

# MAKING A FREEDOM QUILT

## Lesson Overview:

Slaves followed symbols on "freedom" quilts that were put out during the day to give guidance on the directions or dangers that lay ahead of them. Quilts often use flips, turns, and slides to create symmetry. Both math and art elements were used in creating these directional quilts. Three "freedom" quilt designs are studied for evidence of this. The culminating activity is one "freedom" quilt designed and completed by the students.



A Grade 2 class and their Quilt

**Length of Lesson:** Four 45-minute periods

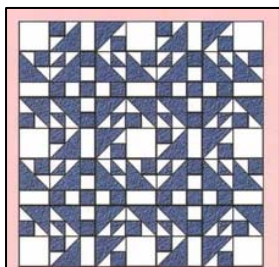
**Notes:** This lesson is particularly suitable for grades 2-8.

**Instructional Objectives:** Students will:

- Explore how shapes slide, flip, and turn using pattern blocks.
- Design a class quilt using slides, flips, and turns and positive and negative colours.
- Identify six of ten "freedom" quilt patterns.
- Using a template, create either the "Crossroad," "Shoofly," "Monkey Wrench," or "Star" pattern.
- Write a description of the math and art elements used to create the "Crossroad," "Shoofly," "Monkey Wrench," or "Star" pattern.

Supplies:

- Markers, crayons, pencils, coloured pencils, or water colour, water, and brushes
- Glue, glue sticks, pencils, and scissors
- Large teacher pattern blocks or see through pattern blocks for use with an overhead projector
- 8" x 8" square (divided into 4, 4" x 4" squares to fit the 16 triangles in)
- Black construction paper/White construction paper



## Instructional Plan:

The students should have some prior knowledge of Harriet Tubman and the Underground Railroad.

( <http://www.spartacus.schoolnet.co.uk/USASubman.htm> )

If not then you need to inform students that the Underground Railroad was organized by former slaves, freed blacks, and sympathetic whites for the run away slaves to find shelter, food, drinking water, safe hiding places, and paths or roads to follow.

Most of the travel was done at night and the "Drinking Gourd" or the "Big Dipper" was a welcome site. Explain to the students that the Big Dipper is a group of very bright stars that

resemble the cup and long handle of a water dipper that was used to get water from a bucket or a well. We do not commonly use dippers today but they were a part of every household in the 1800's. Slaves commonly used a gourd cut in half as a dipper because they did not have the funds to purchase metal or ceramic ones, and so the reference to drinking gourd in "Follow the Drinking Gourd" It helped them keep on a northern path as the North Star could be found at the dipper end of the Big Dipper by looking up from the star that formed the top right hand part of the dipper.

Since many slaves could not read, songs and symbols were used to guide them on their way. One famous song, "Follow the Drinking Gourd" is one that has made it through to today and was sung to tell people how to get to freedom. Another method of communicating safety or danger was the use of quilts. They called them "freedom quilts". They were hung on a line and used different designs to communicate. Do we communicate by symbols in any way nowadays? Signs that are universal like a stop sign or handicapped sign or hand gestures such as a wave that are known. Do people develop secretive symbols or signs? How do shapes and patterns on a quilt communicate information? There were ten patterns that gave messages to the runaways. Tell the students that they will be working with or making six of these patterns and that throughout the lesson they will hear little stories describing the patterns and what they told. Ask them to pay careful attention because at the end of the lesson, they will be quizzed on them.

Display "Flying Geese" a "Freedom" quilt design (see index). Can any students find evidence of slides, flips, or turns in the design? What geometric figures are visible in the design? What compass rose positions are visible in the design? What is symmetry? Is this pattern symmetrical? If so, where is the line of symmetry?

Distribute a medium triangle (shape G) from the Quilt Shapes handout (page 37) and a blank 4 square Quilt Base handout (page 38) to each student. Follow these steps:

1. Have the students place the triangle in the top left square so that the base of the triangle touches the line at the bottom of the top square.
2. Ask the students to SLIDE the triangle up so that the point of the triangle touches the top line of the top square.
3. Once that move is done successfully by all, the students place the triangle on the bottom line and trace around that area.
4. The students then do the SLIDE up to the top line again and trace that triangle. There should be two triangles facing NORTH. They do not overlap and the bottom triangle's top point just touches the top triangle's base. The next step moves to the EAST.
5. Have the students place the triangle (shape G) in the top of the four squares so that it is touching the top line (NORTH).
6. Take the triangle and TURN it to the right. The triangle is now in the top right square and touching the middle line of the four square.
7. Trace that shape and then SLIDE it to the edge. Trace that shape also.
8. Again, two triangles are seen not overlapping, but touching and facing EAST.
9. Repeat the TURN and SLIDE moves for SOUTH and WEST by moving to the bottom right then left squares of the four square. The final product is "Flying Geese."

