

I Spy a Pattern-Making

Sense of Patterns

Grade Levels 3 - 6

Unit Overview

Materials

- Several copies of multiplication chart
- Several colored highlighters
- Dry erase boards
- Dry erase markers
- Variety of poetry books*
- Pictures of animals in nature with patterns
- Crayons, markers, colored pencils
- 5 x 8 plain index cards
- Stem Lab- Kid K'Nex Life Cycle kit
- Pencils
- Paper
- Music for Macarena
- Music player
- Drawing paper 9 x 12 in white
- 3 x 4 inch index cards
- Rulers
- Scissors

Extension Ideas

- Extension ideas are listed in the plans.

ELL Modifications

- Each lesson had ESL strategies within. Each lesson has visuals accompanying it. Since each lesson is associated with patterns the lessons are modified in nature.

Pre/Post Assessment

Pre-assessment: Have children answer the essential question: How are patterns used in math, reading, writing, nature, art, music, and dance?

Post-assessment: Have children answer the essential question: How are patterns used in math, reading, writing, nature, art, music, and dance?

Standards

Unit Content Standards	Unit Youth Development Standards
<ul style="list-style-type: none"> • MA.3.A.4.1: Create, analyze, and represent patterns and relationships using words, variables, tables, and graphs. • MA.4.A.4.1: Generate algebraic rules and use all four operations to describe patterns, including nonnumeric growing or repeating patterns. • MA.6.A.3.2: Write, solve, and graph one- and two-step linear equations and inequalities. • LA. 3.2.1.1: The student will understand the distinguishing features among the common forms of literature (e.g., poetry). • LA.3.2.1.8: The student will select a balance of age and ability appropriate fiction materials to read (e.g., poetry), based on interest and teacher recommendations, to continue building a core foundation of knowledge. • LA.3.4.1.2: The student will write a variety of expressive forms (e.g., poetry) that may employ, but not be limited to, figurative language (e.g., simile, onomatopoeia), rhythm, dialogue, characterization, plot, and appropriate format. • LA.4.2.1.1: The student will read and distinguish among the genres and sub-genres of fiction, nonfiction, poetry, drama, and media. • LA.4.2.1.9: The student will select a balance of age and ability appropriate fiction materials to read (e.g., poetry), based on teacher recommendations, to continue building a core foundation of knowledge. • LA.4.4.1.2: The student will write a variety of expressive forms (e.g., poetry) that employ figurative language (e.g., simile, metaphor, onomatopoeia, personification), rhythm, dialogue, characterization, plot, and/or appropriate format. • LA.5.2.1.1: The student will demonstrate knowledge of the characteristics of various genres (e.g., poetry) as forms with distinct characteristics and purposes; • LA.5.2.1.9: The student will use interest and recommendations of others to select a balance of age and ability appropriate fiction materials to read (e.g., poetry) to expand the core foundation of knowledge necessary to function as a fully literate member of a shared culture. • LA.5.4.1.2: The student will write a variety of expressive forms (e.g. haiku) that employ figurative language (e.g., simile, metaphor, onomatopoeia, personification, hyperbole), rhythm, dialogue, characterization, plot, and/or appropriate format. 	<ul style="list-style-type: none"> • 3 – child receives support from adults • 5 – relationships w/ teachers provide encouraging environment • 10 – child feels safe at school • 12 – school provides clear rules and boundaries • 16 – teachers expect child to do his/her best at school • 22 – child is actively engaged in learning at school • 24 – child cares about adults at school • 34 – child is comfortable with people of other cultures • 35 – child can stay away from people who are likely to get him in trouble • 36 – child seeks to resolve conflict nonviolently • 37 – child feels he/she has some influence over what happens in their life • 38 – child likes and is proud of who he/she is

