

# Your Remake Learning Days Activity Kit



The Remake Learning Days Festival has 3 goals:

- To get families learning together with hands-on activities and projects
- To help prevent the learning loss that can happen over the summer
- To connect families to the amazing resources we have in our region

With all this in mind, we chose 17 activities from our virtual festival, gathered all the supplies and instructions, and put everything together in this kit for you!

Here's what's inside:

- Instructions for all the activities and projects
- Scissors, pencil, sharpener, ruler, crayons, tape, white paper and construction paper. Many of the projects will use these supplies.
- Heavy, white watercolor paper and a watercolor paint set for the Basics of Watercolor and Secret Message Painting activities
- Paper plates, clay and a marble for Plate Mazes
- Embroidery floss for Friendship Bracelets
- Beads for the Binary Jewelry project
- Yarn for the Loom Weaving, Star Weaving, Binary Jewelry, Bookbinding and Robot Hand projects
- Plastic yarn needle for Bookbinding
- Cardboard rectangle and circle for Loom Weaving and Star Weaving
- A jar, glitter, color changing tablets and glitter glue for the Calming Glitter Jar project
- Straws for the Robot Hand and Make a Woodwind Instrument projects

Here are the projects you can do (you might think of your own projects, too)!

- Calming Glitter Jar
- Shadow Puppets
- Binary Jewelry
- Friendship Bracelets
- Plate Mazes
- The Basics of Watercolor Painting
- Loom Weaving
- Star Weaving
- Make a Zine
- Monster Flip Book
- Walking Paper Dog
- Robot Hand
- Bookbinding
- Secret Message Painting
- Paper Airplanes
- Tree Bark Rubbings
- Make a Woodwind Instrument

We're so excited to hear how you use your kit and to see your projects! If you share photos on social media, please use the hash tag #RemakeDaysGC.

You can watch videos of the projects in your kit and about 100 more at [www.RemakeLearningDays.org/GC](http://www.RemakeLearningDays.org/GC). The festival is from May 15-17.

If you have time to complete a survey, we would be very grateful! You could win a \$100 Amazon gift card! Just scan the QR code or go to [bit.ly/3dzSFV6](http://bit.ly/3dzSFV6).





## Calming Glitter Jar

Prepared by: Rowe Schnure

Time needed: 10 minutes

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### Materials needed:

- |                       |  |
|-----------------------|--|
| -glass or plastic jar | -fine and/or chunky glitter              |
| -jug of warm water    | -food coloring or color changing tablets |
| -glitter glue         | -utensil to stir                         |
- 

### Objectives/Connection to Pillars:

BREATHE through big emotions. CONNECT with your awareness and your thoughts.

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### Notes for success:

Create your glitter jar in a space that can be easily cleaned if a mess happens. If you are nervous about the jar reopening, you can secure with super glue.

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## Making the Glitter Jar

Put the ingredients into the jar in this order:

1. Glitter glue: empty the tube into the jar
2. Glitter: be careful--it's messy
3. Color changing tablets or a few drops of food coloring
4. Water: fill the jar, leaving about an 1" of space at the top.

Screw the top tightly onto the jar. Shake the jar and then watch the glitter swirl around and slowly settle to the bottom.

## Settling Your Mind

Our minds are full of thoughts, swirling around like the glitter in the jar.

Sometimes we experience angry thoughts. Sometimes we experience sad thoughts. It's okay to have these strong feelings but through mindfulness we can calm those thoughts and our bodies as well.

We can do this by letting our thoughts settle like the glitter in the jar. When our minds are calm it's easier to work out problems and to talk about whatever it is that is causing us to be upset.

Let's give it a try!

Take a deep breath and first notice how you are feeling right now and write it down.

I feel \_\_\_\_\_

Now give your glitter jar a good shake. Set it down and watch as the swirling glitter begins to settle, and notice how your mind settles as well. How do you feel now?

I feel \_\_\_\_\_

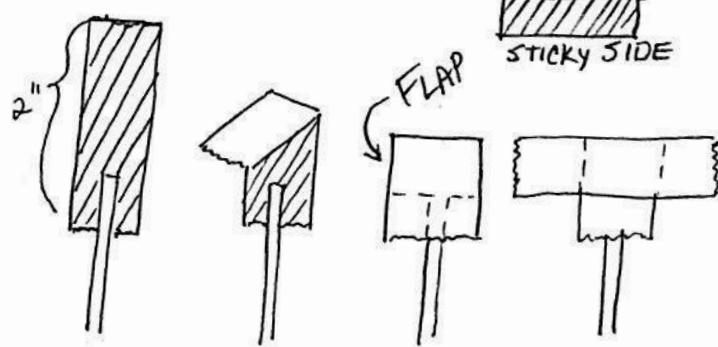
Come back to your glitter jar whenever you notice that you would like to calm and settle your thoughts.

