WISE Activity Booklets

A STEM activity booklet for fun on-the-go learning!

Made by WISE Kid-Netic Energy

DIY Activities
Word Searches
Colouring
... and more!

Grade 2
MAY 2020

Growth and Changes in Animals, Properties of Solids, Liquids and Gases, Position and Motion, Air and Water in the Enviornment

University of Manitoba

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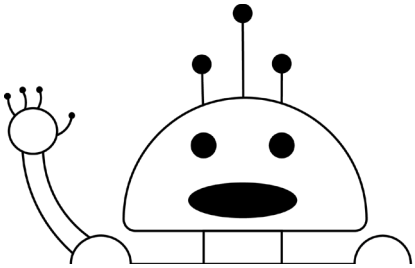


Hello there!

WISE Kid-Netic Energy is a not for profit STEM (Science, Technology, Engineering, and Math) outreach organization at the University of Manitoba. Our organization offers science and engineering workshops, clubs, camps and events to youth from Kindergarten to Grade 12 throughout the province of Manitoba. We reach on average 25 000 to 50 000 youth depending on funding levels. Our approach is simple – present STEM in messy, memorable and engaging ways so Manitoba youth feel motivated to learn more and more. We reach all Manitoba youth, and we particularly target underrepresented youth like girls, indigenous youth and youth facing socio-economic challenges.

All of us at WISE Kid-Netic Energy have been working hard to create these booklets to continue to bring our fun and educational STEM activities to Manitoba youth during these unprecedented times. We are disappointed that we cannot see you in person, and hope that these monthly booklets bring some STEM excitement to your life.

These booklets have been created by our student instructors who are all studying engineering, science, or in another STEM-related field at university. Peek the last page of this booklet to see who created the activities, experiments and recipes within.

All the activities in this booklet are based on the Manitoba Science curriculum. For any teachers viewing this booklet, all the SLO codes are listed at the bottom of each page.

If a link is listed at the bottom of the page, and you have access to the Internet, follow it to check out a video of the activity our instructors have created just for you.

We hope that you enjoy doing the experiments and activities as much as we loved creating them for you.

In this Grade 2 booklet, the science topics you will be exploring are the growth and changes in animals, properties of different phases, position & motion and air & water in the environment!

Best of luck, and until we see you again,

the WISE Kid-Netic Energy Crew

P.S. If you have any suggestions for activities or experiments you would like us to try, contact us through our website, or social media accounts that are listed on the last page of this booklet.

Meet our Amazing Authors!

Amaris

Amaris just finished her first year as a science student at the University of Winnipeg and plans on majoring in biology. In her free time she like reading, playing piano and baking

Gagan

Gagan just finished her fourth year of her honours degree in psychology at the University of Manitoba. She enjoys being creative and loves to learn! In her free time she like reading, playing piano and baking!

Olivia

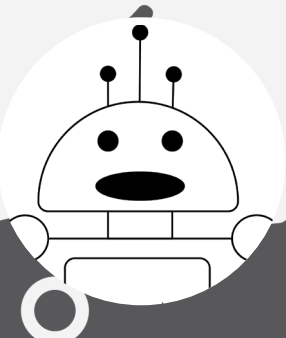
Olivia just finished her second year of biosystems engineering at the University of Manitoba. She hopes to work in renewable energy or water treatment in the future. In her free time, she plays and refs touch football and enjoys playing the piano.

Reem

Reem just finished her first year as a science student at the University of Manitoba, her favorite classes are psychology and microbiology. In her free time, she loves to watch movies and bake desserts.

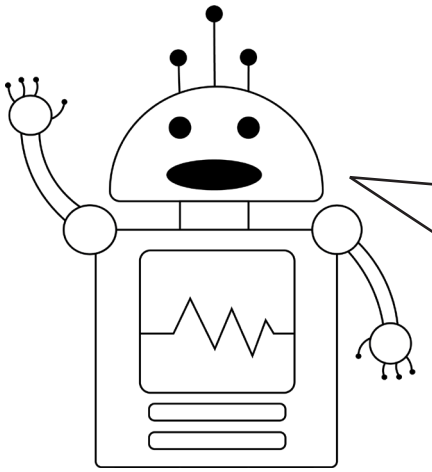
Victoria

Victoria just finished her first year as a science student at the University of Manitoba and is planning on becoming a nurse. She loves to cook, read and take care of plants in her free time.