- LA.6.2.1.1: The student will identify the characteristics of various genres (e.g., poetry) as forms with distinct characteristics and purposes.
- LA.6.2.1.10: The student will use interest and recommendation of others to select a balance of age and ability appropriate fiction materials to read (e.g., poetry) to expand the core foundation of knowledge necessary to function as a fully literate member of a shared culture.
- LA.6.4.1.2: The student will write a variety of expressive forms (e.g., limericks) that employ figurative language, rhythm, dialogue, characterization, and/or appropriate format.
- SC.5.L.17.1: Compare and contrast adaptations displayed by animals and plants that enable them to survive in different environments such as life cycles variations, animal behaviors and physical characteristics.
- VA.A.1.2.1.1: Use and compare two and three-dimensional media, techniques, tools, and processes to create works that are personally meaningful and draw from experience, observation, or imagination.
- VA.A.1.2.4.2: Use good craftsmanship in a variety of two & three-dimensional work of art.
- DA.A.1.2.2: Knows dance steps, positions, and patterns from various dance forms or traditions (e.g. ethnic, modern, and ballet).
- DA.A.2.2.4: Works with others using partnering skills such as imitating, leading, following, and mirroring.

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Lesson 1: I Spy a Pattern—Making Sense of Patterns

Essential Question:

How are patterns used in math?

Content Standards:

- MA.3.A.4.1: Create, analyze, and represent patterns and relationships using words, variables, tables, and graphs.
- MA.4.A.4.1: Generate algebraic rules and use all four operations to describe patterns, including nonnumeric growing or repeating patterns.
- MA.6.A.3.2: Write, solve, and graph one- and two-step linear equations and inequalities.

Youth Development Standards:

- 3 – child receives support from adults
- 5 – relationships w/ teachers provide encouraging environment
- 10 – child feels safe at school
- 12 – school provides clear rules and boundaries
- 16 – teachers expect child to do his/her best at school
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- 37 – child feels he/she has some influence over what happens in their life
- 38 – child likes and is proud of who he/she is

Vocabulary

- Patterns – something that repeats
- Multiples – product of two numbers

Teacher background knowledge:

- Teacher should be aware of multiplicative patterns of 2, 5, and 10 (count by or multiples of 2, 5, & 10)

Materials:

- Several copies of multiplication chart
- Several colored highlighters
- Document camera

Procedure:

1. Introduce multiplication chart. Notice patterns/multiples on chart. First column ends in 1's, second column ends in 2's, second row begins with 2's, (except last digit), etc.

2. In whole group ask children to count by two or find the multiples of two (if not familiar with this – name off every other number). Highlight the even numbers with a single color. Discuss what the patterns are. Set this chart aside.
3. On a new chart count by tens with the class; multiples of ten. Highlight those numbers with a different colored marker. Discuss what the patterns are. Set this chart aside.
4. On another clean chart have children repeat this procedure with fives; multiples of fives. Try to let them count aloud independently.
5. Write the numbers on the board if class is unsure. Discuss patterns and set aside.
6. Each pattern/multiple should take ten minutes.
7. Have children try to find a pattern with another number (i.e., 3's 11's).

Formative Assessment:

- The students should be able to find and name a pattern/multiple on a multiplication chart.

Lesson 2: I Spy a Pattern—Making Sense of Patterns

Essential Question:

How are patterns used in math?

Content Standards:

- MA.3.A.4.1: Create, analyze, and represent patterns and relationships using words, variables, tables, and graphs.
- MA.4.A.4.1: Generate algebraic rules and use all four operations to describe patterns, including nonnumeric growing or repeating patterns.
- MA.6.A.3.2: Write, solve, and graph one- and two-step linear equations and inequalities.

Youth Development Standards:

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- 38 – child likes and is proud of who he/she is

Vocabulary

- Patterns—something that repeats
- Polygons (if desired)—closed figure made up of line segments(i.e. triangle, square)



















Teacher Background Knowledge:

- Teacher should be aware of polygons and patterns.
- A poster with polygons names may be used in reinforcing correct labeling.

Materials:

- Dry erase boards, and dry erase markers

Procedure:

1. The teacher may want to review multiplicative patterns (skip counting – counting by 2, 3, 4, etc.).
2. Teacher introduces two shapes of her choice (i.e., circle and square).
3. Teacher creates patterns with shapes and asks students to predict what shape will come next. (i.e.,  ,  ,  ,  ,  ,  ,  ,  ,  ,  ,  ,  ,  ,  ,  ,  ,  ,  , ,

Lesson 3: I Spy a Pattern—Making Sense of Patterns

Essential Question:

How are patterns used in math?

