



Light Up the Stage

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This curriculum unit is recommended for:
Dance Grades 6-8.

Keywords: elements of dance, time, space, energy, levels, shapes, pathways, mirroring, directions, angles, ripples, canon, rondo, entrance, exit, reflection, refraction, absorption, waves, wavelength, ground state, excited state, sustained, and percussive movement, locomotor movement, non-locomotor movement and scattering.

Teaching Standards: See [Appendix 1](#) for teaching standards addressed in this unit.

Synopsis:

This curriculum unit focuses on the relationships between the vocabulary of the science of light and the vocabulary of dance elements and composition. The unit explores how to embody the science vocabulary through movement exploration. Students will learn how color and light affect dance performances and the choreographer's purpose and intent for a particular piece. In the unit, the students will explore the elements of dance, learn, and implement specific dance vocabulary and use choreographic principles, structures and concepts. The students will explore improvisational skills to develop their phrases. Students will work cooperatively in groups and make decisions as a cohesive team. The students will be immersed in the choreographic process and will make contributions to a dance piece that will be performed in the dance concert. In this unit, students will partner a dance term with a science of light term to create their phrases. This unit supports students' understanding of the various perspectives through which dance can be appreciated in the context of time, space, energy, body, and relationships. This unit focuses on using a variety of thinking skills to analyze and evaluate dance. Specifically, this unit includes a lesson on how to analyze the relationship between dance elements when observing dance and how to interpret the meanings of dances created by their peers.

*I plan to teach this unit during the coming year to **120 Dance students in Grades 6 and 7 and the students in the Special Education Extensions program.***

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Introduction

I work as a Dance Educator at Bradley Middle School in Huntersville, North Carolina. As a dance teacher, I teach six classes each semester, three on A days and three on B days. My unit can easily be adapted for other subject matters and grade levels, specifically Science.

I will teach the Curriculum Unit to eight classes, four from sixth grade, and four from seventh grade. My classes include students from the Extensions Special Education program.

My unit will focus on the relationship between dance and light. My first focus will be on the similarities between the terminology and how the science of light vocabulary can become embodied through movement. My second focus will be on the ways that light can interact with matter and how its use and variety affect the mood and the overall performance aspect of a dance or dance program.

Part one of the unit will focus on how light and color affect the mood of a dance piece and how light affects performance within the stage space including the use of costumes, sets, props, lighting, and overall design. Part two will explore the relationship between dance vocabulary and science of light vocabulary. Students will explore how reflection relates to mirroring, how waves relate to ripples and canon, how ground state, excited state and energy compare and scattering as it relates to speed, pathways, directions, angles, and formations. Part two will also explore how these terms can be used in choreography and movement within the dance space. Part three will focus on self, peer, and group assessment to revise choreography.

This unit can easily be adapted for other subject matters and grade levels. The elements of dance concepts can be applied to other vocabulary and disciplines.

Rationale

This unit is designed to teach students important curricular connections between the science of light terminology and dance. It explores opportunities for students to learn science vocabulary with dance vocabulary and a movement-based embodied approach. The unit will explore the similarities between dance vocabulary and science vocabulary. Students will learn the elements of dance, dance vocabulary, choreographic principles, structures, and processes and how light and color can have such a profound effect on the overall presentation of dance. I am creating this unit to help facilitate the choreographic process of creating dances based on ideas, feelings, experiences, and images and that there are clear connections with dance and concepts from other curricular areas, specifically, science.

Most students already have a frame of reference for some type of dance performance, whether it be in person at the theater, through television, social media, or the movies. Light has a huge effect on the overall performance quality of dance or a dance performance. There are many ways to use light for this purpose and the students will explore these concepts.

Focusing on the similarities between the Dance and Light terminology, the students will learn to embody the vocabulary of light and explore lessons through a movement-based approach. My goal is to increase understanding and retention of the concepts within both disciplines. Students will create choreography that represents a similar dance and science word. Students will create a costume for their performance.

Once the students have completed their choreography, the students will be videotaped for a pre-assessment. As a class, the students will watch and evaluate their dances and receive feedback from their peers. After watching the pre-assessment videos and receiving feedback, the students will make changes and revisions based on the feedback. Students will revise their choreography for a final performance. Students should make sure their dances contain the dance elements of time, space and energy and relationships. The dance should have a clear beginning, middle and ending. The dances should have a clear start and stop, as well as an entrance and exit. Students will present the final revised version of their dances and will be recorded. The students will complete a second self, peer, and group assessment.

This unit will provide opportunities for the students to analyze each other's work. The students will gain experience interpreting the meaning of dances created by their peers as well as analyzing the relationships between the dance and science elements. The feedback gained from analysis and assessment can be used to refine, revise, and make changes to the pieces. Improvements made to the students' dances will be rehearsed and presented again for a final showing. Peer evaluations assist students in thinking critically about the different ways to solve and approach problem solving.

Demographics

Bradley Middle School is located in suburban Huntersville and has 1125 students in grades 6-8. The student population brings together students from the suburban areas of Huntersville, urban areas of northwest Charlotte, lake communities and rural farmland. Bradley is a balanced population both racially, economically, and socially. Bradley offers Cambridge, Honors and Standard level courses. Bradley has a strong elective program, active community support and many extracurricular activities. Bradley has a 50% male and 50% female population. The demographic breakdown for race is 5% Asian, 30% Black, 25% Hispanic, and 35% White and 5% mixed or other.

The majority of the students come to middle school with little to no formal dance training or experience in a formal dance setting. They work best when given specific ideas and directions for creating movement. Since I will teach many of the same students in 7th and 8th grade, it is imperative that the students have a strong foundation of the elements of dance, understand dance terminology and have experience with basic choreographic processes during class. Although these students have little formal training, the students at Bradley are generally eager to learn, enjoy being active and have chosen dance as an elective. The students enjoy creating choreography and all students can be successful in dance regardless of prior experience or training.

