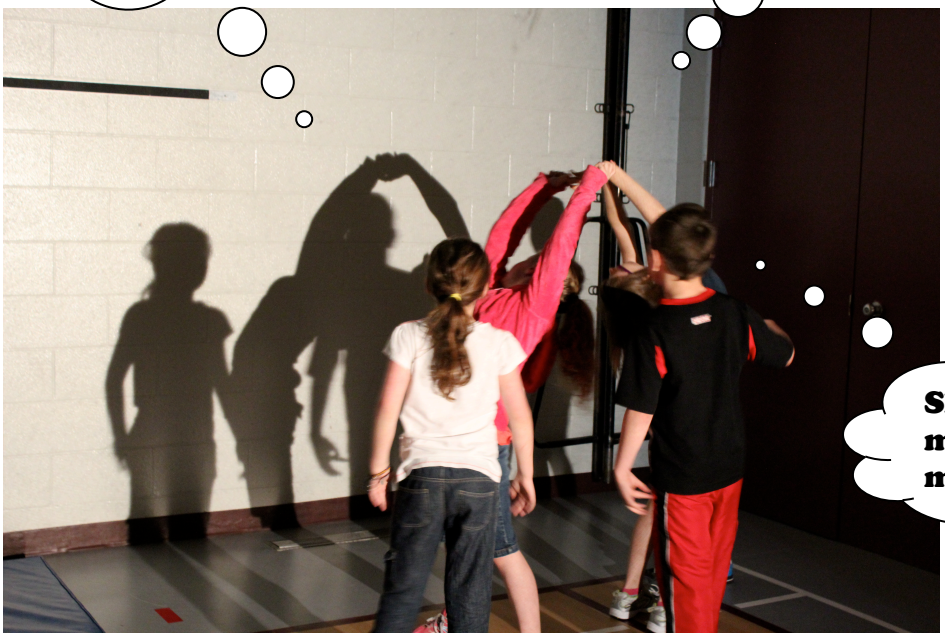
Seeing Dance through Light

4

Essential Question:
How can concepts about light be expressed through dance?

I can solve problems using inquiry in dance and science.

Dance concepts can be related to science concepts



Shadows help me see shape more clearly.

Created by
Ashley Johnson &
Sarah Roche
Living Sky School Div
Dancer in Residency
program

Abstract: this unit will explore the connections between concepts and vocabulary in both Dance and Science with a focus on light and body.

Grade 4

Dance & Science

Outcomes:
CR 4.1
CP 4.2
LI 4.2

Living Sky School Division no. 202

I. Curriculum

Dance:

CR 4.1 Analyze how dance, drama, music, and visual art works represent unique ideas and perspectives.

- Analyze and describe how various arts elements and techniques are applied in own and others' arts expressions.

CP 4.2 Express ideas using the elements of dance including: actions

- **body (body parts leading movements)**
- **dynamics (duration, speed, and force continuum)**
- **relationships (alone, partner, small groups)**
- **space (asymmetrical and symmetrical shapes, creating and recalling pathways).**
    - Identify and use the elements of dance (actions, body, dynamics, relationships, and space) to express ideas.
    - Demonstrate various ways that body parts may initiate (lead) a movement.
    - Copy movement phrases as demonstrated, and create own movement phrases.
    - Create a variety of dance relationships, alone (e.g., body parts to body parts, using a prop), with a partner (e.g., mirroring, beside), and in small groups (e.g., meeting and parting).
    - Recognize that alignment means the relationship of body parts to each other, and practise proper alignment.

Science:

LI 4.2 Analyze how light interacts with different objects and materials to create phenomena such as shadows, reflection, refraction, and dispersion.

- Pose questions about the interaction of light with different materials (e.g., How are shadows formed? How can we change the direction of light? What colours are in light?).
- Investigate how light interacts with various objects to determine whether the objects cast shadows, allow light to pass, and/or reflect light.
- Classify materials and objects as opaque, transparent, or translucent based on personal observations.
- Design and carry out a fair test of the reflective properties of surfaces of different shapes and textures (e.g., mirrors, flat foil, crumpled foil, white paper, coloured paper, and spoons)
- Develop simple conclusions about the reflective properties of surfaces of different shapes and textures based on observation and experimentation.
- Demonstrate and describe how transparent media of different composition and shape (e.g., prisms, plastic blocks, glasses of water, and lenses) are used to change the direction of light.