Esiw the Robot

Esiw is a friendly robot that loves to help kids learn about computers & coding! Esiw loves to do math, solve problems and make people laugh!



Decode the Animals

Can you help me? I messed up translating these words and translated it to symbols instead! Can you use the decoder to decode what the names of these baby and adult animals are?

Decoder

A	=	+	F	=	Ω	K	=	?	P	=	$	U	=	}
B	=	>	G	=	=	L	=	&	Q	=	<	V	=	%
C	=	{	H	=	-	M	=	*	R	=	#	W	=	//
D	=	\\	I	=	)	N	=	>	S	=	~	X	=	:)
E	=	!	J	=	(	O	=	@	T	=	||	Y	=	^
												Z	=	:(

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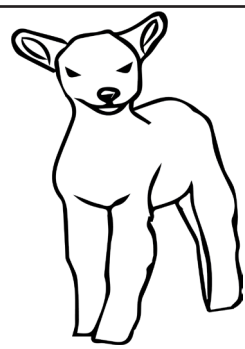

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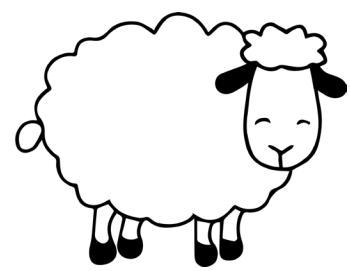

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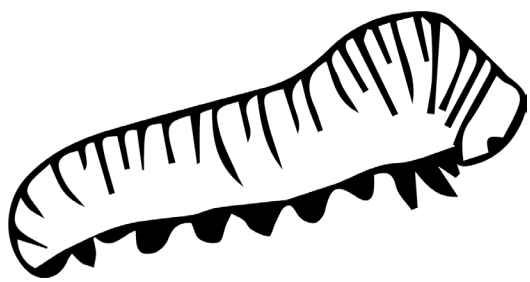

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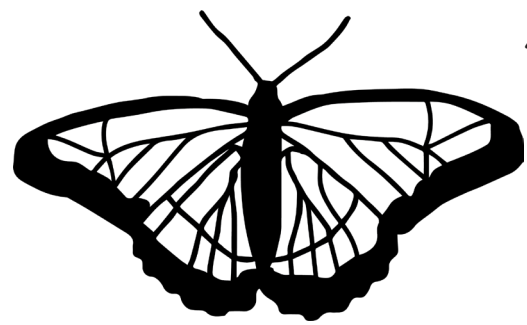

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SLO : 2-1-08; 2-1-09-; 2-1-14

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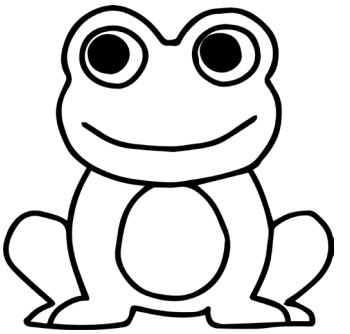

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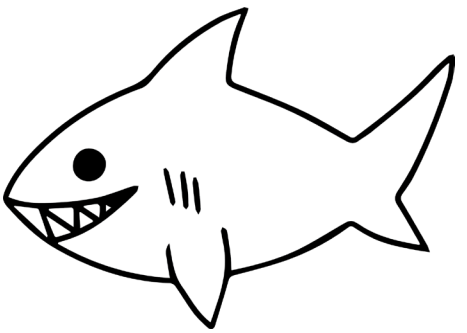

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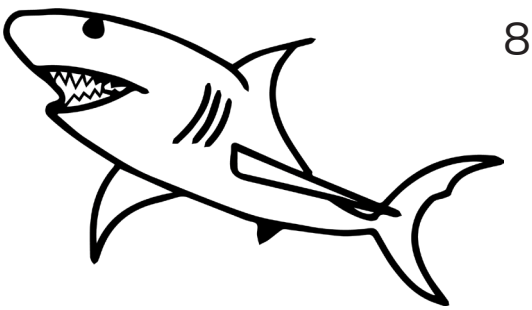