Objectives

My first objective is for students to fully understand the impact lighting, color and costuming can have on a dance performance or a dance piece. Students will have the opportunity to explore options for presenting their work, evaluate their work and gain feedback on the presentation process. Students will be able to develop movement vocabulary, explore connecting shapes in space and try new ways to move and structure movement together. My second objective is for students to be able to create a complete dance that has a clear beginning, middle and ending, incorporates numerous elements of dance and integrates the vocabulary of light. The students should be able to explain in detail how they used each specific term and why they came to that conclusion for their piece. My third objective is for students to learn to work well with others and develop strong cooperative learning skills. Students need to compromise and make choices regarding their work. My final objective is for students to complete self, peer and group assessments and refine their performance based on constructive feedback.

Unit Goals

- Students will create and perform a dance inspired by the relationship between dance vocabulary and the science of light vocabulary.
- Students will understand and apply the elements of dance and use a variety of dance vocabulary to choreograph their dance.
- Students will gain a deeper understanding of light, the science of light and how light affects the mood and performance of a dance piece as well as costuming to enhance the performance.
- Students will learn and embody important and relevant science vocabulary.
- Students will journal about their reasons for selecting certain movements for their choreography.
- Students will gain experience with peer, self, and group assessments and how they can refine their movement based on those suggestions.
- Students will use choreographic principles, structures, and processes to create dances that communicate ideas, experiences, feelings, and images.
- Students will understand the role of improvisation in choreography.
- Students will create short dances that have a beginning, middle, and end, and that vary the use of the dance elements.
- Students will use collaborative and cooperative skills to contribute constructively to the creation of dance.
- Students will use safe and respectful behaviors as a dance class participant.
- Students will use concentration and focus while dancing.

- Students will understand how self-assessment, teacher feedback, and peer feedback can be used to refine dance performance.
- Students will analyze the relationship between dance elements when observing dance. Students will interpret the meanings of dances created by peers and others.
- Students will make connections between dance and concepts in other curricular areas.

Content Research

Dance Education in public schools is by its very nature clearly embodied. The concepts students will gain from their dance education experience should be ones that further the development of dance movement skills, help foster creation and performance experiences, provide ways to connect other concepts and disciplines to dance, encourage integration of other subject matter, and evoke critical responses to dance and shared dance experiences.

This unit is best taught in the middle of the semester. The unit may take ten to twelve class days but can be shortened. If the unit is taught early enough in the semester, students can perform their choreography at the end of the program Dance Concert. Students will have had an opportunity to learn and explore important dance concepts and will have developed a broader range of movement vocabulary. Students will have gained knowledge of the elements of dance, choreographic structures and processes and had opportunities to perform in front of their peers. In addition, students will have had experience working in groups, collaborating with their peers, developing movement phrases, refining choreography, and making decisions about the final structures of their work.

In addition to basic dance concepts and ideas, the structure of group placement and the pairing of group members is key to success. Ideally, at the end of the semester the students will have participated in multiple choreographic exercises and cooperative learning group projects. At this point, students will have gained experience with compromise, collaboration, decision making, and staying within the boundaries of the group. Group selection should be very purposeful. Students should be paired so as to create an environment of cohesion, on task behavior and maximum time on task. In addition to group selection, it is important to rotate the groups within the room itself. The movement, change of location, proximity to the teacher, and proximity to the mirror are helpful tools for the students. These steps assure that the students will see things differently depending on their location within the dance space.

Sixth graders are entering middle school for the first time and most of these students enrolled in my dance class have little to no formal dance experience. Teaching these students movement vocabulary and facilitating their ability to create and develop their own movement vocabulary is crucial. I have found it best to layer broader concepts with specific dance vocabulary and give very specific details and parameters within the choreographic framework of all assignments. I spend a lot of time in the sixth grade teaching movement that the students can in turn reuse, reorder and use as improvisational exercise to create their own movement. My seventh and eighth grade classes contain a mixture of students that had dance in a prior grade and

those that are taking the course for the first time. In these grades, I pair these individuals up with students who have taken the course previously.

Class Structure

Students should begin the class with several warmups. Students should hear the dance terminology, anatomical words, directional phrases and counting during these warmups. Think in terms of learning dance vocabulary in the same sense as learning a foreign language. The warmups can be set, choreographed warm-ups, or they can be changed to fit the needs of the unit. Warm-ups can be used to introduce new ideas and concepts.

Warmups:

Warm-up #1: Isolations

Warm-up #2: Cardiovascular exercises

Warm-up #3: Stretching and Flexibility

Warm-up #4: Technical skills and basic ballet terminology

Class Dances

Classes can perform some or all of these warm-ups. The teacher may choose a specific order depending on the day and/or sequence of events within the class. Time constraints can be a factor in selecting the number of warm-ups that can be completed in a class period.

The first four warm-ups are standard, teacher created warm-ups that allow the class to begin as quickly as possible. The students have these warm-ups memorized and can complete them without the teacher leading. This allows for attendance, student concerns, addressing behavior, locking the classroom door, and answering any pressing questions at the beginning of the class.

Prior to this unit, the students have been introduced to cooperative learning groups and small group procedures. Prior choreography assignments have provided the students with specific tasks and parameters for creating movement. Previous choreographic tasks have instilled the experience of improvising and exploring different ways to develop new movements. Students have had experience refining their movements based on peer and teacher feedback. Students have participated in multiple movement lessons, learned important dance concepts, and developed a broader movement vocabulary. Students have gained knowledge of the elements of dance, choreographic structures and processes and had opportunities to perform in front of their peers. At this point, the class dynamics should be very apparent in terms of work ethic, learning style, leadership abilities and strengths and who works best with one another. A suggested unit to review would be the 2021 Embodied Teaching and Learning Curriculum Unit, https://charlotteteachers.org/wp-content/uploads/2022/03/DGresham_ETAL_CU_11-15-21.pdf

The Lights, Dance, Action Unit can be used for ten to twelve lessons, or it can be expanded depending on the speed in which the students create as well as how in depth the teacher chooses to use the peer, group, and video assessment activities. It can also be geared to a specific performance date.

