

Remembering and Rebuilding:

Using Blogs, SketchUp, and the
MakerBot to Process 9/11



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AUSSIE ITC

Using Blogs, SketchUp, and the MakerBot to Process 9/11: Focus & Target

Focus/Promising Practice:

- In this interdisciplinary problem-based unit, middle school students tackled the issues and architecture surrounding the September 11th, 2001 terrorist attacks.
- Using a combination of Blogs, SketchUp and a 3-D Printer, students created a variety of media to express their understanding.
- The culminating project was a 9/11 Memorial created using the 3-D architectural design software SketchUp.

Target:

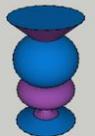
- All 6-8 Students. Interdisciplinary unit touching on Technology, Geometry, Architecture, and Social Studies, delivered in 50 minute Technology class, 2-3 times per week.

Partnership Alignment:

- MOUSE Squad: Created the Thing-o-Matic 3-D Printer in collaboration with MOUSE Squad at MakerBot headquarters
- MOUSE Squad and CUNY Intern offered technical support as needed.
- AUSSIE ITC assisted in alignment to Standards and creation of rubrics for each element of the project.

Resources Utilized

- Teacher web site: www.techbrarian.com (blog prompts, videos, and tutorials)
- SketchUp (3D Architectural design software, available online www.sketchup.com and on the HLC)
- Replicator-G (software Interface for 3D Printer)
- MakerBot 3-D Printer (Built in collaboration with MOUSE)



Student Blog Posts

Rebuilding Ground Zero =]

Posted on November 7, 2011 at 4:02 pm by nbequm188 and

1. What are some things you learned about the materials (e.g., glass, concrete, steel) used for re-building ground zero.

Something I learned is that concrete, glass and steel were made stronger than ever before. Micheal was the one who designed the 9/11 memorials. Did rebuild, but rebuilt BETTER!

2. What were some of the challenges that the builders faced when creating the new WTC building and memorial fountains?

Some of the challenges the builders faced were when they built the glass tower. They kept on experimenting it and checking if it would crack. Another challenge that the builders had to face was pulling and pushing at their limit. Sometimes even more to pass their limit.

3. What does the design of the WTC symbolize? What does the design of the memorial fountain symbolize?

WTC symbolizes "World Trade Center". The memorial fountain means that the water keeps going on and on and goes into a black hole like the whole in peoples hearts when the people die.

4. How will this video affect your memorial design? This video will affect my memorial design because it will help me create a even better design also by me using my imagination.

BORDOM

FRIDAY, SEPTEMBER 9, 2011

1. Describe what your favorite design looked like? my favorite design was the only memorial that had a heart in it. it was a broken heart and i liked it because to me, one side symbolized the ones that we have lost and the ones that are still alive and are saddened and heart broken by the family members and friends that had to leave us on that devastating day.

2. How were the designs different, how were they the same? they were different because they were all unique and some we really interesting and some seemed as if they had more meaning, but i know that they were the same because all of them had alot of meaning and work put into them.

3. If you could create a memorial for 9/11 what would it look like? it would have both of the twin towers, with people surrounding them, holding hands in the shape of a heart and they were on top of the world. i wouldn't put an airplane because i think that it is way too soon for something like that.

POSTED BY PATTY212 AT 11:18 AM

0 COMMENTS:

BLOG ARCHIVE

► 2012 (37)

▼ 2011 (9)

► November (1)

► October (1)

▼ September (2)

1. Describe what your favorite design looked like...

Dear fans of my blog, First off, I want to tell y...

► April (1)

► March (2)

► January (2)

► 2010 (58)

► 2009 (30)

ABOUT ME

PATTY212



VIEW MY COMPLETE PROFILE

ajimenez188

Wednesday, October 26, 2011

Rebuilding Ground Zero [:

1. What are some of the things you learned about the materials (example : glass concrete, steel) used for re-building ground zero.

A: I learned that it is harder than most people thought to get all these thing created for the buildings. Like the concrete, the construction workers had to get the right amount of water in it and different stuff. f the measurement was a little bit off they have to start over. Also with the glass they take lots of tie making it and sometimes it breaks because they did something wrong after creating the glass for a very long time.

2. What were some of the challenges that the builders faced when creating the new World Trade Center building and memorial fountains ?

