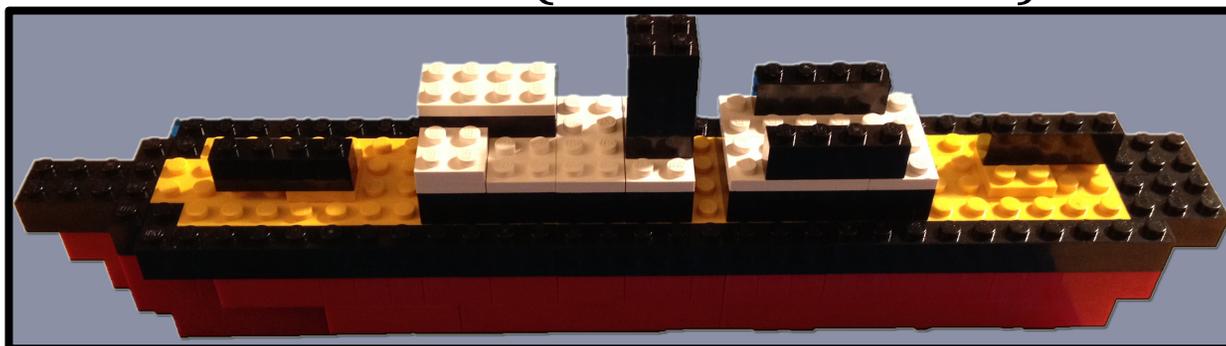


BRICK BY BRICK: LEGO® SHIPBUILDING



LEVEL: MEDIUM (*CSS Nansemond*)



A Note on Dimension:

The instructions included for this ship model represent a new educational initiative by the Hampton Roads Naval Museum and the Naval Historical Foundation in order to promote STEM principles under the lens of naval history. When properly assembled, each graph (or Step) represents a layer of bricks built to resemble a design of a specific ship used in American naval history. Colors represent each specific layer of the vessel, from the keel to the top masts. Please note that the sizes and shapes represented in these instructions are squared. However, they are not to scale with LEGO brick sizes. They merely show the graphical placement locations of brick layers.

RED, WHITE, BLACK, AND YELLOW BRICKS ARE REQUIRED FOR THIS MODEL.

Ship Models included in this program are built with LEGO® bricks. LEGO® is a trademark of the LEGO Group of companies which does not sponsor, authorize, or endorse this program.

BRICK SUPPLY LIST

BRICKS	RED	WHITE	BLACK	YELLOW
1x2	5	0	7	0
1x3	4	0	2	0
1x4	0	0	6	2
1x6	14	0	0	2
1x8	4	0	4	2
1x10	0	0	2	2
2x2	1	0	2	0
2x3	9	0	4	1
2x4	11	3	5	1
2x6	8	1	0	1
2x8	3	0	0	2