After learning the warm-ups, students in grade six and seven complete a unit to create movement based on the form Rondo. Rondo is a form based on alternation between a repeated section (A) and contrasting episodes (B, C, etc.) i.e., ABACA. I use Rondo to teach the specific dance vocabulary terms listed below. The students have the opportunity to work collaboratively, explore improvisation, decision making and the development of new movement vocabulary.

Dance Vocabulary

Students should be familiar with these terms and concepts. The vocabulary words are in bold. Students should incorporate these terms into their choreography and be able to explain their approach to using them. The students will have had experience working in cooperative learning groups and creating choreography.

Choreography

Choreography: 1. The process of making a dance which involves the understanding of choreographic principles, processes, and structures. 2. The product that results from the process of choreography.

Choreographic structure: The specific compositional forms in which movement is structured to create a dance, such as theme, variation, canon, ABA, rondo, etc.

Creation of Movement

Improvisation: Movement that is created spontaneously, occurring within free or highly structured environments, but always with an element of chance. Provides the dancer with the opportunity to bring together elements quickly and requires focus and concentration.

Space

Space: The unlimited area which extends in all directions and within which all things exist. It involves use of level, pathway, shape, positive and negative space, general and personal space, size, focus, and direction.

General space: A defined area of space through which dancers can travel using all the available space.

Levels: The height of the dancer in relation to the floor. Levels in space are referred to as high, middle, and low.

Locomotor movement: Movement that travels from place to place, usually identified by weight transference. Basic locomotor movements are walk, run, leap, hop, jump, skip, slide, and gallop.

Non-locomotor/axial movement: Any movement that does not travel but uses the available space in any direction or movement organized around the axis of the body (axial movement). Bending, twisting, stretching, and swinging are examples of axial movement.

Pathway: The path traced as movement proceeds through space. A pathway may be either on the floor or through the air and is constructed of straight and/or curved lines.

Shape: The spatial contour the body makes such as curved, angular, twisted, straight, symmetrical, or asymmetrical.

Transition: Organize connection between dance movements that maintains flow and continuity in the dance.

Time

Time: A concept which organizes movement; it encompasses tempo, rhythm, and duration.

Tempo: The speed of a movement such as fast, moderate, or slow

Rhythm: A structure of movement patterns in time.

Energy

Energy: The amount of tension or stress of a movement; the flow and control of force. It is defined by the degrees of impetus and follow through which are employed.

Dynamics: The energy of movement expressed in varying intensity, accent, and quality.

Percussive: Sharp, staccato, abrupt, start and stop.

Sustained: Flowing, smooth, continuous.

Performance Structure

Informance: A sharing or showing of dance that demonstrates the process for how students arrive at the product or performance as a result of instruction, rather than focusing solely on the end result. An informance may include explanation or discussion.

Performance: 1. To execute movements. 2. A presentation of dance choreography.

Unison: Movements which are performed simultaneously and identically by more than one dancer.

Rondo: A form based on alternation between a repeated section (A) and contrasting episodes (B, C, etc.) i.e., ABACA.

Canon: Movement which is performed identically but with multiple entry points.

Mirroring: A partnering activity that involves simultaneously following a leader's movement while facing that leader.

Additional Vocabulary

Warm-up: Movements and/or movement phrases designed to raise the core body temperature, move the body through a preparatory range of movement, and bring the mind into focus for the dance.

Science Vocabulary

Students will learn and embody the following Science terms and concepts through a variety of movement exercises. The terms will be paired with Dance concepts and vocabulary.

Absorption: The loss of light as it passes through a material, generally due to its conversion to other energy forms (usually heat). Absorption occurs when photons from incident light hit atoms and molecules and cause them to vibrate and electrons to move to different energy states in the atoms or molecules. The more an object's molecules move and vibrate, the hotter it becomes. This heat is then emitted from the object as thermal energy.

Reflection: is when incident light (incoming light) hits an object and bounces off. Very smooth surfaces such as mirrors reflect almost all incident light.

Sun's energy: The sun gives off all wavelengths of light. When it reaches the Earth, some is reflected back to space by clouds, some is absorbed by the atmosphere, and some is absorbed at the Earth's surface.

Waves: a disturbance on the surface of a liquid body, such as the sea or a lake, in the form of a moving ridge or swell. Any surging or progressing movement or part

resembling a wave of the sea, a wave of the pulse. Ripple. Light also travels as a wave and these waves are called electromagnetic waves.

Wavelength: the distance between successive crests of a wave, especially points in a sound wave or electromagnetic wave.

Diffraction: the bending and spreading of waves around an obstacle. It is most pronounced when a light wave strikes an object with a size comparable to its own wavelength. An instrument called a spectrometer uses diffraction to separate light into a range of wavelengths—a spectrum. In the case of visible light, the separation of wavelengths through diffraction results in a rainbow.

Refraction: bending of light as it travels from one material to another. This happens at the boundary between the materials. As light travels into a different medium, the change in speed bends the light. Different wavelengths of light are slowed at different rates, which causes them to bend at different angles.

Scattering: light is redirected when it interacts with a particle. Different from reflection in that light is absorbed and re-emitted. Can happen multiple times if light goes through a material. Scattering occurs when light bounces off an object in a variety of directions. The amount of scattering that takes place depends on the wavelength of the light and the size and structure of the object.

Ground state: the lowest energy state of an atom or other particle.

Excited state: any of the energy levels of a physical system, especially an atom, molecule, etc., that has higher energy than the lowest energy level.

Instructional Implementation

Teaching Strategies, Classroom Lessons, and Activities

Day 1: My Many Colored Days, by Dr Seuss

1. As a class, students will read the book “My Many Colored Days” by Dr. Seuss.
2. Ask the students to think about a color and how that color makes them feel.
3. Have the students share what their ideas and responses.
4. How can color affect someone’s mood?
5. Discuss how colors can affect movement.
6. Make a class list of colors. Using sticky notes, have the students write down how each color affects their movement. Students should take their sticky notes and place them on the list corresponding to that color.
7. Discuss similarities and differences in the movement for each color.
8. Have the students select a partner.
9. Pairs should pick one color. Based on that color, students should use three action words from the list that describe their mood. Using those actions, pairs will create a short dance phrase using actions and movements to represent their chosen color.
10. Read the book again and have the students solidify their movements.
11. Divide the class into two groups.

