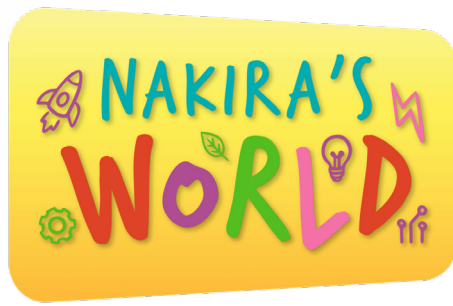




NAKIRA'S
WORLD

Zap into the Energy Zone

A fun-filled workbook for
young adventurers!



ZAP into the Energy Zone

A fun filled workbook for young adventurers



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Hello There!

This book belongs to... (Write your name here on the line)



Let's learn about Energy!

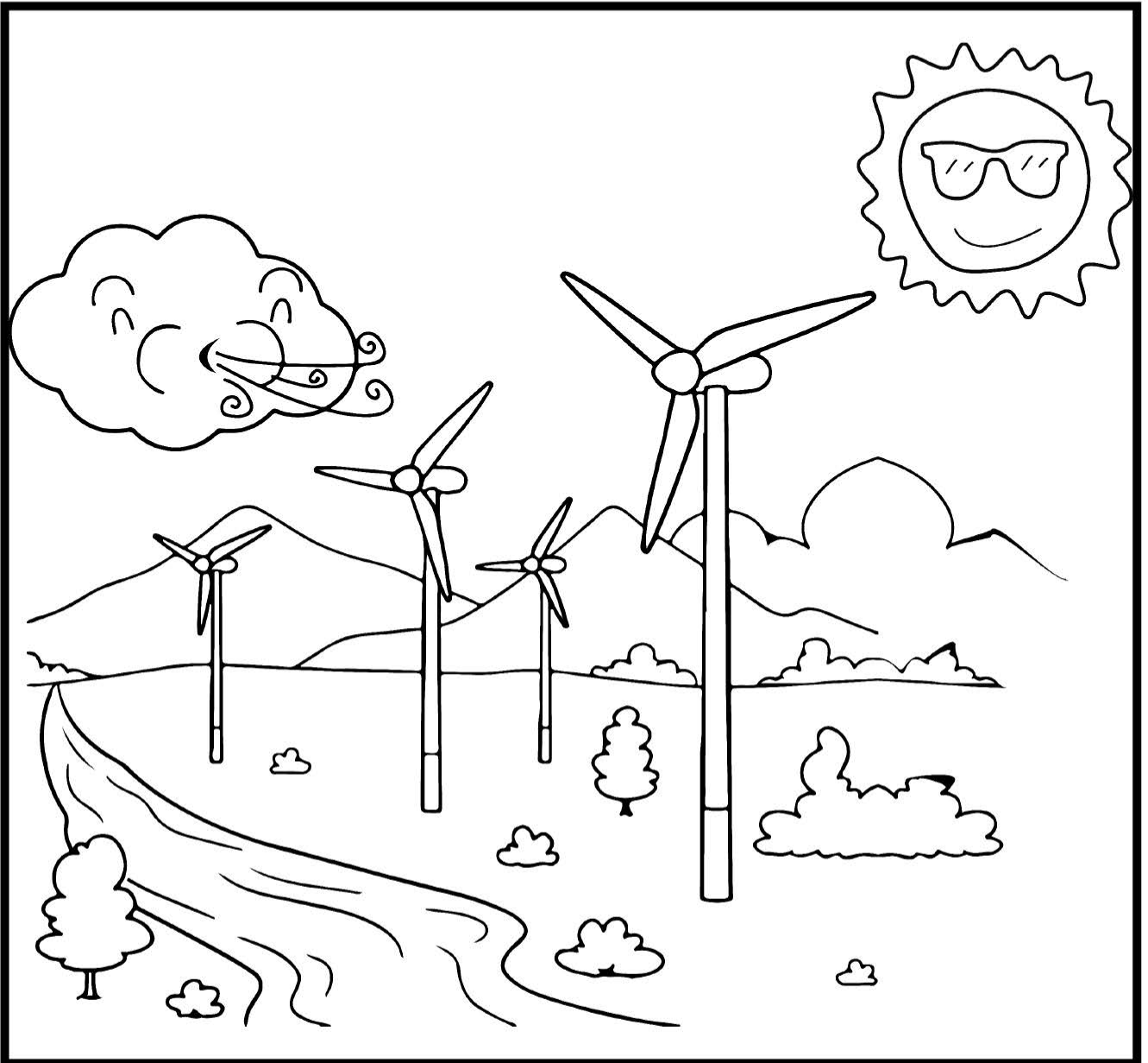




What is Energy?



Energy helps us do things. It gives us light. It warms our bodies and homes. It bakes cakes and keeps milk cold. It runs our TVs and our cars. It makes us grow and move and think. **Color the picture below!**



Energy is the power to change or move things. It is the ability to do work. THERE IS ENERGY IN EVERYTHING.

Match the Photo with the description

Draw a line and match the description on the left with the pictures on the right.

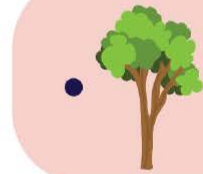
Energy is Light. •



Energy is Heat. •



Energy makes living things grow. •



Energy makes things move. •



Energy runs devices. •



Energy doesn't disappear. •



Hint: Some descriptions have multiple matches.

What Forms of Energy are there?

EVERY object possesses energy.

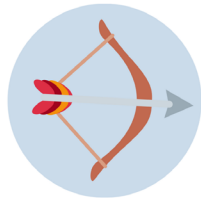