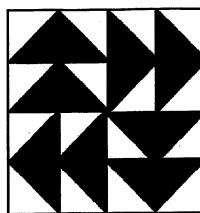
Runaway slaves used the "Flying Geese" pattern for directions. The darker colour indicated what direction to follow. The students colour the large triangles in variations of the same colour. The

two in each square facing the same direction are the same colour. Example, Black, Violet, Purple, and Lilac are colours that could be used to demonstrate this pattern.

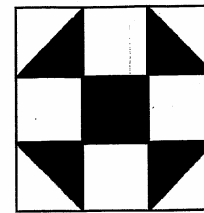
Distribute the **Quilt Pattern Examples handout** (page 41) while referring to "The Bow Tie" (The Hourglass). Place a four square on the board. Give out 8 black and 8 white triangles (shape G) to students. (\*Note: For this step, teacher needs to create these triangles from the template ahead of time.) Four triangles fit in each smaller square. Two are positive (reflect light) and two are negative (absorb light). Have a student place a white triangle in a smaller square. Glue it in place. Another student places a white triangle on top of the glued one and FLIPS it, to create symmetry within the smaller square. Glue.

Then have a black triangle placed on top of the first white triangle and TURN to one side of the first white triangle. Glue. The other black triangle FLIPS off the black triangle to complete the square. Glue. Have the other students complete the design. As each person comes up, he she tells if the triangle is sliding, flipping, or turning off another figure. As each bit goes on ask if it is symmetrical. The final product should be "The Bow tie." This pattern told escaped slaves that new clothing would be gotten at this stop to disguise themselves as free blacks before they reached the next safe house or destination.

Display "Shoefly," (see index) "Monkey Wrench," (see index) "Crossroads," (see index) "The Bow tie" (see index) (The Hourglass), and "The Star" (see index) patterns. Create a chart on the board and distribute the Quilt Chart handout (attached). The students work independently to identify what was done with the shapes to create each pattern.



Flying Geese



Shoefly

"Flying Geese" has been done as a model for the students. Collect and grade the completed work.

Each student is to work on another "Freedom" quilt pattern. Give out black and white construction paper, scissors, pencils, and glue. Divide the class into teams of four. Give each team a template for "Shoefly", "The Crossroad", "Monkey Wrench," and "The Star" patterns. Each person on the team completes one pattern. Provide a template of the sizes of triangles and squares to be cut. Leave the model of the completed patterns on display for reference. Suggest that the students cut out the triangles and squares to trace onto the white and black paper. They should count the number of triangles and squares of each kind needed on the full template design. A small 'b' or 'w' could be placed on the full design to help with placement. Allow students the rest of the time left and perhaps into the next day to complete the quilt piece.

#### **A description of the patterns is as follows:**

- "Monkey Wrench"—the pattern that signaled those slaves planning to escape to collect the mental and physical tools needed for escape. It was the first pattern to be displayed."
- "Shoefly"—a person who was very knowledgeable about codes. This person secretly aided and harboured runaways.
- "The Crossroad"—referred to the Cleveland Ohio Trail, which was often the crossroads point. The fugitive slaves received further instructions because many directions could be taken.

- "The Star"—the North Star; It was used as a navigation tool by the fugitives and sung about in Follow the Drinking Gourd. This pattern and "Flying Geese" are directional patterns and the runaway slaves looked to the sky for guidance.

Have students label the quilt design in a short paragraph or fills an index card. The label is written to inform. It describes the name of the pattern, what was done to create them, and includes math terms and art terms. There should be more than just one description for math and art. Place the card on the back of the finished piece. Then connect all of the pieces for a class quilt.

