the site you find applicable and appropriate to include in their study.
5. As they watch the video(s), have students take notes on:
 - a. interesting and/or important information they learn in the video.
 - b. people, places, objects in the videos that could become images in a graphic novel.
 - c. themes or conflicts they identify.
6. After viewing the video(s), students should look over their notes and begin to create a graphic novel that expresses what they learned. If you have chosen to do this as a whole class activity, students could be broken into small groups to create their graphic novel or could create them individually. Have them consider the following:
 - a. Characters in the graphic novel could be individuals and/or objects seen in the video or people created specifically for the play
 - b. Location for scenes in the graphic novel could be the location in the video, a location referred to in the video, or another appropriate location of the group's choice.

- c. Dialogue the characters speak should include information learned in the video(s) that the group believes is vital to making sure others, who read their novel but have not watched the video(s), understand the important concepts, ideas, themes, etc. the students learned while watching the video(s).
 - d. The length of each graphic novel will vary depending on the video(s) selected and information shared.
7. Instruct the student(s) to sketch the images in the graphic novel and develop appropriate dialogue. Once they have determined the final order for the images in their novel, they can choose to put finished images and dialogue on individual sheets of paper or to fold paper into smaller parts and place images and dialogue in those smaller boxes.
 8. After the images are drawn instruct students to add language to each page/square as needed to complete their graphic novel.

Assessment/Evaluation Options:

1. Have students share their graphic novels with each other or turn in to you for evaluation and assessment.
2. Evaluate how well the graphic novel reflects the information students learned in the video(s).
3. Evaluate visual images on their clarity, appropriateness, and artistic expression by yourself or with the assistance of a visual arts teacher.
4. If this activity has been done individually in its entirety and you choose to have students evaluate each other's work, give students the opportunity to watch the video(s) associated with the graphic novel they will be evaluating.

Variation on the Assignment:

Use this activity with a unit plan on a chosen concept or subject and select different Educate.Today videos for students to watch that deal with that subject or concept. Once students complete their individual graphic novels, have them share with each other and create one class-wide graphic novel that incorporates elements of each student's individual novel into the finished class novel.

Extension Assignment:

1. Make copies of the novel and distribute to the class or with students in another class.
2. Share graphic novels with a professional artist to learn more about what it would take to actually create the product and successfully market it.

Sample Lesson 5: The Golden Ratio

Type of Teacher Tool: Whole Class, small group, individual

Targeted Grade Level(s): 9-12

Targeted Curriculum Areas: Visual Arts, Math, STEAM

Learning Objectives:

How is the principle of the Golden Ratio present in works of art and design?

The learner will:

1. explore and discuss examples of the Golden Ratio (also called ‘phi’ or the Fibonacci Sequence).
2. view video examples of artists whose work demonstrates the golden ratio.
3. observe and recall information regarding the mathematical properties of the Golden Ratio.
4. create a piece of visual art through a chosen medium that demonstrates the Golden Ratio. Mediums might include painting, drawing, sculpture, logo design, or any approved artistic medium of the student’s choosing.

Featured National Standards:

1. NCCAS Standards
 - a. VA:Re7.2.Ia: Analyze how one’s understanding of the world is affected by experiencing visual imagery.
2. Common Core Math Standards for High School: HSF-IF.A.3 Functions Interpreting Functions
 - a. Understand the concept of a function and use function notation
Recognize that sequences are functions, sometimes defined recursively, whose domain is a subset of the integers.

Resources/Materials Needed:

1. [Classroom Package # 6](#) has a large variety of video that could be used for this activity. Here are some clips that illustrate the Golden Ratio, but there are many others depending on your purpose
 - a. [Visual Arts 131: Meet the Artist–Laura Lloyd](#)
 - b. [Visual Arts 138: Meet the Artist–Nicario Jimenez](#)
 - c. [Visual Arts 196: Advice for Young Artists—One Artist’s Perspective](#)
 - d. [Visual Arts 205: Leslie Laskey and Mark Travers at Bruno David Gallery](#)
 - e. [Visual Arts 207: The Evolving Sculpture and Animation of Oliver Laric at SLAM](#)
2. Images or items that represent the Golden Ratio (Fibonacci Sequence) such as shells, flower heads, etc.
3. Rulers and calculators.

