

CLOVERBUDDIES

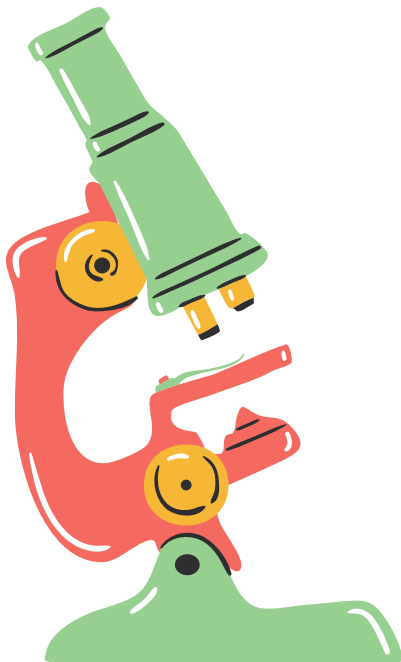
**A 4-H EXPLORATION ACTIVITY SERIES FOR
CLOVERBUD MEMBERS**



FEBRUARY 2025

PROJECT EXPLORATION:

S.T.E.M.



S.T.E.M. CROSSWORD FUN

Just like a good scientist, you must investigate to find the hidden S.T.E.M. words below! Can you find them all?

Word Bank:

Science
Technology

Engineering
Math

Experiment
Activity

Learning
Hands on

Search
Answers

E P X L E A R N I N G U F O D M K A N P
X A P L X H G W J T S Y N R L S Y B O W
Z B G Y P T I W W L Q R E G E D X T J W
G W P U H V E J Y A L N Z A Q O Z F C V
W F J S C U S Q K I G L R S A Y T V F A
J U U G A K R I G I O C C U Q Z S A G V
R Y K S S M J P N O H I O S R J Y E Y Z
O T N E M I R E P X E P F C B Y E N G D
D S R D G A E X F N Y F R V Z C O K A Z
O O X A K R Y R C M P U Y S A Z Z V P T
D J Y C I E P E D Q X J Y T Q L F M E O
E I I N R U A D R A N I E M M S V I O G
N I G K N X A G V N V C B I Y B A V U V
R J M T N O S D N A H R Z A T W K M Y Q
V Y M K A Z K N I N Z E N F I S J S U X
E P A R X E V R O U P S K Y V L Y S T O
O E T D B I C L R W W F H K I P K C R H
D I H G O V O D J E B F U H T U H V P V
Q R M N W G T A R T C P S W C X A R W K
C X A U Y J W S Y E G M G Y A W F E E J

INVISIBLE MESSAGES

Have you ever wanted to send a secret note or picture before? Were you ever jealous of secret agents on TV or in books that could use and see invisible ink drawings? Well, now you can do it too, using science. There are many scientific experiments you will do as you get older, but here is a simple one you can try at home with just a few easy things!



MATERIALS:

- Lemon juice
- Water
- Q-tip or small craft paintbrush
- White paper (printer or letter works best)
- Warm lamp bulb, flashlight, heat vent, or other warm surface

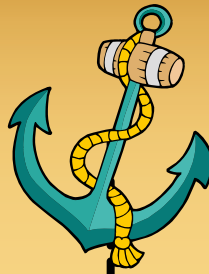
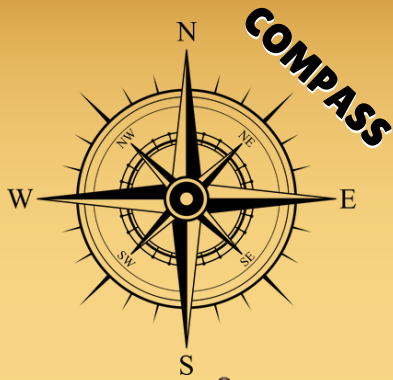
DIRECTIONS:

1. Pour some lemon juice into a small bowl, paper cup or other container. Add just a little bit of water to dilute it.
2. Using a Q-tip or paintbrush, dip the tip in the lemon juice/water mixture and write or draw your secret message on your white paper.
3. Let the paper completely dry. It may wrinkle up a little bit from being wet, but you won't be able to see where you drew with the lemon juice mixture.
4. After drying, place your paper over a warm lightbulb such as a plugged in lamp, a flashlight that gets warm, over your heater vent, or any other warm surface you can find. (Please use caution and ask an adult if you are unsure whether a surface is warm or not).
5. As the light warms up your paper, you should see your secret message appear! This is because lemon juice has carbon compounds that are colorless at room temperature. The heat breaks down the compounds and the carbon turns brown when it oxidizes from the air.