A: The challenges were that until they got it right they had to go through many wrongs and mistakes. For example the glass kept breaking but it showed them what they had to do to make the building perfect with the correct materials.

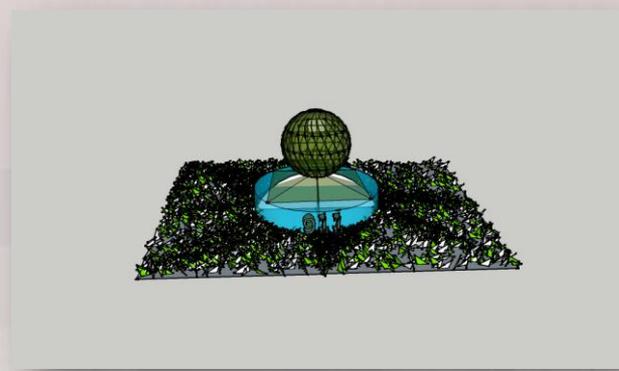
3. What does the design of the World Trade Center symbolize ? What does the design of the memorial fountains symbolize ?

A: The world trade center buildings are to represent the twin towers obviously. And also to have people come together as one and recognize the beauty of the buildings.

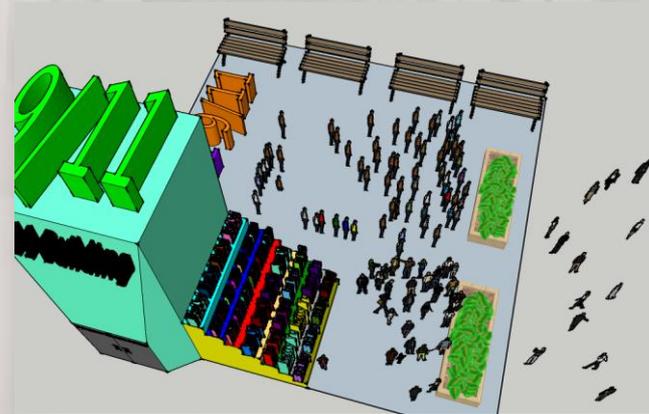
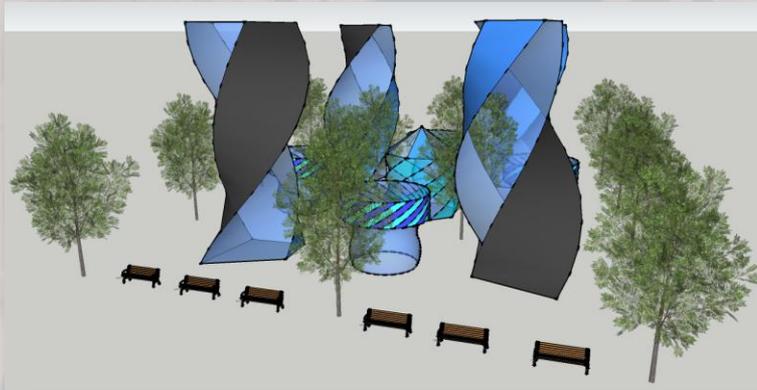
4. How will this video affect your memorial design ?

A: This video will help me a lot because it makes me think outside the box when it comes to the memorial buildings and to keep trying until you feel like you like your design.