TOTALS: 59 4 32 13

BRICKS	FLAT BRICKS			
2x2	0	3	0	2
2x4	0	7	2	0

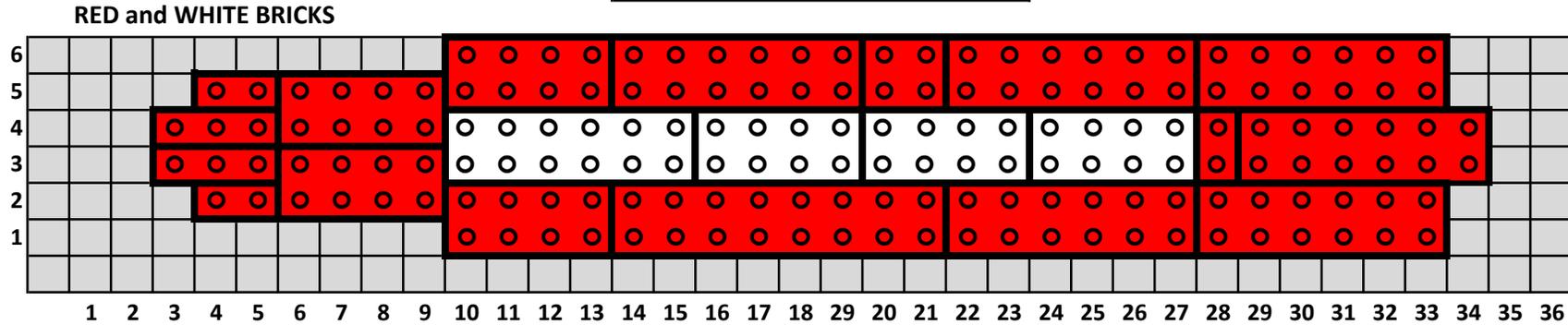
TOTALS: 0 10 2 2

TOTAL BRICKS: 122

CSS Nansemond Model



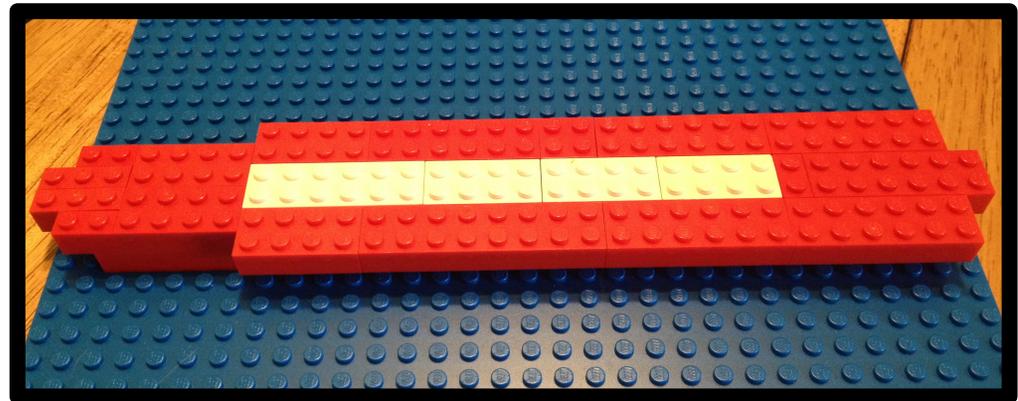
Step 2: Lay down the second layer (Red bricks shown in Red)
 (White bricks shown in White)



For this step, you will need:

BRICKS	RED	WHITE
1x2	3	0
1x3	2	0
2x2	1	0
2x4	4	3
2x6	6	1
2x8	1	0
TOTALS	17	4

STEP 2: VISUAL REPRESENTATION (Shown in RED and WHITE)

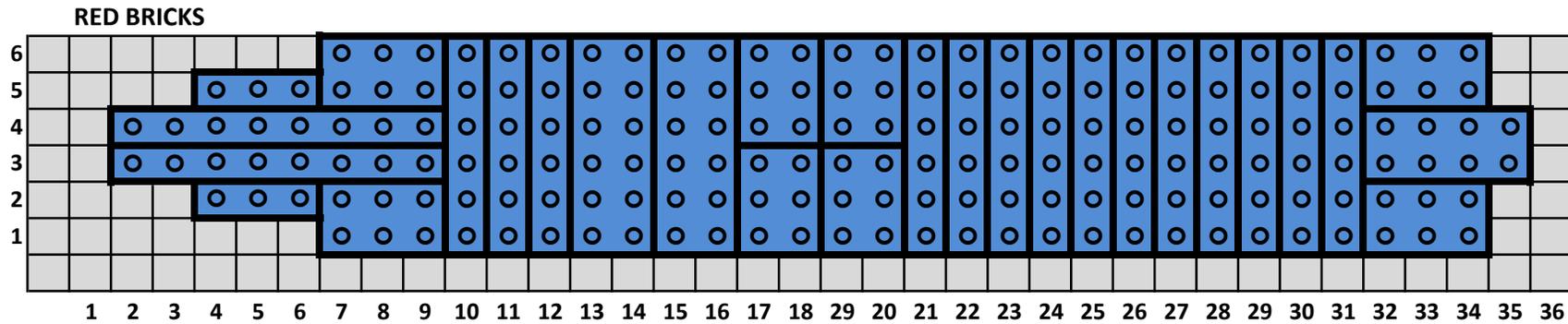


Above image represents actual brick color.