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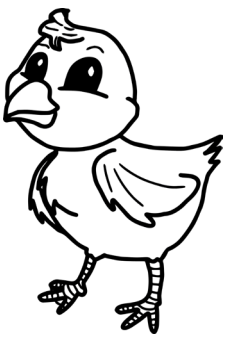

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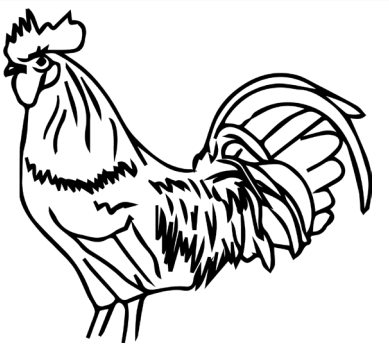

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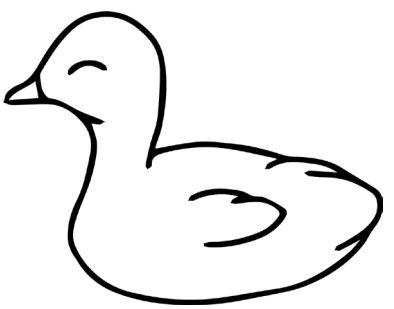

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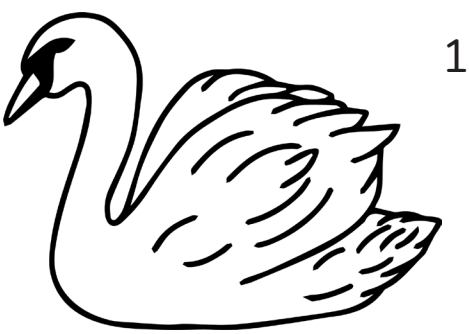

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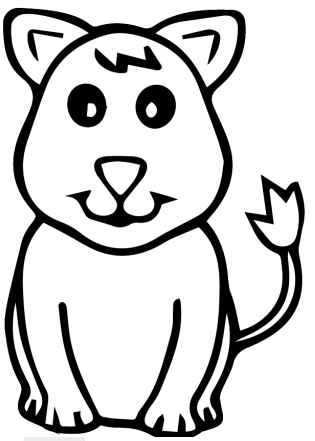
How Lions Grow

Colour the different lions as they grow from a cub to an adult. Read about how they change.
Then write their name on the line. (Example: __Cub__)



A baby lion is called a cub.
Cubs have fluffy and spotted fur.

_____

A 2 year old lion is called a sub-adult.
Male sub-adults are starting to grow their manes.

_____

An adult is called a lion.
Male lions have a large mane and they leave their group to form their own group.
A group of lions is called a pride.

_____

SLO : 2-1-08; 2-1-09; 2-1-11

States of Matter Word Search

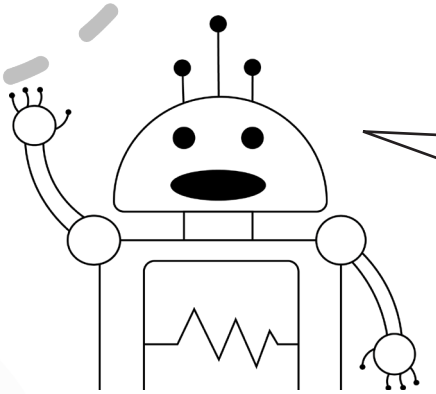
Find the words in the word search, but circle them in different colours based on what state of matter they are generally in. Circle gases in red, liquids in blue and solids in green.

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

AIR
GAS
GOLD
HELIUM
ICE
JUICE
KETCHUP
LIQUID
MILK
PICKLE
PLASTIC
ROCK
SODA
SOLID
STEAM
SYRUP
VAPOR
WATER
WOOD

SLO : 2-2-01; 2-2-02

Sorting Food



I love sorting things! Do you? Do you think you could help me sort some food into their food groups?