Content Standards:

- MA.3.A.4.1: Create, analyze, and represent patterns and relationships using words, variables, tables, and graphs.
- MA.4.A.4.1: Generate algebraic rules and use all four operations to describe patterns, including nonnumeric growing or repeating patterns.
- MA.6.A.3.2: Write, solve, and graph one- and two-step linear equations and inequalities.

Youth Development Standards:

- 3 – child receives support from adults
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- 36 – child seeks to resolve conflict nonviolently
- 37 – child feels he/she has some influence over what happens in their life
- 38 – child likes and is proud of who he/she is

Vocabulary

- Patterns—something that repeats
- Algebraic rule—mathematical phrase with variables, numbers & operations

Teacher Background Knowledge:

- Teacher should be aware of algebra and patterns.

Materials:

- Dry erase boards, and dry erase markers

Procedure:

1. Teacher can review multiplication chart. Review by counting by 3's, 5's, 7's, etc.
2. Teacher will create a pattern and the students will fill in the blank (i.e., 3, 6, ?, 12, 15).
3. Have students explain how they arrived at their predictions. Review with 3 or 4 problems.

4. Have teacher create a T-chart on the board. On the left write an “N” above the line and on the right write “N+1” above the line.
5. Define algebraic rule to the students; a mathematical phrase with variables, numbers and operations. Define each part in the phrase “N + 1 = variable, operation, number”.
6. Write 3 numbers on the left under the line (i.e., 3, 4, 5).
7. Explain the procedure of adding 1 to each number as a representation of “N + 1”.
8. List other random numbers and ask children to predict the answer. Have the students explain how they arrived at their predictions.
9. List 3 new algebraic rules; “N x 6”, “2N + 2”, “3N - 3”.
10. For 3rd and 4th graders work through the problems with the whole group.
11. For 5th and 6th graders you can work with the whole group or you can split students up into pairs and allow them to choose a problem to work through, but monitor closely.

Formative Assessment:

- The students should be able to find, name, and create a simple algebraic rule.

Lesson 4: I Spy a Pattern—Making Sense of Patterns

Essential Question:

How are patterns used in reading?

Content Standards:

- LA. 3.2.1.1: The student will understand the distinguishing features among the common forms of literature (e.g., poetry).
- LA.3.2.1.8: The student will select a balance of age and ability appropriate fiction materials to read (e.g., poetry), based on interest and teacher recommendations, to continue building a core foundation of knowledge.
- LA.4.2.1.1: The student will read and distinguish among the genres and sub-genres of fiction, nonfiction, poetry, drama, and media.
- LA.4.2.1.9: The student will select a balance of age and ability appropriate fiction materials to read (e.g., poetry), based on teacher recommendations, to continue building a core foundation of knowledge.
- LA.5.2.1.1: The student will demonstrate knowledge of the characteristics of various genres (e.g., poetry) as forms with distinct characteristics and purposes.
- LA.5.2.1.9: The student will use interest and recommendations of others to select a balance of age and ability appropriate fiction materials to read (e.g., poetry) to expand the core foundation of knowledge necessary to function as a fully literate member of a shared culture.
- LA.6.2.1.1: The student will identify the characteristics of various genres (e.g., poetry) as forms with distinct characteristics and purposes.
- LA.6.2.1.10: The student will use interest and recommendation of others to select a balance of age and ability appropriate fiction materials to read (e.g., poetry) to expand the core foundation of knowledge necessary to function as a fully literate member of a shared culture.

Youth Development Standards:

- 3 – child receives support from adults
- 5 – relationships w/ teachers provide encouraging environment
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- 21 – child is motivated and strives to do well in school
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- 35 – child can stay away from people who are likely to get him in trouble
- 36 – child seeks to resolve conflict nonviolently
- 37 – child feels he/she has some influence over what happens in their life
- 38 – child likes and is proud of who he/she is

Vocabulary:

- Patterns – something that repeats
- Rhymes – words that end with the same chunk sound at the end

Teacher Background Knowledge:

- Teacher should be aware of rhyming words and patterns.