# SHADOW PUPPETS

## INSTRUCTIONS

- CUT OUT ALL SHAPES
- USE PUSH PIN OR HOLE PUNCH TO MAKE EYES
- ATTACH CONTROL ROD WITH MASKING TAPE

## ATTACH CONTROL ROD

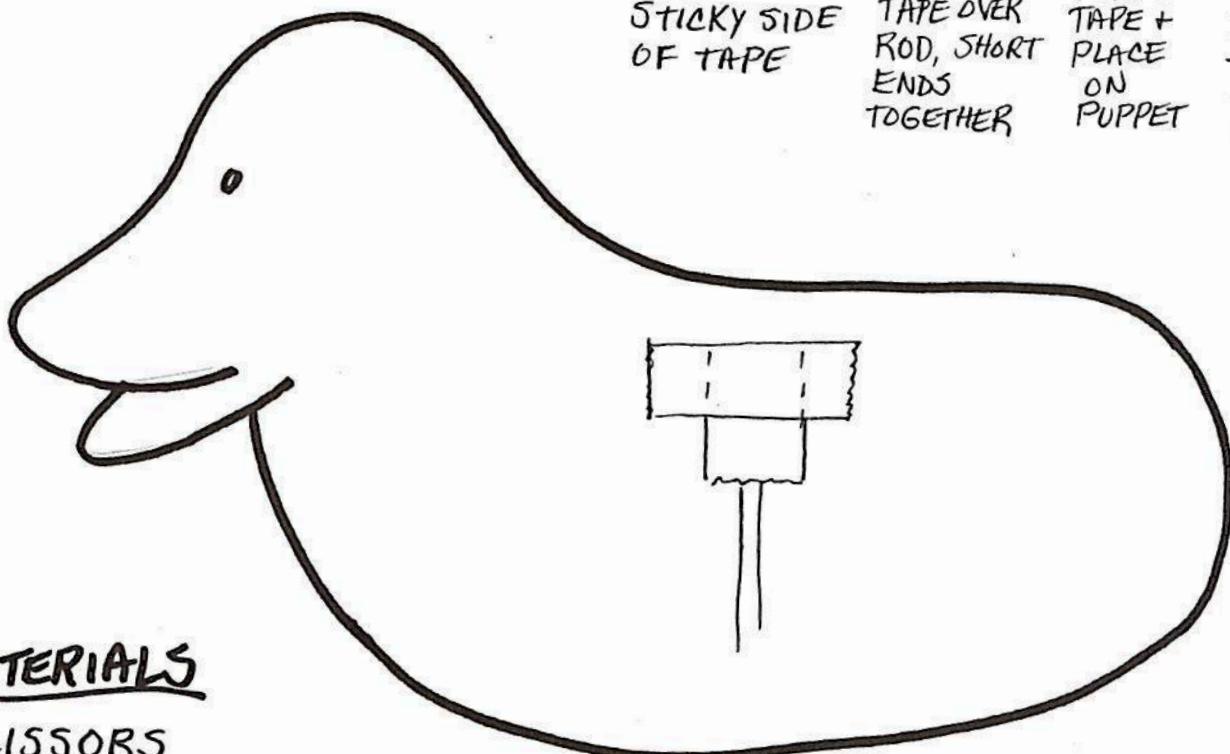


LAY ROD ON  
STICKY SIDE  
OF TAPE

FOLD  
TAPE OVER  
ROD, SHORT  
ENDS  
TOGETHER

FLATTEN  
TAPE +  
PLACE  
ON  
PUPPET

PLACE  
LONGER  
TAPE  
OVER  
FLAP



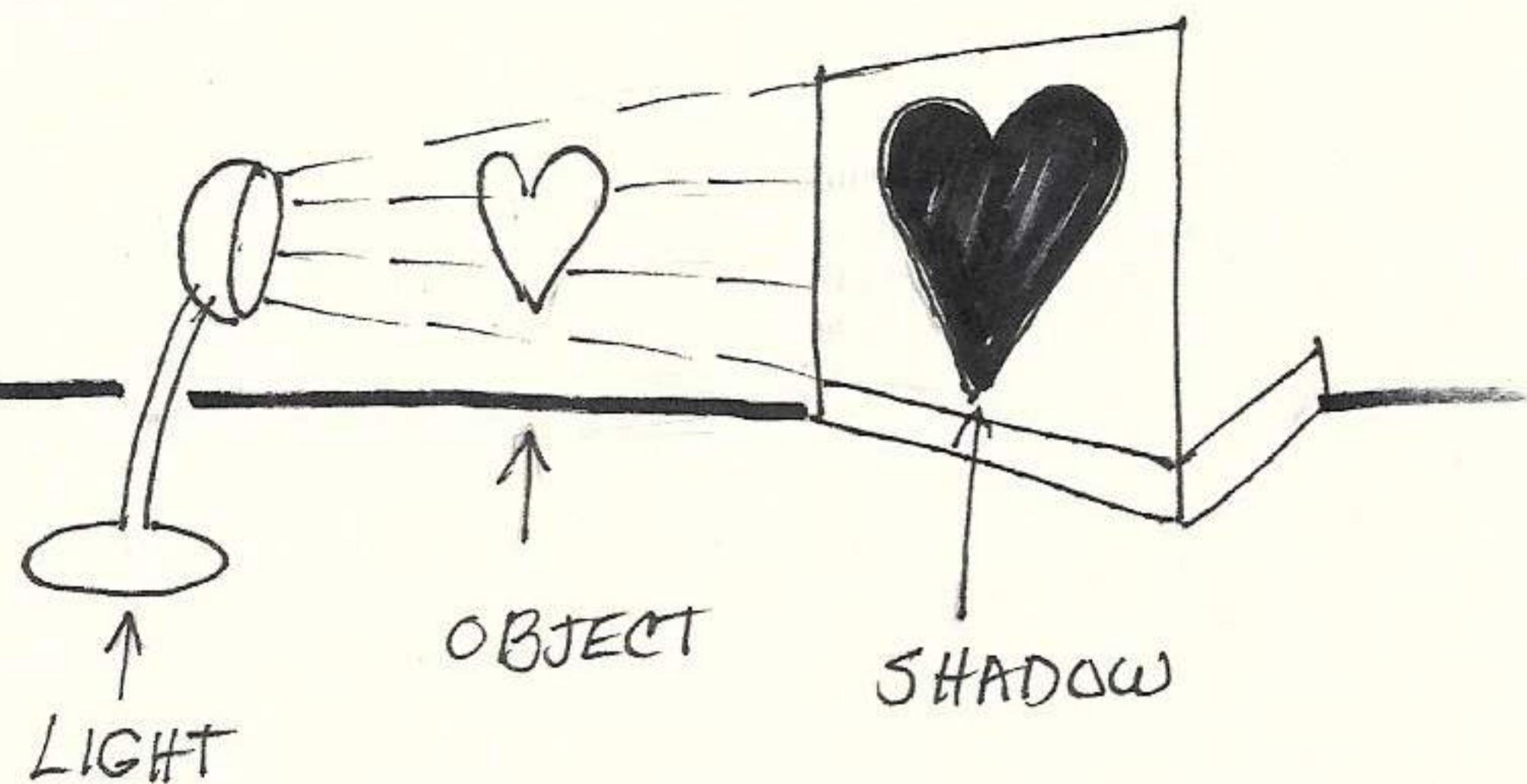
## MATERIALS

- SCISSORS
- MASKING TAPE
- HOLE PUNCH OR PUSH PIN
- DOWEL ROD OR BAMBOO SKEWER

CONTROL RODS

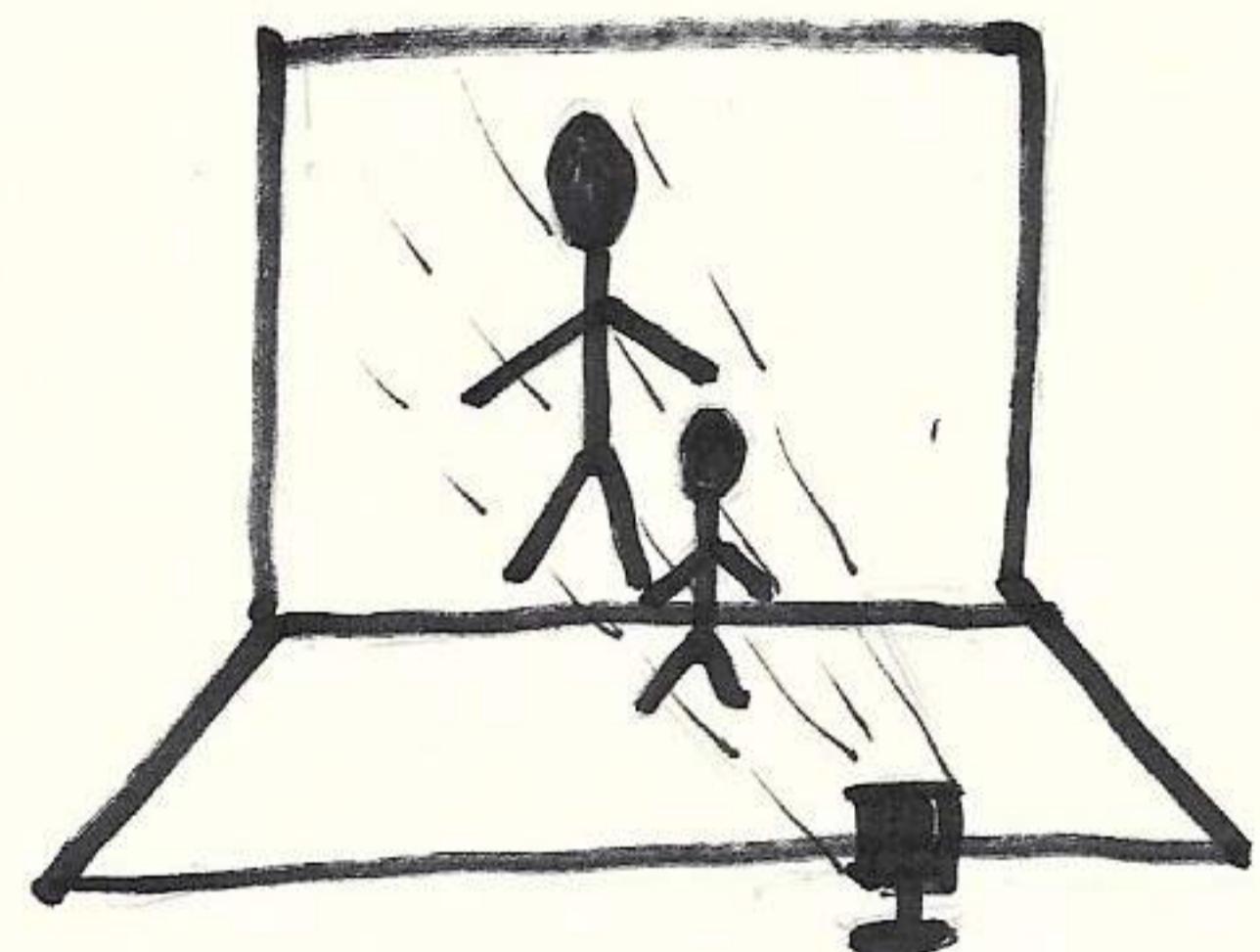
You can trace this shape onto heavy paper to make a sturdy puppet. You can add legs, ears, tail, wings--whatever you want!

# WHAT IS A SHADOW?

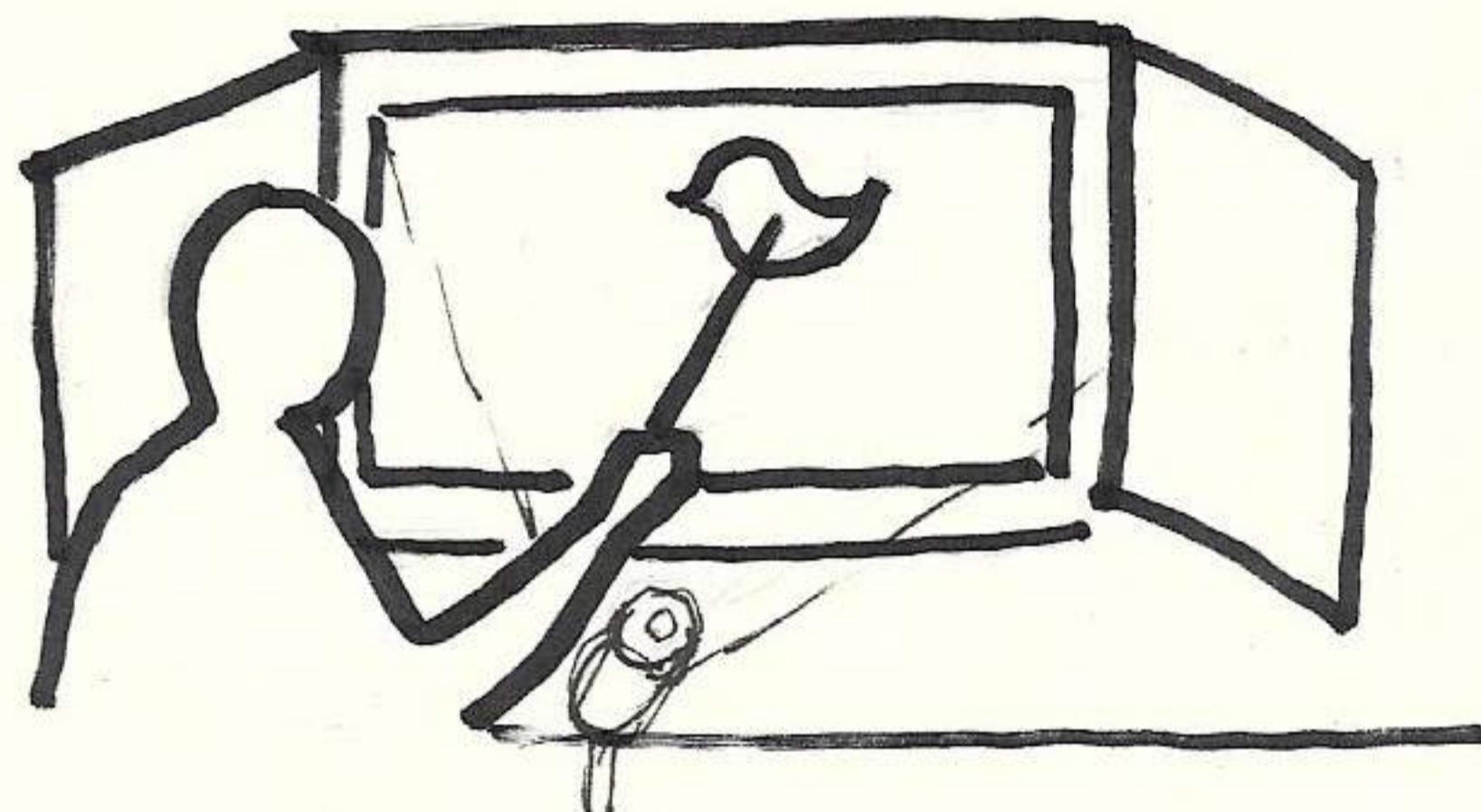


THE DARK SHAPE CAST BY AN OBJECT PLACED BETWEEN A LIGHT SOURCE + A SURFACE IS CALLED A SHADOW. SINCE LIGHT RAYS TRAVEL IN A STRAIGHT LINE, THE SHADOW IS THE SHAPE OF THE OBJECT THAT BLOCKS THE RAYS.

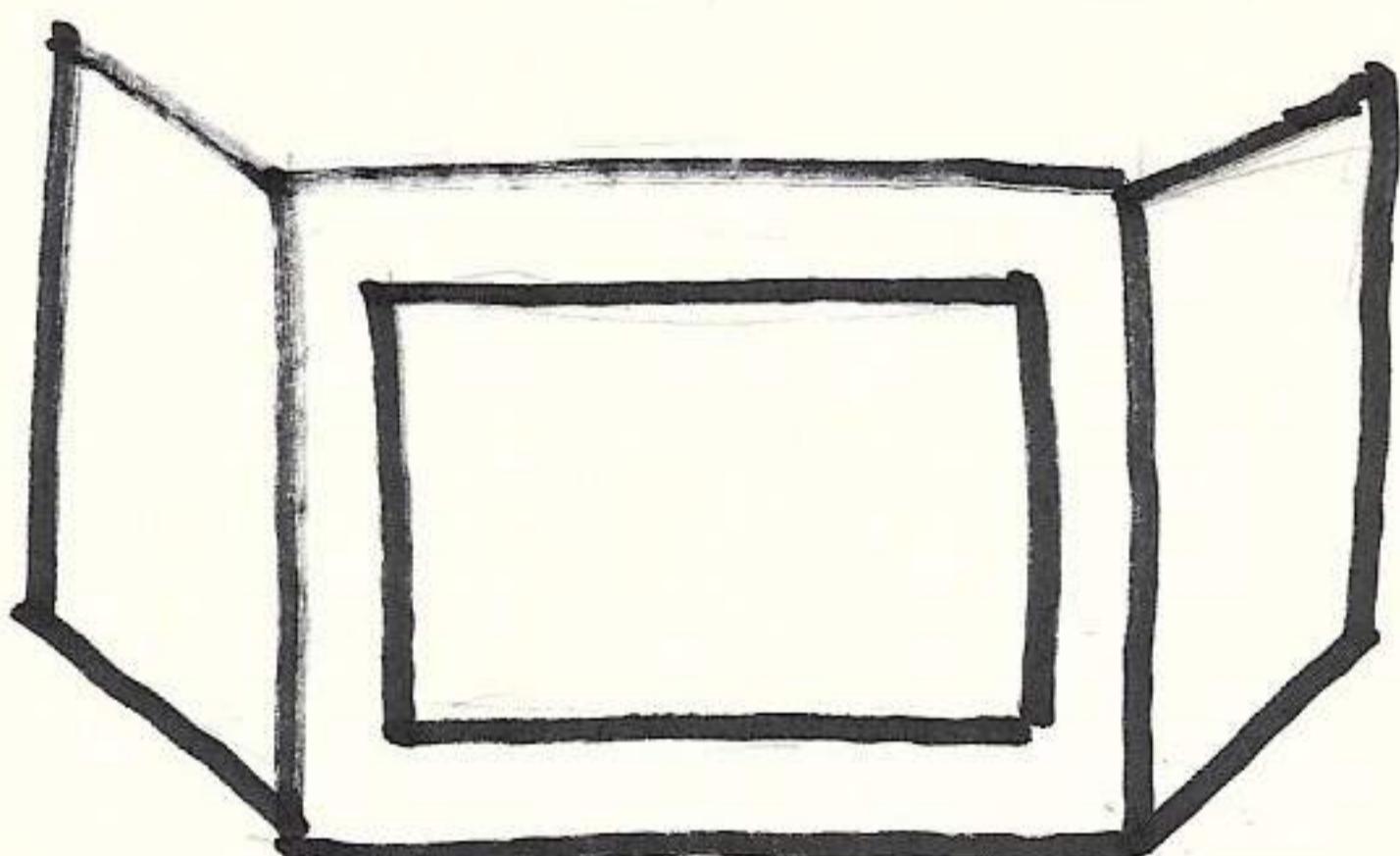
## SHADOWS MOVE + STRETCH



AS AN OBJECT OR PERSON MOVES AROUND BETWEEN THE LIGHT SOURCE + THE SURFACE



## SHADOW SCREEN

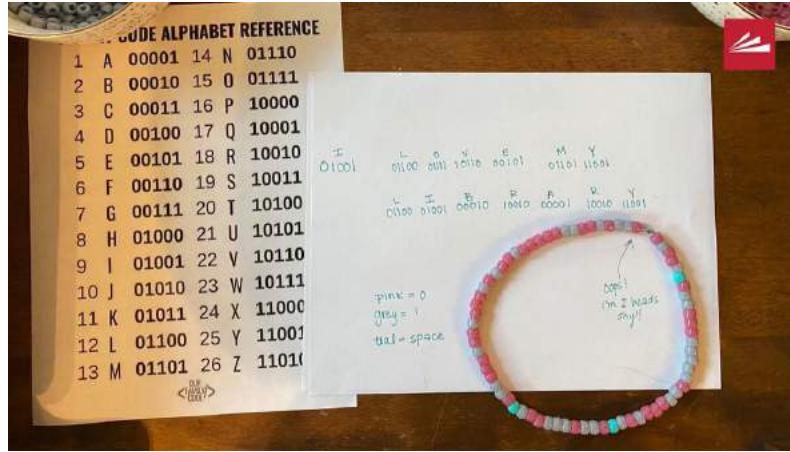


CUT A HOLE FROM THE CENTER OF A 3-SIDED BOX. TAPE WHITE PAPER, WHITE FABRIC, OR SHOWER CURTAIN LINER OVER THE HOLE.