12. Each group presents their piece to the other group.
13. Groups may present/perform a second time for clarity.
14. Questions for the group:
 - a. Who can tell what color this pair chose?
 - b. Did the movements match the mood of the color?
 - c. Did the images match the book?
 - d. What was the relationship with the pairs in space?
 - e. Were there differences in the timing of the pairs?
 - f. How did the movements differ between the pairs?
15. Discuss how abstracted movements can be used to create dance phrases that communicate ideas, experiences, feelings, and images. How can literature inspire movement? Do emotions affect our movements?
16. Have several pairs discuss their movement choices.
17. Consider allowing some pairs to perform their movement again after the questions for clarity.
18. Journal Prompts for Reflection
 - a. What does this color poem mean to you?
 - b. How does this color relate to you as an individual?
 - c. What is the connection between this color and dance?
 - d. What words come to mind when you think of this color?
 - e. What things in your life are constant?
 - f. Think of school. What are things that “still” happen every year?
 - g. Think of family life. What are things that “still” happen every-(day/month/year/holiday)?
 - h. Think of friendships. What are some of the constants in your friendships?

Another option to introduce color and movement is “Harold and the Purple Crayon
Resource for activities:

<https://thesciencepenguin.com/2014/07/time-to-teach-reflection-and-refraction-of-light.html>

Additional Light lessons can be found in Canvas Commons

6th Grade, Unit 3 Waves, and light Energy CMS Canvas Course

6th Grade Science of Light

https://cms.instructure.com/accounts/1/external_tools/3739?launch_type=global_navigation

Day 2: Using Light in Dance

1. Show video #1 <https://www.youtube.com/watch?v=YUAhejWeXjw>
2. How did the use of light on the costumes affect the performance?
3. Have students watch video #2 <https://www.youtube.com/watch?v=ReAusknSMms>
4. How is light affecting this performance?
5. What are some other ways that light can affect dance performances?
6. Show video #3 <https://www.youtube.com/watch?v=fn6fUmSciPE>
7. What type of light is making this work?
8. Discuss the relationships between the dancers and the space to create these images.

9. If time permits, a second video from Catapult Dance:
https://www.youtube.com/watch?v=sDvs_4ANjJ4
10. For additional research and videos, both the students and the teacher can view the Catapult's website for further information <https://www.catapultentertainment.com/>
11. Discuss how abstracted movements can be used to create dance phrases that communicate ideas, experiences, feelings, and images. How can literature inspire movement? Elaborate on previous conversations and answers to this question.
12. Activity: Have students create tableau or frozen images similar to the shadow dances seen in the video
13. Discuss the Exhibit Studio Drift at the Mint Museum in Charlotte, NC:
 - a. <https://mintmuseum.org/immersed-in-light-studio-drift-at-the-mint/>
14. Resource: Charlotte Ballet's premiere of Dispersal, choreographed by Christopher Stuart
 - a. Performance, Behind the Scenes and Interviews
https://www.youtube.com/watch?v=s4PUPa_vBq8

Day 3: Wave Behavior

What is Wave Behavior? https://science.nasa.gov/ems/03_behaviors

Have a class discussion on wave behavior and an overview of the unit. Introduce the following science terms:

1. Reflection
2. Absorption
3. Diffraction
4. Scatter
5. Refraction

Students learn the teacher directed "A" phrase.

As a reference, you can teach this phrase, create your own phrase or reorder, reuse parts of this phrase and simplify as needed.

A Phrase

1. Hold at the very beginning, all other times the A phrase is performed, students will transition to their large group spots
2. Step right arms open 1234, step left arms roll 56, throw down 78
3. Turn right 1234, make a frozen shape 5678
4. Contract to knees 12, arms in an angular shape 34, repeat 5678
5. Melt to the floor, making a ball 1-8
6. Jump up, making vibratory movement in random directions 1-8. This represents absorption
7. Feet together, arms open 1234, cross right over left turn 5678
8. Walk back to small group spots 1-8

The A phrase should consist of eight counts of eight and repeated after each subsequent, alternating phrase. ABACADAZ

Discuss RONDO as a choreographic form if this is the first time the students are using it. If students have used RONDO before, simply review the process.

Rondo: A form based on alternation between a repeated section (A) and contrasting episodes (B, C, etc.) i.e., ABACA.

A phrase: Teacher directed, refraction/contract and release

B phrase: Science term: Reflection, Dance term: Mirroring

A phrase: Teacher directed

C: Science term: Waves, Wavelength, Dance term: Ripple and Canon

A phrase: Teacher directed

D: Science term: Ground State and Excited State, Dance term: Energy, Sustained and Percussive

A phrase: Teacher directed

Z phrase: Science term: Scattering, Dance term: Locomotor movement, Non-locomotor movement, Relationships, Directions, Shapes, and Pathways

Review/Discuss procedures for working in small groups.

1. What does this look like?
 - a. Students should remain in their group location.
 - b. Direct students to determine a specific formation to start.
 - c. Have clear procedures for documenting progress on the think sheets.
 - d. Determine group roles such as leader, timekeeper, person to complete a think sheet.
 - e. Determine the order the groups show/present their work.

Review/Discuss what proper rehearsal looks like.

1. Review the order of the movements.
2. Practice each section full out.
3. Walk through the transitions.
4. Practice the entire dance from start to finish several times.
5. Perform in pairs while another pair watches for feedback.
6. Revise and rework the parts that each person received feedback on.
7. Make notes for the next rehearsal.

Day 4: Mirroring and Reflection, the B phrase

As a class, the students will participate in a teacher directed exercise by mirroring the movements of the teacher. Allow one or two students to take turns leading the class in mirroring.

Discuss the correlations between mirroring in dance and the term “reflection” in science.

Mirroring: A partnering activity that involves simultaneously following a leader's movement while facing that leader.