Posted by ajimenez188 at 1:32 AM

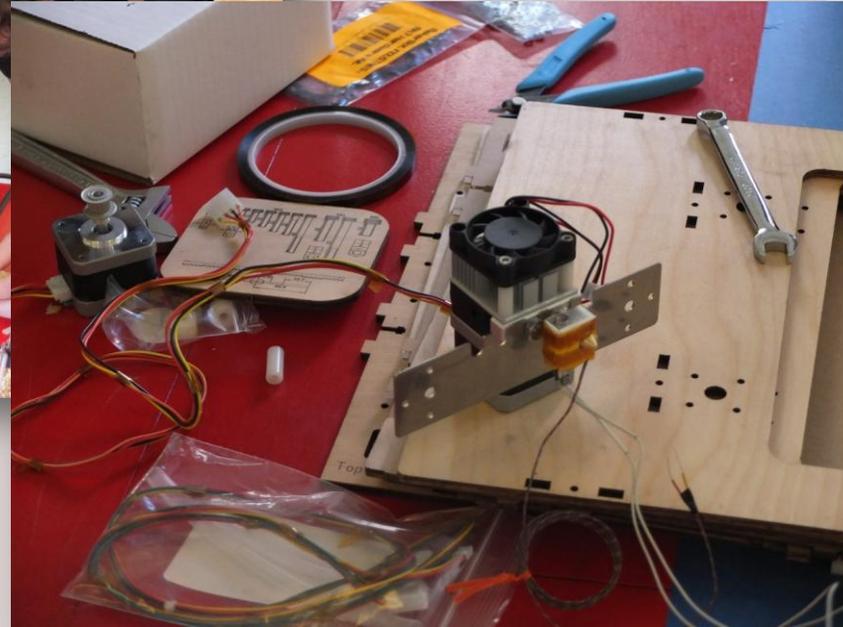
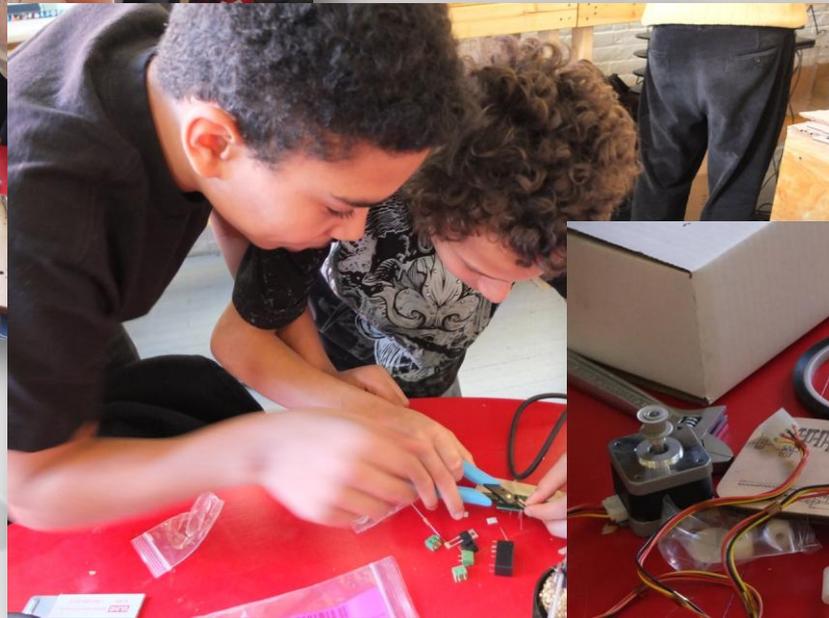


9/11 Memorial Designs created with SketchUp

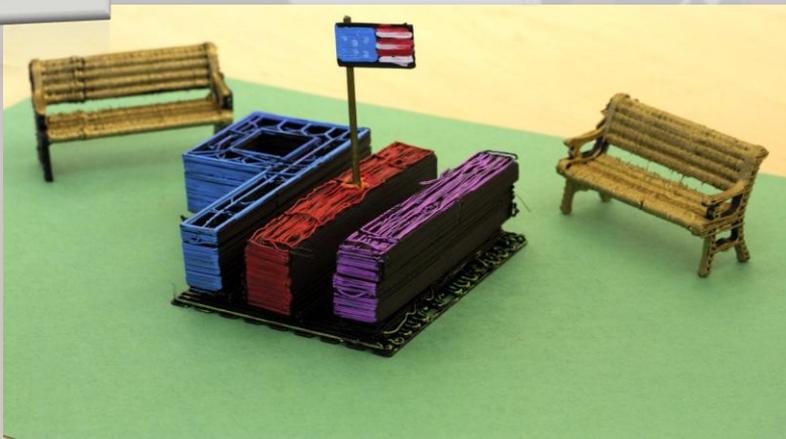
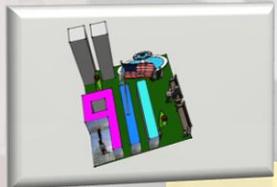
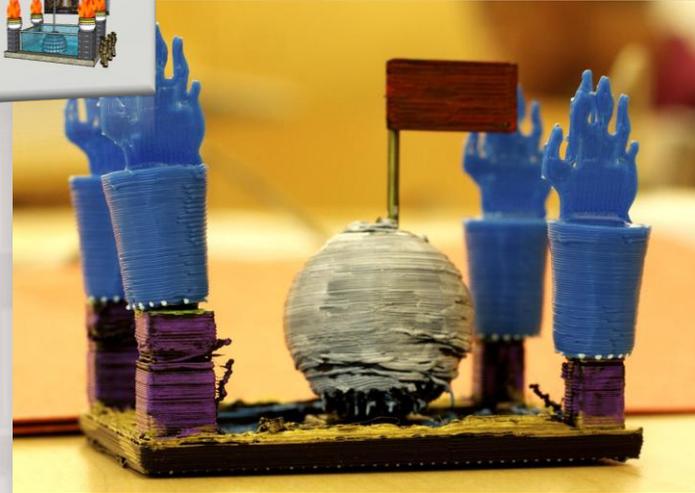