## LIGHTS

- HALOGEN
- LED
- CLEAR BULBS
- FLASH LIGHT
- DESK LAMP
- SUNLIGHT ☀

## Binary Code Jewelry



You've probably heard of secret codes, which allow people to talk to each other in a way that others can't understand. Well, computers use a code, called Binary Code, to process information and talk to other computers.

"Binary" means two and the code is called that because it only has two symbols: a 1 and a 0. So, all the numbers and letters that a computer uses are converted into different combinations of 1 and 0.

Here is the Binary Code for the letters in the alphabet:

### BINARY CODE ALPHABET REFERENCE

1	A	00001	14	N	01110
2	B	00010	15	O	01111
3	C	00011	16	P	10000
4	D	00100	17	Q	10001
5	E	00101	18	R	10010
6	F	00110	19	S	10011
7	G	00111	20	T	10100
8	H	01000	21	U	10101
9	I	01001	22	V	10110
10	J	01010	23	W	10111
11	K	01011	24	X	11000
12	L	01100	25	Y	11001
13	M	01101	26	Z	11010

OUR  
<FAMILY>  
CODE

How would you write the word "me" in Binary Code?

The M is 01101 and the E is 00101, so ME would be written 01101 00101.

In the Binary Jewelry project, you will make a necklace or a bracelet that spells your name in Binary Code. Only someone who knows Binary Code will be able to decode it!



# Take and Make

# Friendship Bracelets

Supplies needed:

3 colors of embroidery floss

Scissors

Tape to attach the bracelet to a table while you are making it

Friendship bracelets are a fun and creative way to show your friends you are thinking about them. They are made with different combinations of knots in various colors. Once you know how to make the knots, you can create your own designs.

## How to tie knots:

Each knot is tied by making two hitches with your floss.

There are two types of hitches:

**Forward hitch** (see example on back)

**Backward hitch** (see example on back)

These hitches can be combined to make four types of knots.

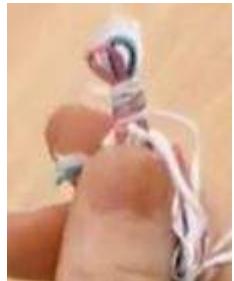
**Forward knot** – 2 forward hitches

**Backward knot** – 2 backward hitches

**Forward Backward knot** – 1 forward hitch and 1 backward hitch

**Backward Forward knot** – 1 backward hitch and 1 forward hitch

To start, knot your strands  
of embroidery floss  
together at the top.



Tape the knot to the table  
while you work.



When your bracelet is done,  
knot both ends. You wear it by  
tying it to your wrist.

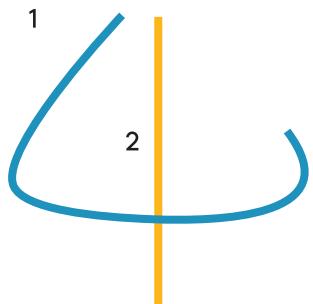


Now that you know the basics, you can get started making your own friendship bracelets!

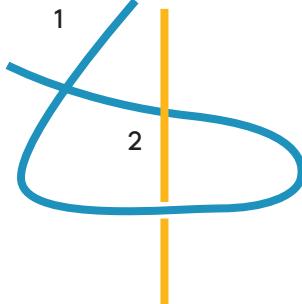


# How to tie knots:

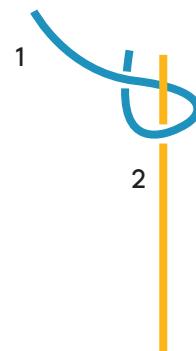
## FORWARD HITCH



**1** Take string 1 and cross over string 2 forming a number "4"

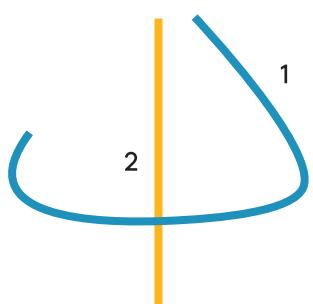


**2** Take string 1 and go under string 2 and then up over string 1.

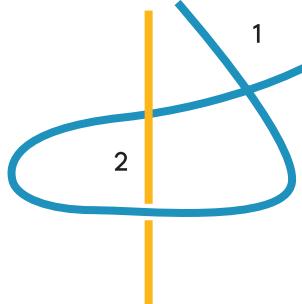


**3** Pull string 1 up to tighten. While doing this, hold string 2 tight toward your body.

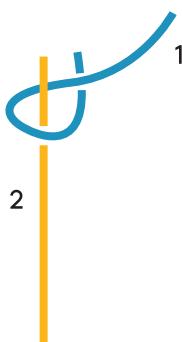
## BACKWARD HITCH



**1** Take string 1 and cross over string 2 forming a backwards number "4"



**2** Take string 1 and go under string 2 and then up over string 1.



**3** Pull string 1 up to tighten. While doing this, hold string 2 tight toward your body.



# Paper Plate Maze

You can be an engineer! Use the engineering design process to plan, build, test and evaluate a 3D maze using a paper plate and play dough or clay.

**Supplies needed:**

**2 paper plates**

**1 tub of play dough or some modeling clay**

**Round bead or marble**

- **Plan:** Think about your design before you get started. Where will the maze start and end? How many dead ends will you have?
- **Build:** Roll your dough or clay into thin ropes to make the walls of your maze. Stick the walls to the paper plate.
- **Test:** Place a bead or marble at the start of your maze. Tilt the plate to roll the bead through to the end.
- **Evaluate & redesign:** Can you improve your maze? Go through the process above again to perfect your design. Then, share it with friend or family member!

Get creative! Use other materials you find around your house to build or add to your maze (like blocks, LEGO Bricks, straws, or paper.)

- Make a maze with at least 3 dead ends.
- Use a baking sheet or piece of cardboard to make a larger maze.

Roll your dough or clay into thin ropes to make the walls of your maze.



Build your maze on the paper plate.

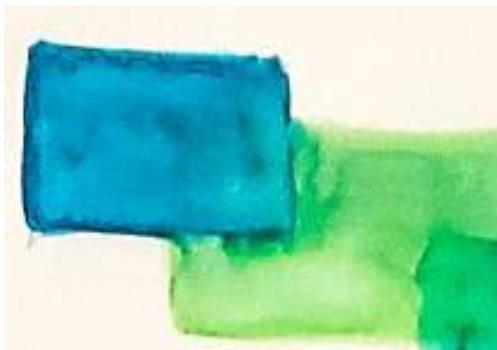


Test your maze.



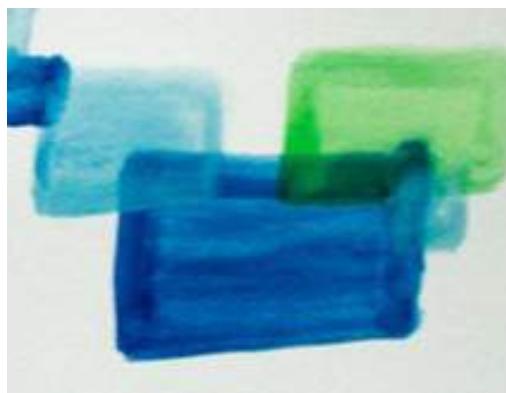
### **Wet on Wet.**

Wet the paper with clear water then use the paint over the water.



### **Wet on Dry**

Use the watercolor on dry paper.



### **Color over lay**

Paint one color in one circle and when that color dries paint a second color in the other circle. Where they overlap you will see a color shift.



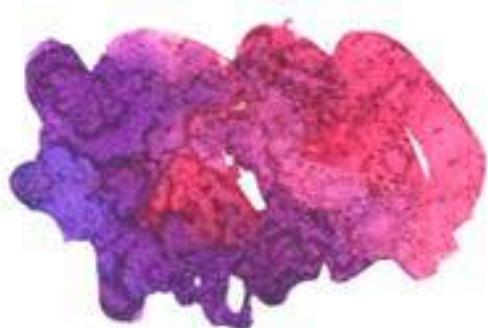
### **Wax resistance.**

Use a white crayon on the paper first and draw something. Then watercolor over your art and watch the magic happen



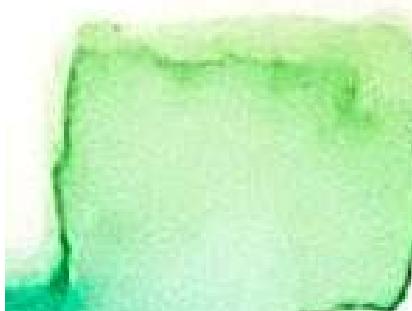
### **Salt**

Use wet on wet for this one. Wet your paper then add color to it and before it dries sprinkle salt on it. This effect will not be visible till it is 100% dry. Then just brush off the salt.



### **Subtraction**

Use wet on wet. Wet your paper and then apply color. With a dry brush touch the wet paper and watch it suck up the color. This is great for when you accidentally add too much water.



## **Painting with Watercolors**

Watercolors are a wonderful medium that give you lots of freedom for expression. To the left are some different techniques to try and below are some tips for working with watercolors.

1: If you are right-handed, put all your supplies on the right side and if you're left-handed, put them on the left side

2: Make sure you are using clean water when doing wet on wet. You may have to change out your water frequently.

3: The thickness and heaviness of the paper – 90lb being the lowest- will affect how much you can paint on it and how much water it can hold.

4: Do not get frustrated, this is a tricky medium to use. It will take time and practice to get the hang of it.

5: If you are having a hard time drawing it is okay to trace pictures on your paper to color in with paint.

6: NEVER store your brushes tip down. This will ruin them. Store them flat or with the tips up.

7: Tape your paper down around all sides, using painter's tape if you have it. This helps keep the paper flat as it dries.

8: Try different types of watercolor and different kinds of brushes.. The different tips will give you different brush strokes.



## Cardboard Loom Weaving

### Materials needed:

- Cardboard
- Scissors
- Yarn

Optional: ribbons, grass, sticks and other found materials

Optional: ruler

### Directions

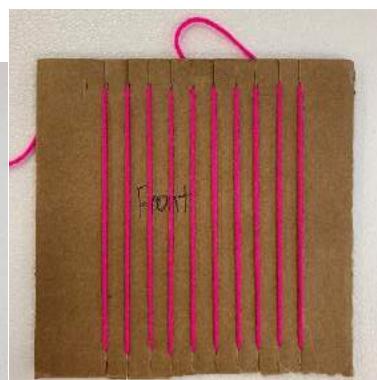
Cut your cardboard into a rectangle. The size you cut will affect your finished weaving. Make a long skinny rectangle for a bracelet, a square shaped one for a coaster or a larger rectangle for a hanging.

Cut an even number evenly spaced 1 inch slits on two opposite edges.

Slide one end of your yarn into the first slit, leaving a tail on the back of the loom.