Teacher Instructions:

6. Pass out the items or images to small groups of students and invite them to explore them and observe the Golden Ratio. Give them time to share their findings. They should be familiar with the concept ahead of time.
7. Move on to the selection of videos. Play the video and pause when the art piece is filling the frame. Engage the students in identifying the concept in the artist's work. Invite them to go to the screen and trace it out. Check to see if a single piece has more than one example. Many art pieces do.
8. Using a worksheet similar to the one attached, ask the groups to figure out mathematically how the squares relate to each other. Demonstrate on the board if needed.
9. Come back to the whole group and discuss each small group finding.
10. Allow students time to plan and brainstorm their art piece that will represent the mathematical concept of the Golden Ratio, and to choose their mediums. Give them sufficient class time to complete the artwork.
11. Mount an art exhibit and have the students present their concept. They should be able to discuss the Golden Ratio and it's presence in their design.

Extension Activity:

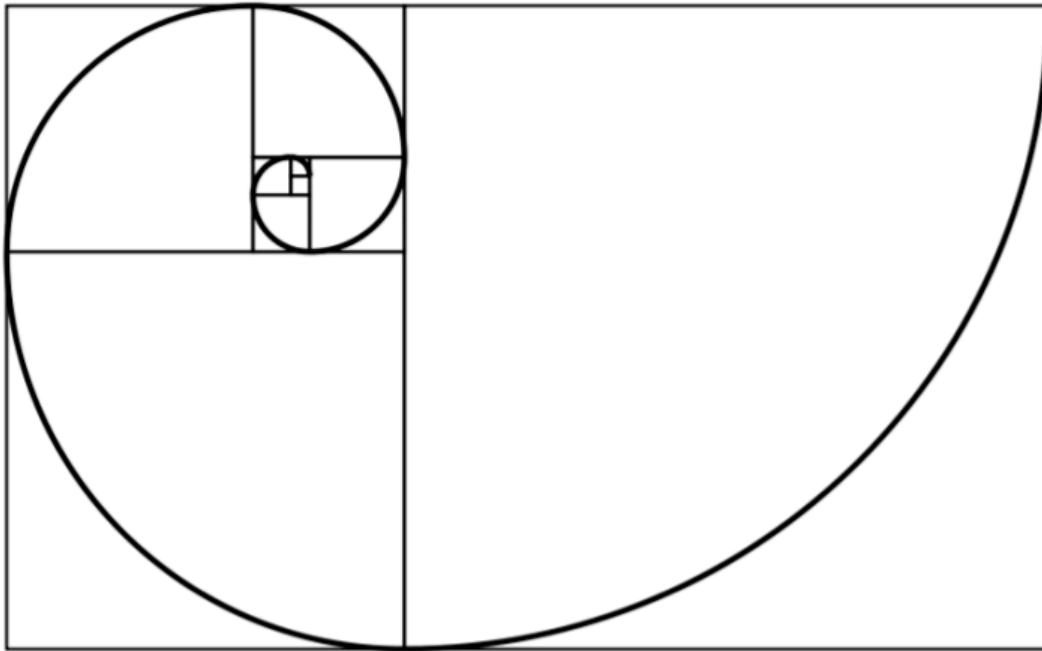
2. Have students start by thinking about the Golden Ratio (ϕ) in nature and then brainstorm engineering designs that mimic nature and the golden ratio as found nature (called biomimicry). For example, spiral fans and pumps that reflect the same shape as a nautilus have been found to increase the efficiency of energy, and buildings.
3. Take measurements of people's faces and bodies to see how closely the averages conform to ϕ and how it affects the way people are perceived as being beautiful. It is recommended to use digital photos and doing the measurements by pixel within a photo editing program.
4. Explore fractals and Penrose tiling with a simple generator found here.
<http://www.stephencollins.net/Penrose/Default.aspx>

Assessment/Evaluation Option

3. Assess the artwork based on how well the work represents understanding of the Golden Ratio.
4. Students can use the square (represented on the worksheet) or other means of measurement to illustrate their use of the formula, and they should also be able to write about it to explain their thinking.

Discovering Phi: The Golden Ratio activity — Brainstorming Squares Brainstorming Squares!

Take a good look at the picture below. How, mathematically, do all those squares relate to one another? Sure, they make a beautiful, organized picture, but there is much more to it than that! You and your partner have five minutes to make measurements of those squares and try to find out how they relate to each other. For example, can you add the lengths of two squares to equal the length of another square? Or can you subtract the length of one square from another square and have that equal the length of a third square? Find out!



Mathematical observation #1:

Mathematical observation #2:

Mathematical observation #3:

https://www.teachengineering.org/content/nyu_/activities/nyu_phi/Attachments/nyu_phi_activity1_brainstormingsqs_v2_tedl_dwc.pdf