



# Got Rhythm

## The Big Idea:

Discover the math in music by making your own music with regular everyday objects. Then test your memory skills by playing our own version of the game Simon!

## You Will Need:

- ★ Construction paper in red, blue, green and yellow: 1 sheet of each color per kid. NOTE: You can use plain paper or whatever colors are available.
- ★ Markers
- ★ Music on a smartphone, CD player, radio, etc.
- ★ Tape
- ★ Unsharpened pencils or other items suitable for drumsticks: 2 per player

## Key Prep:

Find some upbeat music on your smartphone or on CD! We suggest downloading “We Will Rock You” by Queen for the We Will Rock You section plus another fun song for the Silly Simon section, like “Happy” by Pharrell Williams, “Try Everything” by Shakira, “Can’t Stop the Feeling” by Justin Timberlake or “Shout” by the Isley Brothers.

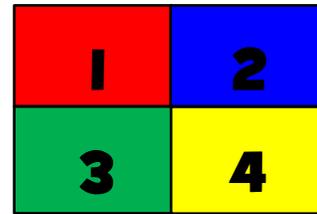
## The Math Behind the Scenes:

- ★ Counting, skip counting
- ★ Pattern recognition
- ★ Sequencing
- ★ Addition

# Silly Simon

## Make the Game Board:

Give each player 4 sheets of paper. Show them how to tape the sheets together and number them as shown at right. We recommend 1 sheet of red, blue, yellow and green, but you can make your drum mat using whatever you have at home!



## Let's Play!

Simon is an electronic device that plays a set of musical notes that you need to play back by pressing its buttons in the correct order. Simon makes the song longer and longer by adding one note each time – the challenge is to see how long you can remember all those notes and play them back without missing one! We're going to play our own version of Simon that uses numbers instead of notes. The key is to make sure you wait until Simon (a parent or sibling) finishes saying the string numbers before you hit the drum set!

Here's a warm-up example:

- ★ Simon says "1." Each player strikes the "1" square.
- ★ Now Simon says "1, 4." The players strike the 1 and 4.
- ★ Add a 3<sup>rd</sup> number, then a 4<sup>th</sup>, and have the players try the pattern. Each time, say the pattern, but don't say it while they drum it. They have to remember the string and play it back after Simon is finished!

Once the players have mastered a 4-step drumbeat, add music (see suggestions in Key Prep). Depending on the age of the kids, Simon can try increasing the string of numbers just like the real game (it may help Simon to write the string on a secret sheet a paper to help keep track)!

**BONUS:** Have Simon call out a single number and see if kids can hit the numbers that add up to this number. For example:

- ★ If Simon says 5, what move can we do that adds 2 numbers to make 5? (Let the players figure out it's either 2 and 3, or 1 and 4.)  
You can let the players strike both numbers at once!
- ★ How about 6? (Let the players figure out it's 2 and 4.)
- ★ And 7? (Let them figure out it's 3 and 4. Let them try it again.)

# Drum Major

Let's make more music with our drumsticks, using math to find the beat. Music is written in sets of notes called 'measures.' Most measures are a total of 4 beats, so each beat is  $1/4^{\text{th}}$  or a quarter of that measure.

Let's hear what a measure of 4 beats sounds like:

1. Have the kids strike their pencils together in an even beat while saying a number on each strike.
2. Make sure the kids rest between each number by pulling their pencils apart in an exaggerated way while saying the word "and" to emphasize the difference between a note and a rest. Everyone should be saying: "1 and 2 and 3 and 4 and"
3. Have the kids practice until they get the rhythm down pat.

Now, let's see how this rhythm sounds when we play it twice as fast:

4. Ask the kids to strike their pencils on every number as well as the word "and." There should be no rest between numbers like before.
  - ★ In 4 beats, how many times did we say a number? (Answer: 4.)  
And how many times did we say the word 'and'? (Answer: 4 again.)
  - ★ So, how many total numbers and words did we say? Let the kids figure out it's 8. When we double the speed of the measure, we divide it into 8 parts. That's why those are called eighth notes. They're each  $1/8^{\text{th}}$  of the whole set.

# We Will Rock You

Now that we've mastered the beat, let's try a fun rhythm with our hands and feet.

1. On a steady beat, stomp your feet twice, clap once, then pause and repeat. You can say the words out loud while you're doing the action:

stomp stomp clap (rest) stomp stomp clap (rest)

2. Invite the kids to try it slowly. Repeat until everyone is doing it in sync! You might recognize this beat as the stadium hit song "We Will Rock You."

3. Now have kids count out the beat while stomping/clapping:

1 2 3 4 1 2 3 4  
(stomp) (stomp) (clap) (rest) (stomp) (stomp) (clap) (rest)

Does this beat fall in 3s or 4s? Discuss. Even though there are 3 motions, the pattern repeats every 4 beats!

**BONUS:** If you have 8 beats, but you do 2 claps for every beat instead of just 1 clap, you've multiplied your sounds by 2. If our rhythm takes up 8 beats, how many beats of the song will it take to play it 6 times? (Answer: 48 beats, since  $8 \times 6 = 48$ .)