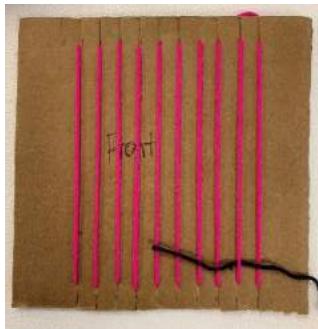


Thread the yard down and around the front and then across the back to the next slit. Continue to thread up and down the front of your rectangle and across to the next slit in the back until your slits are full.



You can tape or tie your ends on the back to secure your yarn. These lines of yarn are your warp.

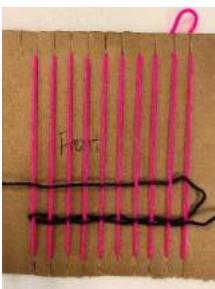
Start to weave your weft (the lines of yarn that go across the weaving). Thread an end of your yarn over the first warp and under the next. Continue across the warp and pull the yarn through, leaving a tail.



Begin the next row by going back in the opposite direction.



Gently press the rows together before beginning the next row.



Continue weaving rows. To add new colors or materials you can tie it to your working weft string or leave a tail on the ends of your rows. The tails can be worked into the weave or left hanging free.



When you are finished with your weaving, it is time to secure it. Cut your warp strings and tie them to each other, in groups of two, to keep your work from unraveling.



You can find a video demonstration of this activity at: <https://www.youtube.com/user/kentonlib>



## Star Weaving

### Materials Needed:

- 4" cardboard circle (coasters work well, or cut one using the circle below as a guide)
- Approximately 24' of yarn or embroidery floss. A single skein of embroidery floss works perfectly, but it is fun to use what you have on hand, too!
- Scissors

### Directions:

If needed, cut a 4" circle from lightweight cardboard using the template below as a guide.

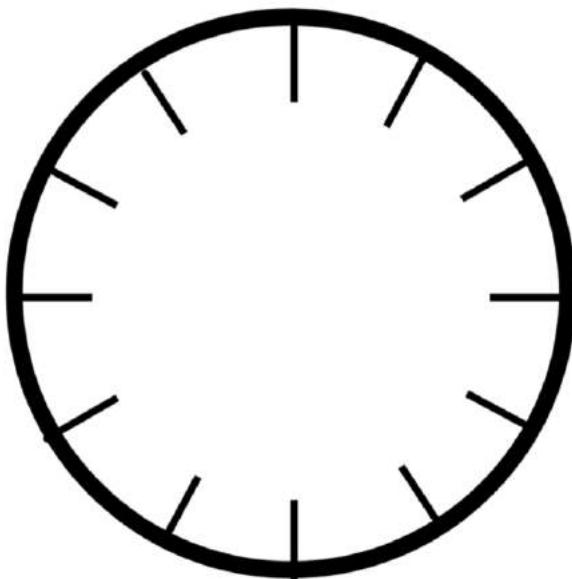
Cut evenly spaced  $\frac{1}{2}$ " slits on the edge of your circle. You can use the marks on the template to help, or space them by eye. The number of slits will affect your design. 6 is a good choice for younger children, 12 will result in a more complicated design.

Once all slits are cut, slide string into first slit, leaving a tail on the back side.

Work your way around the circle, passing through each slit several times until you are happy with your design. You can move in a pattern or randomly – there is no wrong way to do it!

Tie a loop for hanging and tuck the excess tails under the weaving. Enjoy your art!

You can find a video demonstration of this craft at <https://www.youtube.com/user/kentonlib>



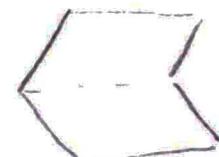
# MAKE A ZINE

## SUPPLIES

- Sheet of paper (any size)
- Writing utensil (anything works, but I like Sharpies)
- Scissors

## STEPS

① Fold your paper hamburger style.



② Unfold it.

③ Fold each edge toward middle fold.



④ Open it back up.

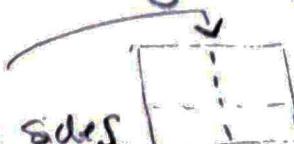


⑤ Fold it hot dog style.



⑥ Unfold it.

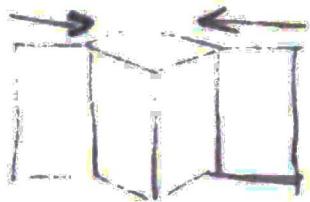
⑦ Fold hamburger style again

⑧ Cut this line  through both sides.

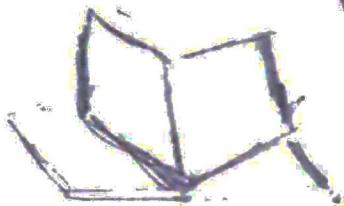
⑨ Open at cut center



⑩ Push together until it forms four pages.



⑪ Fold it so it forms a cover.



⑫ Fill it with your ideas!

Your favorite animal

A TV show

A movie

A book

Poetry

Short stories

photography

a band or musician

your hobby

a social issue

interview someone

DIY instructions

collection of recipes

current events

Fashion

restaurant reviews

# **Mix & Match Monster Flip Book**

**Subject:** Visual Arts

**Grade Level:** K-5

**Time to complete:** 45 minutes

## **DESCRIPTION:**

Create your own mix and match flip book by drawing different monster heads, middles, and bottoms. Watch how your monsters take on a whole new look when you turn a page.



## **IN THIS PROJECT, YOU WILL:**

1. Make a flip book.
2. Design and draw new monster parts for each page.
3. Share your mix & match creation with others.

## **WHY MAKE A MIX & MATCH MONSTER FLIP BOOK:**

1. To practice drawing different body parts.
2. To use your imagination and create something new.

## **VOCABULARY:**

- Shape, color, texture

## **SUPPLIES:**

- Pencil
- Paper
- Scissors
- Markers, crayons, or colored pencils
- If possible, a stapler

## **ADDITIONAL RESOURCES:**

- [Mix & Match Monster Flip Book Video](#)

## **STEP 1:** Make a flip book



1. Fold 3 or 4 pieces of paper in half.
2. If you have a stapler, staple along the edges like a book.
  - a. If not, don't worry about it. Just folding the pages will work.
3. Draw two lines dividing the page into 3 parts. If you are worried about straight lines, use a ruler or a straight edge.



4. Cut along the lines but DO NOT CUT ALL THE WAY THROUGH. Leave about  $\frac{1}{2}$  inch on the edge or spine of the book.
5. Fold the pages back along the edge or spine.

## **STEP 2:** Design and draw new monster parts

### **1. AT THE TOP: Draw the monster's top.**

Use your imagination. What shape is your monster's head? How many eyes does it have? Does it have a nose and a mouth? Does it have hair?

### **2. IN THE MIDDLE: Draw the monster's middle.**

Use your imagination. Does it have arms? How many? Is it big or little? Is it wearing clothing? Does it have fur, feathers, or scales?

### **3. ON THE BOTTOM: Draw the monster's bottom.**

Use your imagination. Does it have legs? How many? Is it wearing shoes?

### **4. Add details with color and texture.**



5. Turn the top page and draw a new monster head.

**WARNING:** Make sure your new head lines up with your first monster's middle. The lines should touch.

6. Turn the middle page and draw a new monster middle.

**WARNING:** Make sure your new middle lines up with BOTH the new head and the first bottom. The lines should touch.

7. Turn the bottom page and draw a new monster bottom.

**WARNING:** Make sure your new bottom lines up with the new middle. The lines should touch.



8. Repeat this process until you have filled your MIX & MATCH MONSTER FLIP BOOK.

9. Once completed, have fun turning the pages to discover new mixed up monsters.



## **LEARNING EXTENSION:**

1. CHALLENGE: Completely fill the flip book on both the front and the back of each page. Make sure you try something new on each page.
2. SIMPLIFY: To make this project simpler, try making a MONSTER HEAD FLIP BOOK, instead of a full body. The top portion will be forehead/hair drawings, the middle portion will be eyes/nose drawings, and the bottom portion will be mouth/chin drawings.

## **SHARE OUT:**

- Share your MIX & MATCH MONSTER FLIP BOOK with a family member or friend. Allow them to flip through your book. Ask them:
  - What is your favorite combination?

## **SELF REFLECTION:**

1. What artistic choices did I make?
2. Overall, I think my artwork is successful because:
3. How did I become a better artist?



## Paper Walking Dog

### Materials:

Construction Paper

Pencil

Ruler with measurements in centimeters

Scissors

Surface with an incline



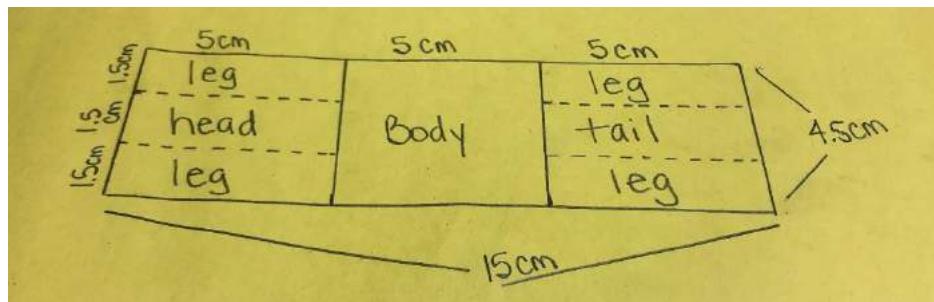
### Instructions:

Using a ruler with measurements in centimeters, measure and draw a rectangle shape that is 15 centimeters (abbreviated cm) by 4.5 cm on a piece of construction paper.

Divide the 15 cm side into three 5 cm sections.

In the 5 cm ends sections, divide into three 1.5 cm sections with a dotted horizontal lines. Label the 1.5 cm sections as shown. Even paper dogs need legs, a tail and head!

Label the middle 5 cm section as "Body". That will be the body of your paper dog.



Using your scissors, cut out your paper dog rectangle. You can use your construction paper scraps to make more paper dogs if you like.

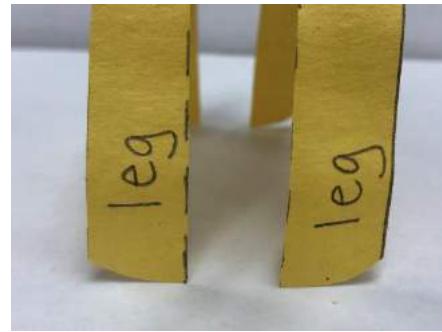
Holding your paper dog rectangle, carefully cut the dotted lines inside the rectangle.

Fold the legs down.

Fold the tail up. Curl the tail using your pencil. Just like a real dog, this tail helps your paper dog with balance.

Fold the head up. Pinch and bend the head section of your paper dog.

Cut the paper dog's feet into a curve with your scissors by cutting a rounded edge at the end of each leg. The outer edge of the dog's leg should be shorter than the inner edge of the leg.



Now it's time to take your dog for a walk. Here's how it works: The paper dog walks by rocking back and forth on its curved feet. As the dog rocks from one foot to the other, gravity pulls the dog's feet down the incline.



#### Troubleshooting:

- If your dog won't walk, make sure the legs are straight out from the body. Bend at the fold.
- Try adjusting the height of the dog's head or the curl of its tail.
- Adjust the height of your incline, if the dog won't walk, make it higher. If the dog tips over, make it lower.
- If your dog isn't rocking back and forth smoothly, trim the edges of each foot to make the feet rounder.
- If the paper dog is sliding, your surface is too slippery. Try to use things you have to add friction to the surface incline.



## Do-It-Yourself (DIY) Robot Hand

### Materials:

1 piece of Card stock paper (any color)  
2-3 standard size drinking straws (paper or plastic)  
1 wider straw, like the kind used for smoothies (paper or plastic)  
Scissors  
Pencil  
Yarn or string (in 5 different colors, if possible)  
Tape  
Ruler

### Instructions:

#### MAKING THE HAND

Trace a hand on card stock paper. An adult's hand is recommended for the larger size. Try to keep fingers close together with just enough space to use your pencil to trace. You don't want your robot hand to look like a Thanksgiving Hand Turkey craft. Don't forget to include a portion of the wrist.



Cut out your hand outline with scissors. Place the human hand back on the card stock paper hand to mark the location of the knuckles (joints) with pencil. Lightly fold the paper hand at the marked joint locations.