Materials:

- Variety of poetry books (*see below for recommendations)

Procedure:

1. The teacher can start lesson with asking students to orally make rhymes with a common word (i.e., black–rack, knack, slack). Do this with 3 or 4 words.
2. Read/Show the poem Owlsong to students. As you read it to them, have them listen for rhyming words.
3. Explain to students that the rhyme pattern is ABCB. This means the 2nd and 4th line rhyme.
4. Read/Show What did? to students. As you read it to them, have them listen for rhyming words.
5. Explain to students that the rhyme pattern is AABCC. This means every two lines rhyme.
6. Have students read a variety of poetry and have them try to identify the pattern with the poem.
7. Give children an opportunity to read a variety of poetry aloud in order to practice the rhythm and pattern.
8. As an extension they can buddy up and perform as a reader’s theater.

Formative Assessment:

- The students should be able to name and identify the pattern of rhyme within a poem.

<p>*Recommended-<u>A Light in the Attic</u> and <u>Falling Up</u> by Shel Silverstein or <u>A Pizza the Size of the Sun</u> and <u>The New Kid on the Block</u> by Jack Prelutsky Website- gigglepoetry.com; childrenspoetry.com; poetry4kids.com</p>	
<p>Owlsong by Jack Prelutsky</p> <p>If I were as wise As many have said, I wouldn’t eat mice, I’d be in my bed.</p> <p>I’m not in my bed, I’m prowling the skies, So mice be aware... I’m not all that wise.</p>	<p>What did? by Shel Silverstein</p> <p>What did the carrot say to the wheat? “‘Lettuce’ rest, I’m feeling ‘beet’.” What did the paper say to the pen? “I fell all ‘write’, my friend.” What did the teapot say to the chalk? Nothing, you silly...teapots can’t talk!</p>

Lesson 5: I Spy a Pattern—Making Sense of Patterns

Essential Question:

How are patterns used in writing?

Content Standards:

- LA. 3.2.1.1: The student will understand the distinguishing features among the common forms of literature (e.g., poetry).
- LA.3.4.1.2: The student will write a variety of expressive forms (e.g., poetry) that may employ, but not be limited to, figurative language (e.g., simile, onomatopoeia), rhythm, dialogue, characterization, plot, and appropriate format.
- LA.4.2.1.1: The student will read and distinguish among the genres and sub-genres of fiction, nonfiction, poetry, drama, and media.
- LA.4.4.1.2: The student will write a variety of expressive forms (e.g., poetry) that employ figurative language (e.g., simile, metaphor, onomatopoeia, personification), rhythm, dialogue, characterization, plot, and/or appropriate format.
- LA.5.2.1.1: The student will demonstrate knowledge of the characteristics of various genres (e.g., poetry) as forms with distinct characteristics and purposes.
- LA.5.4.1.2: The student will write a variety of expressive forms (e.g., haiku) that employ figurative language (e.g., simile, metaphor, onomatopoeia, personification, hyperbole), rhythm, dialogue, characterization, plot, and/or appropriate format.
- LA.6.2.1.1: The student will identify the characteristics of various genres (e.g., poetry) as forms with distinct characteristics and purposes.
- LA.6.4.1.2: The student will write a variety of expressive forms (e.g., limericks) that employ figurative language, rhythm, dialogue, characterization, and/or appropriate format.

Youth Development Standards:

- 3 – child receives support from adults
- 5 – relationships w/ teachers provide encouraging environment
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Vocabulary:

- Patterns – something that repeats
- Rhymes – words that end with the same chunk sound at the end

Teacher Background Knowledge:

- Teacher should be aware of rhyming words and patterns.

Materials:

- Variety of poetry books (* recommendations listed below)
- Diamante
- Variety of poems-Haiku, Limerick

Procedure:

