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Integrated learning solutions

EXPLORING PLANE FIGURES THROUGH MUSIC COMPOSITION

Grade Band: 2-3

Content Focus: Music & Math



LEARNING DESCRIPTION

In this lesson, students will compose speeches to demonstrate their understanding of plane figures and perform them using body percussion in rondo form as whole-class composition.

LEARNING TARGETS

Essential Questions	"I Can" Statements
How can music composition help us understand mathematical concepts?	I can create and accurately perform an original speech composition about a plane figure and perform it in rondo form.
What is rondo form in music?	I can create and accurately perform a body percussion ostinato.

GEORGIA STANDARDS



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Curriculum Standards	Arts Standards
<p>Grade 2: Math 2.GSR.7: Draw and partition shapes and other objects with specific attributes and conduct observations of everyday items and structures to identify how shapes exist in the world. 2.GSR.7.1 Describe, compare and sort 2-D shapes including polygons, triangles, quadrilaterals, pentagons, hexagons, and 3-D shapes including rectangular prisms and cones, given a set of attributes.</p> <p>ELA ELAGSE2W2 Write informative/explanatory texts in which they introduce a topic, use facts and definitions to develop points, and provide a concluding statement or section.</p> <p>Grade 3: Math 3.GSR.6: Identify the attributes of polygons, including parallel segments, perpendicular segments, right angles, and symmetry. 3.GSR.6.1 Identify perpendicular line segments, parallel line segments, and right angles, identify these in polygons, and solve problems involving parallel line segments, perpendicular line segments, and right angles.</p> <p>ELA ELAGSE3W2 Write informative/explanatory texts to examine a topic and convey ideas and information clearly. a. Introduce a topic and group related information together; include illustrations when useful to aiding comprehension. b. Develop the topic with facts, definitions, and details. c. Use linking words and phrases (e.g., also, another, and, more, but) to connect ideas within categories of information. d. Provide a concluding statement or section.</p>	<p>Grade 2: ESGM2.PR.1b. Echo simple singing and speech patterns. ESGM2.PR.2b. Perform steady beat and simple rhythmic patterns with appropriate technique using body percussion and classroom instruments. ESGM2.RE.1 Listen to, analyze, and describe music.</p> <p>Grade 3: ESGM3.PR.1b. Echo simple singing and speech patterns and perform call and response songs. ESGM3.PR.2b. Perform steady beat and simple rhythmic patterns with appropriate technique using body percussion and classroom instruments. ESGM3.RE.1 Listen to, analyze, and describe music.</p>

SOUTH CAROLINA STANDARDS

Curriculum Standards	Arts Standards
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Grade 2:

Math

2.G.1 Identify triangles, quadrilaterals, hexagons, and cubes. Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces.

ELA

WRITING - Meaning, Context, and Craft

Standard 2: Write informative/explanatory texts to examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content.

2.1 Explore print and multimedia sources to write informative/explanatory texts that introduce a topic, use facts and definitions to develop points, and provide a concluding statement or section.

Grade 3:

Math

3.G.1 Understand that shapes in different categories (e.g., rhombus, rectangle, square, and other 4-sided shapes) may share attributes (e.g., 4-sided figures) and the shared attributes can define a larger category (e.g., quadrilateral). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.

ELA

WRITING - Meaning, Context, and Craft

Standard 2: Write informative/explanatory texts to examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content.

2.1 Write informative/explanatory texts that:

- a. introduce a topic clearly;
- b. use relevant information from multiple print and multimedia sources;
- c. provide a general observation and focus;
- d. group related information logically;
- g. develop the topic with facts, definitions, concrete details, quotations, or other

Anchor Standard 1: I can arrange and compose music.

Anchor Standard 3: I can sing alone and with others.

Anchor Standard 6: I can analyze music.



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information and examples related to the topic;
k. use precise language and domain-specific vocabulary to inform or explain the topic

KEY VOCABULARY

Content Vocabulary	Arts Vocabulary
<ul style="list-style-type: none">● <u>Plane figure</u> - A flat, closed figure that is in a plane; may be composed of straight lines, curved lines, or both● <u>Vertices</u> - A vertex (plural: vertices) is a point where two or more lines, edges, or rays meet● <u>Polygon</u> - A geometric shape that has more than two sides	<ul style="list-style-type: none">● <u>Rondo</u> - A form of composition in which the first section recurs throughout the piece, alternating with different sections (e.g., A-B-A-C-A, etc.); found especially in compositions of the Baroque and Classical eras● <u>Ostinato</u> - A repeated pattern (plural: ostinati)● <u>Body Percussion</u> - Sounds produced by striking or scraping parts of the body; typically includes snapping, clapping, patting, and stamping● <u>Phrase</u> - Musical sentence or unit, commonly a passage of four or eight measures; a dependent division of music, much like a single line of poetry in that it does not have a sense of completion in itself

MATERIALS

- Plane figure cards (individual cards with one figure on each)
- Large paper and markers
- Visual of four 8-beat phrases
- Visual of text for section A of the rondo to be displayed after chant is learned
- Sound source (iPod, iPhone, computer, speakers, etc.)
- Recording of musical composition in rondo form (or create your own using found sounds or body percussion)

INSTRUCTIONAL DESIGN

Opening/Activating Strategy

- Perform two sounds, some of which are the same (e.g., clap-clap) and some of which are different (e.g., tap-clap).
- Have students identify what they hear as the same or different.