Things that move possess **KINETIC ENERGY**.
Things that are staying still possess stored **POTENTIAL ENERGY**.

POTENTIAL

Chemical
Energy



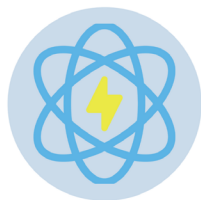
Stored
Mechanical
Energy



Gravitational
Potential
Energy

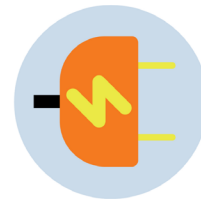


Nuclear
Energy

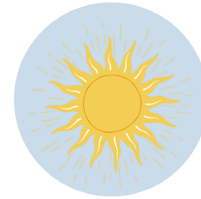


KINETIC

Electrical
Energy



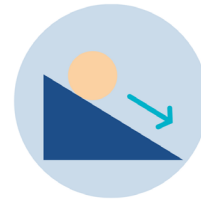
Radiant
Energy



Thermal
Energy



Motion
Energy



Sound
Energy



Types of Energy



Thermal
Energy



Radiant
Energy



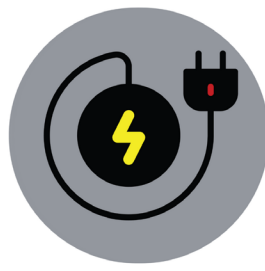
Light
Energy



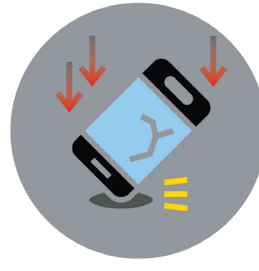
Chemical
Energy



Nuclear
Energy



Electrical
Energy



Gravitational
Energy



Mechanical
Energy

Kinetic Energy:

Energy in motion is known as kinetic energy. For example, a moving ball, flowing water, falling rocks, and you jumping off a chair.

Potential Energy:

Energy stored in an object that is not moving. For example: a table, still water in a lake, and rock sitting at the top of a mountain.

Mechanical Energy:

You get this when you add potential energy (energy due to position of an object) and kinetic energy (the energy associated with the motion).