CSS Nansemond Model



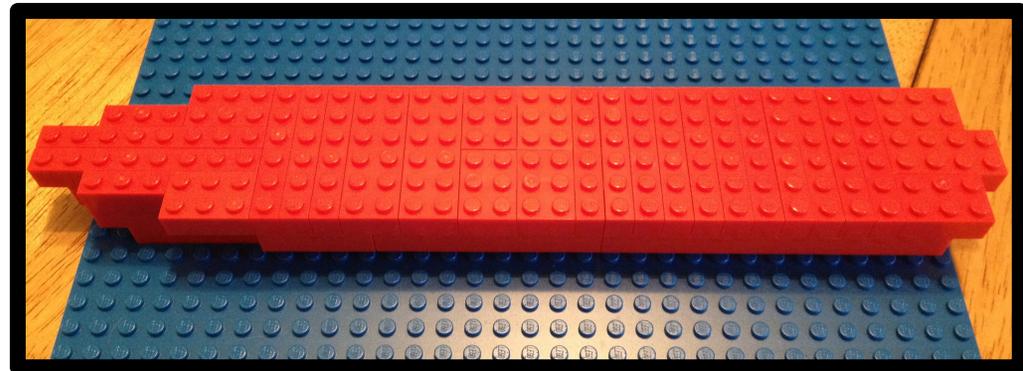
Step 3: Lay down the third layer (shown in Blue)



For this step, you will need:

BRICKS	RED
1x3	2
1x6	14
1x8	2
2x3	8
2x4	1
2x6	2
TOTALS	29

STEP 3: VISUAL REPRESENTATION (Shown in RED)

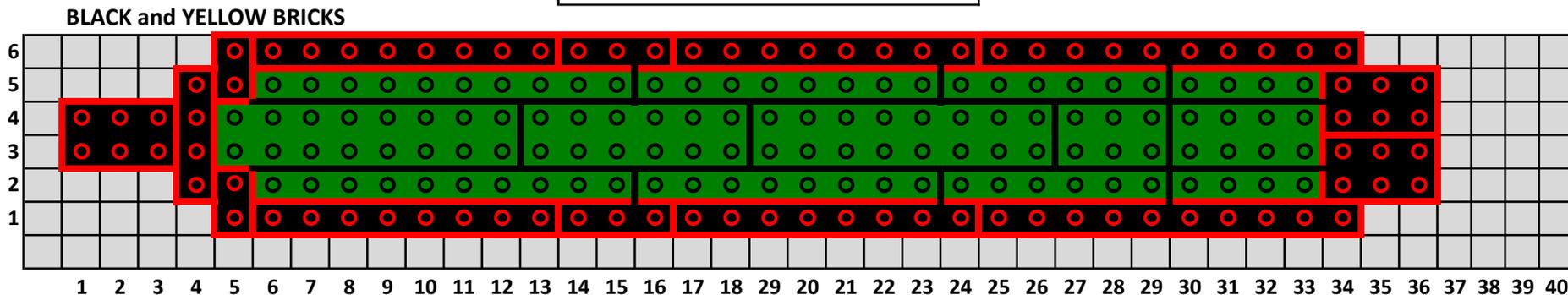


Above image represents actual brick color.

CSS Nansemond Model



Step 4: Lay down the fourth layer (Black bricks shown in Black)
 (Yellow bricks shown in Green)

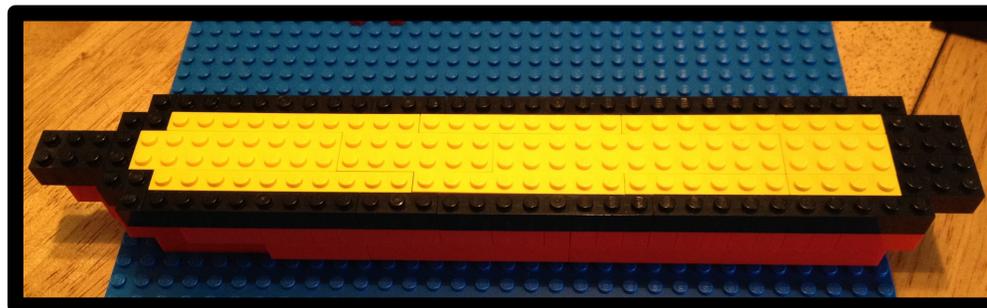


NOTE: Black bricks are highlighted in Red.

