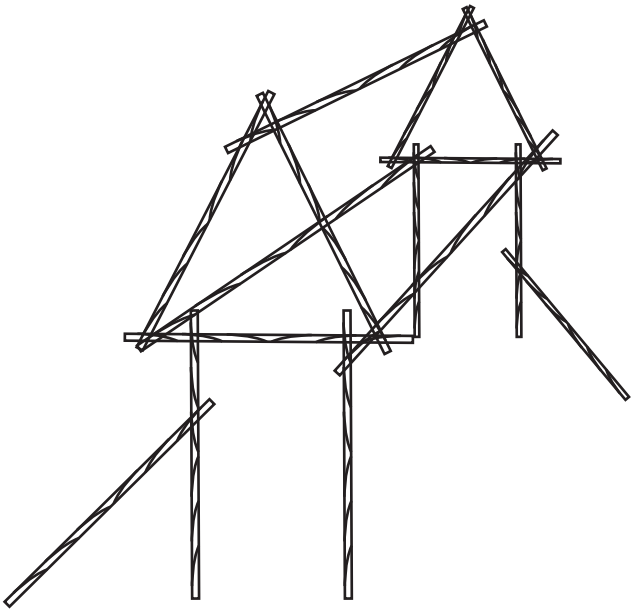
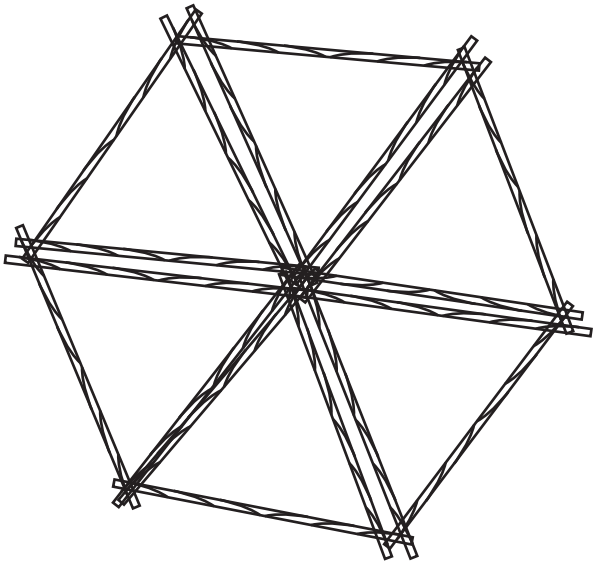
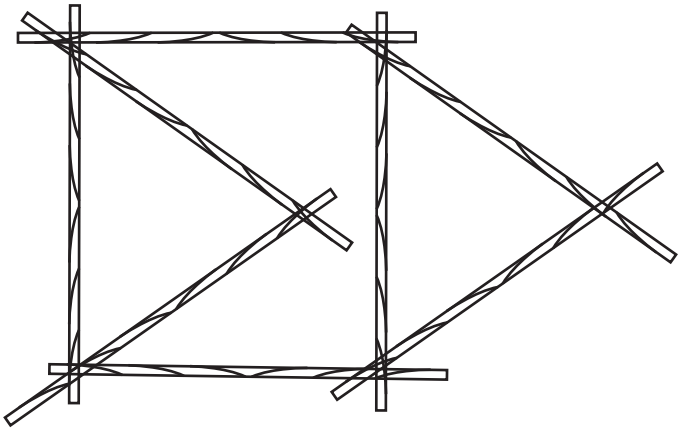
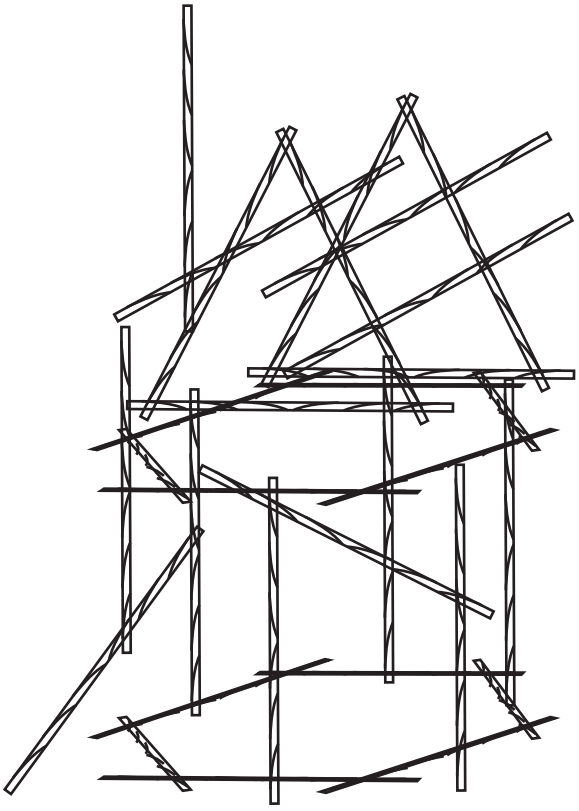
Paperstraw Sculpture Problem Solving









Paper Straw Sculpture
Problem Solving

Problem Solving - The ability to analyze information and solve problems by thinking and using the information you already know from previous experiences.