Partnered With Mouse Squad to Create a 3D Printer (MakerBot)



Final printed models

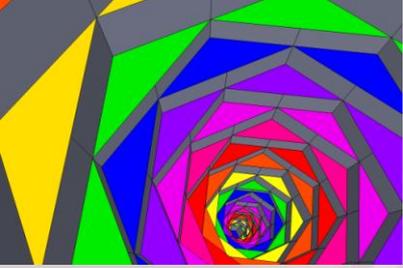




Essential Questions for Students

- What happened on September 11th 2001?
- How has 9/11 impacted survivors and their loved ones?
- What is architecture and what do architects do?
- How can I transform architectural ideas into virtual and physical works?

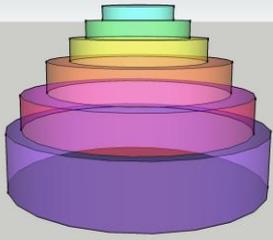




Students Will Know

- The facts and fictions associated with the September 11th terrorist attacks.
- The physical materials and construction practices associated with the building of the September 11th Memorial.
- The tools and techniques for building models in SketchUp
- The architectural works of Frank Gehry
- How to prepare models for and operate a 3D Printer





Students will Understand:

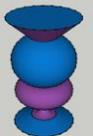
- The potential for false assumptions and misinformation pertaining to historical events.
- The challenges faced by architects and builders of the September 11th Memorial.
- The visual and emotional impact possible through well-conceived architecture.
- How to translate architectural visions into virtual models and the challenges, compromises, and rewards involved in the process.

All Students Will Do:

- Blog posts recognizing the people, events, and architecture surrounding the 9/11 terrorist attacks.
- A variety of SketchUp activities in order to develop the skills necessary to create a 9/11 memorial.
- Construct a 9/11 memorial that meets specific design criteria.

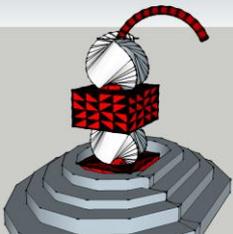
If Time Permits, Students Will:

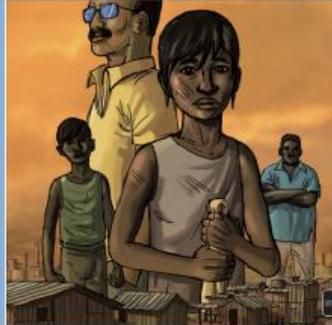
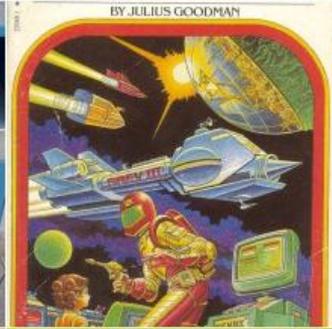
- Prepare their models for printing.
- Operate a 3-D printer.