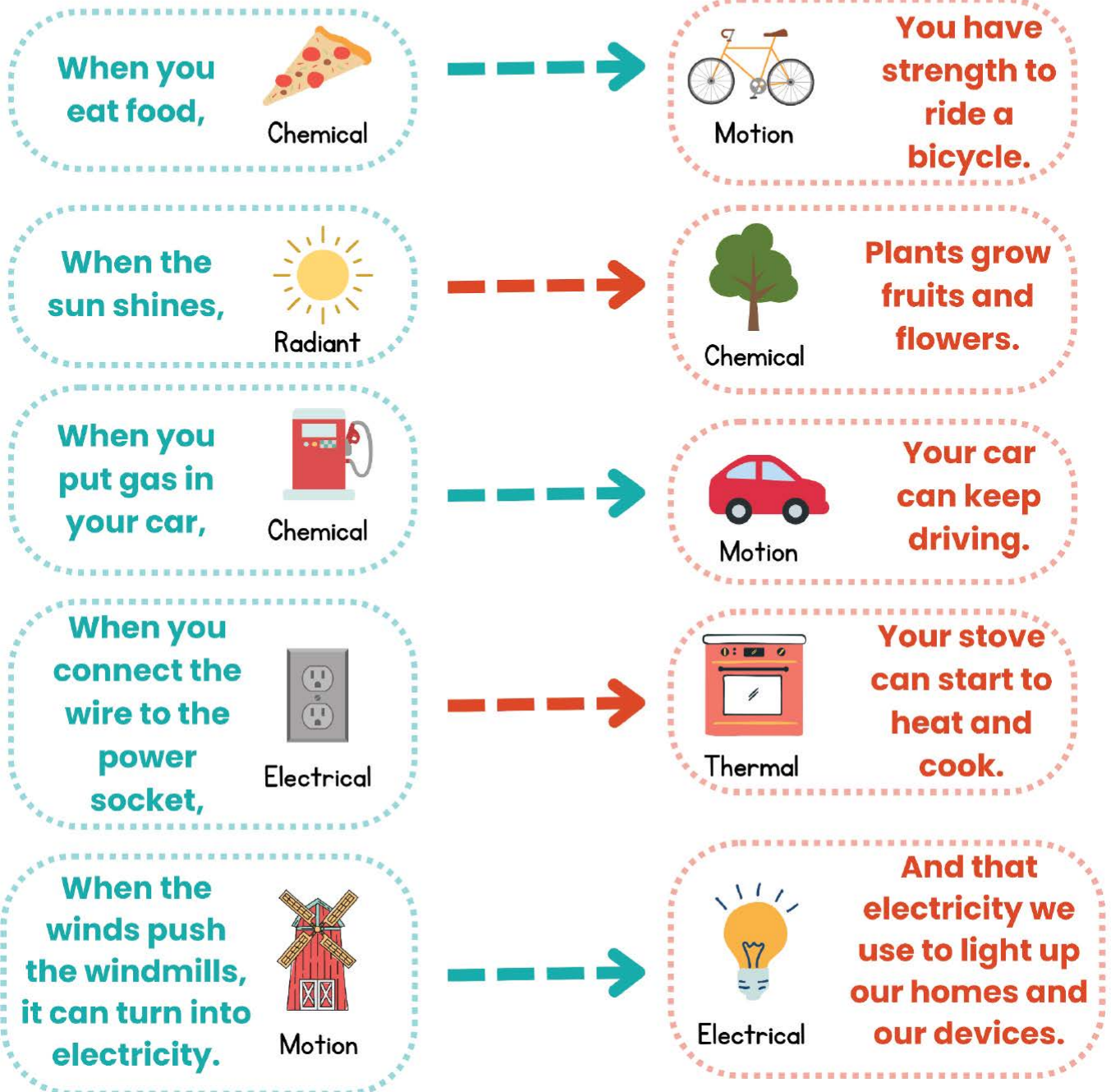
Electrical Energy:

This type of energy can be taken from sources like: oil, gas, wind, sun, water, waves, coal, geothermal steam, batteries, biodegradable waste, non-biodegradable waste, chemicals, and atoms.

