Valley Stream 30

STEAM + Movement

	Monday	Tuesday	Wednesday	Thursday
12:00 - 1:20 PM	**K - 3: STEAM (LIBRARY)**	**K - 3: Move (GYM)**	**K - 3: STEAM (LIBRARY)**	**No Class**
12:00 - 1:20 PM	**4 - 6: Move (GYM)**	**4 - 6: STEAM (LIBRARY)**	**No Class**	**4 - 6: STEAM (LIBRARY)**

*** Note that you need preparation time for technology, see if you are able to enter the classroom earlier.*

Purpose:

Fun while learning

Crafts and movement for developing skills - fine motor and gross motor

Movement Activities:

100 Cup Challenge
Groups are given 100 plastic cups (or less if you don't have so many) and are told to create the tallest structure possible. To make it more difficult you can give specifications like "the structure must support some weight".

The Floor is Lava
Place pieces of paper on the floor. Make them different sizes and place them at alternating distances. Students must cross the room by only stepping on the papers or risk falling into boiling lava! You can use other materials such as tape, pillows, beams, etc. to make it more interesting. Use a Twister spinner to determine colors the students should step on for added difficulty.

Big Rube Goldberg Machines
https://www.youtube.com/watch?v=hPIMsvKgiOg

Gather together any supplies you can think of. You want to look for things you can use as ramps, things that roll and things that move. Here are a few

examples of simple things kids can use to make building their Rube Goldberg Machine easy.

Equipment Available:

Overall Goal: Learn + Make = Fun

Program Outline (below):

Week One:

Materials: Lego Challenge + Imagination Playground

Date	Group	Activity
Wednesday 7/5	**K - 3 STEAM**	**Block Challenge and Getting to know you**
Thursday 7/6	**4 - 6 STEAM**	**Block Challenge and Getting to know you**

Learn the activity here:

Lego Challenge https://www.youtube.com/watch?v=XE5QlYE8oYY

Week Two:

Building

Date	Group	Activity
Monday 7/10 12:00	K - 3 STEAM	Marble Run with paper
Monday 7/10 12:00	4 - 6 MOVE	Play museum and introduce open play stations. Rotate activities every 10 - 15 minutes.
Tuesday 7/11	K - 3 MOVE	Introducing our open play stations. Rotate activities every 10 - 15 minutes.
Tuesday 7/11	4 - 6 STEAM	Marble Run with paper
Wednesday 7/12	K - 3 STEAM	Marble Run with Magna Tiles
Thursday 7/13	4 - 6 STEAM	Simple Rube Goldberg Machine with Magna Tiles

Week Three:

Balloon Powered Cars

The concept behind the Balloon-Powered Car is pretty simple, but that doesn't make it any less impressive. When you blow up the balloon, set your racer down, and let it go, escaping air from the balloon rushes out of the straw. This is your car's propulsion system. The principle at work is Newton's Third Law of Motion. This law states that for every action, there is an equal but opposite reaction.

In the case of the Balloon-Powered Car, the action is the air rushing from the straw and pushing against the air behind the car. The reaction is the air behind the car pushing against the car with the same force causing the forward movement of the car.

The potential energy of the car is stored in the expanding elastic material of the balloon. As the balloon fills with air, it adds more potential or stored energy. As the air flows from the balloon, the energy changes to kinetic energy or the energy of motion.

The moving Balloon-Powered Car is using kinetic energy. If you aim your car down a ramp from the top of the ramp, just lifting it up into position adds potential energy thanks to gravity. Upon release, the energy converts to kinetic energy and the car goes until there's not enough to move it anymore.

Week 4: Cardboard Carnival

Cardboard challenges

We will make things to create an arcade. This is a set of projects and it is nice to have students pick out of the options to create some games. If projects are completed this week or next week please “host” a celebration and have the older students visit the younger students. Have time for questions and presentations of the project.

Watch Cain’s Arcade for inspiration:

https://www.youtube.com/watch?v=faIFNkdq96U&themeRefresh=1

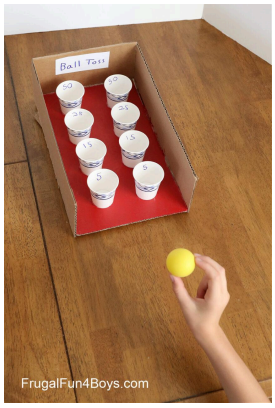
Supplies include:

Cardboard
Hot glue gun
Rice
Fabric
Cups
Marbles
Tape
Scissors
Clothespin
Rubber band
Popsicle Stick
Glue

Project Idea # 1 : Pinball Machines:

https://www.youtube.com/watch?v=19JOAXOBLKE

Project Idea #2: Ball Tosses



Marshmallow Challenge:
https://www.youtube.com/watch?v=7ZMuHZv47bQ

Check out some simple games to play:
https://www.youtube.com/watch?v=kWwuBUk6CaA

Week Five

Hi Everyone,

This summer has been amazing and I want to give you all a huge shout out for the great work!!! We have two weeks left of summer programming.