## STRAWS

Cut the standard size drinking straws into the following sizes: nine  $\frac{1}{4}$ " pieces, five  $\frac{1}{2}$ " pieces, one 1" piece, and four  $2\frac{1}{4}$ " pieces.

Cut the smoothie straw into one  $1\frac{1}{2}$ " piece.

Tape the straws onto the paper hand. Be sure to leave space between the straws.

Starting at the tip of the fingers and thumb, follow these guidelines.

For the thumb: Use two  $\frac{1}{2}$ " pieces, then one 1" piece (placed on the palm of the hand).

For index finger: Use one  $\frac{1}{4}$ " piece, then one  $\frac{1}{2}$ " piece, then one  $\frac{1}{4}$ " piece, then one  $2\frac{1}{4}$ " piece (placed on the palm of the hand).

For the "Tall Man"/middle finger: Use one  $\frac{1}{4}$ " piece, then one  $\frac{1}{2}$ " piece, then one  $\frac{1}{4}$ " piece, then one  $2\frac{1}{4}$ " piece (placed on the palm of the hand).

For the ring finger - Use one  $\frac{1}{4}$ " piece, then one  $\frac{1}{2}$ " piece, then one  $\frac{1}{4}$ " piece, then one  $2\frac{1}{4}$ " piece (placed on the palm of the hand).

For the "pinkie"/little finger: Use three  $\frac{1}{4}$ " pieces, then one  $2\frac{1}{4}$ " piece (placed on the palm of the hand).

Tape the smoothie straw piece at the middle of the wrist area on the paper hand.



## YARN

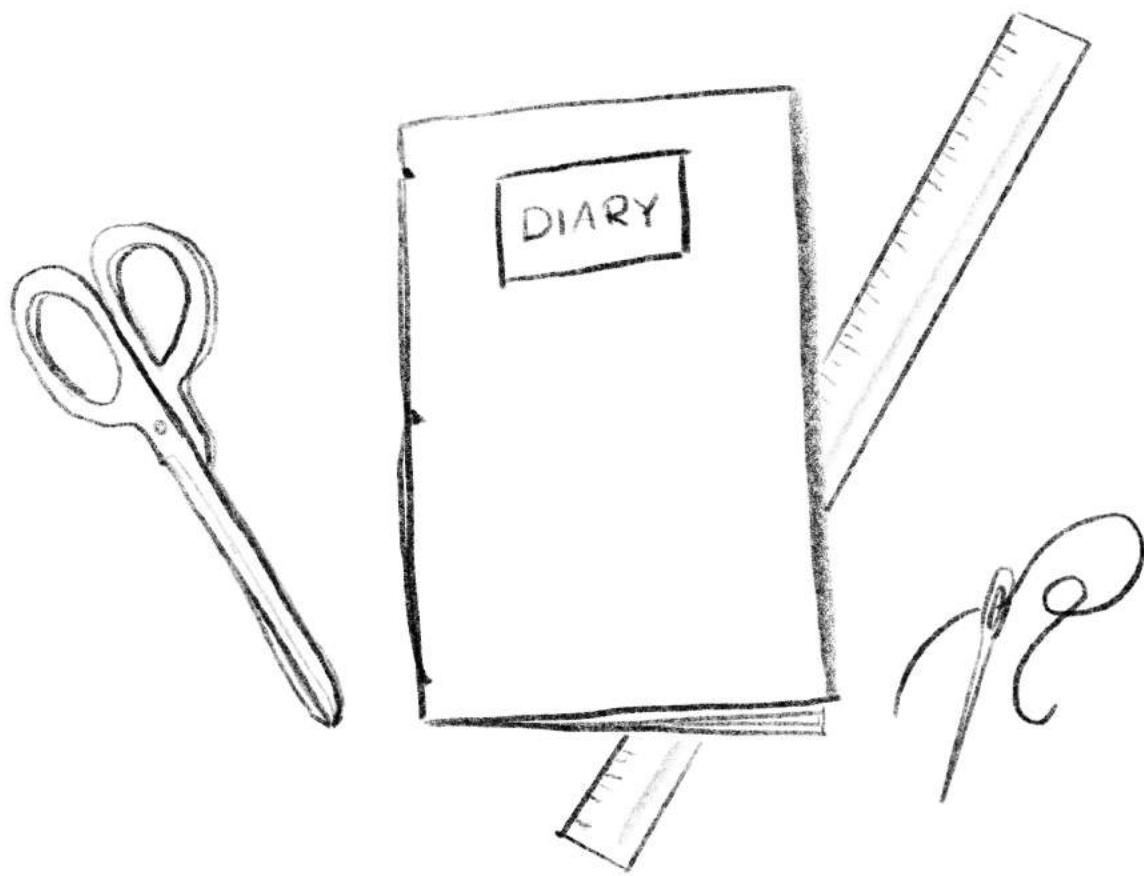
Cut 5 strands of different colors in 24" long pieces. Tie knots in the end of each piece of yarn. Thread the unknotted end through each of the straws of one finger at a time. Use a different color yarn for each finger. Have all colors meet in the wrist smoothie straw. If the knotted end of the yarn/string comes through the fingertip straw, use tape to secure the knot.



## PLAY & EXPERIMENT WITH YOUR ROBOT HAND

Pull on the yarn individually and in combination to explore the wonder of your robotic hand.

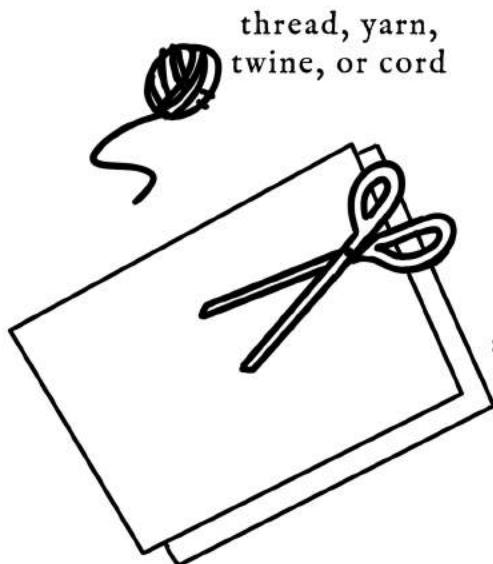
# Simple Bookbinding for Kids



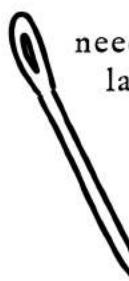
Learn to bind paper together to  
create a simple notebook or journal—  
no fancy tools needed! Use your book  
for notes, sketches, stories, a  
diary—whatever you want!

# Pamphlet Stitch Binding

## Supplies



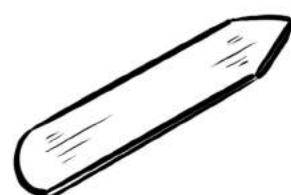
thread, yarn,  
twine, or cord



needle with a  
large eye

scissors, paper for  
the cover, and  
paper for the  
inside pages

## optional supplies

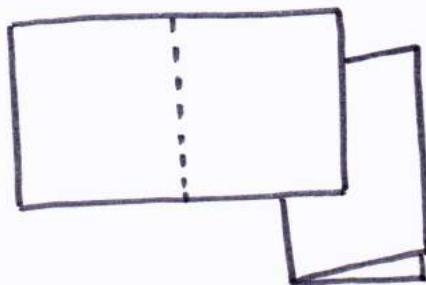


bone folder for  
making sharp  
creases

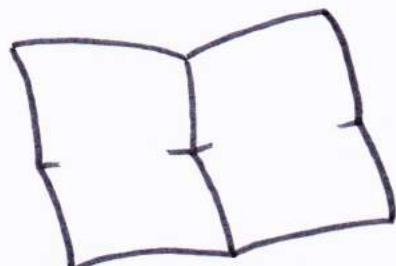


awl for  
punching  
holes

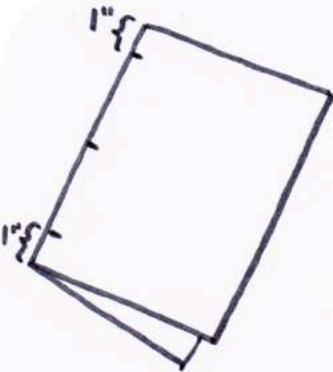
## steps



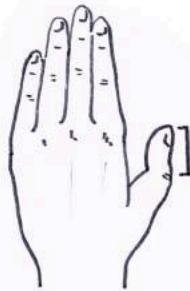
Fold all papers hamburger-style.



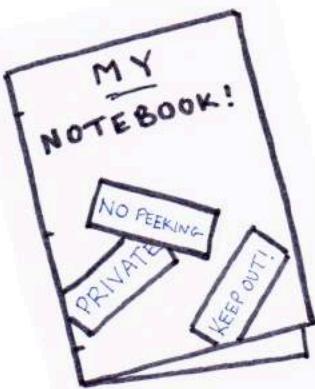
To find the middle of the cover paper, unfold the sheet and then re-fold hotdog style, but do not crease. Just pinch the fold where it crosses the previous crease, and open back up.



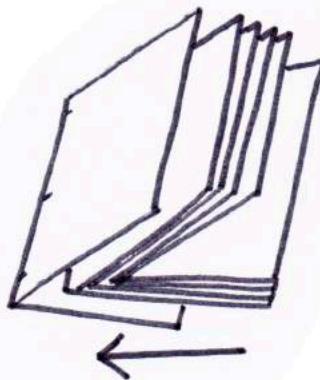
To mark other two sewing holes, measure an inch in from top and bottom of spine. If you don't have a ruler, you can use your thumb as a measuring device.



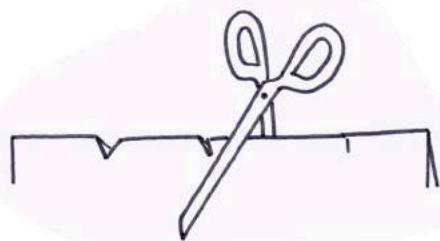
Align the crease of your thumb knuckle with the edge of the paper, and mark the tip of your thumb. No ruler needed!



Decorate your cover.  
Go ham!



Nest all the plain papers inside each other (this is called a 'signature'), then nest that inside the cover. Tap on work surface a few times to make sure everything is aligned.



OR

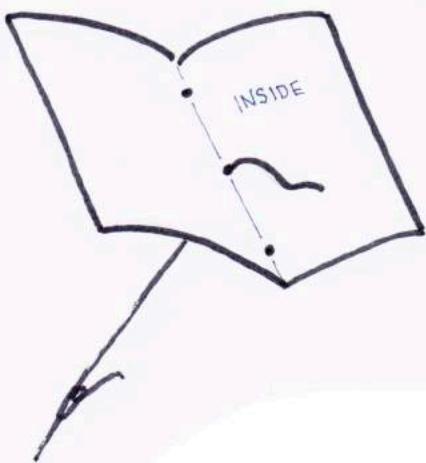


To make sewing holes, either use scissors to cut notches in the spine at each mark (making sure to cut through all the inside papers as well), or use an awl to punch a hole at each mark.



Be very careful when using sharp objects!

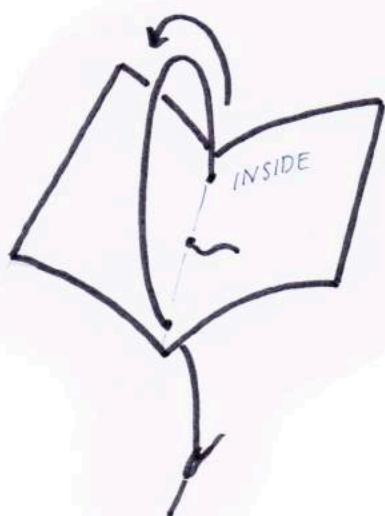
Cut thread two times the length of the spine, and thread needle. Do not tie any knots in the thread.