Cut out and colour the food on the next page and then glue them in the right food group

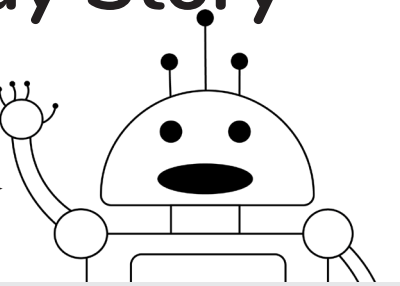
Fruits and Vegetables	Meat, Fish and Alternatives
	Milk and Derivatives
Grain Products	
	Fats, Oils, Sweets


milk
CEREAL

This page is intentionally left blank, because the previous page is meant to be cut up.

Jill's Wacky Wednesday Story

Oh no! I've sorted some of the words from this story into groups and now the story doesn't make sense! Can you help me re-write this story?



Use the words from the word bank below or use your own words to fill in the blanks and help Esiw, the robot, re-write the story.

Jill _____ down the street. She sees a _____ hippopotamus _____
movement *colour* *position*

the brand new statue of the Mayor! Jill takes her _____ and _____ over to
vehicle *movement*

the Mayor's office! While on her _____, she sees a sewer rat and it says,
vehicle

"_____!". The rat _____ off on its _____ .
you choose *movement* *inclined plane*

When Jill finally gets to the Mayor's office, she sees him eating a big bowl of

_____. Suddenly, a(n) _____ tornado is _____ the Mayor and it
noun *adjective* *position*

sucks him out of the office. Using the _____ _____ that was out-
adjective *inclined plane*

side the window, Jill _____ out of the building to escape. To everyone's sur-
movement

prise it was the _____ who saved the Mayor and _____ City was
noun *noun*

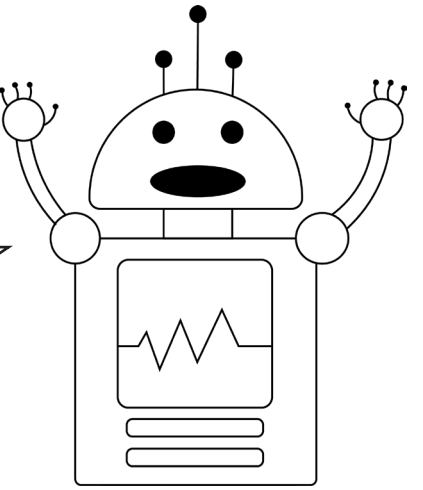
back to normal once again.

Word Bank

Position		Movements		Inclined Plane		Vehicles	
Above	Below	Spins	Jumps	Staircase	Wheelchair ramp	Cart	Plane
Between	In front of	Swings	Pushes	Slide		Wagon	Horse
Near	Behind	Walks	Pulls	Ladder	skateboard ramp	Car	Scoot
Far	To the right/left	Slides	Dances	Ramp on vehicle		Boat	Motorcycle
Next to	Under	Rolls	Gallops		Ski Hill	Bike	

SLO : 2-3-01; 2-3-02

Build a Helicopter

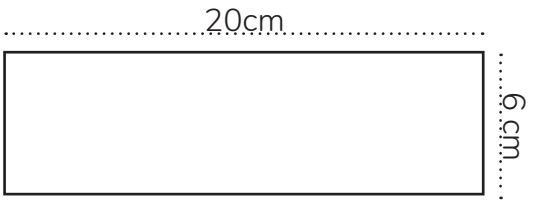


I am really good at following instructions, I have special instructions that tell me what to do all of the time! These special instructions are called a “code”! Are you good at following instructions?

Follow the instructions below to build your own helicopter. The materials you will need are: a piece of paper, scissors, a ruler, markers or pencil crayons and a paper clip.

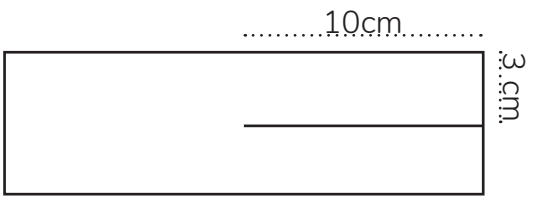
STEP 1

Measure a rectangle on your paper that is 6cm wide and 20cm long. Cut it out.



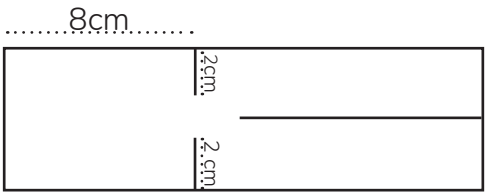
STEP 2

Measure the halfway point of the short side of your rectangle (3 cm) and draw a line 10cm long. Cut on that line.