This week is focused on drawing and building a small portfolio of artwork to share with family and friends to show off our skills with our ideas, and a pencil or a pen.

Having music during these sessions is required. Please play some Jazz or Non-verbal rhythms for students - classical, international acoustics.... Have fun and be a D.J. to set the vibe for a few drawing sessions. Here is a link to Chillhop Radio - jazzy & lofi hip hop beats.

Spend about 5 minutes demonstrating each prompt and make it a game. If lots of students are ready to move on then announce the next challenge. If students wish to continue with the first work, encourage them to stay on their favored prompt. At the end of each session leave time for clean up and sharing. It is important that we teach students how to honor each other's work and to present their work to others.

Add watercolors and markers as options for color if someone asks. Set up a separate color station away from the drawing. We don't want accidents and we actually do not want to focus on coloring in class. The students will take the work home and it can be finished there. Ideally for these lessons the children will and should get lost in their drawings - without a rush.

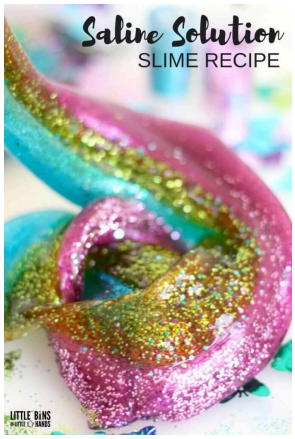
Our children rush all day long in school. From classroom to classroom, in different groups of learners. We want to change that narrative with time for the most important and basic skill: learning to control a tool to draw or write too.

We are using computers and cell phones at increasing rates and many schools no longer teach cursive. Drawing is a fundamental skill - draftsmen and technical applications require it. Reading original documents such as the

Constitute and the Bill of Rights. So let's have fun and draw with these simple games. At the end of the week students must bring home work. Please take video and photos throughout the week.
(prompts on Slide Show **here**).

Week Six

MAKE SLIME WITH SALINE SOLUTION



SLIME WITH BAKING SODA AND SALINE

Kids love to play with homemade slime in their favorite slime colors and textures! Slime making is even more fun when you add in glitter, foam beads, shaving cream, or soft clay. We have quite a few slime recipes to share, and we are always adding more.

YOU WILL NEED:

- 1/2 cup Clear or White PVA School Glue
- 1 tablespoon Saline Solution (must contain boric acid and sodium borate). Good brands include Target Up and Up as well as Equate brand!
- 1/2 cup of Water
- 1/4-1/2 tsp Baking Soda
- Food coloring, confetti, glitter, and other fun mix-ins

Make a maze

Playdough and Round Plates (take home with one marble)