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- Explain that students will be focusing on hearing parts that are the same and parts that are different.
- Play a musical composition in rondo form, challenging students to listen for repeated sections.
 - To help students hear the same and different sections, you may want to have them keep the beat one place for the A sections, a different place for the B section, and a different place for the C section (e.g., A = pat legs, B = clap, C = tap shoulders).
- Identify the form heard in composition as rondo form. Use letters to help students understand the same and different sections (e.g., A B A C A). Explain that students will now become composers of their own piece to illustrate rondo form.

Work Session

- Have students establish a simple 2- or 4-beat body percussion ostinato (e.g., pat-clap or pat-clap-clap-clap).
- While students perform the body percussion ostinato, teach the following chant by rote (teacher speaks, students echo). You may also want to have a visual displayed to aid reading.

*Plane figures are around us everyday.
Just count the sides and angles to see what's on display.
Vertices and angle size, they're important too,
So let's gather 'round and see what you can do!*

- To facilitate student success in learning the chant aurally, begin by speaking the entire chant, then speak the first phrase (first 8 beats) and have students echo.
 - Continue speaking each phrase and having students echo.
 - Then combine two phrases (16 beats) and have students echo.
 - Once students are comfortable with 8- and 16-beat phrases, speak the entire chant.
 - This becomes the A section of the class composition.
- *Teacher note: If maintaining the body percussion ostinato while saying the chant is too difficult, have one group perform the ostinato while the other group speaks.*
- Analyze the structure of the chant (32 beats long with the last word on the last beat 7). A visual such as follows may be helpful in guiding students' analysis.

1	2	3	4	5	6	7	8
1	2	3	4	5	6	7	8
1	2	3	4	5	6	7	8
1	2	3	4	5	6	7	8

- To help students understand the chant's length and structure, point to each number while speaking the chant.
- Analyze the rhyme scheme of the chant, marking on the visual of the chant to facilitate understanding.
 - Teachers may want to use one color marker for "everyday" and "display" and a different color marker for "too" and "do."



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- Divide students into small groups. Give each group a card with a plane figure on it.
 - Have students create a chant about their plane figure (rectangle, triangle, square, trapezoid, quadrilateral, hexagon, etc.).
 - Their chant should be the same length and use the same rhyme scheme as the A section (e.g., 4 phrases of 8 beats each; rhyming words at the end of phrases 1 and 2; different rhyming words at the end of phrases 3 and 4).
 - Have ample space in the room so student groups can move far enough apart during the creating process to enable careful listening and minimize distraction from other groups.
 - Have students write their chants (text only) on large paper. Writing their composition in 4 lines may facilitate understanding of the 4 phrases.
 - Combine compositions with the original chant to create a rondo form. The original chant is the A section while the student creations become the alternating sections.

Closing/Reflection

- Have students find a “rondo” pattern in the classroom (e.g., poster - wall - poster - window - poster = A B A C A).
- Have students describe rondo form in their own words.
- Challenge students to find other examples of rondo form in music.

ASSESSMENTS

Formative

Teachers will assess students’ learning by observing students’ engagement and participation while the class identifies the same and different sections of music, performs a body percussion ostinato to accompany speech, identifies the rhyme scheme of a chant, and creates sentences and say them over 8 beats.

Summative

CHECKLIST

- Students can create and accurately perform an original speech composition about a plane figure using the prescribed form.
- Students can create and accurately perform a body percussion ostinato to accompany the speech composition.

DIFFERENTIATION

Acceleration:

- Have students record their creations.
- Have students create additional sections about different plane figures.
- Challenge students to create and notate simple melodies for their text.
- Have students listen to music in rondo form to discern the different sections.
- Have students transfer their spoken text to body percussion (e.g., clap the rhythm of the words rather than speaking the words).



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- Experiment with and discuss various textures in music. For example, have half the students maintain the ostinato while the other group performs their chant on body percussion; then have only the chant performed on body percussion. Discuss what happens to the texture as other parts are added or deleted.
- To connect to dance, have students create movement compositions to share while they say their chant.

Remediation:

- Rather than creating a rondo, have students work together to create one section about a plane figure. The form then becomes A B A (with the A section being the chant initially presented and the B section being the newly created chant).
- If writing a 32-beat chant is too challenging, use the first half of the chant as the A section, thereby making the chant 16 beats long. Alternating sections then will be 16 beats long (rather than 32 beats).
- If keeping the body percussion ostinato on two levels (pat-clap) is challenging, have students keep the beat on one level (e.g., pat legs).

ADDITIONAL RESOURCES

- Websites such as rhymezone.com may be helpful in finding rhyming words.
- Short pieces in rondo form include “Fossils” by Camille Saint-Saens (ABACA), “La Raspa” (ABACADA), “Für Elise” by Ludwig van Beethoven (ABACA), “Rondo alla Turca” by Wolfgang Amadeus Mozart, and “The Entertainer” by Scott Joplin (Introduction ABACA).
- YouTube includes recordings of music that also show the rondo form.
- [Rondo Form video](#)

**This integrated lesson provides differentiated ideas and activities for educators that are aligned to a sampling of standards. Standards referenced at the time of publishing may differ based on each state’s adoption of new standards.*

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