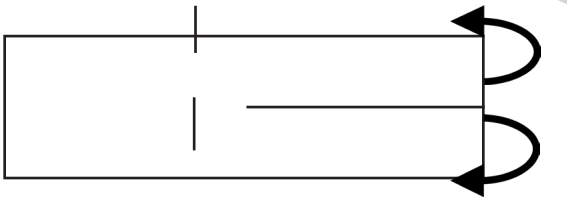
STEP 3

Measure the 8cm from the bottom of your rectangle and draw a line that is 2cm long. Do this on both sides. Cut on those lines.



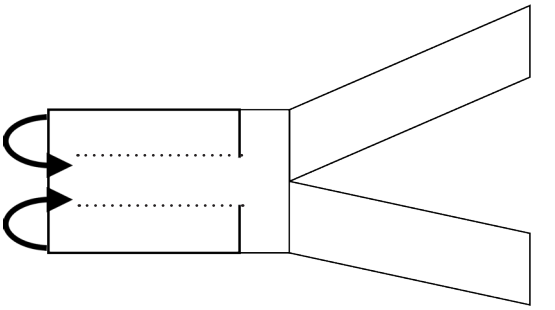
STEP 4

Fold the top flaps in opposite directions.



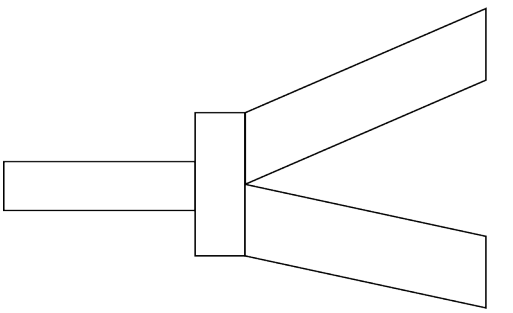
STEP 5

Fold the bottom flaps towards the middle



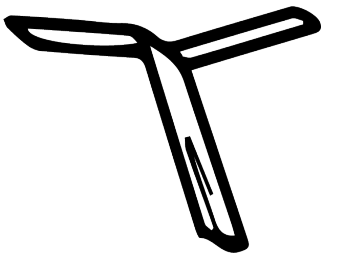
STEP 6

Decorate your helicopter with markers or pencils crayons.



STEP 7

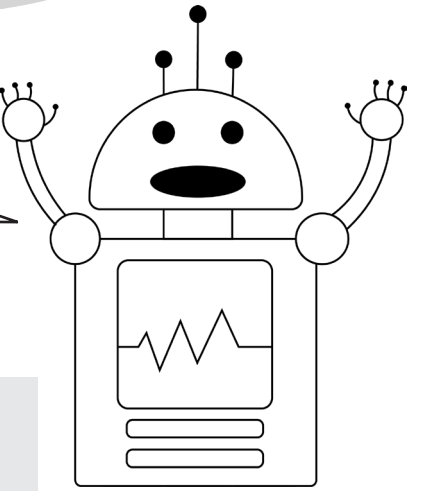
Attach a paperclip to the bottom and throw it in the air, watch what happens.



Fun Fact: The paper spins in the air because, as it falls, the wings are pushed up at an angle by the air. With the wings at a slanted position, the air above one wing pushes down and the air below the other pushes it up.

Now: try changing your helicopter and watch how it those changes change the way it falls. For example, put more paper clips on the bottom, make the paper shorter, longer, wider, thinner...etc. See if you can find a way to make the helicopter fall faster or slower.

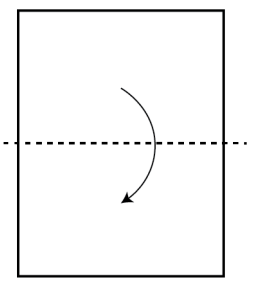
Build a Boat



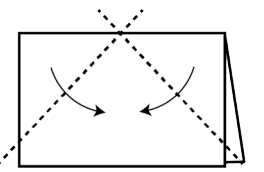
More instructions? Yay! Isn't following instruction the most fun thing to do? Well I guess it's all I can do.... But I love it!