1. What is mirror image?

2. What is reflection?
3. If you are mirroring when learning choreography, are you using the same hand or the opposite hand?

Have the students watch this dance as an example of mirroring:

<https://www.youtube.com/watch?v=YiRPGncy8xk>

Have the students watch this dance for another example of mirroring.

<https://www.youtube.com/watch?v=v5FSC9SVyiM>

Have a class discussion on the differences in the choreography of the two videos.

Students can use this as an example to begin creating their own movement. They are permitted to use the movement created as a class in their submitted phrase or they may create all new movement. The students will work with a partner unless there is an odd number. The B phrase must be eight counts of eight in length. Pairs must include a level change and a direction change. Students are to use the dance terminology that they have learned throughout the semester (see prior knowledge) and utilize as many composition vocabulary words as possible to create their section.

Allow ten to fifteen minutes to complete the choreography. Once the students have completed their phrases, divide the class into two groups. The first half presents their B phrases and then the second half presents their phrases. Pairs may also be assigned to watch another pair specifically. Pairing a direct pair allows a more accurate comparison and critique of the movement.

1. Were the movements mirrored, Why or why not?
2. Did the pair change levels?
3. Did the pair change directions?
4. What are two things the pair did well?
5. What are two things the pair can improve on?

Activities and lessons are designed for students to complete on the assigned class days. Some students/groups may need additional time. Allow review and rehearse time as needed for your situation. Students may use the [Think Sheet](#) to record steps and brainstorm.

Day 5: Ripples, Canon and Waves, the C phrase

As a class, the students will participate in a teacher directed exercise. The teacher will initiate one movement and the students will perform it in a ripple. Allow students to choose another move and perform it in a ripple or wave. Students will learn a teacher created unison phrase. The teacher will divide the class into three or four groups and have the students perform the phrase in a canon. Select 1-2 students from each group to perform for the class.

Discuss the correlations between ripples, and canon and the science terms waves and wavelengths.

Ripples: A ripple occurs when a dancer performs one move, one after the other.

Canon: Movement which is performed identically but with multiple entry points.

4. What is a ripple? What does that look like in dance movement?
5. How does using a ripple or a canon sequence effect choreography?

Have students watch the following videos and discuss whether they saw a ripple or canon.

Science: Waves: Frequency and Wavelength

<https://www.youtube.com/watch?v=KWzyQKcJBYg>

Watch: “Tron Dance” performed by- Wrecking Orchestra

<https://www.youtube.com/watch?v=-Rot9uaVO8s> Watch from 0:40-1:00. What did you see?

Circle one- Ripple or Canon

Watch: “Water Study” choreographed by Doris Humphrey

<https://www.youtube.com/watch?v=wCHaxfzQpQA> Watch from 2:30-3:30. What did you see?

Circle one- Ripple or Canon

Discuss with students how you show waves in science using the following link:

<https://blog.soton.ac.uk/soundwaves/wave-basics/ways-of-showing-waves/>

If time permits, allow students to explore waves in this interactive platform:

https://phet.colorado.edu/sims/html/waves-intro/latest/waves-intro_en.html

Additional information regarding **Wave Behaviors**

Light waves across the electromagnetic spectrum behave in similar ways. When a light wave encounters an object, they are either transmitted, reflected, absorbed, refracted, polarized, diffracted, or scattered depending on the composition of the object and the wavelength of the light.

Students can use these videos as an example to begin creating their own movement. They are permitted to use the movement created as a class in their submitted phrase or they may create all new movements. The pairs will partner with another pair to create small groups of four. The C phrase must be eight counts of eight in length. It must contain a canon section and a single ripple. The movements must resemble a wave-like pattern. Students are to use the dance terminology that they have learned throughout the semester (see prior knowledge) and utilize as many composition vocabulary words as possible to create their section. Discuss the importance of counting in this section.

Allow fifteen to twenty minutes to complete the choreography. Once the students have completed their phrases, divide the class into two groups. The first half presents their C phrases and then the second half presents their phrases. Each small group performs one at a time for feedback and critique of the movement. Encourage students to start with a unison phrase before breaking it down into canon.

1. Were the timing of the movements, correct?
2. Why or why not?
3. Did the pair change levels?
4. Did the pair change directions?
5. What are two things the pair did well?
6. What are two things the pair can improve on?

Activities and lessons are designed for students to complete on the assigned class days. Some students/groups may need additional time. Allow review and rehearse time as needed for your situation. Students may use the [Think Sheet](#) to record steps and brainstorm.

Day 6: Ground State, Excited State and Energy, the D phrase

As a class, the students will participate in a teacher directed exercise exploring ground state (low energy) and excited state (high energy). Play music as students locomote (travel) around the room showing excited state, when the music stops, students will show ground state.

Discuss the correlations between energy in dance and the terms “ground state” and “excited state”. Discuss sustained movement and percussive movement. How are these similar to ground state and excited state? What is the relationship between a sustained movement quality and ground state? What is the relationship between percussive movement quality and excited state?

Energy: The amount of tension or stress of a movement; the flow and control of force. It is defined by the degrees of impetus and follow through which are employed.

Ground state: the lowest energy state of an atom or other particle.

Excited state: any of the energy levels of a physical system, especially an atom, molecule, etc., that has higher energy than the lowest energy level.

Percussive: Sharp, staccato, abrupt, start and stop.

Sustained: Flowing, smooth, continuous.

1. What is the ground state?
2. What is an excited state?
3. What is the quality of sustained movement?
4. What is the quality of percussive movement?
5. What effect does energy have on a dance piece?

Have the students watch the following videos on sustained and percussive movement.

Video #1

https://www.youtube.com/watch?v=Lrfti_j54Mw (6:44) and percussive movement (8:56).

Video #2

<https://www.youtube.com/watch?v=XnelpHF1ZhU>

Students can use this as an example to begin creating their own movement. They are permitted to use the movement created as a class in their submitted phrase or they may create all new

movement. The students will work in their same group of four. The D phrase must be eight counts of eight in length. Groups must include a level change and a direction change. Students are to use the dance terminology that they have learned throughout the semester (see prior knowledge) and utilize as many composition vocabulary words as possible to create their section.