1. Teacher can start lesson with asking students to orally make rhymes with a common word (i.e., black-rack, knack, slack). Do this with 3 or 4 words.
2. Read/Show the poem Owlsong to students. As you read it to them, have them listen for rhyming words.
3. Explain to students that the rhyme pattern is ABCB. This means the 2nd and 4th line rhyme.
4. Read/Show What did? to students. As you read it to them, have them listen for rhyming words.
5. Explain to students that the rhyme pattern is AABBCC. This means every two lines rhyme.
6. Have students try to write a poem that follows either pattern. A starter may be given such as “Roses are red. Violets are blue...”
7. Encourage children to come up with a word that rhymes with blue and work it into the last two lines of the poem (i.e., “when I sneeze I say achoo” or “sheep say baa and cows says moo”).
8. An extension for more capable students is to introduce them to the Diamante poem-diamond shaped poem.
 - a. Line 1 is a single word-subject or noun.
 - b. Line 7 is the antonym.
 - c. Line 2 is two words describing the noun from line 1.
 - d. Line 6 is two words describing the noun from line 7.
 - e. Line 3 is three words ending with –ing that describe line 1.
 - f. Line 5 is three words ending with –ing that describe line 7.
 - g. Line 4 is four words long. The first two describe the line 1 and the last two describe line 7.
9. Teacher can also introduce more capable students to Haikus or Limericks; a more complicated type of poem.

Formative Assessment:

- The students should be able to identify and write a poem with a pattern.

*Recommended-A Light in the Attic and Falling Up by Shel Silverstein or
A Pizza the Size of the Sun and The New Kid on the Block by Jack Prelutsky
Website- gigglepoetry.com; childrenspoetry.com; poetry4kids.com; readwritethink.org;

Owlsong
by Jack Prelutsky

If I were as wise
As many have said,
I wouldn't eat mice,
I'd be in my bed.

I'm not in my bed,
I'm prowling the skies,
So mice be aware...
I'm not all that wise.

Diamante Poem

Fruit
Sticky Sweet
Ripening Squeezing Juicing
Groves Orchards Fields Patches
Harvesting Picking Growing
Healthy Tasty
Vegetables

What did?
by Shel Silverstein

What did the carrot say to the wheat?
"‘Lettuce’ rest, I'm feeling ‘beet’."
What did the paper say to the pen?
"I fell all ‘write’, my friend."
What did the teapot say to the chalk?
Nothing, you silly...teapots can't talk!

Lesson 6: I Spy a Pattern–Making Sense of Patterns

Essential Question:

How are patterns used in nature?

Content Standards:

- SC.5.L.17.1: Compare and contrast adaptations displayed by animals and plants that enable them to survive in different environments such as life cycles variations, animal behaviors and physical characteristics.
- VA.A.1.2.1.1: Use and compare two and three-dimensional media, techniques, tools, and processes to create works that are personally meaningful and draw from experience, observation, or imagination.
- VA.A.1.2.4.2: Use good craftsmanship in a variety of two & three-dimensional work of art.

Youth Development Standards:

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- 36 – child seeks to resolve conflict nonviolently
- 37 – child feels he/she has some influence over what happens in their life
- 38 – child likes and is proud of who he/she is

Vocabulary:

- Patterns–things that repeat
- Nature

Teacher Background Knowledge:

- Teacher should be aware of patterns that can be found in nature.

Materials:

- Pictures of animals in nature with patterns
- Crayons, markers, colored pencils
- 5 x 8 plain index cards

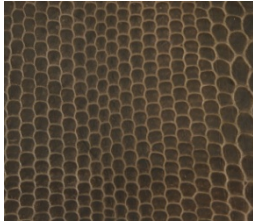
Procedure:

1. Teacher can start lesson by asking students to think of animals or other things in nature that have patterns or shapes as part of their characteristics (i.e., swirls, spots, rings, circles).
2. Teacher can print out pictures, use the document camera, or the computer to show a couple of enlarged images for clarity.
3. After students have brainstormed a list, show students the rest of the pictures attached.
4. As each picture is shown, have students identify the pattern in the picture.
5. Students will then try to replicate a pattern they have seen in nature or create one of their own.
6. Display artwork with title of animal or item.

Formative Assessment:

- The students should be able to identify and describe a pattern in nature.

Examples of Patterns in Nature



snake skin



zebra skin



yellow swallow tail butterfly



white Bengal tiger



cheetah



lemurs



clown fish



blue spotted octopus



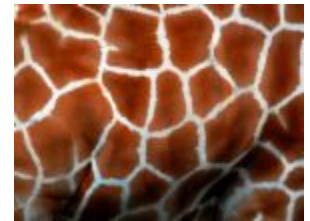
jaguar



bees



ladybugs



giraffe skin



shells-conch & pointy



sun dial shells



rainbow



palm frond



watermelon skin



sunflower seeds



tree stump with rings



pineapple

Lesson 7: I Spy a Pattern–Making Sense of Patterns

Essential Question:

How are patterns used in nature?