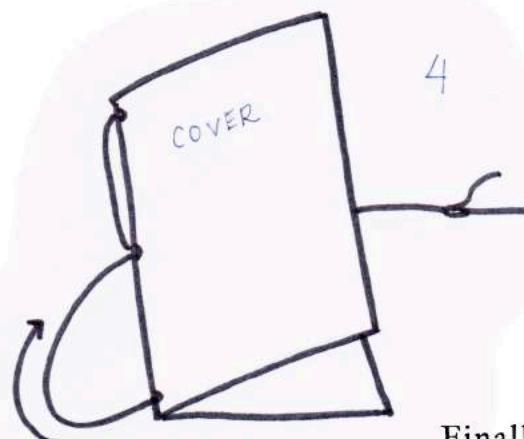
Start sewing from the inside of the book. Enter through the middle hole. Make sure to leave a tail of thread on the inside.



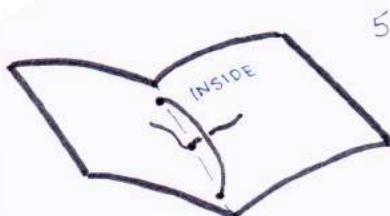
From the outside of the book, enter the top hole.



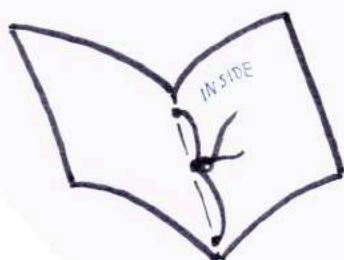
Back on the inside of the book, skip the middle hole and sew down through the bottom hole.



Finally, from the outside of the book, go back through the middle hole.



Remove the needle from the thread, and make sure the two tails are on either side of the long middle stitch.



Tie a double knot and snip off the excess thread. You're all done!

# IN MY OWN WORDS

## SECRET MESSAGE JOURNALING ART WITH JENNY CROWE

### Materials:

white oil pastel OR crayon  
cup for water + water  
watercolor paper or other heavy paper  
watercolor paint + brush  
paper towel or towel

### CONCEPT: STREAM OF CONSCIOUSNESS WRITING

a style of writing where thoughts and feelings are recorded without concern for 'making sense' or being grammatically correct. Another way to think of it is writing that is unedited.

### Steps:

- Have your materials laid out so you can easily reach them.
- Start by taking your white crayon or oil pastel, and filling up your entire paper with writing. REMEMBER, this is unedited. Some themes you could think about are: *how your day is going, what is your favorite activity these days + why, tell us about your pet, describe the taste of your favorite food, etc.*
- Once you fill your entire watercolor or heavy paper with writing, take your paintbrush, and dip it into your water cup. Once your brush is wet, dip it into your first choice of watercolor paint. (*tip: the more water, the lighter the color, the less water, the bolder the color*)
- Apply your paint OVER the white crayon or oil pastel writing to reveal your secret message. It's okay if you're the only one who can read it!
- Dip your brush in water and rinse the bristles to change colors. Repeat STEP 4 until you feel you are finished. WELL DONE!!!

# STEAM Team



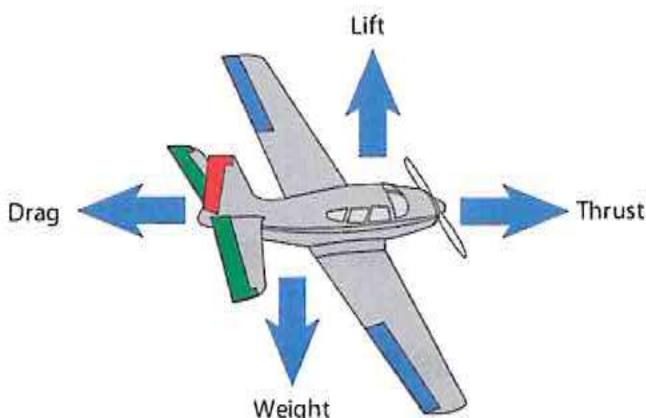
You may want to ask an adult for help with this activity.

**TODAY:** We will learn about flight, then build paper airplanes.

So how do airplanes fly? What helps keep planes in the air? And how do they move through the air?



There are four things that help make planes fly. They are:



- lift
- drag
- thrust
- and weight

Today, we will learn about these forces and how planes fly, then build our very own airplane!

So what are lift, drag, thrust, and weight?

**Lift:** a plane needs lift to get into the air, so a plane's wings provide lift

**Drag:** the air pushing back on the plane

**Thrust:** a plane needs something to move it forward through the air, a plane's engine provides the thrust

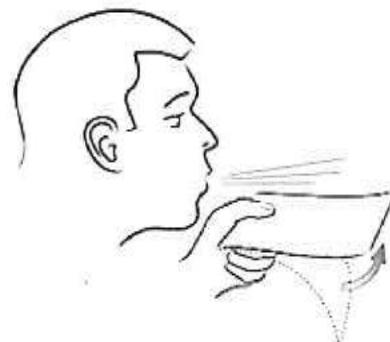
**Weight:** what keeps the plane on the earth



Now that we know more about flight, let's try some activities to see how flight, lift, and drag work.

### Lift:

1. Take out a piece of paper.
2. Hold the edge of the paper up to your mouth.
3. If you blow on top of the paper, do you think the paper should go up or down?
4. Blow onto the top of the paper.



Did the paper go up or down? The paper went up!

This is an example of lift. The same thing happens to the plane's wings, which helps make the plane fly.

### Drag:

1. You will have to use your imagination or take this activity on the go.
2. Imagine you are in the car or on a bicycle moving quickly.
3. Have you ever stuck your hand into the moving air and felt the air pushing back on you?
4. That air pushing your hand back as you move forward is **drag**.



**CHALLENGE:** Now that we know more about flight, let's do an airplane challenge. Today, we will build, or engineer, an airplane!



Here is what you will need to do this activity:

1. Paper
2. A ruler



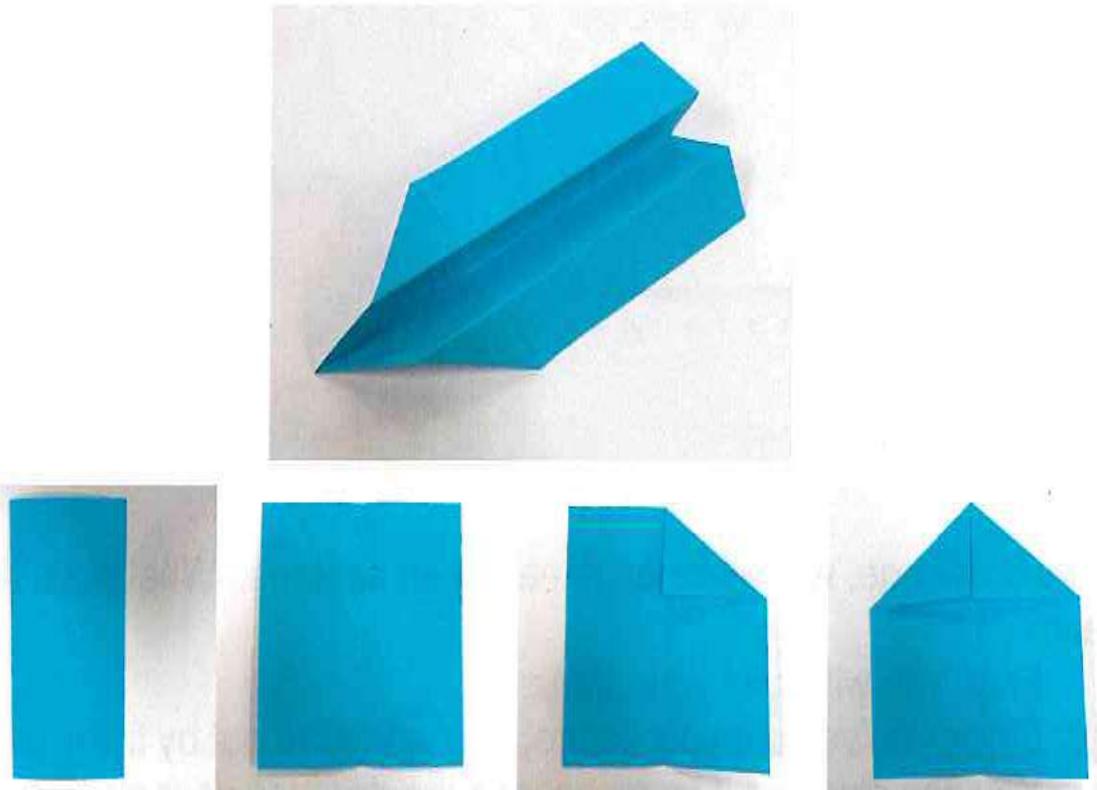
In this challenge, we will be engineering an airplane. What does this mean?

1. First, you will build your plane.
2. Once you've built your plane, you will test it out by flying it.  
You can also test it by measuring the distance your plane travels.
3. Then think: could it be better? Can it improve?
4. Next, improve your airplane if you think it could be better.
5. Continue testing, then improving, then retesting until you get the perfect plane!

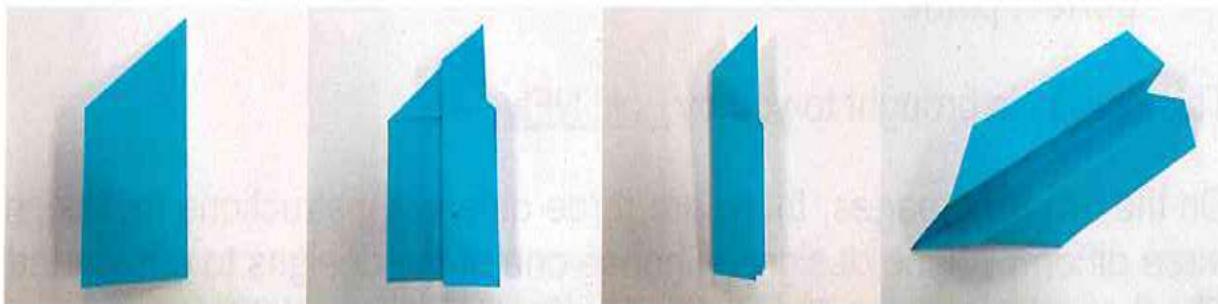
This activity is brought to you by [Fold'N Fly](#).

On the following pages, there are three different instructions to design three different plane designs. Choose one of the designs to get started. The three designs are The Basic, The Dart, and The Stable.

## The Basic:

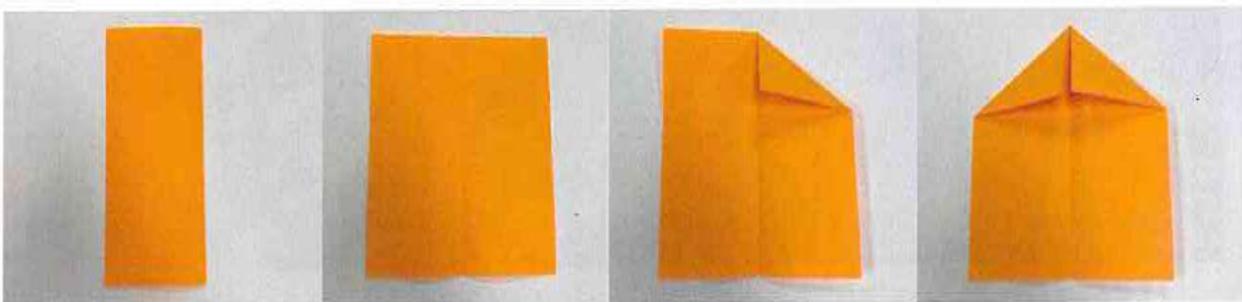
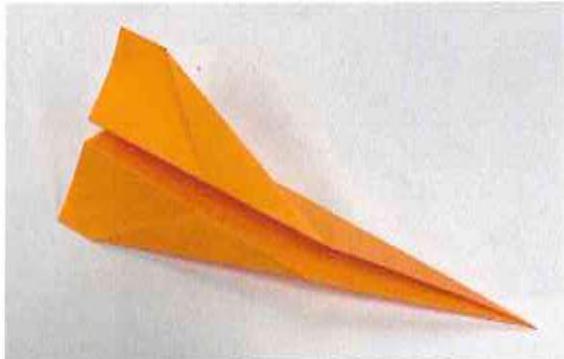


Fold the paper in half. Unfold and then fold the top two corners into the center line.