This assignment is intended to provide you with an opportunity to..

- form theories about the nature of objects.
- develop a process of trying your ideas.
- applying your solution.
- understand the subject on a complex level through analysis and evaluation.

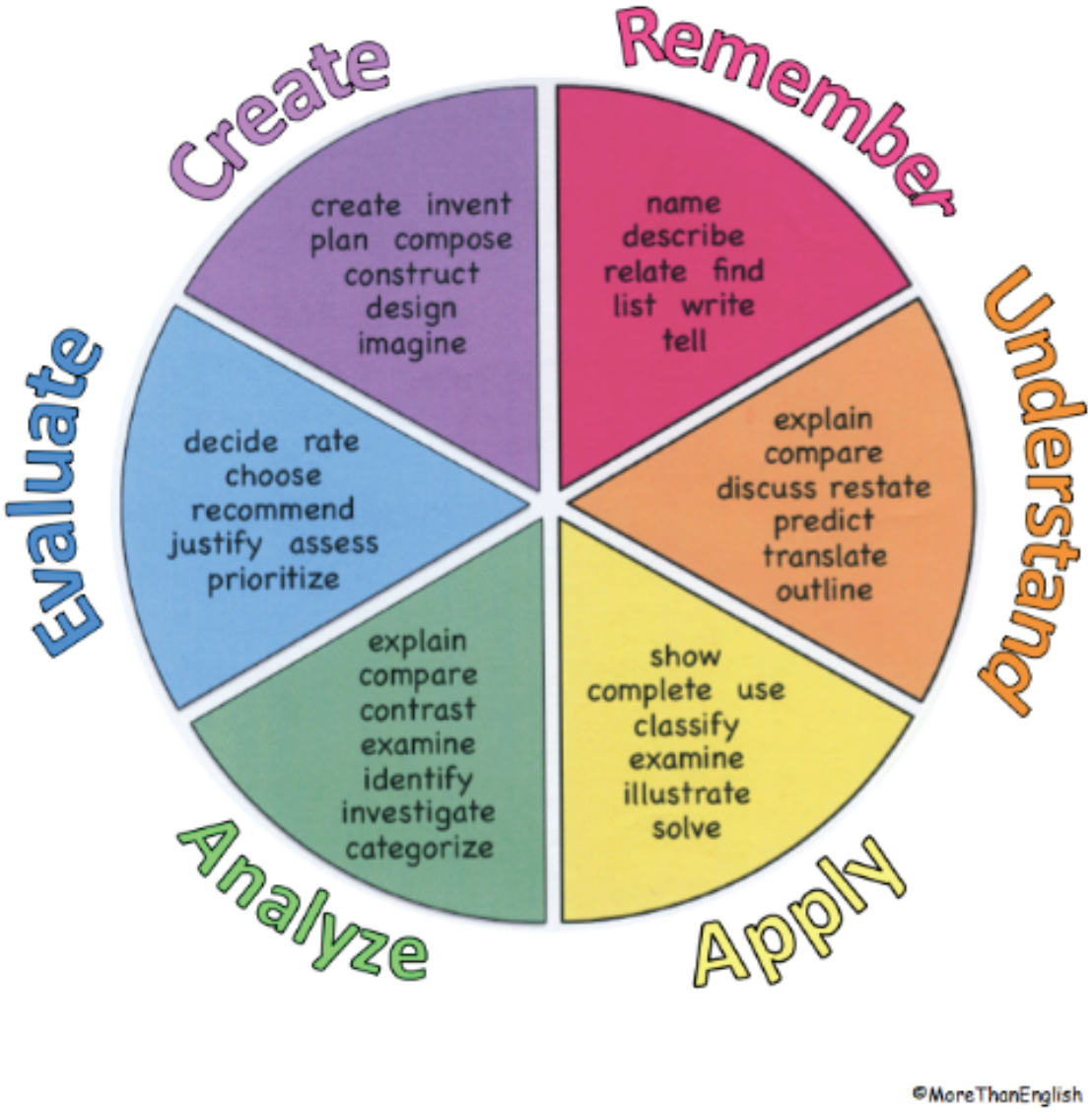
Tips on problem solving..