Materials/Resources/Websites:

- www.Techbrarian.com
(blog prompts, videos, and tutorials)
- SketchUp (3-D Architecture design software)
www.sketchup.com and on HLC
- ReplicatorG (software Interface for 3D Printer)
- 3-D MakerBot Printer (Built in collaboration with MOUSE)





Teacher Blog:
Prompts,
Tutorials, Key
Links



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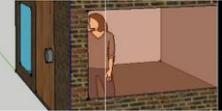
10

11

Step by Step SketchUp Tutorials

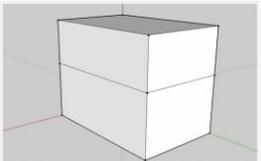
on Techbrarian.com

**ASSIGNMENT 6
(ALL GRADES):
SKETCHUP BOX
TO HOUSE**



In Assignment 5 you created a box using SketchUp. Now, let's transform the box into a house. Click [HERE](#) for directions. REMEMBER: Open and save your documents in Desktop.

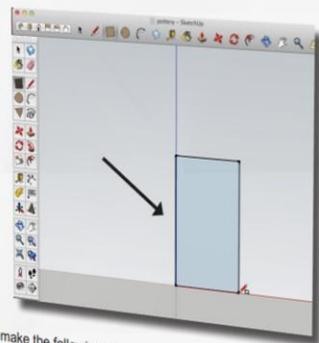
**ASSIGNMENT 5
(ALL GRADES):
SKETCHUP BOX**



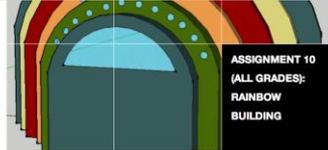
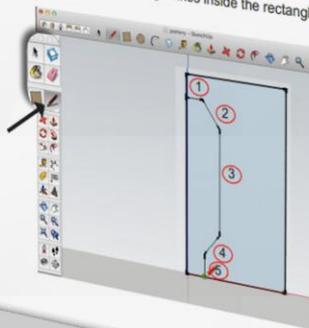
Now that we've grasped the pain and loss, seen the heroes, and viewed the memorials for 9/11, it's time to create our own memorial. Over the next few months we will learn how to use Google SketchUp to create buildings, art, and all sorts of other objects. Let's begin by creating a simple box. Click [HERE](#) for directions. REMEMBER: save all your work in Desktop.



8. Using the blue line as a guide, draw a rectangle using the Rectangle tool.



9. Using the Line tool, make the following 6 lines inside the rectangle.

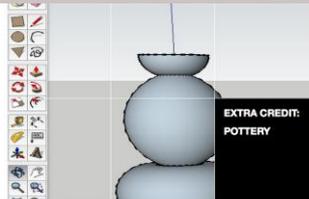


**ASSIGNMENT 10
(ALL GRADES):
RAINBOW
BUILDING**

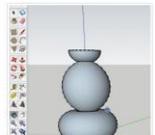


Look around the city and you'll notice it's full of buildings and monuments with arches. Using the Arc tool, you can create elegant shapes for windows, doors, roofs, and much more! Click [HERE](#) to learn how.

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**EXTRA CREDIT:
POTTERY**



Enjoying SketchUp? Here's a challenge. Use the Follow Me tool to create some original pottery. Click [HERE](#) for directions.

Critical Thinking and Analysis of Events Surrounding 9/11

“What does the design of the memorial fountains symbolize?”

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ENGINEERING GROUND ZERO

ASSIGNMENT 11: REBUILDING GROUND ZERO

Now that you've sharpened your SketchUp skills, please watch the following documentary about rebuilding Ground Zero. You can now think of yourselves as junior architects with the ability to create stylish, wild, and creative structures. But you still have a bit to learn. This documentary will teach you about what it takes to build a strong, yet beautiful building and a powerful memorial.

Part 1
Part 2
Part 3

After you watch the video, answer the following questions in your blog:

1. What are some things you learned about the materials (e.g., glass, concrete, steel) used for rebuilding ground zero.
2. What were some of the challenges that the builders faced when creating the new WTC building and memorial fountains?
3. What does the design of the WTC symbolize? What does the design of the memorial fountains symbolize?
4. How will this video affect your memorial design?

“How were the designs different, how were they the same?”