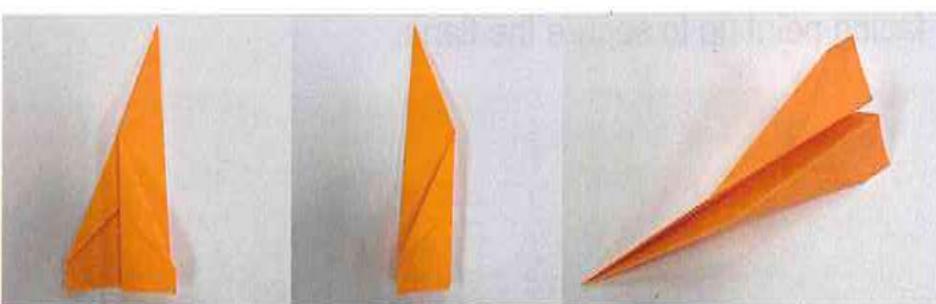
Again, fold the paper in half. Fold the edges down to meet the bottom of the body.

## The Dart:



Fold the paper in half. Unfold, then fold the corners into the center line.

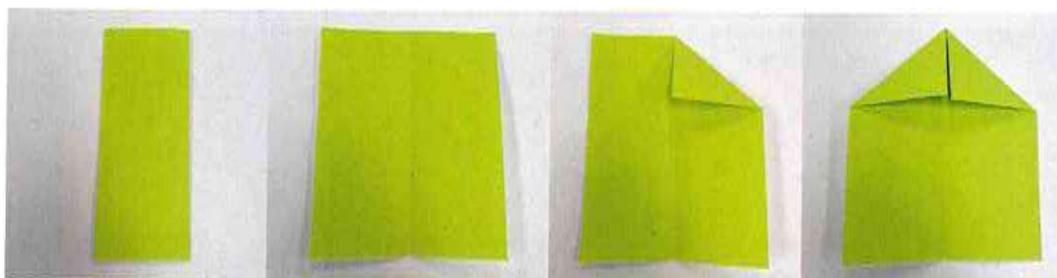
Fold the top edges to the center. Fold the plane in half.



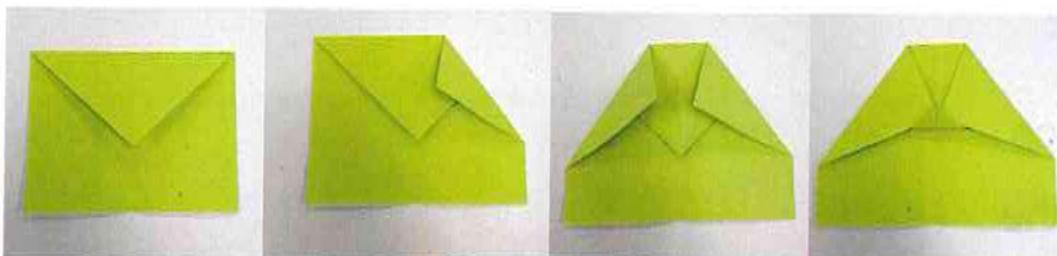
Fold the wings down to meet the bottom edge of the plane's body.



## The Stable:



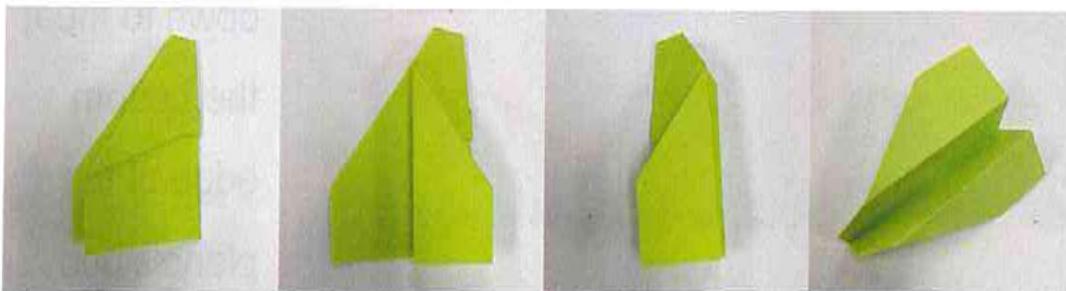
Fold the paper in half. Unfold, then fold the corners to the center line.



Fold the top peak down to create a square.

Fold the top two corners to the center about an inch above the downward facing point, to form a triangle shape on top and a diamond shape on bottom.

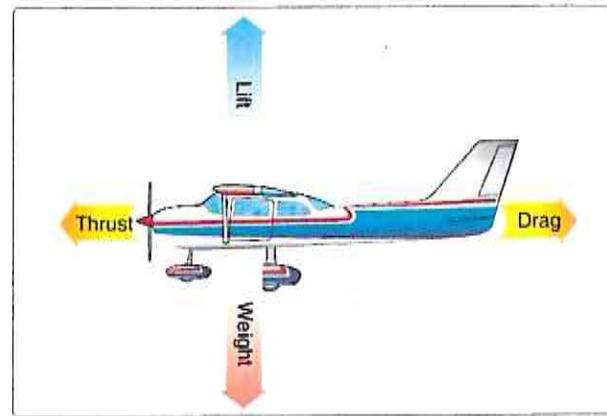
Fold the downward facing point up to secure the flaps.



Fold the paper airplane in half away from you and flatten it out.

Fold the edges down to create the wide wings.

As you build your plane, think about the four things that make planes fly. The wings of your plane give it lift, which works with the weight of your plane. When you throw your plane, that gives it thrust, which works with the air pushing against your plane, or the drag.



Once you are finished building your plane, you will test it! Before you test, make a prediction: How far do you think your plane will fly? Get your ruler out so you can measure its distance.

Find a large space to test. This could be a large room in your home, or you could go outside. Make sure to tell an adult if you go outside, or bring one with you!

After you test, think: could my airplane be better? If yes, improve and keep testing until you have the perfect plane!

## BONUS



Do you want an extra challenge? Try making an airplane using other materials, like construction paper, aluminum foil, lined paper, or printer paper. Then test fly and measure their distances to see what material makes the best plane.

## BONUS



Or make different types of paper planes. Test fly the different types and measure their distances to see what type of plane flies the farthest.



## REFLECT



**REFLECT:** To wrap up for today, discuss these questions with a family member or friend to review what you learned!

1. How do planes fly?
2. What are the four things or forces that help make planes fly?
3. What paper airplane did you choose to build? Why did you choose that plane?
4. Was your challenge today difficult? How did you solve any problems you had?
5. Did you test, improve, and retest your plane?
6. How far did your plane fly?

## BYE!



Thanks for tuning in! We hope you enjoyed your STEAMTeam Adventure!

Activities from Fold'N Fly, PPO, and How Things Fly:

<https://www.quora.com/Why-does-a-piece-of-paper-rise-when-air-is-blown-over-it> &

<https://www.foldnfly.com/#/1-1-1-1-1-1-1-2>



## Texture Lesson with Tree Bark Rubbings

Grades K through 2

### Materials needed:

- Several pieces of blank paper
  - Printer or copier paper works well
- Crayons, with paper removed
  - Extra-large crayons work more easily
- Trees
  - Several different kinds of trees if possible
  - Larger trees work more easily
  - **Trees should be in an accessible, safe location**



Talk with your child about what **texture** means. **Texture** is how the surface of a thing looks and feels. Some examples of **texture** include smooth, rough, bumpy, scratchy, soft, fuzzy, and prickly.

Talk with your child about **smooth** and **rough**.

**Smooth** is a surface which does not have bumps or other raised areas. Look around your space with your child and talk about things in your surroundings that are **smooth**. Have your child run a hand across the smooth surfaces (keep safety in mind!) and talk about how there are no bumps and raised areas.

**Rough** is a surface that has bumps, or raised and lowered, uneven areas. Look around your space and talk with your child about things in your surroundings that are **rough**. Have your child run a hand across the rough surfaces (keep safety in mind!) and feel the difference between it and the smooth surface.

Talk about how they are different. See if your child can identify a smooth surface and a rough surface.

Next, make some tree bark rubbings:

1. Go outside and find a safe place with several different kinds of trees. Large trees work better.
2. Hold a piece of paper flat against the bark of the tree. You may want to hold the paper for your child to make the rubbing.



3. Hold a crayon with the flat side against the paper. The long side will be on the paper instead of the point.



4. Rub the crayon back and forth across the paper until an image of the tree bark fills most of the paper.
5. Repeat with other kinds of trees.



6. Make a rubbing on a smooth surface, like a tabletop or window.



Compare the rubbings and talk about whether the bark on each tree is *smooth* or *rough*. Talk with your child about how the image made by the crayon shows whether the *texture* of each tree's bark is smooth or rough. Talk about how *smooth* and *rough* can be relative to each other. Is one tree *smoother* than the others? Is one tree *rougher*? Talk about other kinds of *texture* tree bark might have. Refer to the guide on the next page to identify common local trees by their bark textures and leaves.



## Red Maple

**Scientific Name:** Acer rubrum

**Size:** Medium to fast growth; Small to medium tree, up to 60 ft. tall

**Leaves:** Deciduous, opposite, simple, orbicular, 3-5 triangular lobes, singly or doubly toothed, 2-6 inches in both length and width; turning red in fall

**Flowers:** March-April, appear before the leaves, monoecious, in tassel-like clusters; usually bright red

**Fruit:** May-June, samara, clusters of seeds with wings up to 1½ inches long, bound to each other at tip; each pair joined to a long, drooping stem

**Bark:** Light gray, smooth; becoming darker, furrowed and flaky with age

**Uses:** Wildlife: Food (seeds); Human: Landscaping; furniture, veneer, interior finish, flooring, kitchenware, clothes hangers, clothespins, gunstocks, woodenware and pulpwood



## Shagbark Hickory

**Scientific Name:** Carya ovata

**Size:** Slow to medium growth; Medium to Large tree, up to 100 ft. tall

**Leaves:** Deciduous, alternate, pinnately compound, 8-14 inches long with 5 leaflets; turning yellow in fall

**Flowers:** April-May, monoecious, male flowers catkins in clusters of 3, 4-5 inches long; females cluster of 2-10 in short spikes

**Fruit:** September-October, nut is elliptical, ¾-1½ inches in diameter in a husk ¼-½ inch thick; nutmeat is sweet with good flavor

**Bark:** Gray; separating into 1 inch thick, long, shaggy strips; free at one end or both ends and curved outward

**Uses:** Wildlife: Food (nuts), nesting and cover; Human: Food (nuts); high-quality charcoal, handles for axes and other tools, athletic goods, agricultural implements baskets, wagons and wagon wheels



## Silver Maple

**Scientific Name:** Acer saccharinum

**Size:** Fast growth; Medium to Large tree, up to 100 ft. tall

**Leaves:** Deciduous, opposite, simple, orbicular, 3-6 inches length and width, 5 lobes separated by deep narrow sinuses; green above, silver beneath, turning yellow in fall

**Flowers:** January-April, appearing long before its leaves, monoecious; yellow-green to red

**Fruit:** April-June, samara, two seeds attached to each other at nearly a right angle, up to 3 inches long; largest of the maple seeds

**Bark:** Light gray; smooth on young trees, later breaking into long thin plates and ridges

**Uses:** Wildlife: Food (seeds), dens; Human: Furniture, veneer, pulpwood, woodenware, boxes and crates



## Sugar Maple

**Scientific Name:** Acer saccharum

**Size:** Slow to medium growth; Medium to Large tree, up to 90 ft. tall

**Leaves:** Deciduous, opposite, simple, orbicular, 3-6 inches long, 3 prominent lobes on upper half, 2 smaller lobes at the base; turning brilliant red-orange, to scarlet and yellow in fall

**Flowers:** April-May, monoecious, perfect, greenish-yellow, ¼ inch or less in length

**Fruit:** August-Oct., samara, joined in a horseshoe shape; seeds and wings 1-1½ inches long

**Bark:** Gray and smooth on younger trees; on older trees, darker with grooves and irregular scaly plates that look burned because of mold growing on the trunk

**Uses:** Wildlife: Food (seeds, twigs, buds and leaves); Human: Furniture, interior finishing, cabinets, veneer and flooring, bowling pins and butcher blocks