For this step, you will need:

BRICKS	BLACK	YELLOW
1x2	2	0
1x3	2	0
1x4	1	2
1x6	0	2
1x8	4	2
1x10	2	2
2x3	3	1
2x4	0	1
2x6	0	1
2x8	0	2
TOTALS	14	13

STEP 4: VISUAL REPRESENTATION (Shown in BLACK and YELLOW)

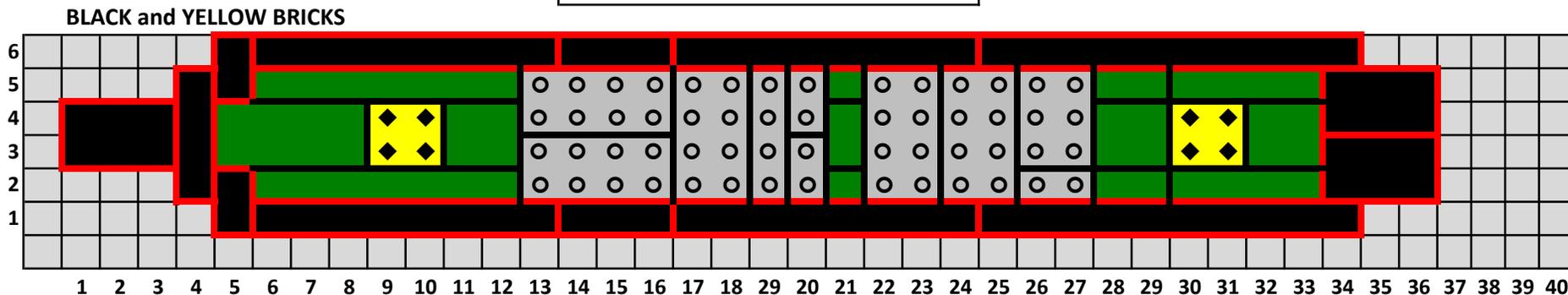


Above image represents actual brick color.

CSS Nansemond Model



Step 5: Lay down the fifth layer (Black bricks shown in Gray)
 (Yellow bricks shown in Yellow)

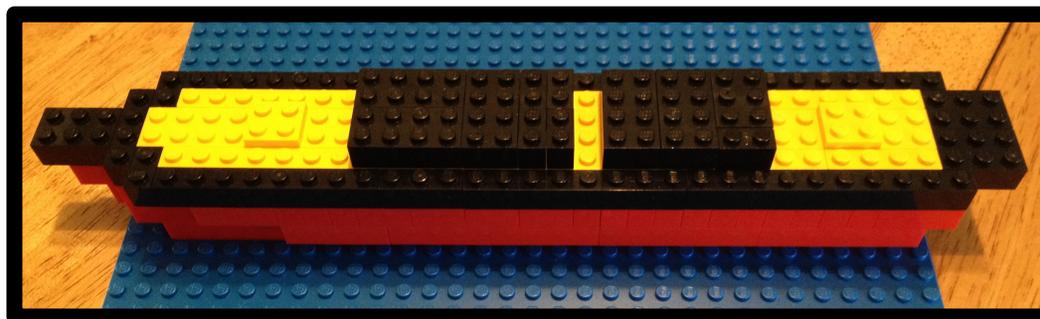



 = Denotes a Flat Brick (Yellow)

For this step, you will need:

BRICKS	BLACK	YELLOW	
1x2	3	0	
1x4	1	0	
2x3	1	0	
2x4	5	0	
2x2	0	2	FLAT
TOTALS	10	2	

STEP 5: VISUAL REPRESENTATION (Shown in BLACK and YELLOW)