Allow ten to fifteen minutes to complete the choreography. Once the students have completed their phrases, divide the class into two groups. Half the class (2-3 groups) presents their D phrases and then the second half of the class presents their phrases. Groups are assigned to watch each other and compare and critique each other's movement.

1. Describe the energy used?
2. Was there a ground state?
3. Was there an excited state?
4. Did you see both sustained and percussive movement?
5. Did the group travel?
6. What are the two things the group did well?
7. What are two things the group can improve on?

Activities and lessons are designed for students to complete on the assigned class days. Some students/groups may need additional time. Allow review and rehearse time as needed for your situation. Have students present their work informally to the class, to the teacher, or to another group. Students may use the [Think Sheet](#) to record steps and brainstorm.

Day 7: Locomotor movement, Non-locomotor movement and Scattering, Z phrase

As a class, the students will participate in a teacher directed exercise. The teacher will play music and call out a way to travel around the room. Students will move through space using the locomotor movement that was directed. When the music stops, students will move in place only using a teacher directed non-locomotor movement. This activity will be repeated four to five more times, each time with a different locomotor and non-locomotor movement. Students will practice varying the speed of their movements. Students will use indirect pathways when traveling. Students will use a variety of directions.

Locomotor movement: Movement that travels from place to place, usually identified by weight transference. Basic locomotor movements are walk, run, leap, hop, jump, skip, slide, and gallop.

Non-locomotor/axial movement: Any movement that does not travel but uses the available space in any direction or movement organized around the axis of the body (axial movement). Bending, twisting, stretching, and swinging are examples of axial movement.

Scattering: light is redirected when it interacts with a particle. Different from reflection in that light is absorbed and re-emitted. Can happen multiple times if light goes through a material. Scattering occurs when light bounces off an object in a variety of directions. The amount of scattering that takes place depends on the wavelength of the light and the size and structure of the object.

Watch the following videos:

Scattering in Science <https://www.youtube.com/watch?v=VsxxO1YgQVI>

Scatter Square Dance to inspire images for movement:

<https://www.youtube.com/watch?v=t7w4FEhq78>

Students can use these videos as an example to begin creating their own movement. The Z phrase must be eight counts of eight in length. The Z phrase must include both locomotor and non-locomotor movement. When the locomotor movement occurs, students should "scatter" in different directions, using different pathways. Students are to use the dance terminology that they have learned throughout the semester (see prior knowledge) and utilize as many composition vocabulary words as possible to create their section. Discuss the importance of counting in this section.

Allow fifteen to twenty minutes to complete the choreography. Once the students have completed their phrases, divide the class into two groups. The first half presents their Z phrases and then the second half presents their phrases. Each small group performs once at a time for feedback and critique of the movement. Encourage students to start with a unison phrase before breaking it down into canon.

1. Were the timing of the movements, correct?
2. Why or why not?
3. Did the group travel with locomotor movement?
4. Did the group incorporate non-locomotor movement?
5. What are two things the group did well?
6. What are two things the pair can improve on?

Activities and lessons are designed for students to complete on the assigned class days. Some students/groups may need additional time. Allow review and rehearse time as needed for your situation. In order to differentiate, allow groups to move ahead on different phrases as it fits their creativity and development style. Students may use the [Think Sheet](#) to record steps and brainstorm.

Day 8: Choreography Review, Teacher Analysis and Differentiation

1. Allow groups time to review, revise and make final corrections to their phrases prior to being videoed for self and peer assessments.
2. Groups should be self-paced and allowed to move onto the next phrase as needed.
3. Review choreography from Phrase B.
4. Review choreography for Phrase C.
5. Review choreography for Phrase D.
6. Review Choreography for Phrase Z.
7. After ample time to work, start the group altogether from the beginning. As the class proceeds through each phrase, remind them to make a mental note of what changes and/or corrections they need to make to each phrase.

8. Present work for feedback. This can be an informal presentation with the teacher, one group performing for another group or two groups going at the same time. Select the option that works best for your situation.
9. Revise choreography based on feedback.

Day 9: Rehearsal and Filming Day

1. Rehearsal Day
 - a. Allow time for the students to rehearse each phrase.
2. One group at a time, film each group performing all phrases using the ABACADAZ format.
3. As the groups are performing, have the other students complete either the [PerformanceRubric](#) or the [Final Performance Checklist](#) for the group they are watching. This exercise will familiarize the students with their own evaluation instruments.
 - a. Having the students complete a group assessment of the performing group is a great tool for managing classroom behavior and teaching audience etiquette.
 - b. Consider posting these videos to canvas or a google site so the students can complete the group assessment for homework.
 - c. Consider pairing groups so the students only have to complete one group assessment.
 - d. Be very specific in your directions for this activity so the students are actively watching their peers. Consider having them wait until the performance is over to document the form or have them watch the video again at home to finish.

Day 10 and 11: Self and Peer Assessments and Revision

1. Watch the videos and complete the [Self-Assessment](#) document. Consider posting these videos to canvas or a google site so the students can complete the self-assessment document for homework.
2. Watch the videos and complete the [Peer Assessment](#) document.
 - a. Assign each group a partner within their original group to peer assess.
 - b. Provide feedback using the peer assessment tool.
 - c. Should there be time constraints, these tasks can be assigned as homework. The videos can be posted to canvas or a google site for the students to work independently, in small groups or complete for homework.
3. Gather the [Peer Assessment](#) forms used to evaluate each group. Share these with each specific group. Based on this feedback, students should make a plan for revision.
4. Have each group read and discuss the feedback.
5. Groups should complete the [Written Plan for Revision](#) document.
6. Allow rehearsal time for revisions based on peer and group assessment feedback.
7. Allow time for discussion, additional rehearsal time, reworking, revisions to choreography and completion of the [Final Performance Checklist](#).
8. Review the [Final Performance Checklist](#)
9. Review the [Performance Rubric](#)

Important Questions for Discussion and Assessment

1. Does your group's choreography reflect the required vocabulary for each phrase?
2. How does your dance use variations in time, space, and energy?
3. Compare the [Think Sheets](#) for each phrase.
4. Complete the [Final Performance Checklist](#) for your choreography.
5. Does each phrase have a clear beginning, middle and end?
6. Does each phrase have the correct transitional movements?
7. What changes will you make after watching the pre-assessment video and receiving feedback from your peers?

