

## ARTS IMPACT PROJECT BASED LEARNING UNIT PLAN

### Dance and STEM Infused PBL Unit

#### *Save the Salmon!*

Authors: Katie Tabor, Carly Groszhans, Rebecca Adams, with Debbie Gilbert      Grade Level: 2<sup>nd</sup>

**Project Idea:** Salmon life cycle, habitats, challenges salmon face and solutions are expressed through dance.

#### **Driving Question:**

How can we help our salmon survive to spawn again?

#### **Unit Summary (Completed at end of project. Use for sharing out public product.)**

We engaged in a dance-infused project based learning unit in which we are trying to solve the challenge of helping salmon survive. We discovered many challenges salmon face at every life stage and habitat. We created a dance to communicate how we can help overcome those challenges.

### Learning Targets and Assessment Criteria

**Target:** Understands the different stages and challenges during the life cycle of a salmon.

**Criteria:** Shows understanding through a properly labeled written diagram of life cycle of salmon. Includes what habitats salmon live in and challenges the salmon face at each stage.

**Target:** Dances stages and their challenges and solutions in the salmon life cycle.

**Criteria:** Uses dance concepts to demonstrate what can harm and help the egg and alevin and fry in the river OR the smolt in the estuary OR the adult/spawner in the ocean traveling back upstream home to the river.

**Target:** Works collaboratively.

**Criteria:** Communicates ideas to others, makes compromises, and incorporates input/feedback.

#### Vocabulary

##### Arts:

Levels, shape, self-space, general space, spatial relationships, smooth, sharp, speed

Tableaux, choreography

##### Arts Infused:

Cycles, model, beginning, middle, end

##### STEM:

Stages of life cycle: egg, alevin, fry/fingerling, smolt, adult, spawner

Body: egg sack, yolk, size, color

Habitat: fresh water river, brackish water estuary, salt water ocean, cold, clean, shallow, deep, oxygen, current, flowing, rocks, redd (nest), gravel, roots

Challenges: dams, fish ladders, predators, prey, pollution, logging, overfishing, urban development, storm water runoff

##### Social Emotional Learning:

Compromise, collaborate, feedback/input

##### 21<sup>st</sup> Century Skills:

Collaborate

Communicate

#### Materials

##### **Resources (Websites, experts, texts)**

Mr. Dan, Ms. Kate Ayer (maker space & technology)

Jessica Staire the music teacher

Salmon in schools people can come and do presentations

Salmon release field trip

Salmon tank

##### **Museum Artworks or Performance**

*Snow White* Pacific Northwest Ballet, March 23<sup>rd</sup>, 2018

##### **Materials**

Salmon eggs, salmon tank

Books in Spanish and English

Poster paper

Markers

Space to dance

Musical speakers

Technology—dvd videos, ipads to record

Science journals

Class assessment worksheets, self assessment worksheets, peer assessments

Resources on teacher share drive

GLAD strategies (laminated color photos, anchor charts)

## Standards to Drive the Inquiry

### Arts

#### WA Arts Learning Standards

For the full description of each anchor standard and the grade level performance standards, see:

<http://www.k12.wa.us/Arts/Standards>

Anchor Standard 1: Generate and conceptualize artistic ideas and work.

Performance Standard (DA:Cr1.1.2): a. Explore movement inspired by a variety of stimuli (for example, music/sound, text, objects, images, symbols, observed dance, experiences) and suggest additional sources for movement ideas. b. Combine a variety of movements while manipulating the elements of dance.

Anchor Standard 2: Organize and develop artistic ideas and work.

Performance Standard (DA:Cr2.1.2): a. Improvise a dance phrase with a beginning, a middle that has a main idea, and a clear end. b. Choose movements that express a main idea or emotion, or follow a musical phrase. Explain reasons for movement choices.

Anchor Standard 3: Refine and complete artistic work.

Performance Standard (DA:Cr3.1.2): a. Explore suggestions and make choices to change movement from guided improvisation and/or short remembered sequences.

Anchor Standard 5: Develop and refine artistic techniques and work for presentation.

Performance Standard (DA:Pr5.1.2): a. Demonstrate a range of locomotor and non-locomotor movements, body patterning, and dance sequences that require moving through space using a variety of pathways. b. Move safely in a variety of spatial relationships and formations with other dancers, sharing and maintaining personal space. c. Repeat movements, with an awareness of self and others in space. Self-adjust and modify movements or placement upon request.