MAP SKILLS

A very important skill you will learn over and over is how to tell where you are directionally - North, South, East or West of another thing. A compass is a common tool to help you tell these directions. Using the compass below, see if you can tell which directions the objects are from each other by looking at the map. It may take a few tries to get the hang of it!



1. THE TREASURE CHEST IS _____ OF THE ANCHOR
2. THE PIRATE IS _____ OF THE SHIP
3. THE ANCHOR IS _____ OF THE TREASURE CHEST
4. THE SHIP IS _____ OF THE PIRATE
5. THE ANCHOR IS _____ AND _____ OF THE SHIP

SUDOKU

Sudoku is a fun numbers game that uses logic and deductive reasoning skills. These kind of puzzles are good for exercising your brain! Each dark outlined box of 4 squares can only contain the numbers 1-4, using each number only once. This rule also applies to each row and column of the 4 boxes inside the large box. So, if you follow the rules only one number (1, 2, 3, or 4) can go into a box. Try to finish the example below to get a feel for it. Then, try your hand at completing the rest of the puzzles below!

3	1	4	2
2	4	1	
1	3	2	
4			1

3			
			2
4			1

2	3	4	1
3	4	1	2

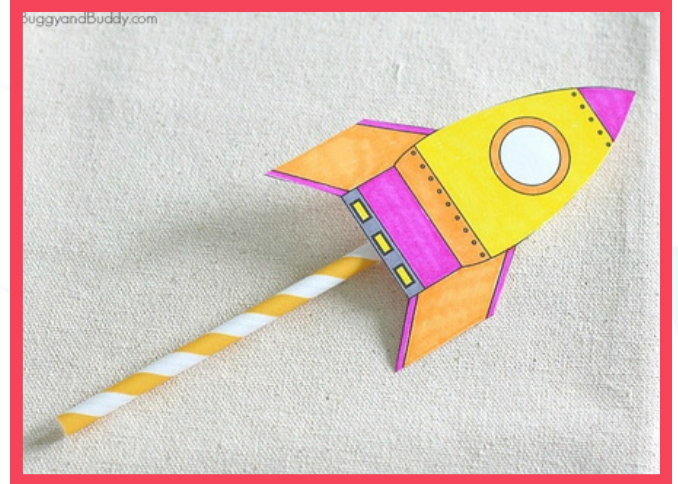
	2		
	1	4	
		3	

FAIR PROJECT! ANY OTHER ITEM YOU HAVE MADE - AIR POWERED ROCKETS

One 4-H project you can learn about in the S.T.E.M. category is called Aerospace. Rockets are a really fun part of space to learn about! Complete the activity below to launch your own air powered rocket!

MATERIALS:

- Straws
- Plastic Pipettes (or straws with a larger diameter than the other straws)
- Markers/crayons/Colored Pencils
- Tape
- Scissors
- Rockets (on next page)



TO MAKE AND LAUNCH YOUR ROCKET:

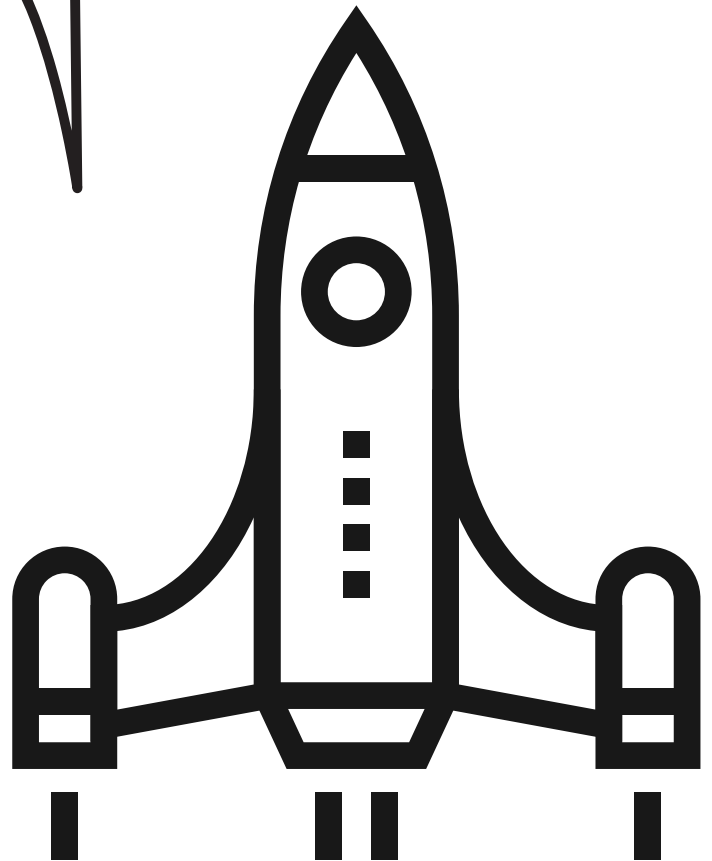
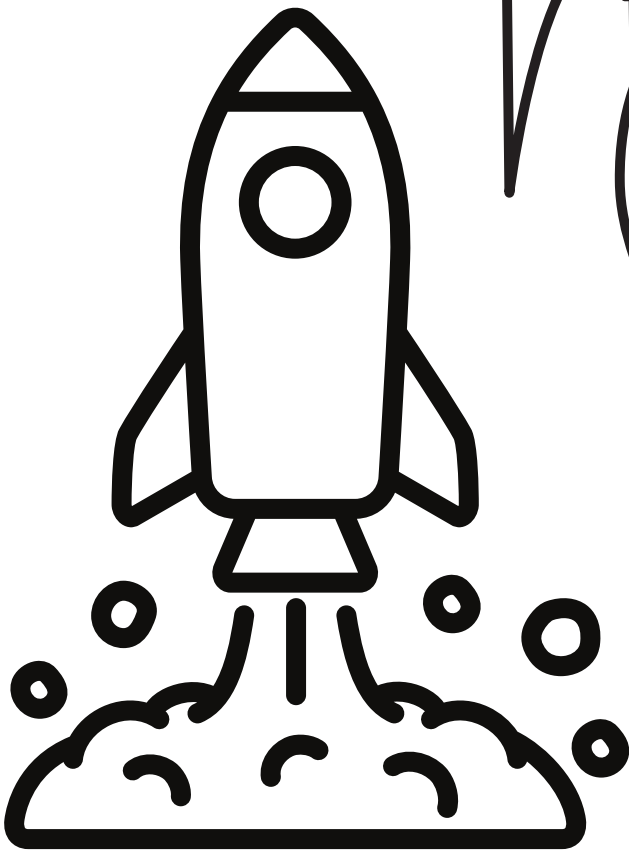
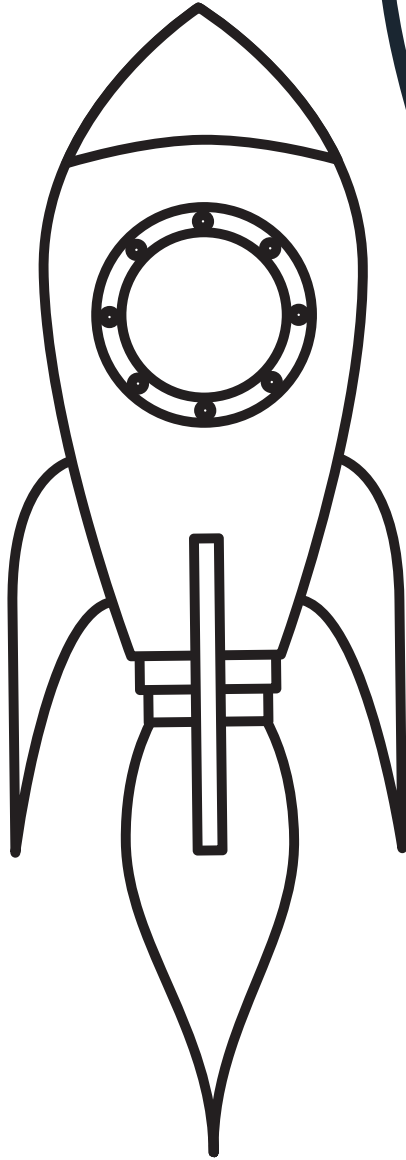
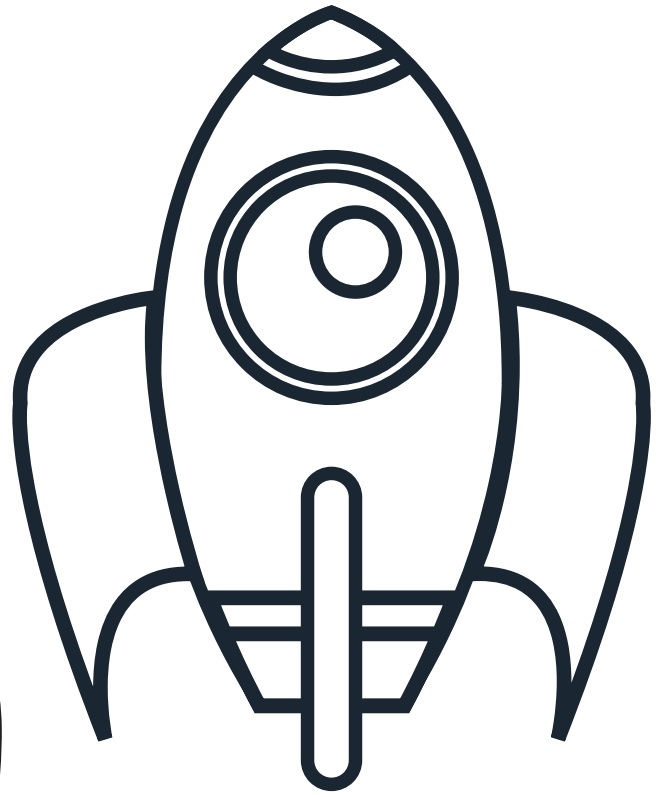
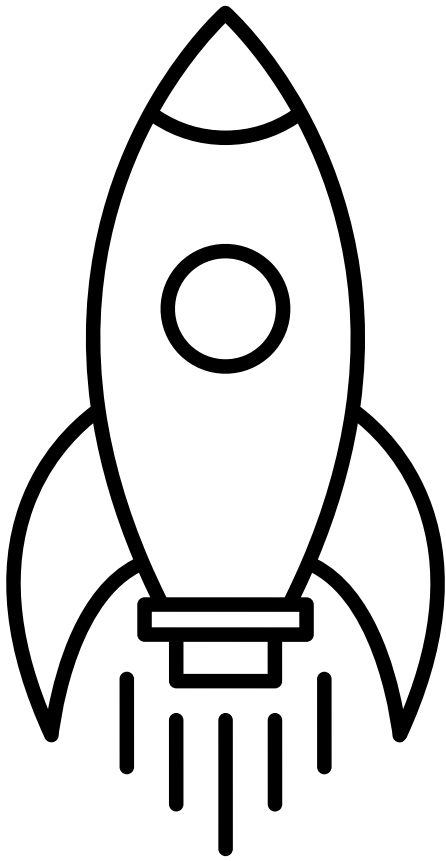
1. Print, color and cut out the rockets from the next page (You can choose one or do as many as you'd like!)
2. Cut off the bottom of the plastic pipette, and tape it to the back of your rocket (with the open side facing the bottom of your rocket).
3. If you are using a large diameter straw instead of a plastic pipette, then cut the straw to fit the length of your rocket and tape one end so it is completely sealed. Tape the straw to the back of your rocket (sealed side at the top of your rocket).
4. Now you put your straw (or skinnier straw) into the bottom of your pipette/straw and you're ready to launch!
5. Take a big breath and blow it into your straw to see your rocket take off!