Content Standards:

- SC.5.L.17.1: Compare and contrast adaptations displayed by animals and plants that enable them to survive in different environments such as life cycles variations, animal behaviors and physical characteristics.
- VA.A.1.2.1.1: Use and compare two and three-dimensional media, techniques, tools, and processes to create works that are personally meaningful and draw from experience, observation, or imagination.
- VA.A.1.2.4.2: Use good craftsmanship in a variety of two & three-dimensional work of art.

Youth Development Standards:

- 3 – child receives support from adults
- 5 – relationships w/ teachers provide encouraging environment
- 10 – child feels safe at school
- 12 – school provides clear rules and boundaries
- 16 – teachers expect child to do his/her best at school
- 21 – child is motivated and strives to do well in school
- 22 – child is actively engaged in learning at school
- 24 – child cares about adults at school
- 34 – child is comfortable with people of other cultures
- 35 – child can stay away from people who are likely to get him in trouble
- 36 – child seeks to resolve conflict nonviolently
- 37 – child feels he/she has some influence over what happens in their life
- 38 – child likes and is proud of who he/she is

Vocabulary:

- Patterns–things that repeat
- Nature

Teacher Background Knowledge:

- Teacher should be aware of patterns that can be found in nature.

Materials:

- Stem Lab- Kid K’Nex Life Cycle kit
- 5 x 8 index card
- Pencils

Procedure:

1. The teacher can start the lesson by asking students to think of animals or other things in nature that have cyclical patterns as part of their characteristics.
2. Teacher can discuss cycles in nature (i.e., life cycles, water cycle, rock cycle).
3. Have students brainstormed a list.
4. Using the STEM Kid K'Nex Life Cycle kit, follow its direction to replicate the life cycle of a frog, caterpillar, and chicken.
5. Have students write an explanation of one of the life cycles.

Formative Assessment:

- The students should be able to identify and describe a cyclical pattern/life cycle in nature.

Lesson 8: I Spy a Pattern—Making Sense of Patterns

Essential Question:

How are patterns used in music or dance?

Content Standards:

- DA.A.1.2.2: Knows dance steps, positions, and patterns from various dance forms or traditions (e.g., ethnic, modern, and ballet).
- DA.A.2.2.4: Works with others using partnering skills such as imitating, leading, following, and mirroring.

Youth Development Standards:

- 3 – child receives support from adults
- 5 – relationships w/ teachers provide encouraging environment
- 10 – child feels safe at school
- 12 – school provides clear rules and boundaries
- 16 – teachers expect child to do his/her best at school
- 21 – child is motivated and strives to do well in school
- 22 – child is actively engaged in learning at school
- 24 – child cares about adults at school
- 34 – child is comfortable with people of other cultures
- 35 – child can stay away from people who are likely to get him in trouble
- 36 – child seeks to resolve conflict nonviolently
- 37 – child feels he/she has some influence over what happens in their life
- 38 – child likes and is proud of who he/she is

Vocabulary:

- Rhythm—a characteristic pattern
- Repetition—things done over and over

Teacher Background Knowledge:

- Teacher should be aware of patterns found in music and rhythmic movement.

Materials:

- Music for Macarena
- Music player – CD, IPOD, etc.

Procedure:

1. The teacher can start the lesson by teaching that songs have a rhythm.
2. The teacher can model how to play pat-a-cake to demonstrate repetition in music and steps.
3. The teacher can also create a pattern and have students try to imitate (i.e., snap, snap, clap; students snap, snap, clap).
4. The teacher can make this activity increasingly more difficult.
5. The same is true for most dances.