WORLD TRADE CENTER SITE MEMORIAL COMPETITION

LMDC
Lower Manhattan Development Corporation

• Winner • Exhibition • About Memorial Competition • Press Releases

Submissions by Country

A	C	H	R
Alaska (1)	Germany (96)	Hongary (1)	Russia (6)
Algeria (1)	Greece (1)	Hungary (4)	Russia (6)
Angola, West Indies (1)			
Argentina (7)	I	J	S
Austria (1)	Ireland (1)	Japan (1)	Senegal (1)
Austria (1)	Israel (2)	Jordan (1)	South Africa (1)
Austria (1)	Italy (5)		South Korea (8)
		K	Spain (4)
		Kazakhstan (1)	Sweden (1)
B	L		Switzerland (1)
Belgium (6)	Latvia (1)	M	Taiwan (1)
Belize (1)	Lithuania (2)	Malawi (1)	
Brazil (2)	Lebanon (1)		U
Bulgaria (1)	Lesotho (1)	N	United Kingdom (1)
		Netherlands (1)	United States (AL, AK, HI, NY) (1)
C	E	N	Venezuela (1)
Canada (187)	Egypt (5)	New Zealand (1)	
China (2)	El Salvador (1)	Norway (2)	
Colombia (1)	France (4)		
Costa Rica (1)			
Czechia (1)			
Czech Republic (8)			
Dominican Republic (1)			

Scratch Videos Student Blog Top Blog Teachers

“What were some of the challenges that the builders faced when creating the new WTC building?”

TECHBRARIAN.COM

ASSIGNMENT 2 (ALL GRADES): 9/11 MEMORIAL

THE SMOKE HAS CLEARED

WATCH THIS MOVIE ABOUT SEPTEMBER 11TH. NOW, CHECK OUT SOME OF THESE DESIGNS FOR MEMORIALS.

Scratch Videos Student Blog Top Blog Teachers

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Posted on November 7, 2011 at 4:02 pm by nbequm188 and

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“The memorial fountain means that the water keeps going on and on and goes into a black hole like the hole in people’s hearts when the people died.”
(Nahida, 7th Grader)

BORDOM

FRIDAY, SEPTEMBER 9, 2011

1. Describe what your favorite design looked like?
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POSTED BY PATTY212 AT 11:18 AM

0 COMMENTS:

ABOUT ME



PATTY212
VIEW MY COMPLETE PROFILE

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ajimenez188

Wednesday, October 26, 2011

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Posted by ajimenez188 at 1:32 AM

“[My memorial] would have both of the twin towers with people surrounding them, holding hands in the shape of a heart. They would be on top of the world. I wouldn't put an airplane because I think that it is way too soon for something like that.” (Patty, 8th Grade)

Rubrics were developed in collaboration with AUSSIE consultant for:

- Blog Posts

- SketchUp designs

Outcome Assessed	Beginning	Developing	Proficient	Strong
	1	2	3	4
Use of Blog Affordances	Post includes no internal links, external links or embedded media.	Post contains at least one internal link, external link, or embedded media	Post contains at least one internal or external link and one embedded media	Post contains at least one internal link, one external link, and one embedded media.
Intellectual Engagement with Key Concepts	Blog post makes no reference to issues raised through class discussions and Techbrarian activities	Blog post makes some reference to issues raised through class discussions and Techbrarian activities	Blog post demonstrates awareness of most of the key issues raised through class discussions and Techbrarian activities	Blog post demonstrates engagement with the issues raised through class discussions and Techbrarian activities
Personal Connection to Key Concepts	Blog post shows no personal response to the issues/concepts raised through class discussions and Techbrarian activities	Blog post conveys little evidence of a personal response to the issues/concepts raised through class discussions and Techbrarian activities	Blog post conveys evidence of a personal response to the issues/concepts raised through class discussions and Techbrarian activities. The author demonstrates they are capable of reflecting on learning, technology, and society	Blog post conveys extensive evidence of a personal response to the issues/concepts raised through class discussions and Techbrarian activities. The author demonstrates their growth through reflecting on learning, technology, and society
Writing Mechanics / Skill of Expression	Blog post uses incorrect grammar and syntax consistently, making it difficult for others to follow	Blog post demonstrates some evidence of correct spelling, grammar, punctuation, etc. Audience will have little trouble reading the post	Blog post shows a good command of Standard English and has some flair and originality	Blog post shows excellent command of Standard English and has plenty of flair and originality
Total				

Standards Addressed: ISTE

ISTE Standards:

Creativity and Innovation

Students demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology. Students:

- a. apply existing knowledge to generate new ideas, products, or processes.
- b. create original works as a means of personal or group expression.
- c. use models and simulations to explore complex systems and issues.