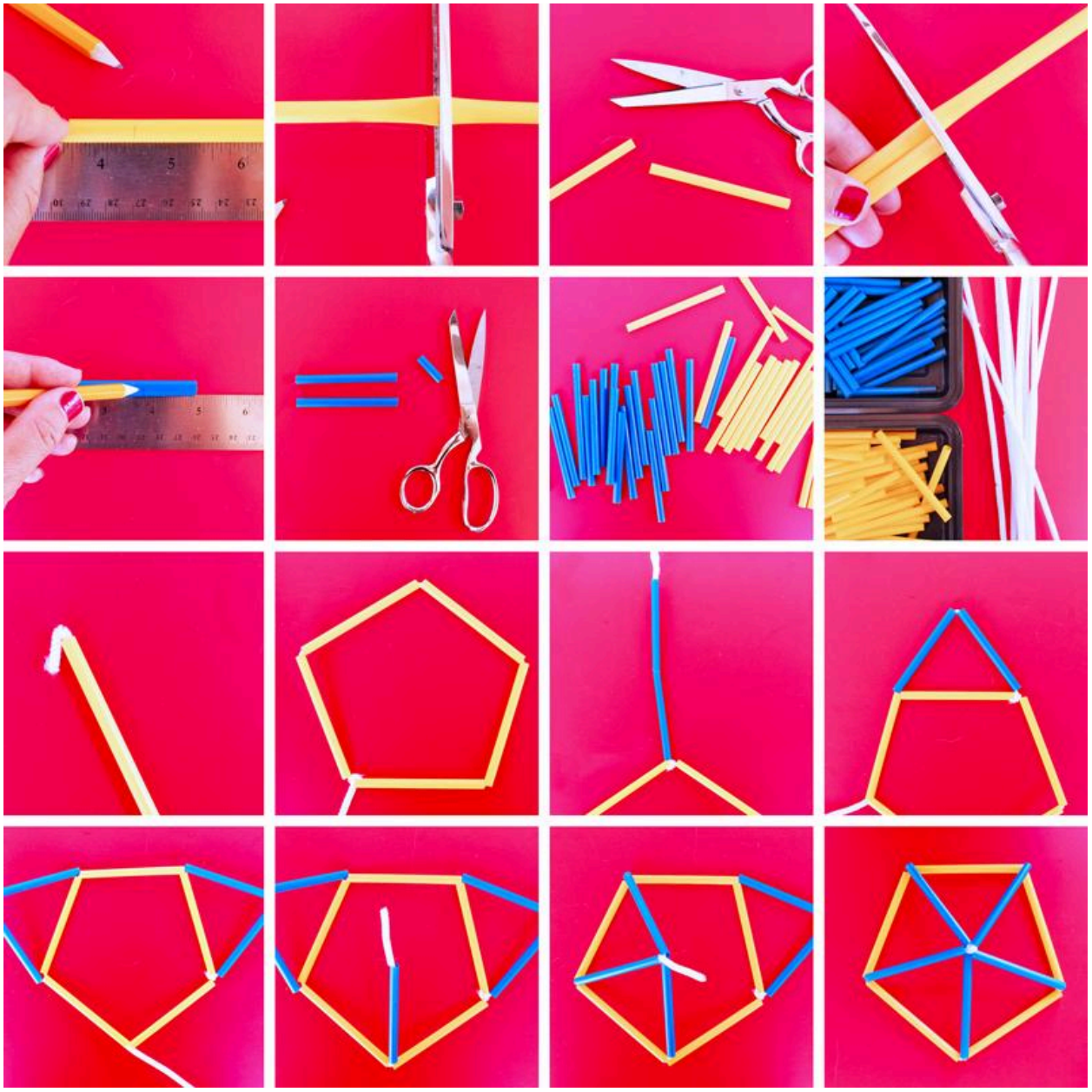
Straw Geodesic Dome & Sphere

To visualize this project ahead of time here's the basic plan:

1. Cut straws into two different lengths (Strut A & B)
2. Make 6 pentagon sections
3. Join them together in the shape of a dome

Yes, it's that easy.

Note: We will be cutting two sizes of straws. For ease of understanding it's best to cut the different sizes from different colors. That way it's easy to keep track of which are the longer struts and which are the shorter.