1. Define the problem in language that you understand.
2. Create as many possible solutions as you can.
3. Evaluate the best solution from your list.
4. Try your solution.
5. Be comfortable with trying a new solution if your first one did not work out.

Step 2 is where your art education will come in handy and help you find new ways to solve problems. Step 2 is the creative process.

Over

Bloom's Taxonomy



This graph show different types of learning tasks.

At the most basic are REMEMBER and UNDERSTAND

The ability to APPLY and ANALYZE are higher level cognative skills.

The next level up is EVALUATE.

The ability to CREATE is the most difficult cognative process.

Paper Sculpture - Abstract problem solving

Pre-Learning Activities

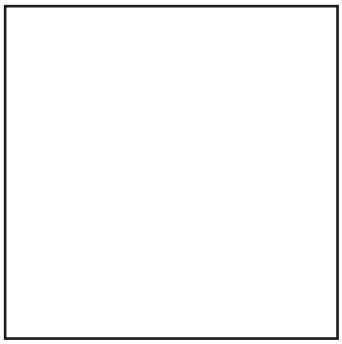
1. Learn some simple paper folding techniques that could be used to create a solid structure.
2. Investigate some techniques to attach your folded or rolled paper elements together.

Your Assignment today

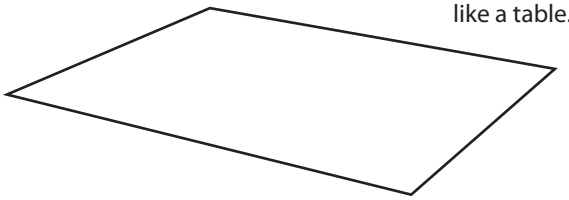
1. Create a small piece of sculpture that incorporates a minimum of 10 folded or rolled paper elements.
2. The design is your choice. The sculpture can look however you choose. Feel free to mix rolled and folded elements.

How to make a paper straw

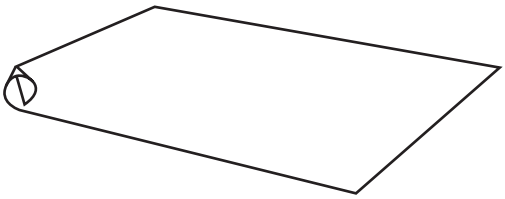
1. Get a piece of paper. Any size or shape will do.

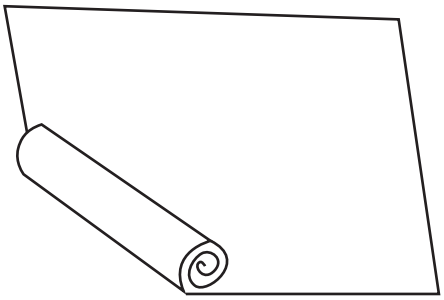


2. Lay the paper on a hard surface like a table.



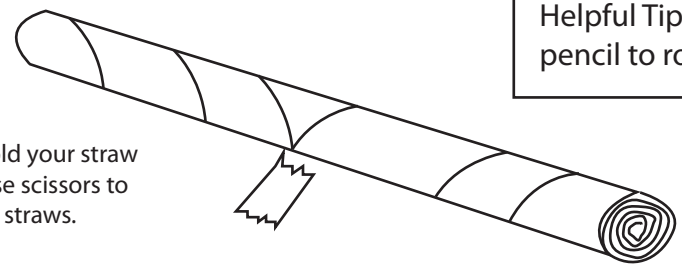
3. Curl the corner of the paper by rolling it between your fingers.





4. Continue rolling . You may need to allow it to unroll and re roll to make it easier to roll.

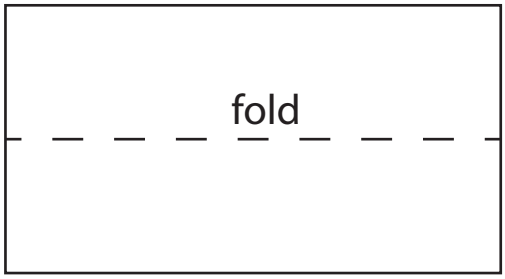
Helpful Tip: It may be helpful to use a pencil to roll the paper around.

