

Lesson Plan Format WITH Descriptions

Teacher's Name: Kenny Sprinkle

UNIT TITLE: The Art of Quantum Physics

GRADE LEVEL: High School

LESSON:	1. Introduction to Julian Voss-Andreae	7. Cutting and AQOTW
	2. Facial Proportions: Portraits	8. Forming and Assembling
	3. Facial Proportions: Profiles	9. Forming and Assembling and AQOTD
	4. Quantum Woman	10. Continue Sculpture Construction
	5. Measuring & Labeling	11. The Final Details and Preparing for Skype
	6. Measuring & Labeling part 2	12. Conclusion: Skype with Julian Voss-Andreae

LESSON OBJECTIVES:

(H.1.6) **Art History Objective:** Students will be able to recall that Julian Voss-Andreae's process for creating his sculptures included designing a computer program to cut his pieces for him and labeling each piece so that he knew where they went before assembling them.

H.1.6: Identify the knowledge and skills gained in art experiences that transfer to daily life.

Art Criticism Objective: NA

Aesthetics Objective: NA

(H.7.3) **Art Studio objective:** Students will be able to use their sculpture handout drawings to assist them in measuring out the rectangles for their sculpture and labeling the pieces just as Julian Voss-Andreae had done using the computer program.

H.7.3: Create artworks that demonstrate skill and understanding of different media, processes, and techniques.

Vocabulary:

Quantum Physics- describes a moving object as having waves set up perpendicular to the direction the object is going.

Perpendicular- at an angle of 90 degrees to a given line, plane, or surface.

Wave- Energy that moves from one place to another, without the transfer of matter

Portrait- the frontal view of a face

Profile- the side view of a face

Advance Preparation: Prepare Take Home Quiz and Quantum Wave Theory Assessment

Materials: Sculpture "Stencil" worksheet
Venn Diagrams
Poster board (one sheet per person)

Tools: Pencil
Rulers

Equipment: Computer Projection Unit

Day 5: AC AP AH Aesth**(50 minutes)**

The vital concept(s): Students be able to determine the direction of the quantum waves of three different situations. Students will continue to measure and write down the dimensions of their rectangles. Students will also be able to use their poster board in the most resourceful way possible by arranging their measured out rectangles adjacent to each other where adjacent sides are of equal lengths (when possible).

1. **5 minutes – Determining direction of Quantum Waves Assessment**
 - a. Students will be given a worksheet with three different objects moving in different directions where they will need to determine the direction of the quantum waves of motion.
2. **40 minutes – Workday**
 - a. Students will continue measuring and writing down the dimensions of their rectangles.
 - b. Once all of their rectangles are measured out, I will demonstrate how to organize the different sized rectangles onto their poster board in order to be the most efficient with their poster board.
3. **2 minutes – Assignment: Take Home Quiz**
 - a. I will hand out a take home quiz to the students where it will test their knowledge of what they have learned this week in an unexpected way
 - i. Instead of them answering the questions, they will be explaining what they have learned to their parent(s) or guardian(s) and their parent(s) or guardian(s) will fill it out and sign it at the bottom.
 - ii. It will require the parents to write out answers in sentence form to avoid the students writing for their parents.
 - iii. If the students actually comprehended what they learned this week, this will allow them to expand their comprehension by explaining it to a someone who has no idea about any of the content; similar to being a teacher.
 - iv. These quizzes will be due on Monday
4. **3 minutes – Clean up**
 - a. Students will stack all of their poster boards into a single pile on the table and return the rulers to their correct location.

Resources:

“Quantum Objects”: Physics-inspired art by Julian Voss-Andreae. (2009). Symmetry Breaking, Vol. 6.

<<http://www.symmetrymagazine.org/breaking/2009/11/30/quantum-objects-physics-inspired-art-by-julian-voss-andreae/>>

Julian Voss-Andreae. (2005-2010). *German American Artists*

<<http://www.germanamericanartists.com/index.php/julian-voss-andreae>>

Jones, A.Z. (2009). Julian Voss-Andreae’s “Quantum Objects”: Sculptures capture essence of quantum physics.

<<http://physics.about.com/od/quantumphysics/ig/Julian-Voss-Andreae/>>

Patton, V. (2008). Oregon Art Beat: Quantum Sculptures with Julian Voss-Andreae

<<http://www.opb.org/programs/artbeat/segments/view/767>>

Personal email from Julian with attached word document (unfinished article that has not been published yet) 3 February 2010