- 

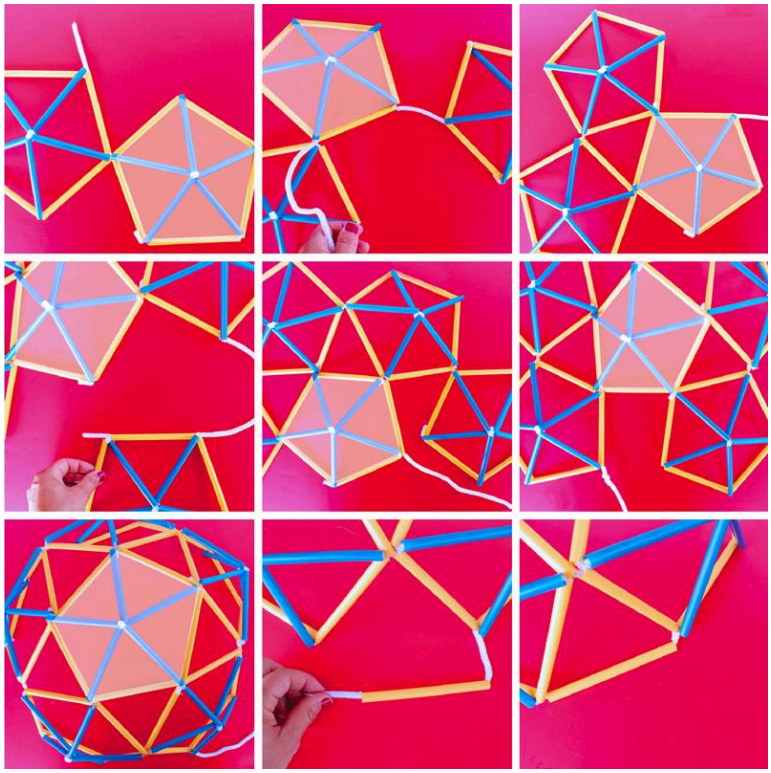
Make the Dome

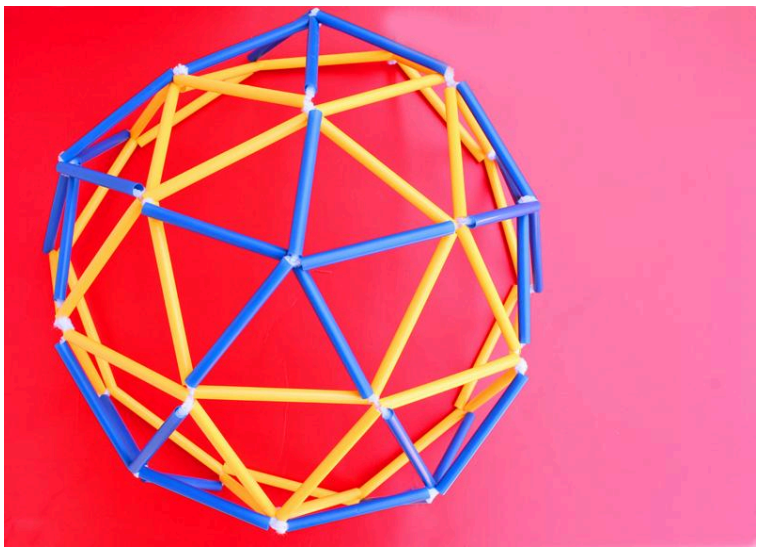
Now that you have the basic shape that will form the dome all you need to do is connect them together. For a dome you will need 5 Strut B's to form the base. If you are making a full sphere you can eliminate the extra struts as the pentagons from one side will join the second side of the sphere.

Dome- For ease of reference I have shaded in the center pentagon in this visual tutorial. Trust me, it look more complicated than it is.

- **Step One** Take one pentagon and thread a pipe cleaner through one side, secure at the end. This will be your center pentagon.
- **Step Two** Thread the long end of the pipe cleaner through one Strut B of a second pentagon. Make sure the pointed sides of the shapes are facing OUT. Pull them together.

- **Step Three** Repeat Steps one and two to connect a third, fourth, and fifth pentagon at the joints of the center pentagon. Pull tightly.
- **Step Four** Take the (5) single Strut B's and feed them through the base of the row of pentagon at the bottom, alternating pentagons and struts. Pull tightly.





SATURDAY FAMILY DAY: BALLOON POWERED CARS + KITES

BALLOON POWERED CARS

In this activity , students will make a car powered by the elastic energy of a balloon.
This car converts potential energy into kinetic energy, unlike your family car which converts chemical energy into kinetic energy
Balloons are elastic and store potential energy when they are filled with air. When the air is released, the potential energy is converted into the energy of motion, which is also known as kinetic energy. This is the energy you see when the car is propelled forward.
The more potential energy is stored, the more kinetic energy the car will have when you let it go!

Objectives

- Observe and describe the conversion of energy from potential to kinetic energy.

Materials

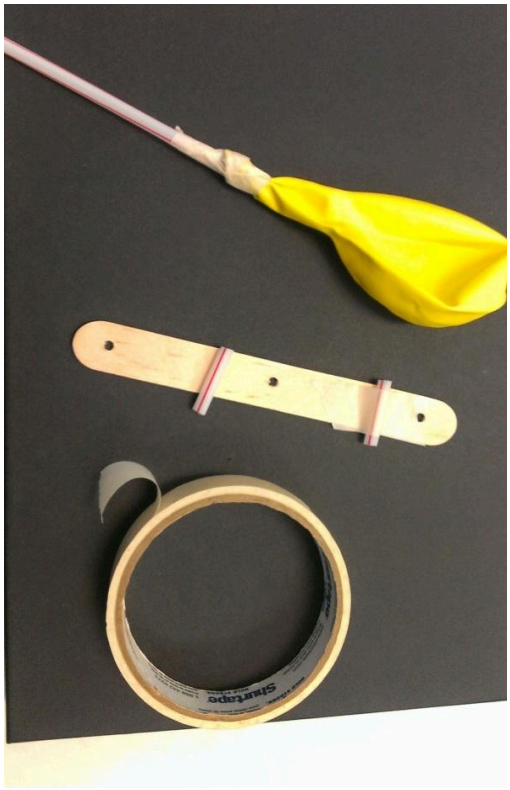
- Per Class:
  masking tape
  hammer
  nail
- Per Student:
  1 tongue depressor
  2 short pieces of straws cut the width of the tongue depressor
  1 straw
  2 bamboo skewers
  4 plastic pop bottle lids
  1 balloon