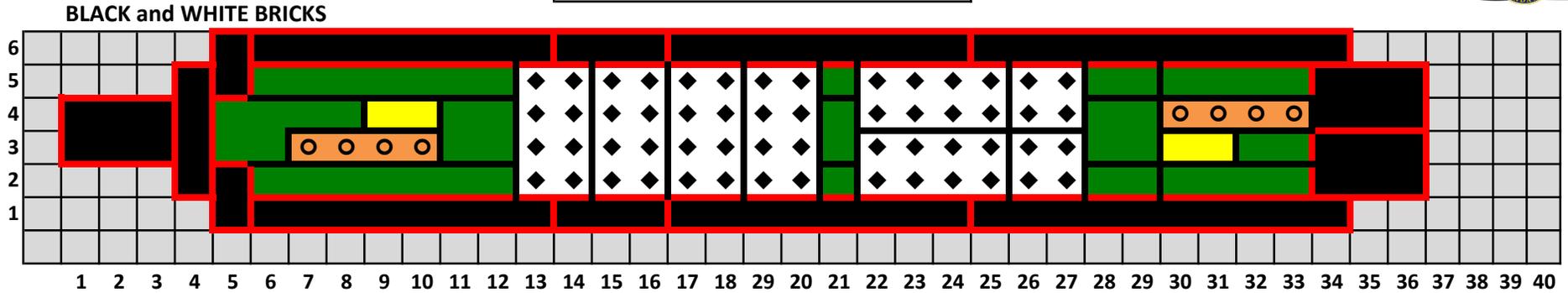


Above image represents actual brick color.

CSS Nansemond Model

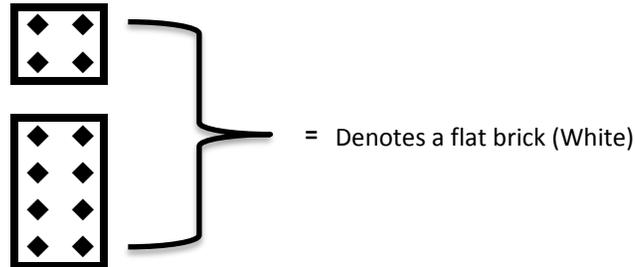


Step 6: Lay down the sixth layer (Black bricks shown in Orange)
 (White bricks shown in White)

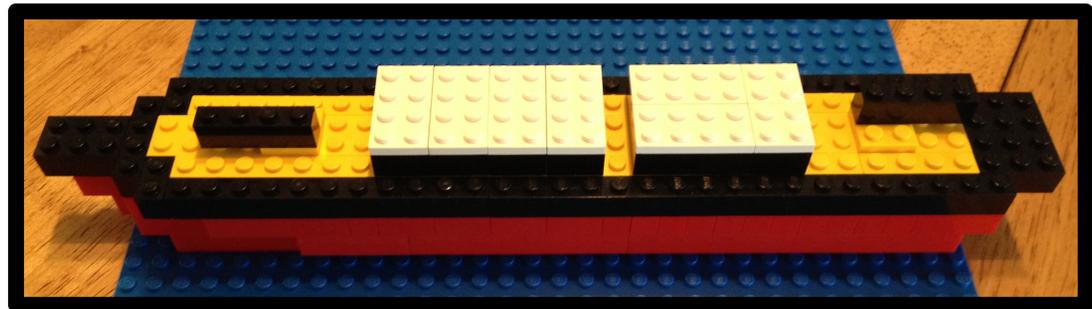


For this step, you will need:

BRICKS	BLACK	WHITE	
1x4	2	0	
2x2	0	2	FLAT
2x4	0	6	FLAT
TOTALS	2	8	



STEP 6: VISUAL REPRESENTATION (Shown in BLACK and WHITE)



Above image represents actual brick color.