Day 12: Final Performance

Final Performance

1. Film the final dances in costume.
2. Students should create a costume for their performance. The costumes can incorporate light either on the costume or in the dance space.
 - a. Costumes could consist of black bottoms and a similar color top, different colored tops, items the students already have, donated items or purchased items.

Assessments/Grading

1. Students will be assessed on the correct completion of each phrase A-Z.
2. Students will complete the Final Performance Checklist for their choreography.
3. Students will present the first draft of their dance piece. This will be videotaped.
4. Students will complete a [Self-Assessment](#) based on their cooperative learning group after viewing the first draft of the video.
5. Students will complete a [Peer Assessment](#).
6. Students will complete a minimum of two Group Assessments.
7. Based on feedback, students will develop a [Written Plan for Revision](#).
8. Students will revise and rehearse choreography.
9. Students will complete a [Final Performance Checklist](#).
10. Students will present the final dance piece. Students will be assessed on their final performance using the [Performance Rubric](#)

Supplemental Activities and Additional Movement Tasks

1. Students can create original choreography inspired by a light exhibit, a light cluster, an everyday phenomenon such as a rainbow, or any other specific light source, even the sun.
2. Students can explore the relationship of their chosen light source with other objects.
3. Students can create an original costume for their performance and explore the ways light can affect their costume.
4. Students can explore the science behind the relationships light has with an object, set or prop in their dance piece.
5. Discuss the Exhibit "Studio Drift at the Mint", located at the Mint Museum in Charlotte, NC: <https://mintmuseum.org/immersed-in-light-studio-drift-at-the-mint/>

6. Resource: Charlotte Ballet's premiere of Dispersal, choreographed by Christopher Stuart
Performance, Behind the Scenes and Interviews
https://www.youtube.com/watch?v=s4PUPa_vBq8

Think Sheet

Phrase _____

Notes:

Additional things to consider:

Determine the body shape. Is it the whole body or parts of the body?

What initiates the movement?

Determine the timing of each movement.

****(duration, speed, tempo, beat, accent, rhythmic pattern, repetition)

Determine the stillness.

Determine the size of the movement.

Will the movements be locomotor or non-locomotor?

Determine the pathways through space.

Determine the levels, direction, focus and relationships.

Determine the energy qualities.

Determine the force, tension, weight, flow, and attack.

Determine transitions from one movement to the next.

Determine the transitions from one sequence to another.

Additional concepts to consider

For each phrase, consider having the dancers focus on one eight count at a time. This will allow the students to concentrate on one particular element, narrow their focus and ensure their movement eventually incorporates all of the elements. For example, concentrate on body shapes first. Then, concentrate on the transitional elements.

Self-Assessment

What Phrase are you critiquing? BCD or Z?

What are two things you do well in this section?

What are two things you can improve on in this section?

How often are you watching others in the dance because you don't remember the dance, you don't know the timing, or because you don't know your spacing without the other dancers?

Based on the above answer, what is your plan to improve memorization?

How much of the dance are you on time with the music?

Based on the above answer, what is your plan to improve your timing?

Are your hands and arm motions strong? If not, then why?

What areas of the dance are your arms/hands different from others? What should they look like?

What part of the choreography are you using a different foot than others? Which foot/feet should you be using?

What parts of the dance are you turning in a different direction from others? What direction should you be turning?

Are you dancing full out? What are your plans to improve execution?

What sections do you plan to focus on making improvements?

Peer Assessment

Phrase are you critiquing _____ Person you are watching _____

What are two things your peers do well in this section?

What are two things your peers can improve on in this section?

How often is your peer watching others in the dance because they don't remember the dance, don't know the timing, or don't know your spacing without the other dancers?

Based on the above answer, what suggestions can you provide for your peer to improve?

How much of the dance is your peer on time with the music?

Based on the above answer, what can your peers do to improve their timing?

Are your peer's hands and arm motions strong? If not, then why?

What areas of the dance do your peer's arms/hands differ from others? What should they look like?

What part of the choreography is your peer using a different foot than others? Which foot/feet should you be using?

What parts of the dance is your peer turning in a different direction from others? What direction should they be turning?

Is your peer dancing full out? What are some suggestions to improve their execution?

What sections should your peer focus on to make improvements?

Group Assessment

Students can choose to evaluate each other's group using either the [Performance Rubric](#) or the [Final Performance Checklist](#). I chose these options so the students would become familiar with both ways in which they will be evaluated.

Written Plan for Revision

Based on the feedback from the Peer Assessment, what changes will you make?

What is your plan to make these changes?

Based on the feedback from the Group Assessment, what changes will you make?

What is your plan to make these changes?

Did you find these suggestions helpful? Why or why not?