**Assessment:** Use the **Rubric** (page 39) to assess your students. Give out the freedom **quilt Quiz** (page 40) handout for the students to complete and return to the teacher. Students can also fill in the **Quilt Chart** (page 42) to illustrate understanding of the geometric processes involved in creating the quilt blocks.

**Extensions:** Have students create their own quilt designs to guide the run away slaves. They then write a description of the significance of the design. The description also includes math and art elements.

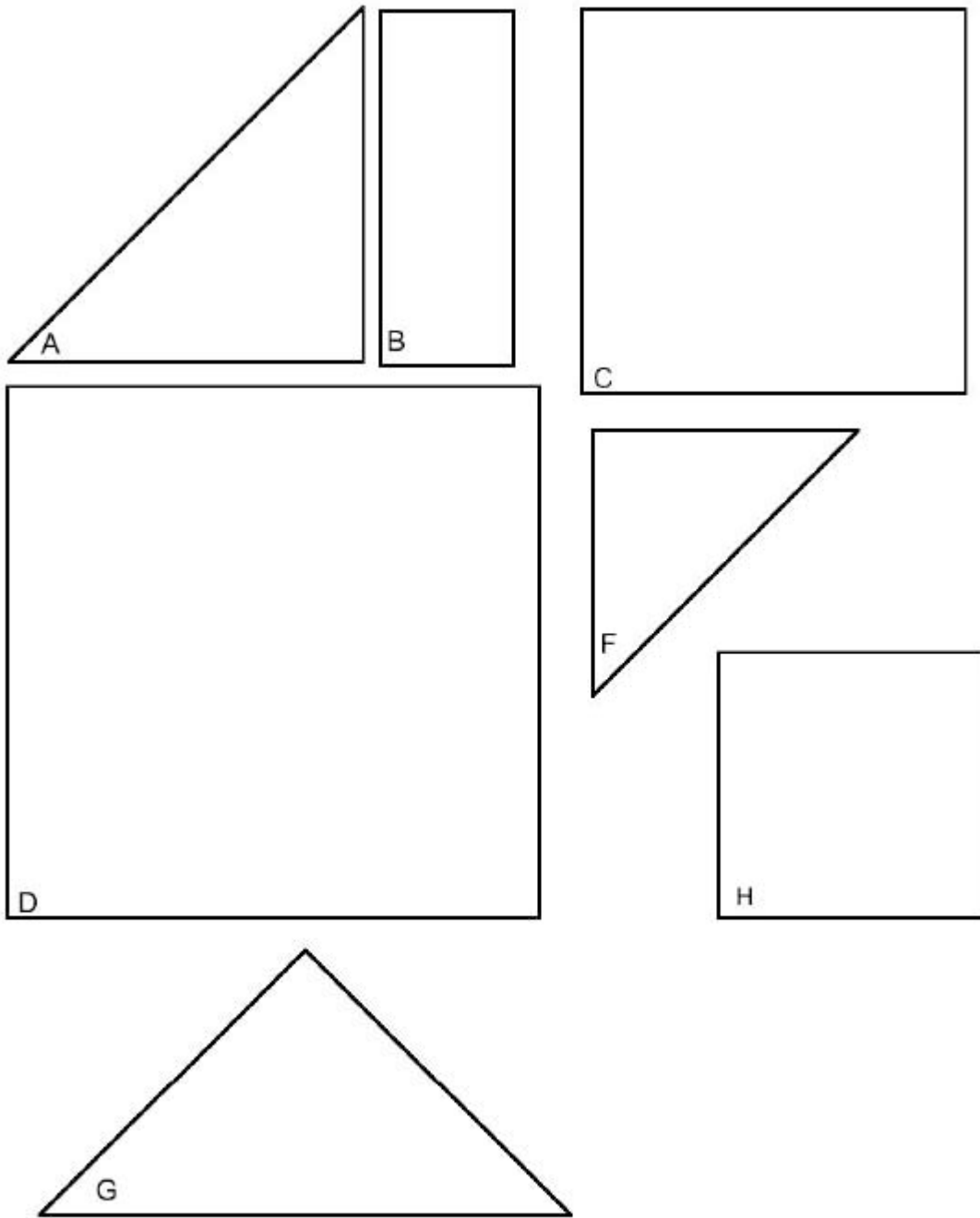
Instead of black and white paper to make the patterns, use coloured construction paper and wrapping paper. Have the colours used compliment each other dramatically. The designs now can be three or four colours instead of just two. Don't go over four because for young students, it gets very confusing. (Many adults also have this problem.)

