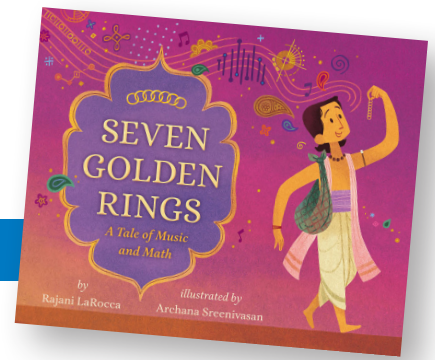


Seven Golden Rings: A Tale of Music and Math



RIF EXTENSION ACTIVITIES FOR EDUCATORS

INTERDISCIPLINARY THEMES: ART, ENGINEERING, GEOGRAPHY, MATH,
MUSIC, WRITING

ENGINEERING, MATH

BINARY CODE NAME

By thinking about the set of rings as each representing a different binary digit, Bhagat was able to use the three chains to create every number up to seven. Binary codes are represented in 1s and 0s.

Have your students use the attached Binary Code Alphabet to write their names in binary code. For an additional challenge, have your students write a secret message in code for a friend.

TECHNOLOGY CONNECTION

Code.org has additional lessons on binary numbers that your students may enjoy: <https://curriculum.code.org/csp-18/unit1/5/>

MATH, WRITING

MATH WORD PROBLEM

In the story, Bhagat shows us how we can use math to solve problems. Have your students work individually or in pairs to write a fun math word problem that could occur in everyday life. Then have your students trade word problems to solve. Afterwards encourage your students to reflect on their experiences writing and solving math word problems. You can have your students use RIF's Understand, Plan, Solve, Evaluate (UPSE) Chart to help students solve their word problems.

MUSIC, MATH

DIVISION FREEZE DANCE

On his journey, Bhagat hears different rhythms in his head created by whole notes, half notes, and quarter notes. He learns that there are many ways to divide a whole. Tell your students that you will be experimenting with how to divide the whole class into groups through a new version of freeze dance. When the music is playing students may dance and move about the space and when it stops you will call out a number and students must create groups that size (e.g., groups of 2, 3, 4). Afterwards have a discussion on the many ways to divide the whole class into groups.

GEOGRAPHY, WRITING

INDIA TRAVEL BROCHURE

Have your students research to find out details about India such as the culture, currency, foods, and sights to see. Then, individually or with a partner, have them create a travel brochure about India. (Technology link: if resources are available students could create a webpage instead). You may visit <https://knowindia.india.gov.in/national-identity-elements/> for your research.

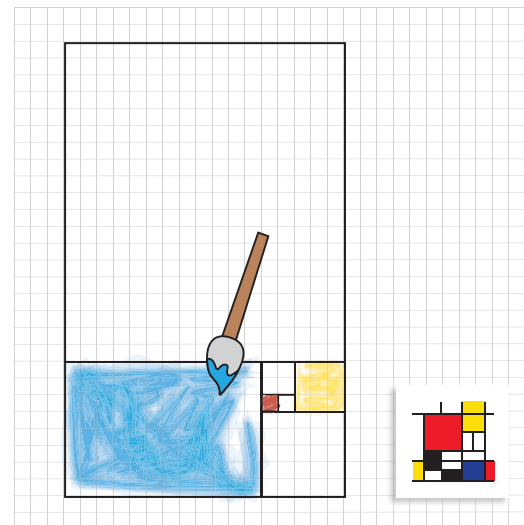
ART, MATH

MONDRIAN AND THE GOLDEN RECTANGLE ART

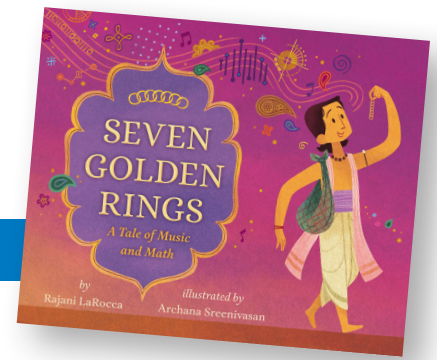
Materials: graph paper, pen or pencil, paint, paint brush

Tell students that Piet Mondrian was a Dutch artist who created abstract geometric artwork. Look up some of his artwork online and ask your students what they notice. Many of his artworks featured the Golden Ratio. The Golden Ratio is the sum of the previous two smaller sections. Learn more about Fibonacci's Golden Ratio by watching this video with your students: <https://www.youtube.com/watch?v=ihxJN6ZC9HE>.

Then, using graph paper, have your students create their own artwork using the Golden Ratio. Last, have your students paint in the squares with Mondrian's primary colors.



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BINARY CODE ALPHABET REFERENCE

1	A	00001	14	N	01110
2	B	00010	15	O	01111
3	C	00011	16	P	10000
4	D	00100	17	Q	10001
5	E	00101	18	R	10010
6	F	00110	19	S	10011
7	G	00111	20	T	10100
8	H	01000	21	U	10101
9	I	01001	22	V	10110
10	J	01010	23	W	10111
11	K	01011	24	X	11000
12	L	01100	25	Y	11001
13	M	01101	26	Z	11010