Final Performance Checklist

Name _____ Class _____ Date _____

	Entrance is clear and choreographed
	Clear, frozen beginning shape
	Clear transitional movements, smooth, fluid and purposeful
	Pathways are clear (not running into another dancer)
	Clear movement development of Phrase
	Use of levels: low, middle, high, mixed use of levels
	Good use of space
	Locomotor and non-locomotor movements present
	Variations of movement and stillness
	Timing is correct and in sync with other group members
	Variations in duration, speed, tempo, beat, accent, rhythmic pattern, repetition
	Variations in energy qualities, force, tension, weight, flow, and attack.
	Good ending shape, remains frozen
	Excellent focus and concentration
	Good movement execution
	Memorization of movement is excellent and in sync with other dancers

	Performance quality is excellent
	Costume is ready and prepared
	Self, Peer, and Group Assessments are complete
	Exhibits excellent audience etiquette when watching other groups perform

Performance Rubric Name _____ Points _____/24

Points - Criteria	0 - No Evidence	1 - Developing	2 - Accomplished	3 - Distinguished
Focus	Did not use it.	Had at least 3 or more moments with no focus.	Had 1-2 moments without focus.	Maintained focus for the entire performance.
Clear beginning shape	Beginning is not clear.	Beginning shape is present, but not still or ready.	Beginning shape is clear and still.	Beginning is clear, still and the dancer looks performance ready.
Clear transitions	Transitions are not present.	One transition is present.	Two transitions are present.	At least three transitions are present, and transitions are clear.
Clear development of movement to match vocabulary words	Movement does not match any of the vocabulary words.	Movement matches one of the vocabulary words.	Movement matches two of the vocabulary words.	Movement matches all three vocabulary words.
Space - Levels	None present.	One level present.	Two levels present.	All three levels are present and clearly seen in the performance.
Use of Space	Stayed in the same spot.	Dancer used some space.	Dancer traveled in a large area.	Dancer used a great deal of space and made excellent use of movement through space.
Locomotor and	Stayed in the	Use of one	Both locomotor	Use of both

non-locomotor movements	same spot.	component, but not both.	and non-locomotor movements are present.	locomotor and non-locomotor movement clearly seen in final performance.
Clear ending shape	Ending is not clear.	Ending shape is present, but not still or ready.	Ending shape is clear and still.	Ending is clear, still and the dancer looks performance ready.

Appendix 1: Teaching Standards

Dance Standards:

6.CP.1 Use choreographic principles, structures, and processes to create dances that communicate ideas, experiences, feelings, and images.

1. 6.CP.1.1 Understand the role of improvisation in choreography.
2. 6.CP.1.2 Create short dances that have a beginning, middle, and end, and that vary the use of the dance elements.
3. 6.CP.1.3 Use abstracted movement to create dance phrases that communicate ideas, experiences, feelings, or images.
4. 6.CP.1.4 Use collaborative and cooperative skills to contribute constructively to the creation of dance.

6.CP.2 Understand how to use performance values (kinesthetic awareness, concentration, focus, and etiquette) to enhance dance performance.

1. 6.CP.2.3 how self-assessment, teacher feedback, and peer feedback can be used to refine dance performance.

6.DM.1 Understand how to use movement skills in dance.

1. 6.DM.1.2 Compare qualities within the elements of time, space, weight, and flow dance.

6.R.1 Use a variety of thinking skills to analyze and evaluate dance.

1. 6.R.1.1 Analyze the relationship between dance elements when observing dance.
2. 6.R.1.2 Interpret the meanings of dances created by peers and others.

6.C.1 Understand cultural, historical, and interdisciplinary connections with dance.

1. 6.C.1.2 Exemplify connections between dance and concepts in other curricular areas.

Science Standards

6.P.1 Understand the properties of waves and the wavelike property of energy in earthquakes, light and sound waves.

6.P.1.1 Compare the properties of waves to the wavelike property of energy in earthquakes, light and sound.

6.P.1.2 Explain the relationship among visible light, the electromagnetic spectrum, and sight.

6.P.3 Understand characteristics of energy transfer and interactions of matter and energy.

6.P.3.2 Explain the effects of electromagnetic waves on various materials to include absorption, scattering, and change in temperature

Resources for Teachers:

Dr. Seuss. Paw Prints, 2011 *My Many-Colored Days*

Excellent resource book for teachers to use to inspire movement and improvisation

Johnson, Crockett. Johnson, Crockett. 1955. *Harold and the Purple Crayon*.

Excellent resource book for teachers to use to inspire movement and inspiration

<https://us.humankinetics.com/blogs/excerpt/dynamics-qualities-of-movement>

Excellent resource book for teachers and students

Book: Light, The Visible Spectrum and Beyond; Kimberly Arcand and Megan Watzke

Excellent resource book for teachers and students

NCDPI Dance Vocabulary <https://www.dpi.nc.gov/media/3934/open>

Dance Glossary of Terms

6th Grade, Unit 3 Waves, and light Energy CMS Canvas Course

Excellent resource for teachers, can be found in Canvas Commons

Resources for Students:

[Think Sheet](#)

[Self-Assessment](#)

[Peer Assessment](#)

[Written Plan for Revision](#)

[Final Performance Checklist](#)

[Performance Rubric](#)

List of Materials for Classroom Use

1. Projector
 - a. used for videos and examples

2. Hand Outs
 - a. see under Resources for Students
 - b. see under Resources for Teachers
3. Sound System
 - a. Recommended musical selections
 - i. “Willow” by Helen Jane Long
 - ii. “Expression” by Helen Jane Long
 - iii. Instrumental: on Top of the World” by Imagine Dragons
 - iv. Instrumental “Can You Feel It” by Michael Jackson
 - v. Instrumental “Don’t Stop ‘til You Get Enough by Michael Jackson

End Notes

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2. Gilbert, Anne Green. The Brain Dance <https://www.creativedance.org/brain-dance/>
3. Dr. Seuss. Paw Prints, 2011 *My Many-Colored Days*
4. Johnson, Crockett. Johnson, Crockett. 1955. *Harold and the Purple Crayon*.
5. Resource for activities:
<https://thesciencepenguin.com/2014/07/time-to-teach-reflection-and-refraction-of-light.html>
6. Additional Light lessons can be found in Canvas Commons
7. 6th Grade, Unit 3 Waves, and light Energy CMS Canvas Course
8. 6th Grade Science Energy and Light Unit
https://cms.instructure.com/accounts/1/external_tools/3739?launch_type=global_navigation
9. <https://www.youtube.com/watch?v=YUAhejWeXjw>
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11. <https://www.youtube.com/watch?v=fn6fUmScIPE>
12. https://www.youtube.com/watch?v=sDvs_4ANjJ4
13. <https://www.catapultentertainment.com/>
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<https://blog.soton.ac.uk/soundwaves/wave-basics/ways-of-showing-waves/>
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