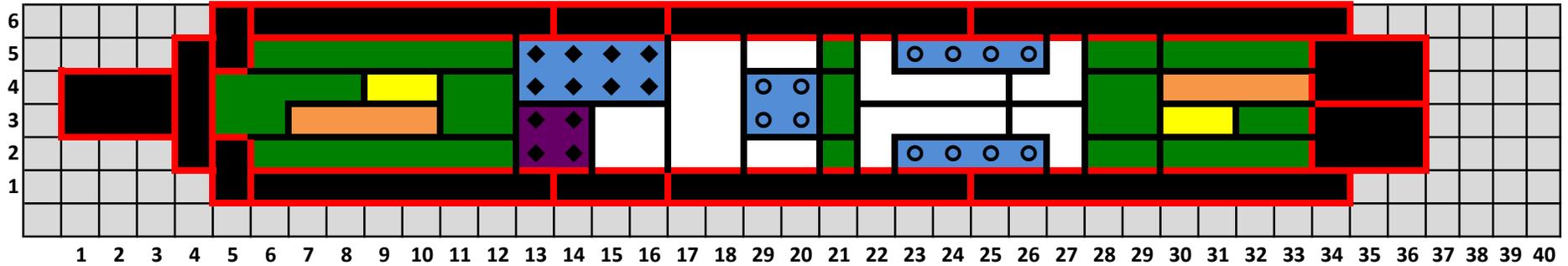
CSS Nansemond Model



Step 7: Lay down the seventh layer

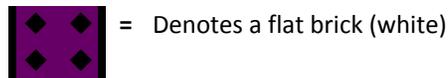
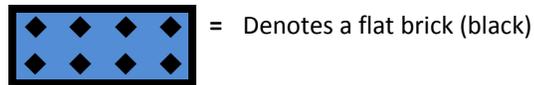
(Black bricks shown in Blue)
 (White bricks shown in Purple)

BLACK and WHITE BRICKS

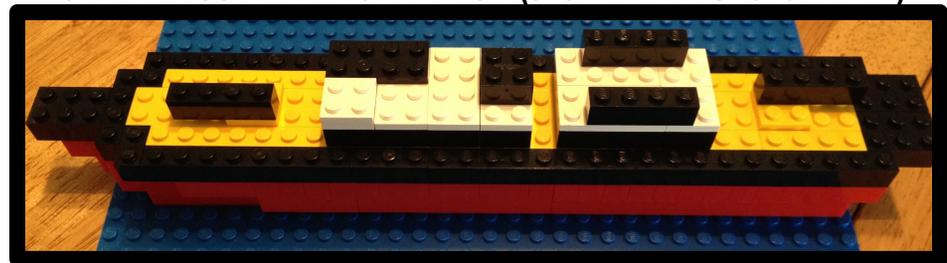


For this step, you will need:

BRICKS	BLACK	WHITE	
1x4	2	0	
2x2	1	0	
2x2	0	1	FLAT
2x4	1	0	FLAT
TOTALS	4	1	



STEP 7: VISUAL REPRESENTATION (Shown in BLACK and WHITE)

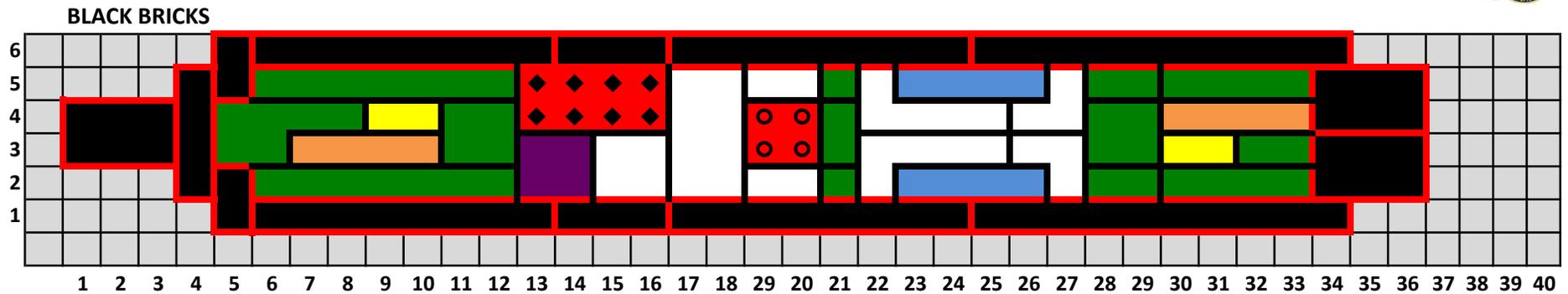


Above image represents actual brick color.