### Science, Technology, Engineering

#### Next Generation Science Standards

<http://www.nextgenscience.org/search-standards>

#### Disciplinary Core Ideas

LS1.B: Growth and Development of Organisms

Reproduction is essential to the continued existence of every kind of organism. Plants and animals have unique and diverse life cycles.

#### Scientific and Engineering Practices

Obtaining, Evaluating, and Communicating Information

Developing and Using Models

Obtaining, evaluating, and communicating information

#### 21st Century Skills

<http://www.p21.org/our-work/resources/for-educators>

- Communication: *Actively listens; expresses ideas – visually/physically/verbally; responds to others*
- Collaboration: *Communicates ideas to others; makes compromises; and incorporates input/feedback*
- Growth Mindset: *Takes risks; embraces alternative possibilities; work develops over time*

## Teacher Project Planning

(Questions for teachers.)

1. *What will the entry event be to launch this unit?*

Release the salmon eggs in the tank; ask kids:

**“How can we help our salmon survive to spawn again? !!!”**

2. *What resources might we need?*

*(Experts, fieldtrips, texts, websites, data, equipment, materials)*

Invite *Salmon in Schools* people to present to class

Nature Vision

Salmon tank—people to clean and monitor....

Duwamish Tribe Member (River Cleanup Coalition)

Aquarium Field Trip to salmon exhibit

Books in Spanish and English about Salmon

Field trip to release salmon (Salmon in Schools)

Salmon videos (Netflix documentary)

Mariela Salcedo (former 2<sup>nd</sup> grade teacher at Concord has Spanish translations)

How to incorporate this into Math? (count the fish)

3. *What is the duration of this unit?*

4-6 weeks

4. *What will be group work?*

Choreography, research different parts of life cycle (expert groups)

*What will each individual student do?*

Read, write, research, self evaluate

5. *What will the formative assessments/moments for reflection be?*

*(Journal entries, plans, outlines, rough drafts, sketches, turn and talk, physical brainstorm, idea mapping, diagramming)*

Diagram of life cycle with habitat and challenges of salmon noted, self assessment, science journals, dance drafts

6. *What will the summative assessment/ public product be?*

*(Performance, exhibition, publication, public presentation, website, installation)*

Dance performance

## Facilitating Student Understanding of the Problem

(Questions to guide student inquiry.)

1. *What do we know about this problem before we begin?*
2. *What do we need to learn in order to solve it?*
3. *Where will we look for resources?*
4. *Who is our audience? Who will be helped by our solution?*
5. *How will we share our solution?*
6. *How will we assess our own learning?*

## PBL Unit Outline of Inquiry

(Begin each step with a question. Follow that with a brief description of what students do to address the question.)

### 1. What is the salmon life cycle? What is the salmon's habitat?

- The students research different stages of life cycle and the habitats at each stage in expert groups.
- The students will present their research so that the other groups can obtain the information (students will take notes).
- The students will make shapes for stages of life cycle (work with group).
- The students create a diagram of the life cycle independently in science journal.

Student reflection and assessment: Shows understanding through a properly labeled written diagram of life cycle of salmon. Includes what habitats salmon live in and challenges the salmon face at each stage.

### 2. What are the challenges the salmon face at each stage?

- The students will read and watch videos about challenges that the salmon face (predators, pollution, habitat destruction). They will write and sketch in their science journals.
- Students brainstorm, research, and discuss the challenges.
- Students will warm up with BrainDance.
- The students will make shapes that reflect the challenges at each stage (activate tableaux). Students/teachers document shapes in photos.

☑ Student reflection and assessment: Photographs shapes in tableaux and makes sketches with labels in Science journal.

### **3. How can you communicate through dance?**

- The students will review dance concepts from K and 1<sup>st</sup> grades with dance with Debbie (levels, shapes, self and general space, time, speed).
- The students will review dance skills (mirroring, shadowing).

☑ Student reflection and assessment: Demonstrates understanding of dance concepts and skills.

### **4. How can we collaborate?**

- The students articulate criteria for collaboration (e.g. offering ideas for movements, compromising, incorporating feedback).
- The teacher videotapes the process.
- Students self-assess collaboration in writing.

☑ Student reflection and assessment: Communicates ideas to others, makes compromises, and incorporates input/feedback.