Critical Thinking, Problem Solving, and Decision Making

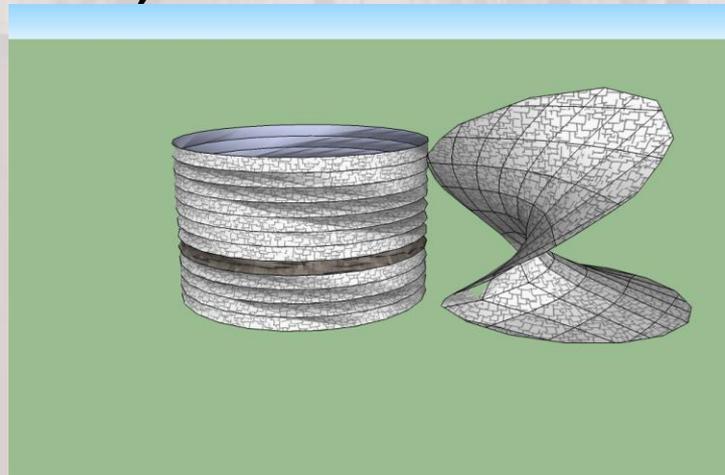
Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources. Students:

- a. identify and define authentic problems and significant questions for investigation.
- b. plan and manage activities to develop a solution or complete a project.
- d. use multiple processes and diverse perspectives to explore alternative solutions.

Standards Addressed: Common Core Math

Grade 7 Geometry (7.G):

- Draw, construct and describe geometrical figures and describe the relationships between them.
- Solve real-life and mathematical problems involving angle measure, surface area, and volume.





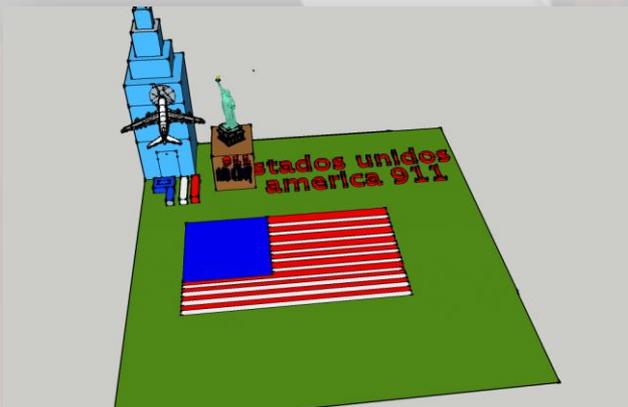
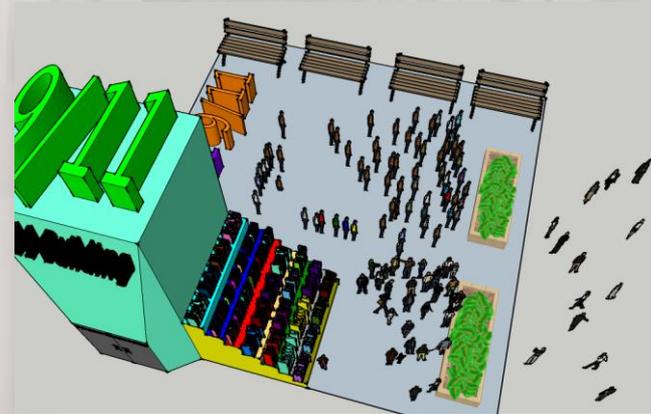
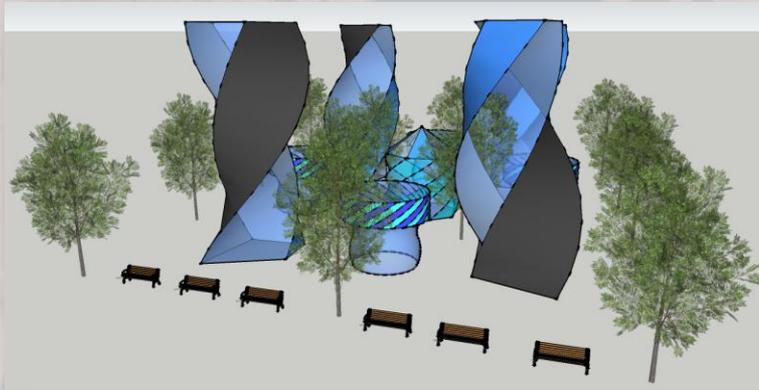
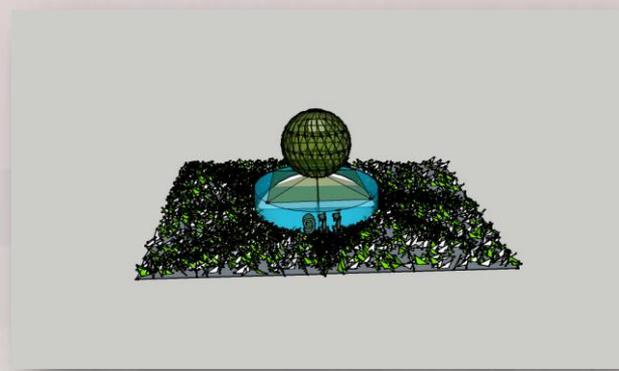
ASSIGNMENT 13: YOUR SKETCHUP MEMORIAL