CSS Nansemond Model

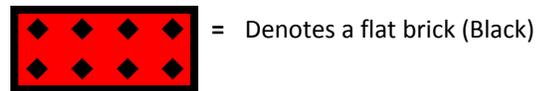


Step 8: Lay down the eighth layer (Black bricks shown in Red)

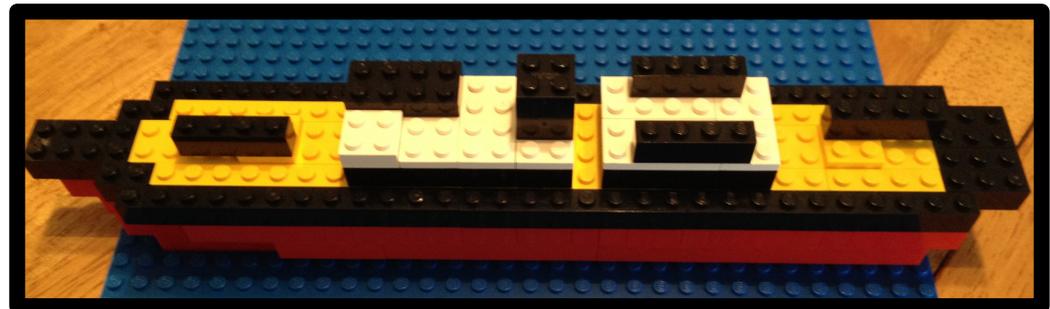


For this step, you will need:

BRICKS	BLACK	
2x2	1	FLAT
2x4	1	
TOTALS	2	



STEP 8: VISUAL REPRESENTATION (Shown in BLACK)

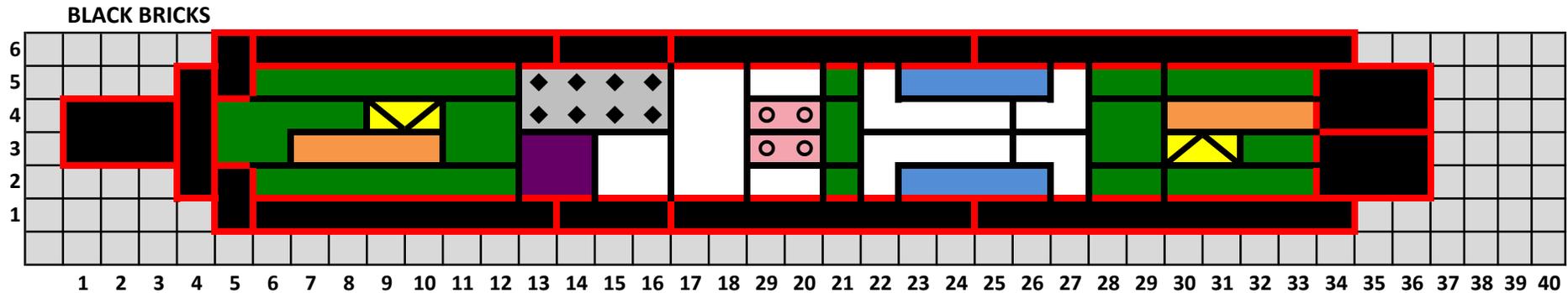


Above image represents actual brick color.

CSS Nansemond Model



Step 9: Lay down the ninth layer (Black bricks shown in Pink)
 (White bricks shown in Gray)

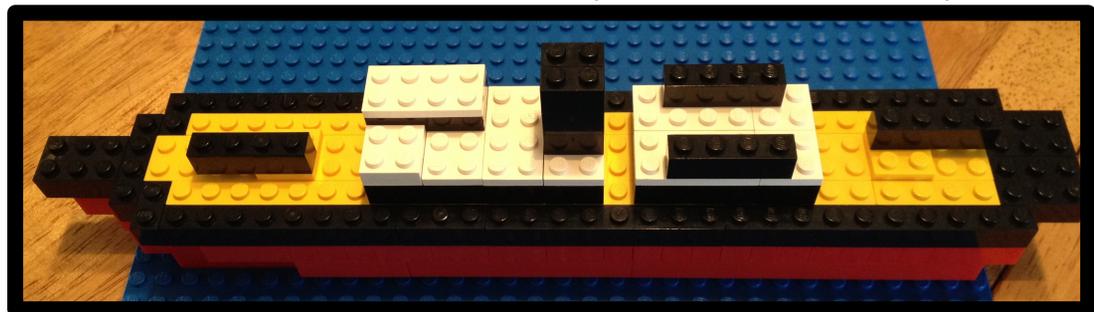


For this step, you will need:

BRICKS	BLACK	WHITE	
1x2	2	0	
2x4	0	1	FLAT
	2	1	

= Denotes flat brick (White)

STEP 9: VISUAL REPRESENTATION (Shown in Black and White)



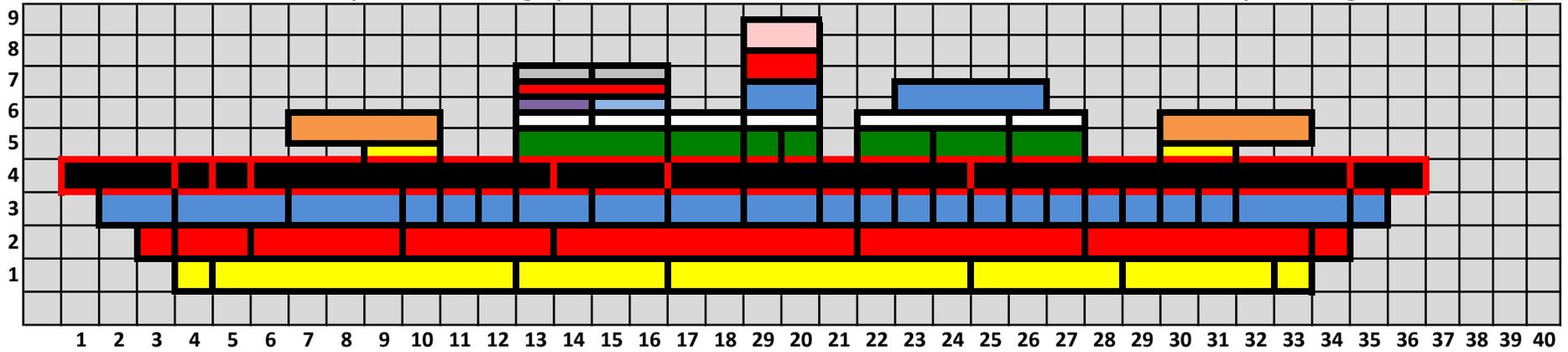
Above image represents actual brick color.

CSS Nansemond Model

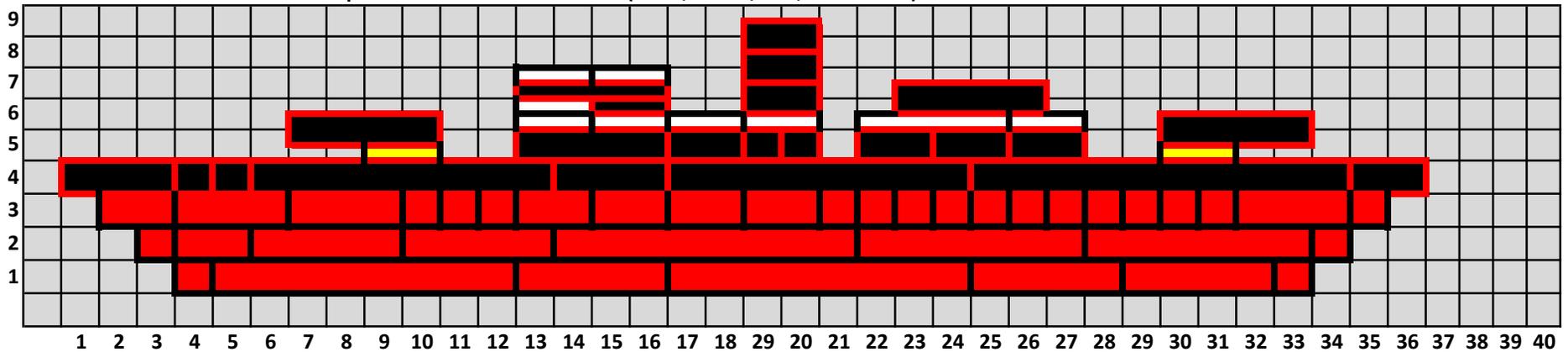
FINAL SHIP DIMENSIONS



NOTE: Ship shown in building layers, not actual colors of bricks used. Please see schematic below for completed design.



NOTE: Ship shown in actual brick colors (Black, White, Red, and Yellow)



BOW

STERN

VIEW FROM PORT SIDE