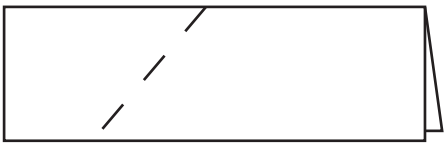


5. Use a piece of tape to hold your straw together. You may want to use scissors to cut off the end of your paper straws.

How to make a paper Triangle

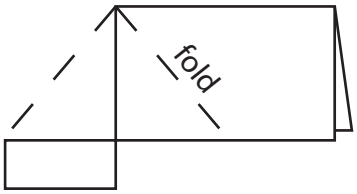
1. Make sure your paper is longer than it is tall. A square will not work. Fold the paper long ways. *"Hotdog" style.*

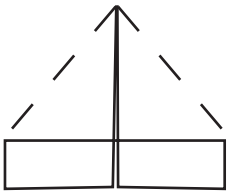




2. Make a diagonal fold near the center of the paper. It is OK if it is not exactly in the center

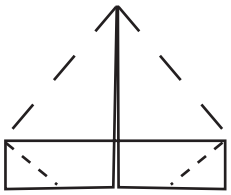
3. Repeat the diagonal fold on the other side.

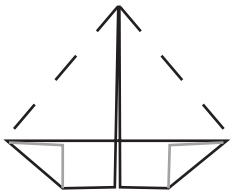




4. There should be flaps at the bottom of the triangle.

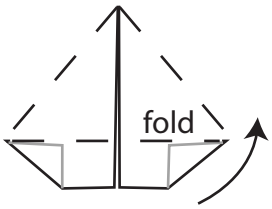
5. Make a diagonal fold on the corner of the flap at the bottom.

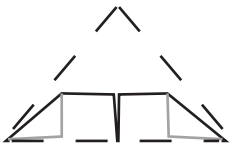




6. Tuck the folded corners behind the flaps.

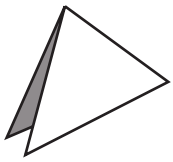
7. Fold the flaps up at the base of the triangle.





8. Tuck the flaps into the opening at the bottom of the triangle.

9. Fold the triangle in half.

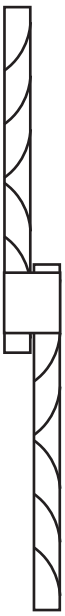


10. Repeat

Suggestions on how to attach your pieces together

Materials

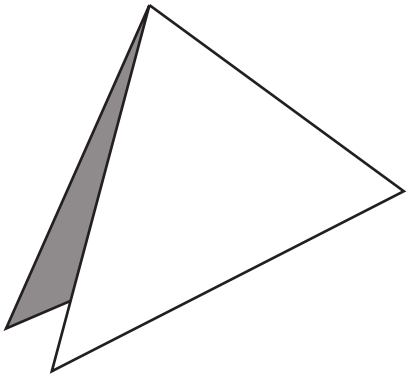
1. Tape
2. Glue
3. Staples
4. String
5. Wire
6. If you have an idea please ask to see if the medium is acceptable.



Tape straws side-by-side.

Glue or tape one straw into another.

Use string to tie your straws together.

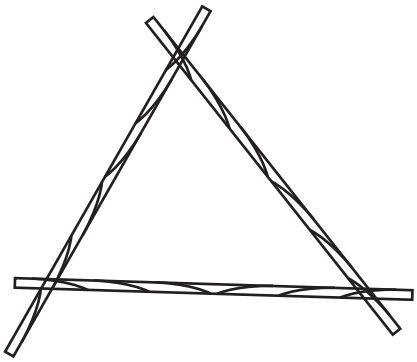


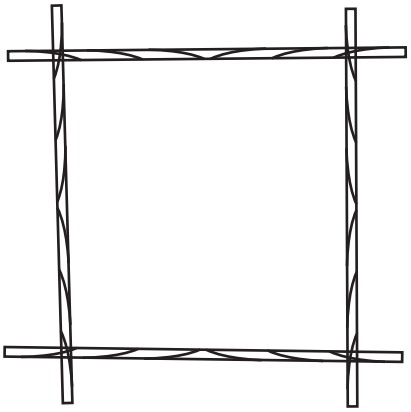
The triangles will fit together by inserting into the opening at the base.