6. Begin with the Macarena and introduce students to the steps.
 - a. Right arm extended out, palm up
 - b. Left arm extended out palm up
 - c. Flip right arm, palm down
 - d. Flip left arm, palm down
 - e. Right hand to left shoulder
 - f. Left hand to right shoulder
 - g. Right hand to back of head
 - h. Left hand to back of head
 - i. Right hand to left hip
 - j. Left hand to right hip
 - k. Right hand on right hip
 - l. Left hand on left hip
 - m. Sway hips and jump rotating a 90° turn to the left
 - n. Repeat pattern starting with step "A"
7. Have children practice steps without music.
8. When children are able to perform the steps have them practice the steps to the song.
9. Discuss with students others song/dances that follow a pattern/repetition (i.e., electric slide, achy breaky heart).

Formative Assessment:

- The students should be able to identify, describe, and perform a repeating dance.

Lesson 9: I Spy a Pattern—Making Sense of Patterns

Essential Question:

How are patterns used in art?

Content Standards:

- VA.A.1.2.1.1: Use and compare two and three-dimensional media, techniques, tools, and processes to create works that are personally meaningful and draw from experience, observation, or imagination.
- VA.A.1.2.4.2: Use good craftsmanship in a variety of two & three-dimensional work of art.

Youth Development Standards:

- 3 – child receives support from adults
- 5 – relationships w/ teachers provide encouraging environment
- 10 – child feels safe at school
- 12 – school provides clear rules and boundaries
- 16 – teachers expect child to do his/her best at school
- 21 – child is motivated and strives to do well in school
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- 37 – child feels he/she has some influence over what happens in their life
- 38 – child likes and is proud of who he/she is

Vocabulary:

- Rhythm—a characteristic pattern
- Repetition—things done over and over
- Pattern—something that repeats
- Tessellation—an artwork made up of repeating geometric figures without gaps or overlaps

Teacher Background Knowledge:

- Teacher should be aware of patterns and repetition.

Materials:

- Drawing paper 9 x 12 in white, 3 x 4 inch index cards, colors, markers, colored pencils, rulers, scissors

Procedure:

1. The teacher can start the lesson by teaching that most art has patterns, symmetry, and shapes.
2. Instruct students to make three 3" sections across the paper length-wise.
3. Also have the students make three 4" sections across the paper width-wise.

4. After they have the nine squares as shown, have them make a template out of their little card.
5. If possible have their template try to touch two of the sides so that the piece is centered in each cell.
6. They will be making tessellations on this paper. A tessellation is a repeating pattern.
7. They will either keep the pattern facing the same way in every box (example 1) or they will flip it over the line every time (example 2).
8. Instruct students to color the tessellations using ONLY two colors. The colors should be contrasting but complimentary at the same time (i.e., green with yellow, blue with orange, black with red).
9. Tell the students to try and not let any of the white show through on their art pieces.

Formative Assessment:

- The students should be able to identify, describe, and draw a tessellation.

EXAMPLE 1

AB	AB	AB
AB	AB	AB
AB	AB	AB

EXAMPLE 2

←↑	↑→	←↑
←↓	↓→	←↓
←↑	↑→	←↑

Lesson 10: I Spy a Pattern—Making Sense of Patterns

Essential Question:

How are patterns used in math, reading, writing, nature, art, music, and dance?

Content Standards:

- Culmination of all standards

Youth Development Standards:

- 3 – child receives support from adults
- 5 – relationships w/ teachers provide encouraging environment
- 10 – child feels safe at school
- 12 – school provides clear rules and boundaries
- 16 – teachers expect child to do his/her best at school
- 21 – child is motivated and strives to do well in school
- 22 – child is actively engaged in learning at school
- 24 – child cares about adults at school
- 34 – child is comfortable with people of other cultures
- 35 – child can stay away from people who are likely to get him in trouble
- 36 – child seeks to resolve conflict nonviolently
- 37 – child feels he/she has some influence over what happens in their life
- 38 – child likes and is proud of who he/she is

Teacher Background Knowledge:

- Teacher should be aware of patterns and repetition.

Materials:

- Paper, pencils

Procedure:

1. The teacher can start assessment by asking children to remember all of the patterns we have worked with over the last two weeks.
2. Review each subject area asking children to recall the patterns, rhythms, rhymes, repetitions, lesson, or creations associated with that lesson.
3. Have children answer the essential question – How are patterns used in math, reading, writing, nature, art, music, and dance?

Formative Assessment:

- The students should be able to identify, describe, or draw a pattern used in any of the given subject areas.