The teacher may wish to distribute plain paper, water colour, and brushes, as well as limiting the colour pallet the students can use. Students can do dry or increasingly wetter brush strokes. The design is to be abstract. After it dries, the student can choose the most interesting parts of the abstract to use in the quilt. The pieces can be traded around also because they are the same limited colour grouping. Add a solid complimentary piece of construction paper and it becomes very interesting.

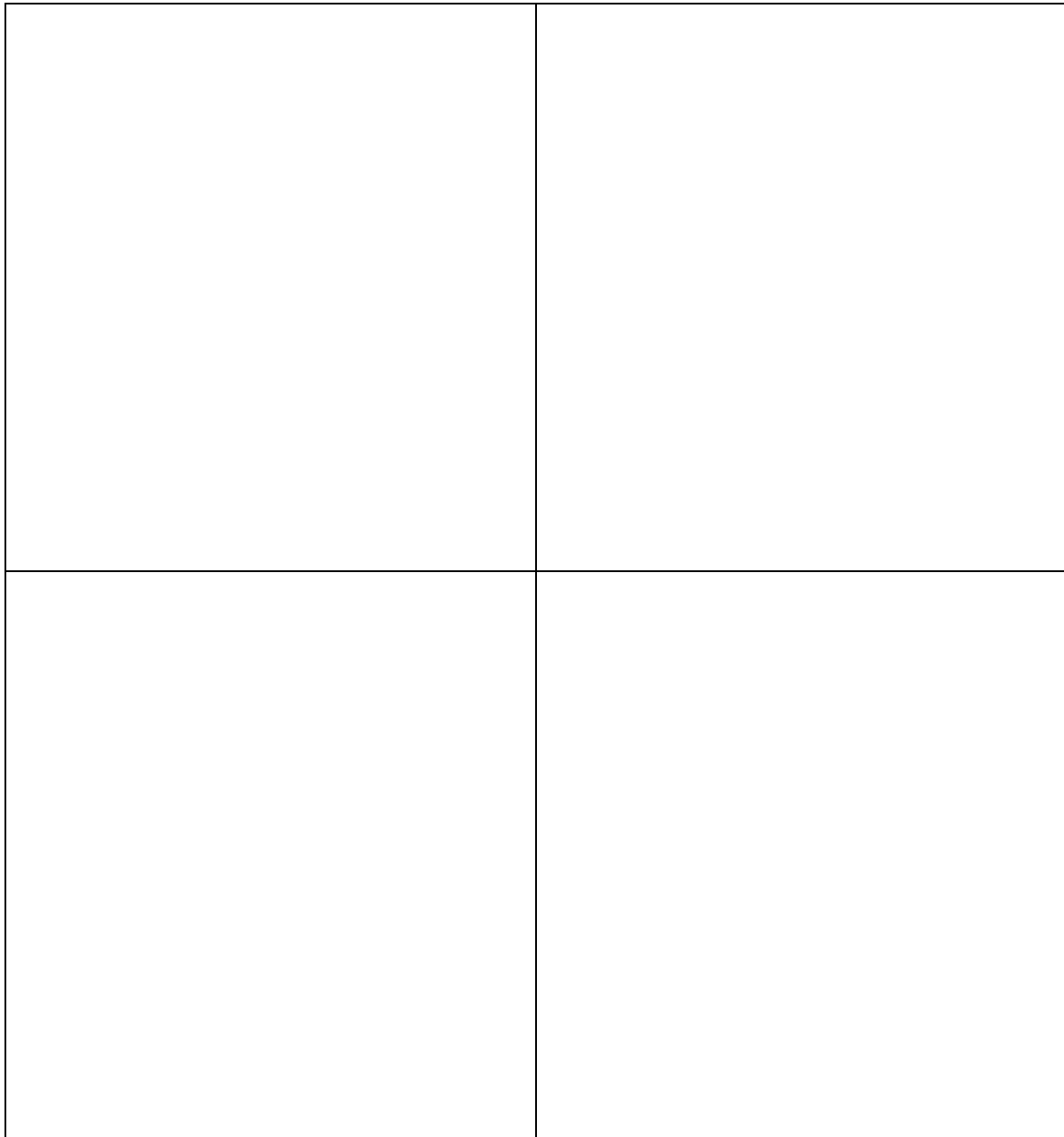
Have older students work on the other four patterns of the "Freedom Quilts." Use the quilt web sites to look at them. The directions are there. They are:

