

ARTS INTEGRATION LESSON FRAMEWORK (ARTS/OTHER DISCIPLINE)

Title: Finding Patterns in life		Grade: 3-5
Subject/Content Area & Art Form: Science, Music *Note: This lessons should be done with both a music and science teacher.		Lesson Duration: Varied
Driving Question: Patterns are everywhere in nature and music people create. Where can you find patterns that are predictable?		
Connected Objective: At the end of this lesson, students will know how patterns can be identified and predicted, be able to identify patterns in science and music, and create a pattern using rhythm and small percussion.		
Subject/Content Area Objective Students will know: How to identify patterns in natural phenomenon. Students will be able to: Create a diagram or chart which demonstrate the pattern in nature.		Art Form Objective Students will know: How to identify patterns in music by listening for repeated sections and sounds that mark a certain dance move. Students will be able to: Create a musical piece that demonstrates a repeating pattern and use either standard or improvised notation to document their music.
Subject Area Standard(s): Social Studies CC.1.R.I.3, CC.1.R.I.7 Science 3-LS1-1. Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death. 4-ESS1-1 Identify evidence from patterns in rock formations and fossils in rock layers to support an explanation for changes in a landscape over time. 5-ESS1-2 Represent data in graphical displays to reveal patterns of daily changes in length and direction of shadows, day and night, and the seasonal appearance of some stars in the night sky.	Art Elements: MU:Cr1.1.3, 4, 5 b.Generate musical ideas (such as rhythms and melodies) within a given tonality and/or meter. MU:Cr2.1.3, 4, 5 a.Demonstrate selected musical ideas for a simple improvisation or composition to express intent, and describe connection to specific purpose and context. b.Use standard and/or iconic notation and/or recording technology to document personal rhythmic and melodic musical ideas. MU:Pr6.1.4, 3, 5 a. Perform music, alone or with others, with expression and technical accuracy, and appropriate interpretation.	21st Century Skills: (Choose skills that apply to lesson) <ul style="list-style-type: none"> <input type="checkbox"/> Creativity & Innovation <input type="checkbox"/> Critical Thinking & Problem Solving <input type="checkbox"/> Collaboration & Teamwork <input type="checkbox"/> Communication <input type="checkbox"/> Cross-cultural Understanding

Formative Assessment(s): Create a chart, diagram or model that demonstrates patterns in nature.

Summative Assessment(s): Create a musical piece that follows natural patterns. Notate the music using either traditional notation or the natural model, chart or diagram.

Lesson Materials/ Preparation:

- Science materials
- Internet connection to watch **Melodic Planet video**
- Paper, poster or other writing surface for diagram, chart or model, music notation
- Musical instruments- variety of small percussion

Lesson Steps/Strategies for Learning

- **Introduce:** Where can you find patterns? Make a list of all the observable patterns students can name. What about patterns in nature? What about patterns in music? Art?
- **Engage:** Watch the **Melodic Planet video** interview with Danny Richardson and Rich Senegal. Focus on the section on music composition from 13:33-18:02 and look for patterns in the regalia decoration (art) from 24:15-27:10. Write a chart or diagram to show the patterns. (See below for an example)
- **Build Knowledge: Science**
- **3rd Grade:**
 - Describe the unique and diverse life cycles of plants and animals.
 - Develop a model to identify the common stages between organisms (birth, growth, reproduction, death)
- **4th Grade:**
 - Create an explanation of the idea that landscapes change over time.
 - Use evidence to support the claim that different types of fossils (marine and land) can be found in different rock layers because of different occurrences of Earth's forces.
 - Use reasoning to support the claim that specific patterns of rock layers and fossils indicate that the landscape has changed over time.
- **5th Grade:**
 - Analyze and interpret data and graphical displays of daily and seasonal changes cause by Earth's movement.
 - Describe the following patterns: the apparent motion of the sun from east to west, the day and night cycle, shadow lengths, and length of seasons.
 - Distinguish between Earth events such as rotation and revolution which occur at different rates.

- **Build Knowledge: Music**
- Create a picture of one of the songs in the video. The picture or chart should include that the song starts at a high pitch and then gets progressively lower. The picture should also include a marker for the honor beats- when one person hits the drum louder and off beat from the other drummers.
- Look up “powwow songs” on youtube and choose a video to watch. Did the song follow the same or a similar pattern? If not, make a new picture or chart to show the flow of this new song.

- **Deepen/Assess Understanding: Using the chart or diagram which shows a pattern in nature, assign a sound to each marker. Using musical instruments, play the sounds as a musical piece, repeating the music several times to demonstrate that it is a repeated pattern.**

- **Apply: Record the piece and share with the class.**

- **Reflect: What patterns were common? Unique? Which sounded best as a musical piece?**

EXAMPLES: Each one can be done as an individual project or small group.

3rd Grade: Looking at the life cycle of a specific animal, make a chart showing each stage. Assign an instrument and/or melodic or rhythmic pattern to each stage. Notate the musical pattern using traditional or creative notation. Play through one life cycle. As each new generation of this animal is born, will the music change? Get louder? Faster? Slower? Etc. Notate any changes and then play through several life cycles. Record your composition or play it live for your class.

4th Grade: Create a model that shows different layers of the earth and note how each is different or the same. Assign a musical instrument, sound or ostinato to each layer. Notate your composition using traditional notation or create a new one. Play your musical idea so that it follows the layers of earth. Are there repeated sections? Or did you create a new ostinato or sound for each unique layer? Record your composition or play it live for your class.

5th Grade: Have students draw a picture of each season, winter, spring, summer, fall. Assign an instrument or ostinato to each season. Notate your composition using traditional notation or create a new one. Play through the pattern several times to demonstrate how the seasons rotate through the year. You can also use a looping program like Incredibox to compose your seasonal composition, make sure each season has specific music to identify it. You can listen to Antonio Vivaldi’s composition “The Four Seasons” as an extension. Record your composition or play it live for your class.
