

Math is Music to Our Ears: Lesson 3

Lesson Title: Money Rhythms

Length: 50 minutes

Age Group: Grade 2

Materials Needed: drum, Money Rhythm visuals, play money, big clock, easel, journals

Standards:

Math	Music	Movement
<p>CCSS.Math.Content.2.MD.C.8 Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using \$ and ¢ symbols appropriately. Example: If you have 2 dimes and 3 pennies, how many cents do you have?</p> <p>CCSS.Math.Content.2.G.A.3 Partition circles and rectangles into two, three, or four equal shares, describe the shares using the words halves, thirds, half of, a third of, etc., and describe the whole as two halves, three thirds, four fourths. Recognize that equal shares of identical wholes need not have the same shape.</p>	<p>2.1 Imitate rhythmic and melodic patterns on pitched and unpitched instruments.</p> <p>2.2 Perform on pitched and unpitched instruments in rhythm while applying a steady beat</p> <p>2.3 Perform rhythm accompaniments by ear.</p>	<p>1.1 Perform axial movements (e.g., bend, stretch, twist, turn, swing, collapse).</p> <p>1.3 Demonstrate eight basic loco-motor movements (e.g., walk, run, hop, jump, leap, gallop, slide, skip) traveling forward backward, sideward, diagonally, turning.</p>

Learning Objectives:

Cognitive	Affective	Psychomotor/ Artistic
<p>(1) Identify quarters and dollars and their values.</p> <p>(2) Partition rectangles into four equal shares.</p> <p>(3) Imitate rhythms.</p> <p>(4) Keep a steady beat.</p> <p>(5) Use sharp and smooth movements.</p>	<p>Students will appropriately use their voices to learn about money as a class or in small groups.</p>	<p>Students will transfer knowledge of patterns observed in money and rhythm to create their own patterns in song.</p>

Assessment Criteria for this lesson:

Cognitive	Affective	Psychomotor/ Artistic

Can students identify quarters and dollars? Can students partition rectangles into four equal shares? Can students keep a beat with their hands and repeat rhythms with their mouths? Can students use sharp and smooth movements?	Can students appropriately use their voices and bodies to learn about money?	Can students transfer knowledge of patterns observed in money and rhythm to create their own patterns in song?
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Introduce Lesson's Target Learning

How will you introduce your lesson's concept?

- I will introduce this lesson by describing that the whole purpose of the unit is to observe patterns in math, music, and movement. This class, students will be guided to understand money by learning about different rhythms.

Why are you studying this?

- To help students understand the connections between the music, dance, and math.

Integrated Activities

Whole Group Discussion

- What do you already know about money and rhythm?

Movement Warm Up

- Self space
 - Force – sharp vs. smooth movements

Rhythm Warm Up

- Gather in a circle and sit.
 - If there is not enough room, teach “Let’s Move Our Desks.”
 - “Let’s move our desks (class: let’s move our desks), so we have room to sit on the floor (class: so we have room to sit on the floor).”
- Show me your spider hands! Use these to tap on your laps the beat like this. Can everyone join me? Everybody look around. Are we all together?
- Imitating quarter and whole note rhythms on neutral syllables. (Point to self when modeling. Point to class when it is the students’ turn.)
 - Quarter = Du Du Du Du
 - Whole = Du-u-u-u
- What is the difference?

Same or Different?

- Speak two patterns – use hands to show if the two patterns were same (fist fist) or different (fist hand) we should have the two patterns written out. maybe: Duuuuuu (whole) du(quarter) du (quarter) du (quarter). and du (quarter) duuuuuu (whole) du (quarter) duuuuuu (whole)
- Introduce Rests
 - Rest = Sh à Du Du Du Sh
- What was different about the last pattern you heard? The sh sound. (Speak quietly) What sound do you make when a baby is sleeping? Or when you walk into the library? (Sh.) In music, silent moments are called “rests.” Can everybody say “rests?”

Introduce Money Visuals

- Explain what each money visual means
 - One dollar = Du-u-u-u
 - Four quarters = Du Du Du Du

- Rest = Du Du Du Sh
- Practice speaking rhythm to each visual with a beat

Rhythm Game

- Fast round
 - Hold up visual cards, including the tricky rhythms
 - Go slowly/ allow for beats in between?
 - Go faster?

Instructional Input – Whole Group: Introduce Fractions

- Shape doesn't matter! It is the value of the money. If I ripped this dollar in half, would it be worth anything?
- Pass around play money – dollars and quarters.
- Relate to time language “quarter past/ before” – show on clock the four quarters.
- Draw:
 - \$1 above 4 quarters
 - Say rhythm together. How many symbols do we see? 4. How many quarters do we see? 4. $\frac{4}{4}$. This is called a fraction. In math, when there is a four on the bottom, we can say “fourth” or “quarters.” For example, this is 4 fourths. Because we have 4 out of 4
 - Let's add up these values. How much does a quarter equal? 25 cents. This is the symbol we use for “cents.” Now let's add up all the quarters we have. How many quarters are there again? Okay, so 25 cents + 25 cents + 25 cents + 25 cents = \$1. This is the symbol we use for “dollar.” Do four quarters equal one dollar? Yes. So when we speak a rhythm with four quarters in it, how much is this rhythm worth? \$1. Great. Let's move on to something a little bit trickier.
 - \$1 above 3 quarters + 1 rest
 - Say rhythm together. How many symbols do we see? Also 4. How many quarters do we see? 3. $\frac{3}{4}$.
 - Let's add up these values. How many cents is a quarter again? 25. How many quarters do we have? 3. Let's add 25 cents 3 times. 25 cents + 25 cents + 25 cents = 75 cents. So when we speak a rhythm with three quarters out of four possible quarters in it, how much is this rhythm worth? 75 cents.
 - \$1 above 2 quarters + 2 rests
 - Say rhythm together. How many symbols do we see? 4. How many quarters do we see? 2. $\frac{2}{4}$.
 - Let's add up these values. How many quarters do we have again? 2. Let's add 25 cents 2 times. 25 cents + 25 cents = 50 cents. So when we speak a rhythm with two quarters in it, how much is this rhythm worth? 50 cents. (Show a Money/ Rhythm visual with 2 quarters and 2 rests in it different from the one drawn.) Are these two rhythms the same or different? In other words, are the patterns the same or different? Show me with your hands. Different. Are these two values the same or different? Show me with your hands. Same.
 - \$1 above 1 quarter + 3 rests
 - Say rhythm together. How many symbols do we see? 4. How many quarters do we see? 1. $\frac{1}{4}$.
 - Let's add up these values. How many quarters do we have again? 1. So how much is this rhythm worth? 25 cents. (Show a Money/ Rhythm visual with 2 quarters and 2 rests in it different from the one drawn.) Are these two rhythms the same or different? Show me with your hands. Different. Are these two values the same or different? Show me with your hands. Same.

Culminating Activity

Create your own Rhythm

- Go back to seats

- Hand out Create Your Own Rhythm worksheets
 - Part One: Students will be given certain money values (25¢, 50¢, 75¢, \$1). Their job is to design their own rhythms in the blank spots by inserting quarters, rests, or dollars. Any combination of money is acceptable, as long as the money values add up to the correct value.
 - Part Two: With their partners, the students will work together to say the rhythm.

Assessment

The following assessment will be used to measure students' ability to identify quarters and dollars and understand rhythm.

Whole Group Reflection – Reflect on activities

Written reflections – journals

Adapted from Lesson Plan Template by Eric Johnson 2002