- "The Wagon Wheel" —this was the second pattern displayed and symbolized the need to think about what was needed for survival.
- "The Log Cabin"—it told fugitives that this was a safe house location. Yellow or red in the center meant a welcome, warm, and safe place. A black center warned of danger.
- "The Drunkard's Path"—reminded the runaways to move in a zigzag fashion to fool the slave hunters.
- "The Bear's Paw"—used in South Carolina and the Appalachians to indicate the best path for food and water.

# QUILT FORMS



# Quilt Pattern 6x6



## Freedom Quilt Rubric

Student Name: \_\_\_\_\_

	<b>Level 4</b>	<b>Level 3</b>	<b>Level 2</b>	<b>Level 1</b>
<b>The student created “Flying Geese” Pattern using slides and turns.</b>	Successfully completed the pattern in both design and colour	Completed most of the pattern in both design and colour.	Attempt made, but part of the pattern is incorrect either in design or colouring.	No attempt made.
<b>The student completed the Quilt Chart identifying the name; geometric shapes used; slides, flips, or turns; and if the pattern has symmetry.</b>	Successfully completed chart with no incorrect answers.	Attempt made with few incorrect answers.	Attempt made with few correct answers or incomplete.	No attempt made or all answers incorrect.
<b>The student created the quilt piece using positive and negative design.</b>	Successfully completed the pattern in both design and colour.	Completed most of the pattern in both design and colour.	Attempt made, but part of the pattern is incorrect in design or colour.	No attempt made.
<b>The student identified six “Freedom Quilt designs.</b>	5 – 6 patterns correctly identified.	3 – 4 patterns correctly identified.	1 – 2 patterns correctly identified.	No attempt made or all answers incorrect.
<b>The student described in writing the elements of math and art that were used to create the quilt piece they worked on in class.</b>	Wrote about the quilt piece included both math and art elements/many descriptions.	Wrote about the quilt piece included both math and art elements, but minimum. descriptions used.	Wrote about the quilt piece but did not include both math and art elements.	No attempt made.

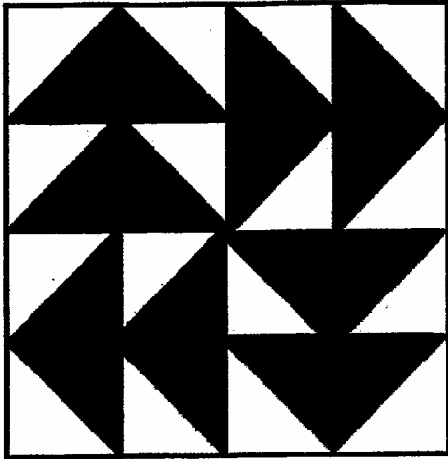
## Freedom Quilt Quiz

Name: \_\_\_\_\_ Date: \_\_\_\_\_

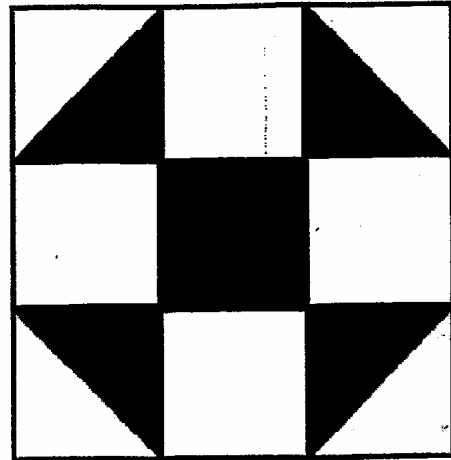
**Directions: Fill in the blank with the correct quilt design name.**

1. The way the darkest colour was facing gave the direction to follow \_\_\_\_\_.
2. Change clothes to look like a free man \_\_\_\_\_.
3. Get ready by gathering tools for the journey \_\_\_\_\_.
4. Wait for further directions at this stop \_\_\_\_\_.
5. Look to the night sky for the directions \_\_\_\_\_.
6. This person knows a lot of secret codes \_\_\_\_\_.