II. Overview

Big Ideas:

Using my body to express concepts helps me to connect across curriculum.

Inquiry through dance and scientific experimentation helps me solve problems.

Interacting and manipulating light increases awareness of the way I move.

Essential Questions:

How can I use dance elements to express light vocabulary?

How does the light on a stage change the dance?

How can I create a dance using what I know about how light affects dance?

Students will know:	**Students will do:**
Lighting affects dance creation and experiment some simple lighting design. Common vocabulary and concept of light and dance. Science concepts can be expressed and understood in different ways through dance, experiments, and language.	Explore the properties of light using dance elements and vocabulary that crosses both light and dance Create dances to demonstrate the properties of light and the elements of dance

III. Assessment Plan

Formative	Summative
Pre assess knowledge of science concepts and vocabulary regarding light. Pre assess knowledge of dance concepts and vocabulary. Practice dance language and elements as a group Explore creating dance phrases Use crossover dance and science language to talk about phrases. Use an exit card to show the connection between light and dance. Example: Demonstrate reflection with your body. Use language and the body to demonstrate vocabulary of light. Example: transmit, absorb, reflect. Watch and respond to the interaction of both the body with the light source. Watch and respond, using light specific vocabulary (opaque, transparent and, translucent), to the interaction of objects with the light source. Observe how light changes due to the interaction of objects with the light source and respond using light specific vocabulary (opaque, transparent, translucent).	**Performance Task** *Create/show dance phrases with a beginning, middle and end.* *Create a lighting design using concepts of translucency, opacity, and reflection.* **Summative:** Respond to someone else's dance using the language of light and dance.

IV. Learning Plan

Introduce: dance vocabulary and concepts related to light.

Each lesson is structured in a five-part lesson plan format –

Part 1 – Introducing the concept and warm up

Part 2 – Exploring the concept

Part 3 – Skill development

Part 4 – Creation and improvisation

Part 5 – Cool down

Lesson 1: Seeing Dance through Light
1.5 hours

Pre-Assess :

1. Determine prior knowledge by brainstorming and recording what students already know about concepts about light.
2. Physically demonstrate ways to interpret the meaning of specific words ex. reflect, transmit, absorb, using gesture.
3. Brief discussion of why light is important in dance or on stage; what does it do? (Provides light, tells audience where to focus, creates mood/atmosphere/scene.)

Five Part Lesson Plan:

1. **Warm-up**

Brain Dance - Use the concepts of **active** and **passive** in the alternating patterns with active body and passive body.

Briefly discuss what fully active and fully passive might look like in the body. Using the metaphor of a dimmer switch turned fully on and fully off, have the students experiment what it may look like in their bodies if the dimmer was to move up and down.
Reflection - When are we active? When are we passive?

2. **Exploring the concept**

Spotlights-

Holding a imaginary spotlight, the teacher moves around the room shining the spotlight on different body parts and moving it through different levels. Students must stay in the spotlight and dance whatever of the body the spotlight is shining on.

"The spotlight is on your shoulder" (Only shoulder moves)

"The spotlight is moving toward the floor" (move to a low level)

Teacher can hold hands up and move around room. Remind the students they each have their own spotlight and do not need to crowd to a particular 'spotlight.'

Shape Museum –

Students divide in two groups, half left in the space, (museum) and half outside of the museum. Students in the museum create shapes on a variety of levels and other half dance into the museum when music begins. Dancers find a statue to reflect. Statue then dances away. The person left behind makes a new shape and will be reflected by another student.

Variation: Students reflect with the opposing energy as the statue. Ex. Statue is in a passive shape. Reflection is in an active shape.

3. **Skill Development/ Creating**

Traveling between spots-

What direction does light travel in? What direction are you going to travel in to stay in the light?

Four hoops are set up in a row (can have multiple rows so multiple groups going at once). Students create a shape in each hoop, using variety of levels, and active or passive bodies. Can travel with locomotor actions between hoops.

This process is done once in full light and a few times with projectors behind the dancers so they can see their shadows grow as they approach the wall.