Follow the instructions below to build your own boat. The only materials you will need are: a piece of paper, and some markers or pencil crayons.

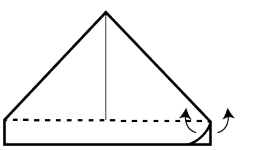
STEP 1 Fold the paper in half.



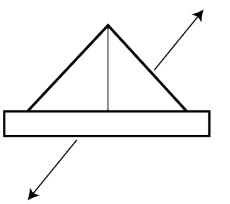
STEP 2 Fold the corners to the center.



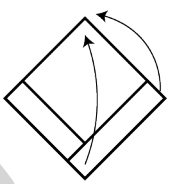
STEP 3 Fold up the bottom flaps on both sides.



STEP 4 Pull the bottom out and push the sides together.

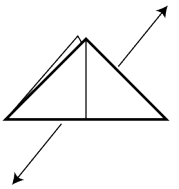


STEP 5 Fold the front and back sides up



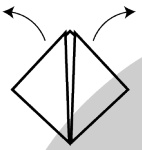
STEP 6

Pull the bottom and and push the sides together (like step 4).



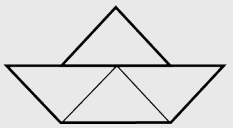
STEP 7

Pull apart the sides.



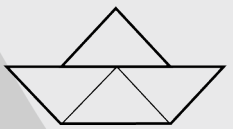
STEP 8

Make sure the boat is open on the bottom.

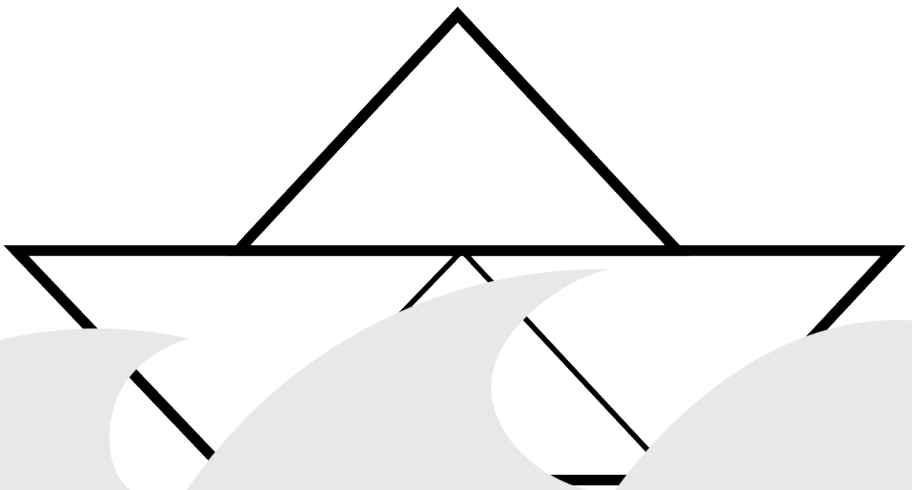


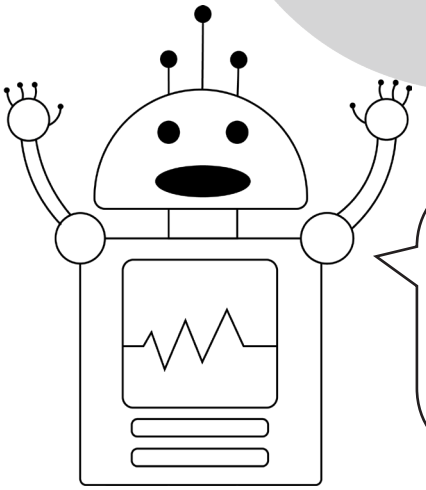
STEP 9

Decorate your boat.



Fun Fact: Sailboats move using the same forces as the wings on planes! The sails on top and the keel on the bottom generate a 'lift' force that help the boat move forward!





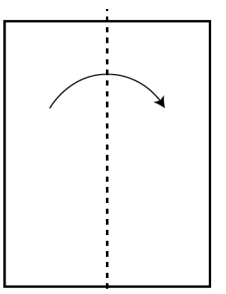
Build a Airplane

Wow isn't it exciting all of the things you can make with instructions! My instructions, called 'code', let me do so many things too!