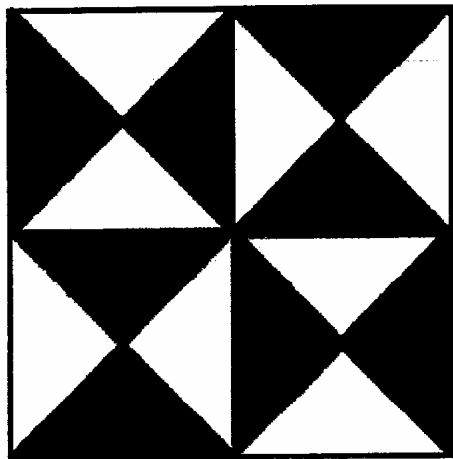
**Monkey Wrench Shoofly Flying Geese Star Crossroads Bow tie**



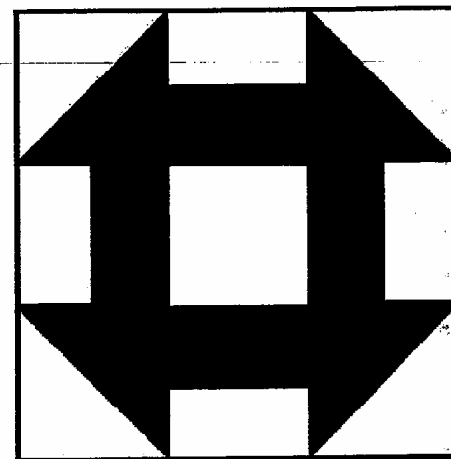
Flying Geese



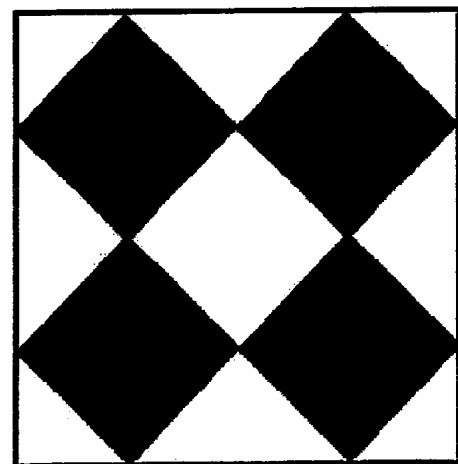
Shoofly



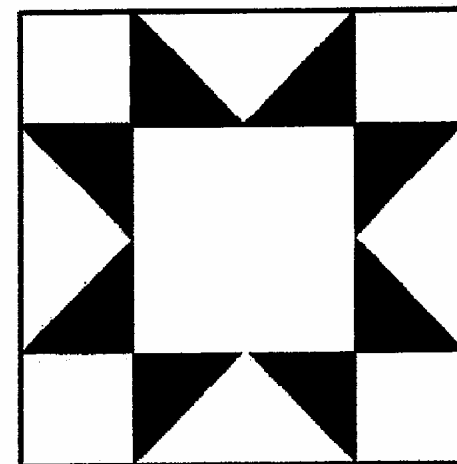
Hourglass



Monkey Wrench



Crossroads



Star

# Quilt Chart

Student Name: \_\_\_\_\_

Name	Flip, Slide, Turn	Geometric Shapes	Symmetry
Flying Geese	Slides and Turns	Used Large and Small Triangles	Yes

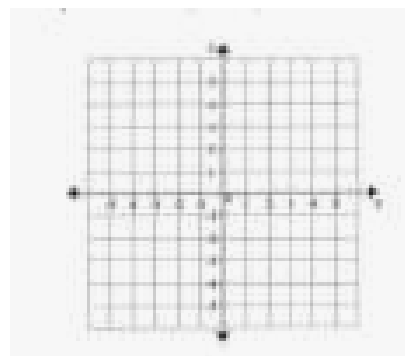
# MATH LESSON

## Escape to Canada: Criteria for the game

Your task is to create a game based on how black slaves escaped to Canada.

Your game must include:

- A game board that resembles a co-ordinate plane – players will move according to the co-ordinates given
- Clearly stated rules and instructions on how to play the game
- Use of transformational geometry



### Planning your game:

Game name:

Materials needed:

Game board design:

Game rules:

How to play the game:

Teacher/Group Conference (possible suggestions)