The other types of energy are **Chemical**, **Electric**, **Magnetic**, **Radiant**, **Nuclear**, **Ionization**, **Elastic**, **Gravitational**, **Thermal**, **Heat**, **Motion**, and **Sound**.

How is Energy Transferred and Transformed?

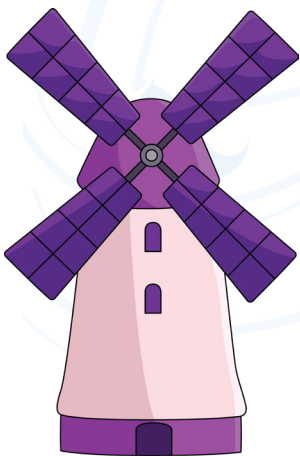
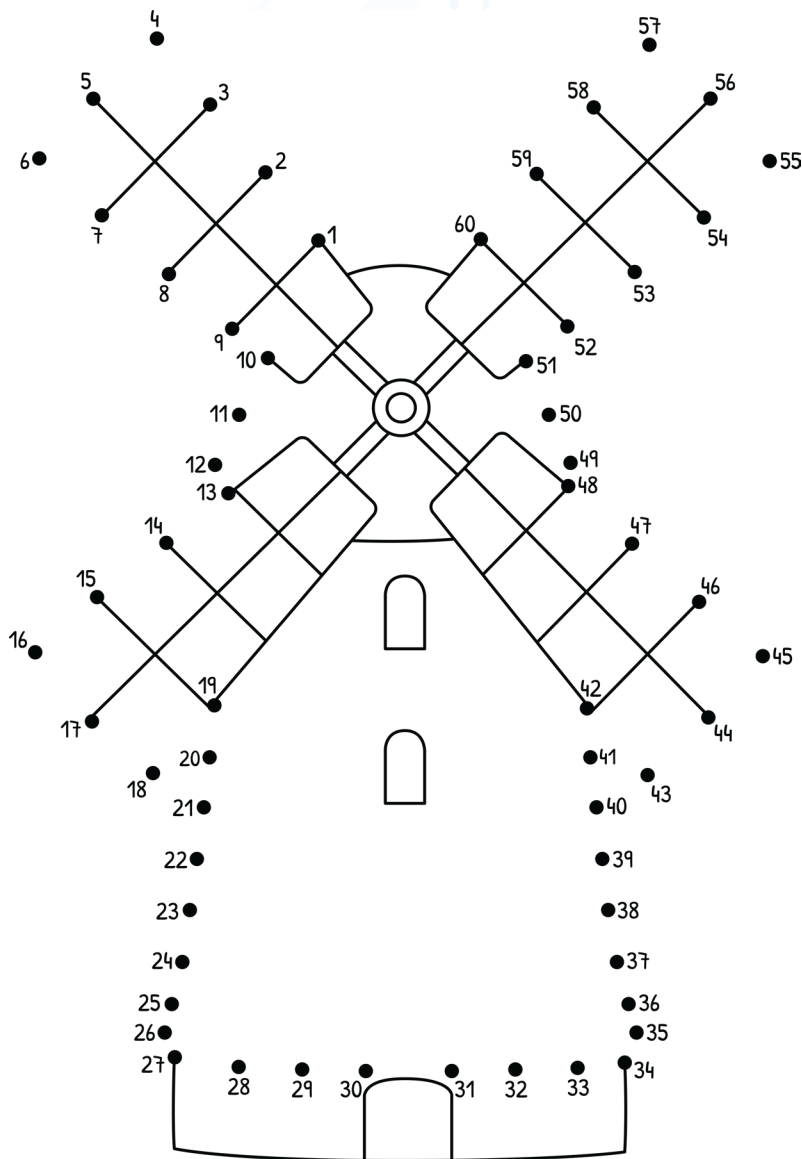
Have you seen how water can freeze into ice or turn into liquid or disappear when you heat it? Just like that, energy can also transform in many ways.