Follow the instructions below to build your own airplane.
The only materials you will need are: a piece of paper, and some markers or pencil crayons.

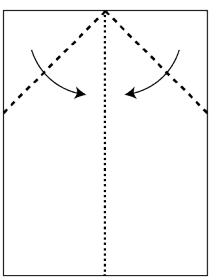
STEP 1

Fold the paper in half. Then unfold it.



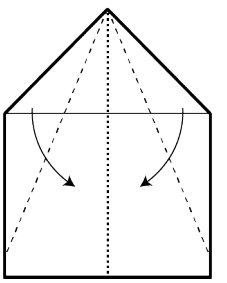
STEP 2

Fold the top corners to the center line you just made.



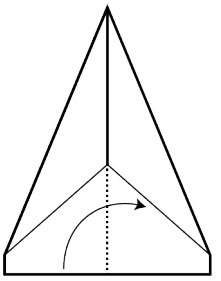
STEP 3

Fold the top edges to the center line.



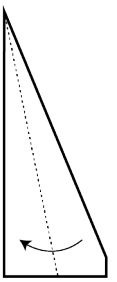
STEP 4

Fold it in half again.



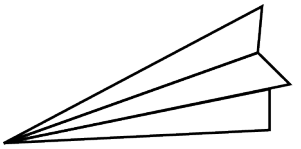
STEP 5

Fold the free ends of the paper to meet the bottom of the paper



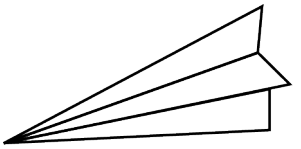
STEP 6

Decorate your airplane using your pencil crayons or markers.



STEP 7

Throw your airplane and watch it fly.

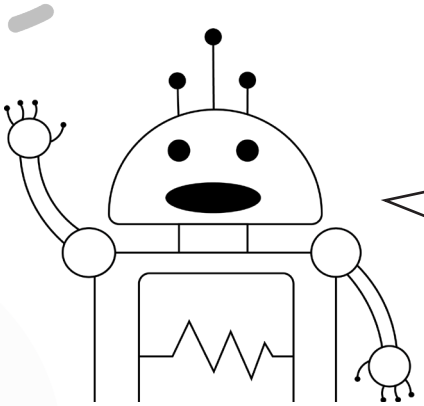


Tips and Tricks:

- Make sure all of your fold lines are crisp and tight! This makes sure that the airplane stays together and keeps it's shape.
- Make sure the point of your airplane is sharp.
- When throwing your plane, angle your hand upward to make the plane fly giher while keeping it level to the groud : this will make it go further.

Now: Try changing the way your throw your paper airplane and see how that effects how far it goes. Do you know a different design for paper airplanes that you think will go even further?

Healthy Earth

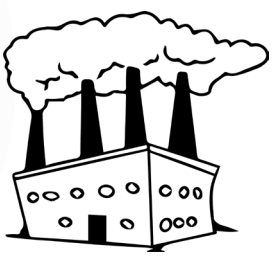


You're really good at sorting things! Do you think you could help me sort these things into what is good for your planet and what is not?

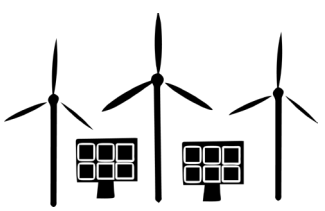
Draw a line from each drawing on the left to the healthy earth if it is good for our planet and environment or the unhealthy earth if it is not.

Plant a tree

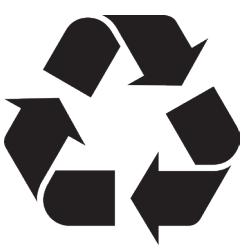
Factories



Clean Energy



Recycling



Littering

Healthy Earth

Unhealthy Earth

Answer Keys

Decode the Animals (page 4 + 5)

1. lamb	2. sheep	3. caterpillar	4. butterfly	5. tadpole	6. frog
7. pup	8. shark	9. chick	10. chicken	11. cygnet	12. swan

Sorting Food (page 8 + 9)

