<table>
<thead>
<tr>
<th>Program Title: Science and Shadow</th>
<th>Teaching Artist Name: Nyssa Collins</th>
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<tr>
<td>Grade Level: 2-12</td>
<td>Maximum Student Participants: 25</td>
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<td>Length of Program: Total Days: 1 day Length of session(s): 60-90 minutes</td>
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<tr>
<td>Arts Focus: Shadow Puppetry</td>
<td>Curriculum Focus: Ecology</td>
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Primary Learning Goal(s):
*(What should students learn during this residency, workshop, or performance?)*
- Learn about the tradition of shadow puppetry
- Learn how to make paper puppets and bring them to life with overhead projectors
- Study the networks that link living things (which may include): food chains, ecosystem diversity, species relationships, biomes, and human influence
- Illustrate a concept of ecology using shadow puppetry

Connecting NC Essential Arts Standard
Identify at least one NC Essential arts standards being addressed by the program and primary learning goal.

3.CX.2 Understand the interdisciplinary connections and life applications of the visual arts.
   - 3.CX.22 Understand how to use information learned in other disciplines, such as math, science, language arts, social studies, and other arts in visual arts.

4.CX.2 Understand the interdisciplinary connections and life applications of the visual arts.
   - 4.CX.2.3 Understand individual roles, while applying collaborative skills in creating art.

5.V.2 Apply creative and critical thinking skills to artistic expression.
   - 5.V.2.1 Evaluate solutions to artistic problems, including their effectiveness
   - 5.V.2.3 Create realistic, imaginative, abstract, and non-objective art.

Connecting Common Core State Standard(s)
Identify at least one common core standards in math or language arts being addressed through your residency for the grade level specified above.

**CCSS.ELA-Literacy.RI.2.3**
Describe the connection between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text.

**CCSS.ELA-Literacy.RI.3.7**
Use information gained from illustrations (e.g., maps, photographs) and the words in a text to demonstrate understanding of the text (e.g., where, when, why, and how key events occur).

Connecting NC Essential Standard(s)
Identify at least one NC Essential science, social studies, information & technology, healthful living, or world languages standards being addressed by the residency and primary learning goal.

5.L.2 Understand the interdependence of plants and animals with their ecosystem.
   - 5.L.2.1 Compare the characteristics of several common ecosystems, including estuaries and salt marshes, oceans, lakes and ponds, forests, and grasslands.
5.L.2.2 Classify the organisms within an ecosystem according to the function they serve: producers, consumers, or decomposers (biotic factors).
5.L.2.3 Infer the effects that may result from the interconnected relationship of plants and animals to their ecosystem.

Program Overview (Describe the activities you will present each day of the residency, or for the timeframe of the workshop/performance in order to develop participant understanding of the primary learning objective and the connecting arts and core curriculum standards. (Include approximate length of each activity).

Workshop Outline:
Introduction to shadow puppetry – history, materials, equipment; mini puppet show – 20 minutes
Ecology research, show outlines, finding puppets, rehearsing – 30 minutes
Ecology shadow show performances! – 20 minutes

Materials: List materials that will be required to conduct this program.
Overhead projectors (1-2)*
Shadow puppet screen*
Shadow Puppets*
Ecology research materials
(optional: for extended time workshop that includes making shadow puppets –
Cutting mats
Xacto Knives/Scissors (depending on grade level)
Sticks for puppet rods
Black cardstock)

*provided by artist

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<th>Teacher Involvement</th>
<th>Program Evaluation</th>
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<td>Teacher(s) role: Describe the role of the classroom teacher before, during, and/or after the sessions and activities. Before the workshop, the teacher will do ecology research with the class to provide a basic understanding of concepts necessary for the workshop. During the workshop, the teacher will assist with research, editing shows for clarity, accuracy, and simplicity, and help facilitate teamwork. After the workshop, the teacher may reflect with the class and use extension materials to extend this method of research and presentation into new areas of ecology or learning.</td>
<td>Evaluation Tool(s): Describe how you will evaluate your program’s success. Address at what points you will check in throughout the residency to determine student learning and participation levels. The workshop will be determined a success if the culminating presentations clearly show a concept from ecology and are presented in a way that demonstrates good teamwork and understanding of the artform. Students’ work will be checked/given opportunities for revision at different points prior to this: 1. As they are doing research, 2. As they are outlining their show, 3. During rehearsal for their show.</td>
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**Teacher-Artist Orientation:** Outline your orientation checklist, including any questions, suggestions, collaboration ideas and any information you will provide to teachers/staff as part of this program. Prior to the workshop, teacher and artist will communicate about classroom age/ability level, time availability, and current subjects studied in ecology and science. Teachers will be sure sufficient materials for research are on-hand.

**Extension Activities:** Describe the tools you will leave behind for teachers and staff to develop and implement after you have left the classroom.

Teachers will be left with additional research worksheets and show outline worksheets so students may research additional areas and illustrate new aspects of ecology – a comic strip is one great way! Teachers will also receive a small manual on shadow puppetry as a resource for the classroom, so that they may create further puppet shows!

**Resources:** List resources consulted or used during the residency (books, DVD’s, music, web resources, and other supporting materials)
Ecology literature (print or online)

**Space Requirements:** Standard classroom

**Technical Needs:** Access to electricity

**Program Variations Available:** Describe any flexibility in the program or other variations of the program offered, etc.
- Workshop can be extended to 2 hours or multiple days to give students the opportunity to actually make shadow puppets (in one hour form, students are only able to select from premade puppets)
- Workshop topics can be vastly varied to include many concepts from literature, social studies, science, and math. This needs to be discussed in advance, though, for the puppets to be adequately prepared.

**Additional Comments:**