IDEAS TO CONSIDER:

- How does the angle you launch your rocket affect the distance it travels? Try out different angles and record the results.
- Can you design your own rockets to attach to the pipette or straw? Which designs work better?
- Try adding another fin to your rocket with tape. How does it affect the flight of your rocket?

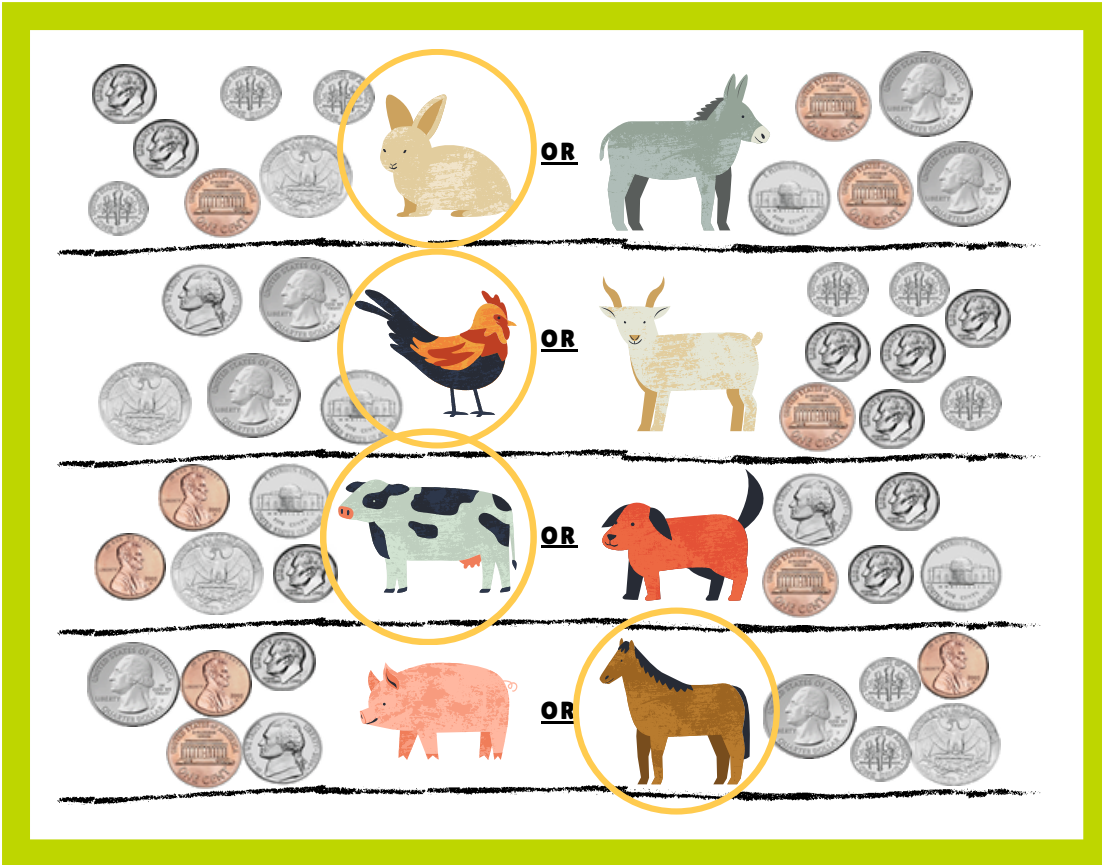
Activity source: BuggyandBuddy.com

This can be a fair exhibit, Department 17, Class A, Item 44; Any other item you have made! Visit www.lacrosseinterstatefair.com after June 1st, and you can enter this exhibit on the registration.



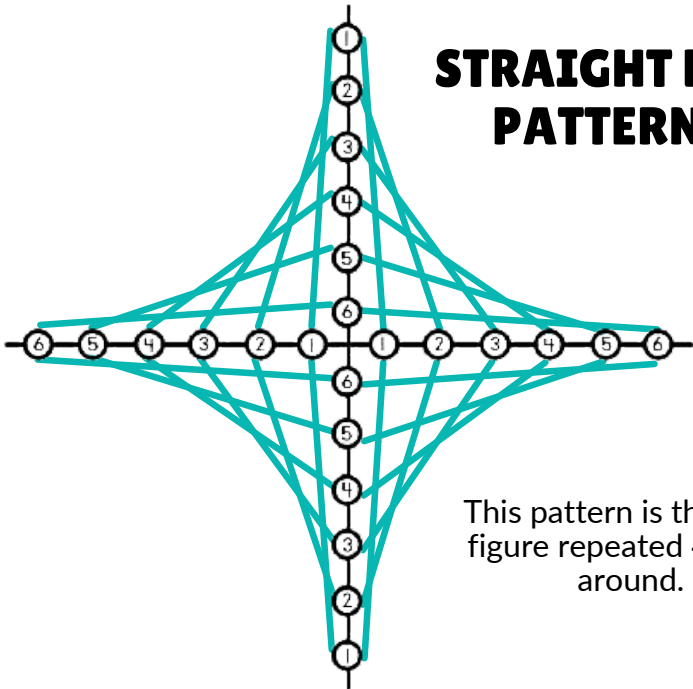
JANUARY ANSWER KEYS

Answers to all Cloverbuddies activities will appear on the back cover of the following month's issue. For answers to this issue, watch for March's installment of Cloverbuddies!

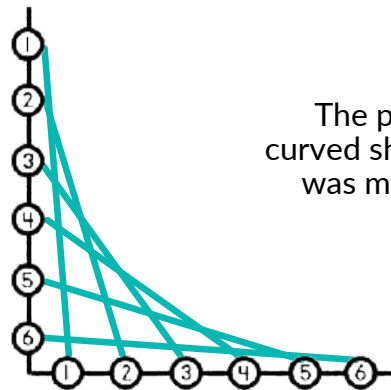


WHO HAS MORE?

STRAIGHT LINE PATTERNS



This pattern is the same figure repeated 4 times around.



The pattern creates a curved shape even though it was made with straight lines.