### **5. How can you demonstrate the different stages of the life cycle and the challenges through dance?**

- The students collaborate in groups to create a dance that demonstrates a stage of the life cycle. Each class is in charge of 2 different stages and a habitat. In the classroom, students will work in small groups to brainstorm different ideas. (DANCE FIRST, makes shapes and movements for beginning, middle, end, THEN, what kind of music, what props do we already have that we could use i.e. ribbons, drums, maker space etc,).

#### **Ms. Carly in the river**

- Eggs
- Alevin

#### **Ms. Katie on the way to the estuary**

- Fry
- Smolt

#### **Ms. Adams to the ocean/return home**

- Adult/Spawner

- Each dance has a challenge (storm water runoff, pollution, dams. etc.) and a solution presented.
- Students create posters showing beginning, problem, solution.
- Videotape several versions of the dance and show the dances for feedback and input for rehearsal.

☑ Student reflection and assessment: Uses dance concepts to demonstrate what can harm and help the egg and alevin and fry in the river OR the smolt in the estuary OR the adult/spawner in the ocean traveling back upstream home to the river. Communicates ideas to others, makes compromises, and incorporates input/feedback.

## **6. How can we help the salmon?**

- The students will collaboratively identify the biggest threats to salmon and what WE can do to help them survive.
- The students will collaboratively determine an audience for their new knowledge. They will discuss a product for sharing their knowledge: public service—posters, storm drain spray paint on ground, presentations to classes, video public service announcement...Students can come up with ideas.

☑ Student reflection and assessment: Determine product and audience. Communicates ideas to others, makes compromises, and incorporates input/feedback.

## **7. Presentation: Who is the audience? How will we communicate our message through dance?**

- The students decide for whom they want to perform their dance. Family? School? Community? Local government?
- The students perform dance together as 2<sup>nd</sup> grades.

☑ Student reflection and assessment: Uses dance concepts to demonstrate what can harm and help the egg and alevin and fry in the river OR the smolt in the estuary OR the adult/spawner in the ocean traveling back upstream home to the river. Communicates ideas to others and makes compromises and incorporates input/feedback.

## 8. What is my personal commitment to protecting the salmon?

- The students release the salmon in the stream.
- The students sign a pledge to promise to do their part to protect the salmon we have released into the world.

Student reflection and assessment: Signs pledge to protect the salmon.

### Public Product/Sharing

Who is our audience?

Each other (2<sup>nd</sup> grade classrooms)

Family? School? Students will decide.

Begin with a question, followed by the description of the culminating event that shares the learning from the PBL unit.

*How do we as a class want to communicate our message:*

*How can we help our salmon survive to spawn again?*

Dancers communicate their learning and message through sharing their dance with the selected audience.

**ARTS IMPACT LESSON PLAN Dance and STEM Infused PBL Unit**

Grade 2: *Save the Salmon!*

**CLASS ASSESSMENT WORKSHEET**

The following assessment checklist can be used along with other assessment tools developed by teachers and students.

Disciplines	SCIENCE	DANCE/SCIENCE	21 <sup>st</sup> CENTURY SKILLS	Total
Concept	Life Cycle	Choreography	Collaboration	3
Criteria	Shows understanding through a properly labeled written diagram of life cycle of salmon. Includes what habitats salmon live in and challenges the salmon face at each stage.	Uses dance concepts to demonstrate what can harm and help the egg and alevin and fry in the river OR the smolt in the estuary OR the adult/spawner in the ocean traveling back upstream home to the river.	Communicates ideas to others, makes compromises, and incorporates input/feedback.	
Student Name				
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				
Total				
Percentage				

*What was effective in the unit? Why?*

*What do I want to consider for the next time I teach this unit?*

*What were the strongest connections between arts discipline and STEM?*

Teacher: \_\_\_\_\_

Date: \_\_\_\_\_

Arts Impact Arts and STEM Infusion PBL 2017-2018

**Katie Tabor, Rebecca Adams, Carly Groszhans; Concord International; SAVE THE SALMON!**

### ARTS AND STEM INFUSED PBL UNIT: *Save the Salmon!*

---

Dear Family:

We are engaged in a **dance-infused project based learning unit** in which we are trying to solve this challenge:

**Driving Question:**

How can we help our salmon survive to spawn again?

- We asked, "What are the different stages and habitats of a salmon?"
- We discovered that there are many challenges our salmon face at every life stage and habitat.
- We created a dance to communicate what the challenges are how we can help overcome them.
- We identified an audience for our dance and message and performed our dances.

At home, you could extend the learning by asking your child what you as a family can do to help save the salmon.