

# Freedom Quilts

CELEBRATING DIVERSITY THROUGH MATHEMATICS  
AND OTHER INTEGRATED SUBJECTS

Activities and Lessons: Grades 2-8



Honouring the Black Slaves who traveled the Underground Railroad by  
Creating Quilt Codes.



Compilation created by: Brian Diogo, Leonora Inglese, Jennifer Portelli, MaryAnna Lawrence,  
Sonia Janik-Corvinelli, Steve Kotulak and Mark Cassar

*Based on a Compilation of works by Professor Lynda Colgan of Queens University*

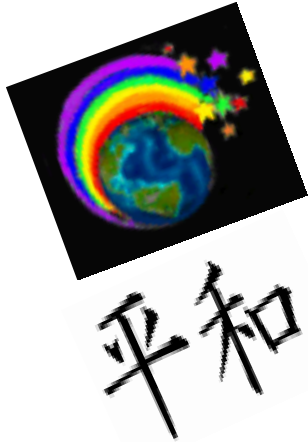


## Serve Our Children

O God, we pray for all those in our world  
 who are suffering from injustice:  
 For those who are discriminated against  
 because of their race, color or religion;  
 For those imprisoned  
 for working for the relief of oppression;  
 For those who are hounded  
 for speaking the inconvenient truth;  
 For those tempted to violence  
 as a cry against overwhelming hardship;  
 For those deprived of reasonable health and  
 education;  
 For those suffering from hunger and famine;  
 For those too weak to help themselves  
 and who have no one else to help them;  
 For the unemployed who cry out  
 for work but do not find it.

We pray for anyone of our acquaintance  
 who is personally affected by injustice.  
 Forgive us, Lord, if we unwittingly share in the  
 conditions  
 or in a system that perpetuates injustice.  
 Show us how we can serve your children  
 and make your love practical by washing their  
 feet.

Mother Teresa



平和



寧

صلوات الله  
وعلى آله  
وسلم



Symbols of Peace: top, clockwise – Doves, Peace Crane, Chinese symbol of Peace, Islamic Symbol of Peace, West African 'BI NKA BI' - "No one should bite the other", universal peace symbol, Ying-Yang symbol, universal torch, Circular, past-present-future peace, Japanese peace symbol, international rainbow symbol.

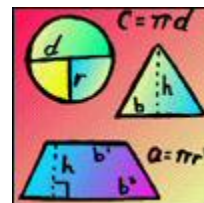
## Introduction



The need to promote mathematical literacy has been apparent for some time and traditionally, mathematics has been taught in isolation, usually from a textbook. For as long as we have tracked results, many students have generally struggled with mathematics. Many develop math anxiety, other simply get bored and lose interest. The question that often arises from students is: “*When will I ever need this stuff?*”

At the same time, the diversity of our student body challenges teachers to develop an inclusive curriculum, one that encompasses meaningful topics that have relevance to our students’ backgrounds and cultures. The Dufferin Peel Catholic District School Board serves the area of Peel, considered to be the most multicultural and diverse urban centre in the world. The need to develop an inclusive curriculum will challenge the traditional ways curriculum is taught and assessed.

Consequently, we conceived a need to create a unit that would fuse the beauty of mathematics, with the power and substance of diversity. Woven within these pages is a celebration of mathematics, highlighted with lessons in art, technology, history, geography, music, drama, Religion/Family Life and English. The vehicle for this celebration is the Freedom Quilts used by slaves during the era of North American slavery. The Freedom Quilt represent how a people, denied of any formal education, created an elaborate manner of communication, through a series of complex geometric shapes, inconspicuously woven into a tapestry of colours. These Freedom Quilts were hung from windows and served as a collection of signals, phrases and directions for slaves as they journeyed the Underground Railroad. All of this was accomplished, unbeknown to their Slave owners. Credit for the idea of connecting math to the Freedom Quilts is extended to Professor Lynda Colgan at Queens University. It was her presentation at OAME 2005 that provided the impetus to create a comprehensive unit on the topic.



Of course, no unit can encompass all elements of this topic, however, we hope you find the sample lessons and activities helpful and worthwhile. Your students will not only appreciate the intelligence, versatility and tenacity shown by Black slaves, but also appreciate the real-life applications of mathematics, in a cross-curricular, integrated setting. Not only will this resource suit most cross-curricular needs during February’s Black History Month, it will also serve well independently, all year round.



Some of the lessons will require access to the Internet. This insures the most up-to-date information available. Rubrics and assessment pieces, along with relevant background information, resources and reading, have also been included. Lessons are general enough to be adapted for many grade levels, combined classes and student abilities.

Tremendous gratitude is extended to those educators who contributed so much to the creation of this document. It is through their creativity and their dedication to the promotion of good mathematics teaching that made this resource possible. They are: Jennifer Portelli, Brian Diogo, Leonora Inglese, MaryAnna Lawrence, Sonia Janik-Corvinelli and Steve Kotulak.