Reflection:
Discuss what students observed with projectors and shadows in terms of size, clarity, and shapes.

4. Cool Down

Mirror, Mirror -

Students stand facing each other and slowly begin to mirror each others movements. This is done very slowly and often begins in a lead and follow relationship and progress onto both following.

Lesson 2: Seeing Dance through Light
1.5 hour lesson

Critical viewing:

View videos of stage dance that has clear use of lights and ability to see and then discuss the following –

- direction of the source
- shapes the light is making in space
- how light is creating and/or affecting the space. ex Creating warm or cool tones with colour
- use of gobos to create atmosphere
- how the light can divide the space.

Five Part Lesson Plan

1. **Warm-up**

TAR (transmit, absorb, reflect) –

Students stand in circle and pass the light with gestures to represent the words, **T**ransmit (a sending action), **A**bsorb (a taking-in action), **R**eflect (reflect the action of the person who sent the light).

Students explore sending and receiving with variety of body parts and on different levels. Students can work up to building speed or eventually not having to use words with their gestures.

2. **Exploring the concept**

Shape Museum - Variation: Puzzle Pieces

Introduce the concept of negative space in the body when making a shape. Ask students to look for the areas of restricted space (between arms, legs, etc). Once

they have identified the space have them fill by creating a shape that fits in their partners puzzle piece.

Students divide in two groups, half left in the space (museum) and half outside of the museum. Students in the museum create shapes on a variety of levels and other half dance into the museum when music begins.

Dancers fill in the empty space of a statue. Statue then dances away to fill the negative space of another statue. The person left behind makes a new shape.

3. **Skill Development/ Creating**

Traveling Spots

Spots are staggered and the projector is set-up behind the spots. One student is frozen in each spot. Another student travels through the spots and makes a combined shape using negative space with the dancer in the hoop.

4. **Reflection**

Observe and respond to the shadow shapes.

What happens to the shape as it gets farther away from the light?

How does the light source affect where the shadow is?

Lesson 3: Seeing Dance Through Light
1.5 hours

Introduction

Review and respond

What is the purpose of light in dance? Light manipulates focus and creates mood

Watch youtube video *'Shadowland'*

Observe the play of bodies and light

What can be created using light, how?

1. Warm up

Brain Dance with reflection and shadow using the projectors

Using the projectors have the students run through the BD patterns while observing their own shadows on the wall and floor.

What do I need to do with my body to create the shadow I want?

2. Exploring the Concept

Sculptures

Review concepts of negative space and using levels in shapes and sculptures.

Separate the students into groups of four or five start with one student making a shape in the center and have the other students enter one at a time, make shape. Once all students are part of the sculpture have them leave one at a time, dissolving the sculpture.

3. Skill Development

Add in the projectors and have students observe their shadows.

Using sculptures and shadow experiament shrinking and growing (changing levels), changing size (depth moving forward and back) and dissolving the sculpture (moving through space).

4. Creating

Create a phrase in groups using the following outline:

1. Neutral Shape (a shape that creates one single shadow, the group looks like a whole)
2. Sculpture (transition into a shape with many sides and negative space)
3. Dissolve (each student moves through the space to leave the group)

5. Reflection

Show and respond to each groups dance

Introduce concepts of light design for next class using opaque and translucent objects on the projector to make a 'set' or 'scene' on our wall to shadow dance on.

Lesson 4: Seeing Dance Through Light
1.5 hours

1. Warm Up

TAR (transmit, absorb, reflect)

2. Exploring the Concept/Skill Development

Review concepts of negative space and shadow (depth, clarity).

Review phrase outline, neutral shape, sculpture, and dissolve.

Review opaque and translucent concepts with projector, experiementing with different objects and liquids to see the effects.

3. Creating

Create a set design using homemade 'gobos' on the projector.

Examples –

Water with food colouring, soap, oil, people blowing through straws to move colours,
Paper cut in designs, wood blocks, clear colored blocks, crinkled paper, feathers, sticks, pipe cleaners, string.

Put set up and practice dance.

4. Reflection/Assessment

Pair groups up and have them give feedback to each other.
What mood did your dance create? Could you see the three distinct parts? What dance concepts did you see being used? What concepts of light were being used in both the dance and the light design?