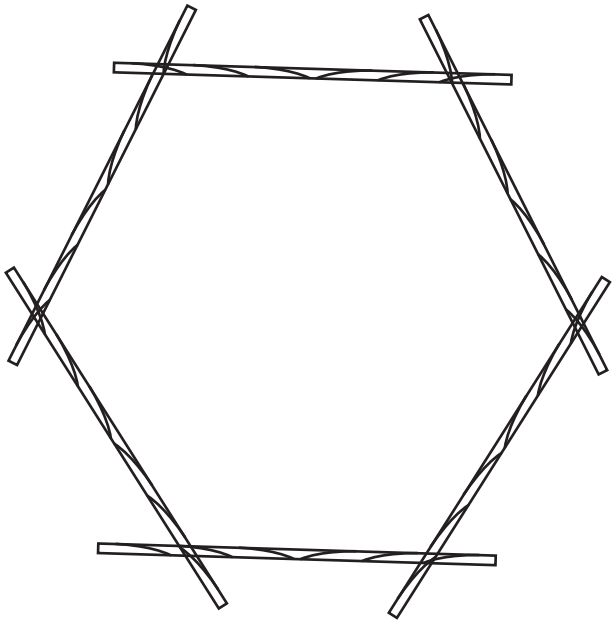
You may also choose to staple some together.

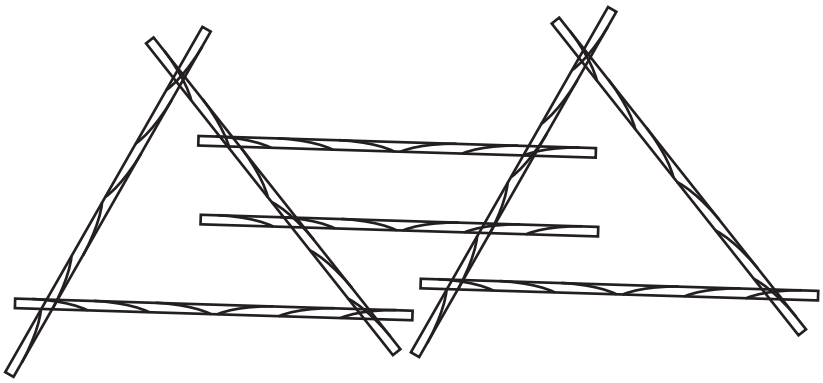
Be CREATIVE and find new ways to build.
There are no wrong answers.

Paper Straw Sculpture
Problem Solving - Suggested ways to begin









Directions for Paper Straw Sculpture
Problem Solving

1. You must work indiviually to create your own sculpture. No Execptions!
From my past experience it is impossible to accuratly assign a grade to projects that were built by two or more people.

2. Your sculpture must have a minimum of 50 pieces. Yes, I will be counting. 50 pieces is the minimum. For the best grade your sculpture will be around 75 -100 pieces.

3. Your sculpture needs to be strong enough to stand alone or be attached to a base (cardboard.) I would strongly advise using a piece of cardboard as a base to help support your sculpture.

4. Your sculpture must have a moving element. Create an element that can slide, swing, rotate, or spin.

5. Your sculpture must not include any premade elements.

6. The sculpture will be made of only paper, tape, glue and string. If you want to paint it after you are done that will be fine.

7. The sculpture in not intended to represent an object. The main purpose of this assignment is to provide our class with a problem solving project.

8. Use your presketches as a start for your design. Eventually, your sculpture will begin to unfold as you build it. Allow the process to develop.

Rubric
Paper Straw Sculpture
Problem Solving

1 pt.	3 pt.	5 pt.
The sculpture has between 10 - 20 pieces.	The sculpture has between 35 - 50 pieces.	The sculpture has between 75 - 100 pieces.
The sculpture is falling over.	The sculpture is weak and is having trouble standing alone or with a cardboard base.	The sculpture is strong enough to stand alone or with a cardboard base.
The intersections created by the straws are weak. The method of construction is not holding the pieces together. There is evidence of wasted materials.	The intersections created by the straws are weak. There is evidence of only tape to hold the pieces together.	The intersections created by the straws are stong. There is evidence of tape and glue to hold the pieces together. Additional materials such as wire or string will also be considered for their strength.
The sculpture does not have a moving element that swings, slides, rotates, spins, etc.	The sculptures moving element is trying swings, slides, rotates, or spins, but needs additional problem solving to be successful.	The sculpture has a moving element that swings, slides, rotates, spins, etc.
The student showed **no** of effort to try to build the best project that they were able to. The student wasted a lot of time. The student was not helpful in clean up. The student was disrespectful of our classroom supplies.	The student showed **a little** of effort to try to build the best project that they were able to. Somedays the student worked on solving problems for their sculpture. The student was helpful in clean up. The student was respectful of our classroom supplies.	The student showed **a lot** of effort to try to build the best project that they were able to. Everyday the student worked on solving problems to push their sculpture forward. The student was helpful in clean up. The student was respectful of our classroom supplies.