*Mark Cassar, Principal*

<i>Number</i>	<i>Table of Contents</i>	<i>Page</i>
<b><i>BACKGROUND INFORMATION</i></b>		
<b>1.</b>	Prayer and Introduction	<b>2-3</b>
<b>2.</b>	The Story of The Quilt Code	<b>6</b>
<b>3.</b>	The Great Escape....The Underground Railroad Symbols to Freedom	<b>8</b>
<b>4.</b>	The Cairn	<b>9</b>
<b>5.</b>	What was the Underground Railroad and Where's the Math?	<b>10</b>
<b>6.</b>	Experimenting with Quilt block patterns	<b>14</b>
<b><i>MATHEMATICS &amp; TECHNOLOGY– The Making of a Freedom Quilt</i></b>		
<b>7.</b>	Geometer's Sketch Pad #1 – Flying Gees Quilt Block (grades 5-8)	<b>15</b>
<b>8.</b>	Geometer's Sketch Pad #2 – Monkey Wrench Quilt Block (grades 5-8)	<b>19</b>
<b>9.</b>	Geometer's Sketch Pad #3 – Freedom Quilt Patter Extension (grades 5-8)	<b>24</b>
<b>10.</b>	African Math Games – Awari and Mancala	<b>28</b>
<b>11.</b>	Blacks in Canada: A Long History - (Article: Math and English) (gr. 5-8)	<b>30</b>
<b>12.</b>	Making a Freedom Quilt – Detailed Lesson Plan. (Math, Art) (gr. 2-8)	<b>36</b>
<b>13.</b>	<i>Escape to Canada</i> – Math Game – Culminating Activity (gr's 5-8)	<b>46</b>
<b><i>MUSIC</i></b>		
<b>14.</b>	The Story and Song of the Drinking Gourd	<b>48</b>
<b>15.</b>	• Drinking Gourd Song and Lesson (gr 5-8)	<b>50</b>
<b>16.</b>	Communication Codes and Music – Background information	<b>55</b>
<b>17.</b>	• Freedom Songs and Assessment Rubric	<b>59</b>
<b>18.</b>	<i>Let's Make Music</i>	<b>63</b>
<b>19.</b>	• <i>Siyahamba</i> musical score, and assessment rubrics (grades 5-8)	<b>68</b>
<b><i>WEB BASED ACTIVITIES</i></b>		
<b>20.</b>	<i>The Slave Escape</i> (History, SES) (grades 4-8)	<b>71</b>
<b>21.</b>	<i>Heroes Of The Underground Railroad</i> (History) (grades 4-8)	<b>72</b>
<b>22.</b>	Acting Out A Scene from the Underground Railroad (Drama) (gr. 3-8)	<b>73</b>
<b>23.</b>	<i>Would You Have Helped?</i> (Ethics, Religion) (grades 6-8)	<b>73</b>
<b><i>SPECIFIC BLACK HISTORY LESSONS</i></b>		
<b>24.</b>	Harriet Tubman Lesson One: (S.E.S) Grades 3-6	<b>74</b>
<b>25.</b>	Harriet Tubman Lesson Two: (Art) Grades 3-6	<b>80</b>
<b>26.</b>	Harriet Tubman Lesson Three: (Music) Grades 3-6	<b>84</b>
<b>27.</b>	Black Slave Narratives – (English/History) Grades 5-8	<b>88</b>

28.	<i>Which Way Is Best?</i> – (Geography/SES) Grade 6-8	98
29.	Telling Stories Through Artifacts – (English) Grades 6-8	102
30.	Mapping Routes to the Underground Railroad (SES/Geog.) Grades 6-8	107
31.	Activity or Centre Ideas (Junior/Intermediate)	115
<b><i>EXTENSIONS</i></b>		
32.	Creating a Jazz Talk Show - (Music, art, English) Grades 4-8	126
33.	Creating an ABC book about slavery and Black History - (Music, Art, History, SES, English) Grades 3-8	129
34.	<i>Coming to North America: Then and Now</i> (English Grades 7-8)	133
<b><i>BLACK AND WHITE TEMPLATES</i></b>		
35.	• The Monkey Wrench	155
36.	• The Wagon Wheel Quilt Block	157
37.	• The Bear's Paw Quilt Block	159
38.	• The Cross Road's Quilt Block	161
39.	• The Log Cabin Quilt Block	163
40.	• The Shoe Fly Quilt Block	165
41.	• The Bow Tie Quilt Block	167
42.	• The Flying Geese Quilt Block	169
43.	• The Drunkard's Path Quilt Block	171
44.	• The North Star Quilt Block	174
<b><i>COLOUR INSTRUCTIONS FOR CREATING QUILT BLOCKS</i></b>		
45.	• The Bear's Paw Quilt Block	176
46.	• The Bow Tie Quilt Block	179
47.	• The Monkey Wrench	182
48.	• The Wagon Wheel Quilt Block	185
49.	• The Cross Roads Quilt Block	190
50.	• The Flying Geese Quilt Block	194
51.	• The Drunkard's Path Quilt Block	199
52.	• The Shoofly Quilt Block	206
53.	• The Log Cabin Quilt Block	210
54.	• The North Star Quilt Block	213
<b><i>RECOMMENDED READINGS, WEBSITES, RESOURCES &amp; TEMPLATES.</i></b>		
55.	• Recommended Readings	214
56.	• Websites and Other Books For Children	218
57.	• 7 x 7 Grid Template, 4 x 4 Grid Template, 3 x 3 Grid Template	221
58.	• Summary Sheet of Each Quilt Code	224
59.	• Underground Rail Road Codes and Phrases of Communication	226