[Student Blogs](#)
[Top Blog Posts](#)
[Teachers](#)


We have now reached your final SketchUp assignment. If you've enjoyed SketchUp, please continue to use it as a way to express your ideas in this class and beyond. Our class has spent over two months studying the heroes, victims, and destruction caused by the terrorist attack. We have also learned about the re-building of ground zero and how to create architectural works ourselves through SketchUp. Now it's time to strut your stuff. Your assignment is to create a September 11th memorial. Your memorial must have at least 3 of the following parts:

- Recognition of each individual lost: Each of the 3025 names of the souls lost
- Quiet Visitation and contemplation- People can reflect upon the lives lost. Create serenity with plants, birds, butterflies, etc.
- Family Gathering area- families can meet and leave flowers, letters, poetry, photographs, etc.
- Unidentified remains- Create a structure dedicated to the final resting place for unidentified remains
- Surviving elements- A place to display elements of the original towers
- Public Ceremony Space-
- A building in place of one or both Twin Towers

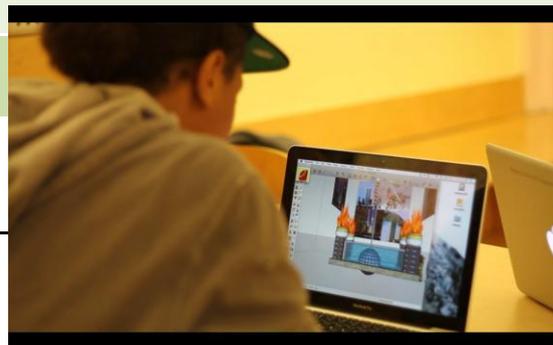
Your memorial should include **very few** downloaded components. I am looking for original work– it doesn't have to be perfect...but it should be your own creations. If you need ideas, below is a link to the entries from New York for the World Trade Center Memorial competition held in 2004.
New York Entries



Outcome Assessed	Beginning	Developing	Proficient	Strong
	1	2	3	4
Completion of model	Model is incomplete, showing little resemblance to a memorial.	Model shows several elements of memorial examples, but lacks cohesion.	Model contains all necessary elements. Does not show additional flourishes/original elements.	Model is complete and contains original elements. Creativity and ownership are clearly present.
Integration of lessons	SketchUp model makes no reference to issues raised through class discussions or Techbrarian activities.	SketchUp model makes some reference to issues raised through class discussions and/or Techbrarian activities.	Model demonstrates awareness of most of the key issues raised from discussions and Techbrarian activities.	SketchUp model demonstrates engagement with the issues raised through class discussions and Techbrarian activities.
Originality	The model lacks original elements.	Model shows moderate effort to create original elements such as color & alternative shapes. No integration of past techniques or tools present.	The model displays original use of colors, shapes, and components. Moderate use of past techniques and tools are evident.	The model displays original use of colors shapes, and components. Uses techniques and tools previously taught in new and novel ways.
Total				12

Student Name Kaleel Miller

Date 11/10/2011



So proud of you Kaleel! You have a bright future in architecture.



Partnered With Mouse Squad to Create a 3D Printer (MakerBot)