Key Questions

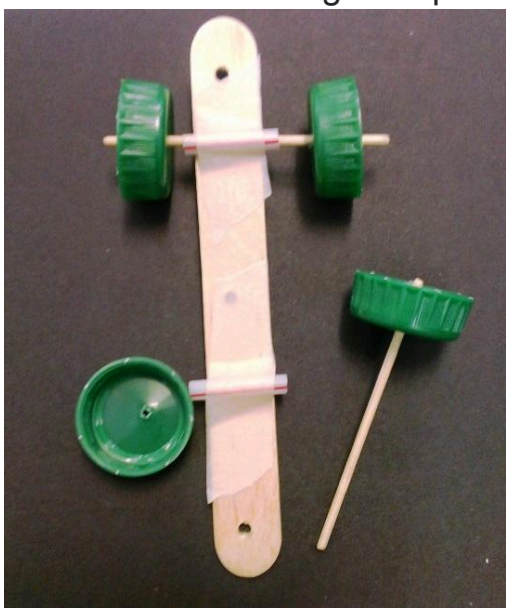
- What happens when you blow the balloon bigger?
- How can you make the car travel further or take off faster?

What To Do

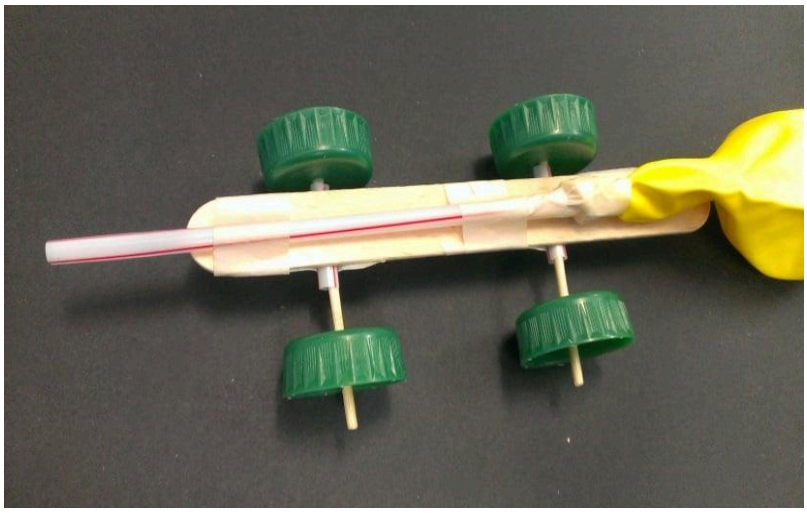
1. Using masking tape or rubber bands to attach the balloon to the straw. Make sure there are no holes in the balloon by blowing into the straw.
2. Attach the two short pieces of straws to the tongue depressor. These will be the axles for the wheels.



4. Attach the four wheels using the skewers. This may be a bit tricky! You may have to adjust the bottle cap to make sure it doesn't rub against the side of the tongue depressor.



5. Attach the balloon and straw to the top of the car using masking tape. Make sure the straw is over the edge so there is enough room to blow into the straw!



6. Blow into the balloon, pinch the straw and let go! Watch as the car takes off!

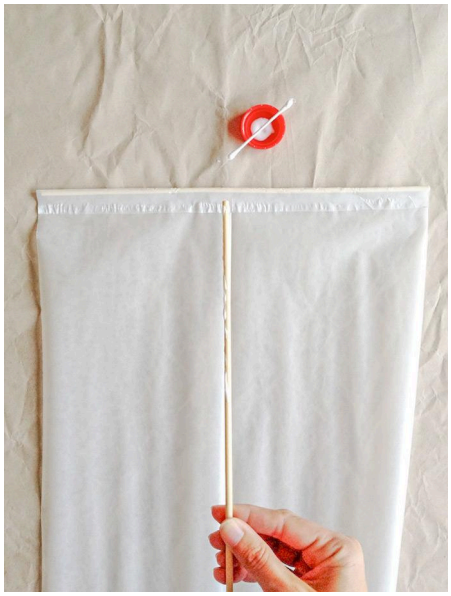
Kites:

Decoration

- 1 wax paper 14 x 20 inch (36x51cm), white (sail)
- 4 thin bamboo sticks: cross 2x 23 3/4 inch (60cm); spine 1x 19 1/2inch (48cm); strut 1x 14 inch (36cm)
- Tissue paper 1 x 5 inch (2.5×12.5cm), yellow, blue, magenta, violett
- 7 sheets of copy paper 1 1/2 x 1 1/2 inch (4x4cm), (patches)
- 2 sheets of crepe paper 2 inch x 2,7yards (5x250cm), yellow (tail)
- 20m twine (extra strong)
- Keyring (small)
- Tape roll (handle)

Tools

- Scissors
- Measuring tape
- Pencil
- PVA Glue
- Glue stick
- Q-Tip and bottle cup
- Toothpick



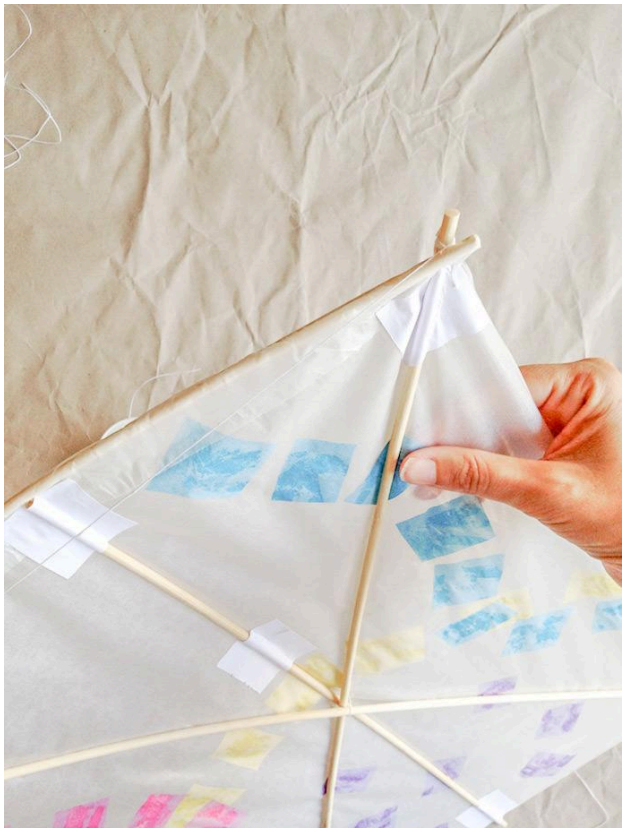
Step 1
Fold the sail in half and open up again. Fold 1″ to the top and open up again. Top: Glue the 14″-stick to the upper and fold in the paper (14″-side). Glue the paper over it. Spine: Cover the 19″-stick with glue and glue it to the middle.

Step 2
Glue the 2 cross-sticks (23 3/4″) across the paper.

Step 3
Glue the 7 white paper patches to the paper as shown in the picture.

Step 4
Cut squares from the colored tissue paper and decorate the kite.

Step 5
Make two holes with the toothpick in the middle, left, and right of the spine.



Step 6

Cut a piece of twine and knot it to the upper sticks on the left. Make a second knot to the right and wind up the twine until you get a bow (stick-side shows upwards).

Step 7

The width, or top left to top right of the kite measures 2×18 1/2″(48cm) and the length, or middle of the kite measures 15″ (38.5cm). Cut the twine a bit longer for both. Knot it first twice to the top left, measure and knot it to the right corner. Make a larks head in the middle and add it to the keyring. For the middle make a pigtail with stopper knot. Measure and put it through the two holes in the middle and knot it twice. Add it to the keyring.

Step 8
Take the twine and knot it to the inner tape roll. Wind it all up. That's really important, otherwise the kite will fly away with a strong wind (which happened to us)! Make a pigtail at the end. Best to add it to the keyring just before you let the kite fly.

Step 9
Glue the two tails to the bottom left and right. They are essential, helping the kite keep a steady flight.

Your kite is ready! Fly your kite in an open space without too many people or power lines nearby. Choose a day with medium and steady wind. Stand with your kite, the wind at your back, and give twine loosely to let it free. Be careful not to let the twine cut into your hands.