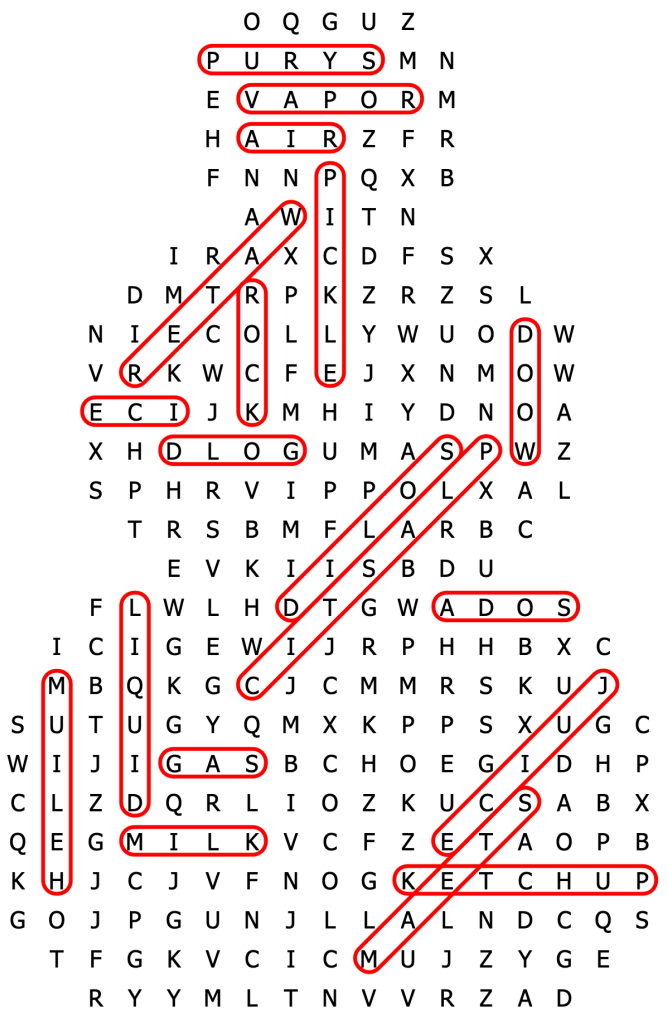
Fruit + Vegetables : avacado, brocoli, carrot, lettuce, strawberry, watermelon

Grains : bread, cereal, pasta

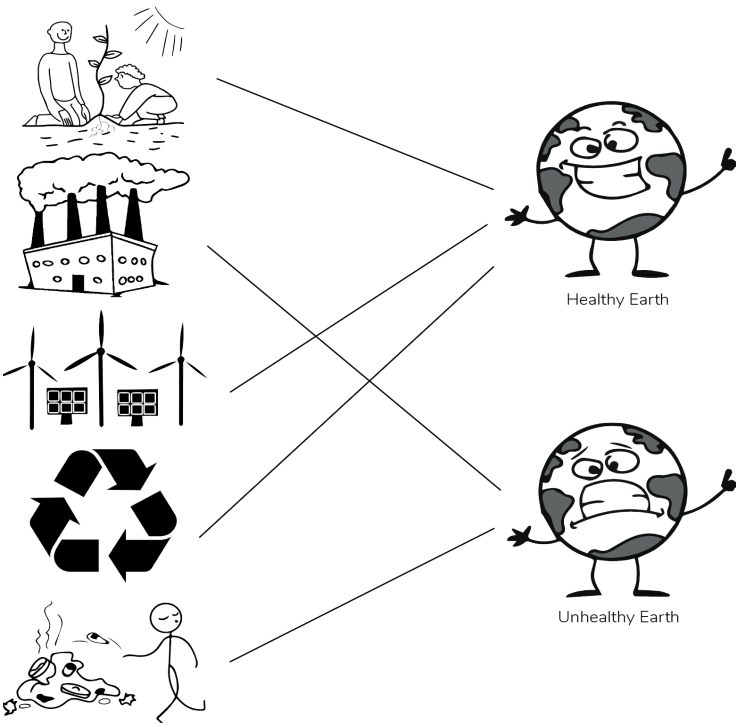
Milk and derivatives : cheese, milk, yougurt

Fats, Oils and Sweets : chocolate, donut, lolipop

State of Matter Word Search (page 7)



Healthy Earth (page 18)



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