## White Oak

**Scientific Name:** Quercus alba

**Size:** Slow to Medium growth; Large tree, up to 120 ft. tall

**Leaves:** Deciduous, alternate, simple, 5-7 rounded lobes in 2 distinct forms (one has shallow, wide, rounded lobes; the other has long, narrow, fingerlike lobes with indentations nearly to midrib of leaf) 5-9 inches long, 2-4 inches wide; turning red to brown in fall

**Flowers:** April-May, appear with leaves, monoecious, male 2-3 inch catkins, bright yellow; female red, solitary or on spikes

**Fruit:** September-October, acorns solitary or in pairs, about ¾ inch long; cup covered with warty scales encloses ½ of nut

**Bark:** Light gray; rough with long, loose scales; becoming blocky on very old trees

**Uses:** Wildlife: Food (acorns); Human: Interior finishing, veneer, cabinets, general construction, fence posts, railroad ties, fuel and tight cooperage (whiskey and wine barrels)



## Yellow Poplar (Tulip Tree; Tulip Poplar)

**Scientific Name:** Liriodendron tulipifera

**Size:** Medium growth; Large tree, up to 100 ft. tall or higher

**Leaves:** Deciduous, alternate, simple, 4-6 inches long; apex broad, notched with wide "V" shape between lobes at apex, entire; shiny, dark green to whitish beneath, turning yellow in fall

**Flowers:** May-June, large, 3 inches long, 2½ inches wide, cup-shaped; 6 yellow-green petals, orange inside

**Fruit:** September-October, brown, woody, cone-shaped, 2-3 inches long, containing numerous winged seeds

**Bark:** Tight and gray at first, thin, often with white spots; later gray to brown with rounded ridges and long, deep grooves

**Uses:** Wildlife: Food (seeds, leaves, nectar) and nesting; Human: Veneer, plywood, boxes, crates, furniture, cabinets, musical instruments, toys and novelties



## Kenton County

### Parks & Recreation

### Tree Sampling

A sampling of  
a few tree species  
that can be found  
in our Parks.

Our parks include:

Fox Run Park

Doe Run Lake

Middleton-Mills Park

Lincoln Ridge Park

Pioneer Park

Richardson Road Park

420 Independence Station Road,

Independence, KY 41051

(859) 525-PLAY (7529)

[www.kentoncounty.org](http://www.kentoncounty.org)

@kentoncountyparks

[parks.recreation@kentoncounty.org](mailto:parks.recreation@kentoncounty.org)

## American Sycamore

**Scientific Name:** *Platanus occidentalis*

**Size:** Fast growth; Large tree, up to 120 ft. tall  
**Leaves:** Deciduous, alternate, simple, orbicular, 3-5 main lobes, entire to toothed, 4-8 inches long and wide; yellow-green above, pale beneath, turning dull tan in fall

**Flowers:** April-June, monoecious; male flowers dark red in short clusters; female flowers green to red in ball-like clusters

**Fruit:** September-October, aggregate, light brown, round composition of many seeds

**Bark:** Reddish-brown to gray; bark on upper limbs scaling off in thin plates to reveal the conspicuous white new bark

**Uses:** Wildlife: Food (seeds), nesting, dens; Human: Crates, interior finishing and furniture; difficult to split, used for butcher blocks and buttons, hence the common name "buttonwood"



## Black Locust

**Scientific Name:** *Robinia pseudoacacia*

**Size:** Medium to fast growth; Medium tree, up to 60 ft. tall

**Leaves:** Deciduous, alternate, pinnately compound (9-19 inches, generally with a terminal leaflet); leaflets oval, ½-1¼ inches wide, ½-2 inches long; turning yellow in fall

**Flowers:** May-June, appearing after the leaves, monoecious, perfect, large cluster with individual flowers; white, showy, fragrant

**Fruit:** September-October, pod, flat, 3-4 inches long

**Bark:** Grayish-brown to black; grooves; narrow, ropelike ridges; inner bark fibrous and yellow to light orange

**Uses:** Wildlife: Food (nectar, leaves, twigs, seeds and seedpods); Human: Landscaping



## Boxelder Maple

**Scientific Name:** *Acer negundo*

**Size:** Fast-growing, short lived (< 80 years); Medium Tree, up to 70 ft. tall

**Leaves:** Deciduous, opposite, pinnately compound (6 inches long) 3-5 slightly lobed leaflets (2-4 inches long), pointed base; dark green above, pale beneath, turning yellow to red in fall

**Flowers:** April-May, appearing before or with the leaves, dioecious, yellow-green; clustered on slender, drooping stalks

**Fruit:** August – October, samara, 1 to 2 inches long; drooping clusters, 6-8 inches long, with samara attached in pairs; persistent

**Bark:** Smooth, green, on young trees; pale gray to brown on mature trees; separating into long thin ridges; shallow grooves

**Uses:** Wildlife: Food (seeds); Human: Wood for paper pulp, crates, woodenware and inexpensive furniture



## Common Hackberry

**Scientific Name:** *Celtis occidentalis*

**Size:** Fast growth; Medium to Large tree, up to 80 ft. tall

**Leaves:** Deciduous, alternate, simple, 2-4 inches long, 1½-2 inches wide, ovate, rounded; unequal, with one side broader than other; rounded base; shiny green and smooth above, lighter beneath, turning yellow in fall

**Flowers:** April-May with or soon after leaves, monoecious, male flowers green in small clusters; female green, single

**Fruit:** September, drupe, fleshy berry, ¼-¾ inch diameter, purple when mature; flesh orange, sweet

**Bark:** Gray with numerous wartlike projections along the trunk becoming more prominent with age

**Uses:** Wildlife: Food (fruit); Human: Wood for fuel, furniture, veneer, fence posts, boxes and crates



## Honey Locust

**Scientific Name:** *Gleditsia triacanthos*

**Size:** Fast growth; Medium tree, up to 60 ft. tall

**Leaves:** Deciduous, alternate, bipinnately compound (6-10 inches long, leaflets ½ inch wide, 1¼ inches long), edges irregular; 7-15 pairs of leaflets; turning yellow in fall

**Flowers:** May-June appearing after the leaves, dioecious; male flowers, downy, large, in clusters, 2-5 inches long, greenish-white; female flowers in smaller clusters, 2-3 inches long, also greenish-white

**Fruit:** September-October, pod, 6-12 inches long, many seeded, often twisted

**Bark:** Grayish brown to black, deep narrow grooves separating into scaly ridges on older trees; often bearing large, branched thorns; smooth on younger trees

**Uses:** Wildlife: Food (nectar, seed pods), dove nesting; Human: Thornless cultivars used for landscaping



## Eastern Black Walnut

**Scientific Name:** *Juglans nigra*

**Size:** Slow to Medium growth; Large Tree, up to 90 ft. tall

**Leaves:** Deciduous, alternate, pinnately compound 12-24 inches long; 9-25 leaflets, lanceolate, 3-5 inches long serrate, base round, apex long-pointed, slightly hairy; dark shiny green above, lighter green beneath, turning yellow in fall

**Flowers:** April-May, monoecious, but maturing at different times; male on previous year's twigs, flowers in catkins 3-5 inches long among new leaves; female flowers on short spikes

**Fruit:** August – October, samara, 1 to 2 inches long; drooping clusters, 6-8 inches long, with samara attached in pairs

**Bark:** Smooth, green, on young trees; pale gray to brown on mature trees; separating into long thin ridges; shallow grooves

**Uses:** Wildlife: Food (seeds); Human: Wood for paper pulp, crates, woodenware and inexpensive furniture



## Northern Red Oak

**Scientific Name:** *Quercus rubra*

**Size:** Medium growth; Medium to large tree, up to 100 ft. tall

**Leaves:** Deciduous, alternate, simple, up to 8 inches long with pointed lobes (which are not divided again at their tips); middle and upper lobes point diagonally upward and have bristle-pointed teeth; yellowish green above, turning red in fall

**Flowers:** April-May, appear with leaves, monoecious, male 4-6 inch catkins; female rust-red, short-stalked strobiles

**Fruit:** September-October, acorns solitary or in pairs, 1 inch long, oblong in shape; flat cup with fine, hairy fringe covering a third of the nut

**Bark:** Dark brown to black, smooth on young trees; eventually develops wide, flat ridges separated by shallow fissures; more narrowly ridged on older trees

**Uses:** Wildlife: Food (acorns); Human: Furniture, flooring, veneer, interior finishing, railroad ties, posts, general construction and fuel



## Eastern Red Bud

**Scientific Name:** *Cercis canadensis*

**Size:** Medium to fast growth; Shrub or small tree, up to 40 ft. tall

**Leaves:** Deciduous, alternate, simple, cordate, 2-6 inches long, apex pointed, base heart-shaped, entire dark green above, light green beneath, turning yellow in fall

**Flowers:** March-May before leaves, purple-red in clusters

**Fruit:** September-October, nut, thick green or brown husks, 1½-2½ inches diameter, deeply rigid

**Bark:** Dark brown to black, deeply furrowed ridges, slight diamond pattern, inner bark chocolate brown

**Uses:** Wildlife: Food (nuts); preferred host by caterpillars of the luna and regal moths; Human: Food (nuts); wood for cabinets, veneers, furniture, interior finishing and gunstocks



## Pin Oak

**Scientific Name:** *Quercus palustris*

**Size:** Fast growth; Medium tree, up to 70 ft. tall

**Leaves:** Deciduous, alternate, simple, 4-6 inches long; 5-7 lobes (deeply divided) extend ⅔ or more to midrib, ends of lobes have 2-3 small divisions, each bristle-tipped; dark green and shiny, turning red to brown in fall

**Flowers:** April-May, appear with leaves, monoecious, male 4-6 inch catkins; female rust-red, short, hairy strobiles

**Fruit:** September-October, acorns solitary or in clusters of 2-3, rounded, ½ inch diameter, often striped with dark lines; thin saucer-shaped cup

**Bark:** Grayish-brown, smooth, branches point down

**Uses:** Wildlife: Food (acorns); Human: Fuel, interior finish, shingles and general construction



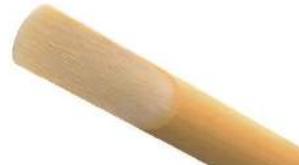
# Making a Woodwind Instrument

From Skool Aid's Science of Woodwinds lesson

Have you ever heard a musician play a clarinet, saxophone or oboe?



These instruments are part of the woodwind family because their sounds are made by blowing air across a little piece of wood called a **reed**. The reed vibrates and the sound is magnified by the rest of the instrument.



You can make a basic woodwind of your own with a paper or plastic drinking straw and a pair of scissors.

## Step 1:

If you have a bendy straw, cut off the bendy part, which we will not be using. Measure about  $\frac{1}{2}$  inch down on one end of the straw and flatten the area with your fingers. It doesn't have to be perfectly flat and there will still be an opening for air to come in.



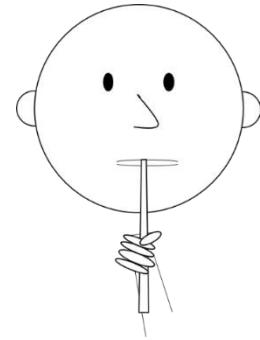
## Step 2:

With your scissors, snip off the corners of the flattened end. The opening will now be shaped like a triangle or a bird's beak.



### **Step 3:**

To play your woodwind, place the pointed end of the straw in your mouth, clamping your lips over the flattened part. It may help to flatten your lips against your teeth a bit. Don't bite down on the straw, though, or you won't be able to get any air through it. Hold the straw steady with one hand.



### **Step 4:**

Blow air through the straw, while keep your lips clamped together in a straight line. You should hear a buzzy noise that sound like a musical instrument. If you don't hear anything, reposition your lips and try again.

You might look a little like this man, who is playing an oboe.



Your straw is being used like the "double reed" on an oboe or bassoon.



### **Changing the pitch of your woodwind**

To make the pitch of your straw woodwind sound deeper, you can attach another straw onto the uncut end of yours. You just pinch the uncut end of your straw a little bit until you can fit it inside the end of a second straw.



To make your straw woodwind have a higher pitch, you can just cut it shorter.

You can make several straw woodwinds of different lengths (so that each has a different pitch) and play a concert!