Blow Blow Blow Away!

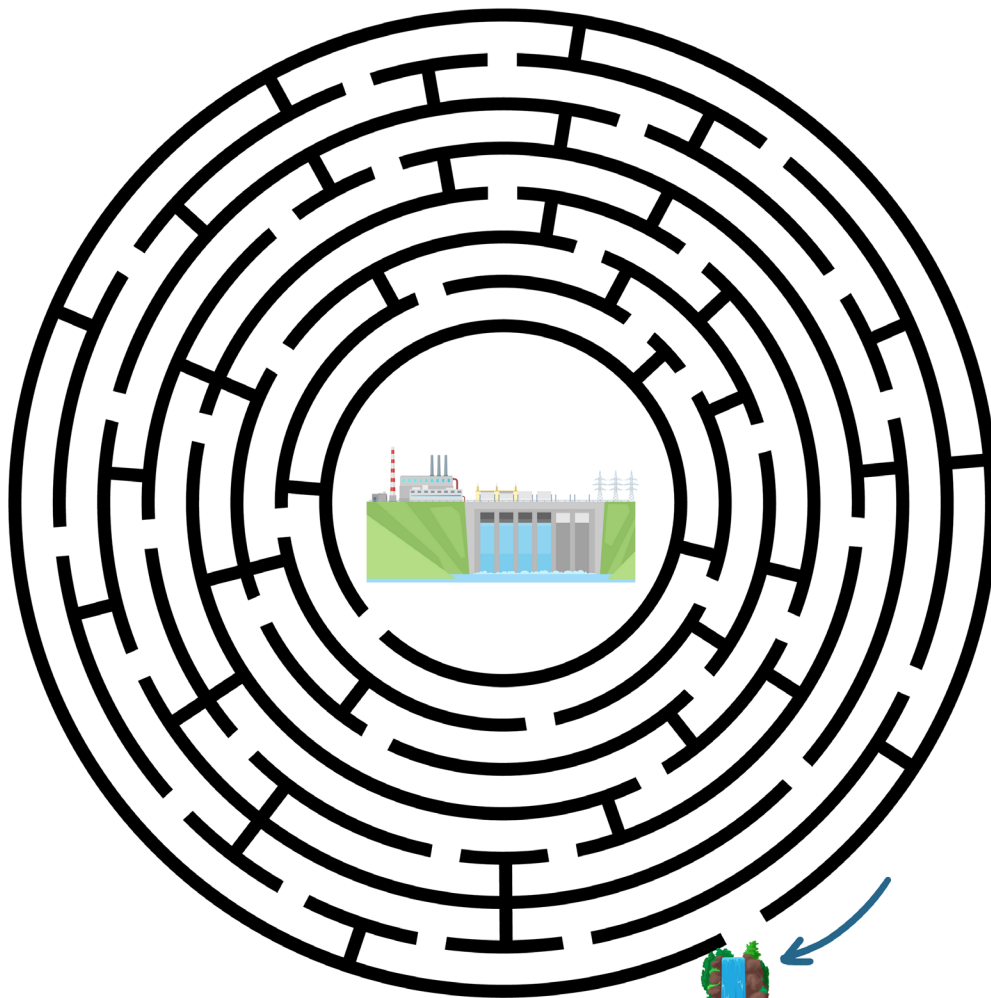
Have you ever seen a fan? Well a Wind Turbine is exactly like that---A Big Fan with the wind pushing it to go around!

Connect the dots on this wind turbine to help the people complete the windmill so that they can harness electricity from the wind!



THE WAY OF WATER

Help the water flow from the falls, through the rivers, and to the dam, so that the electricity factory (also called a Power Plant) can produce more electricity for the city.



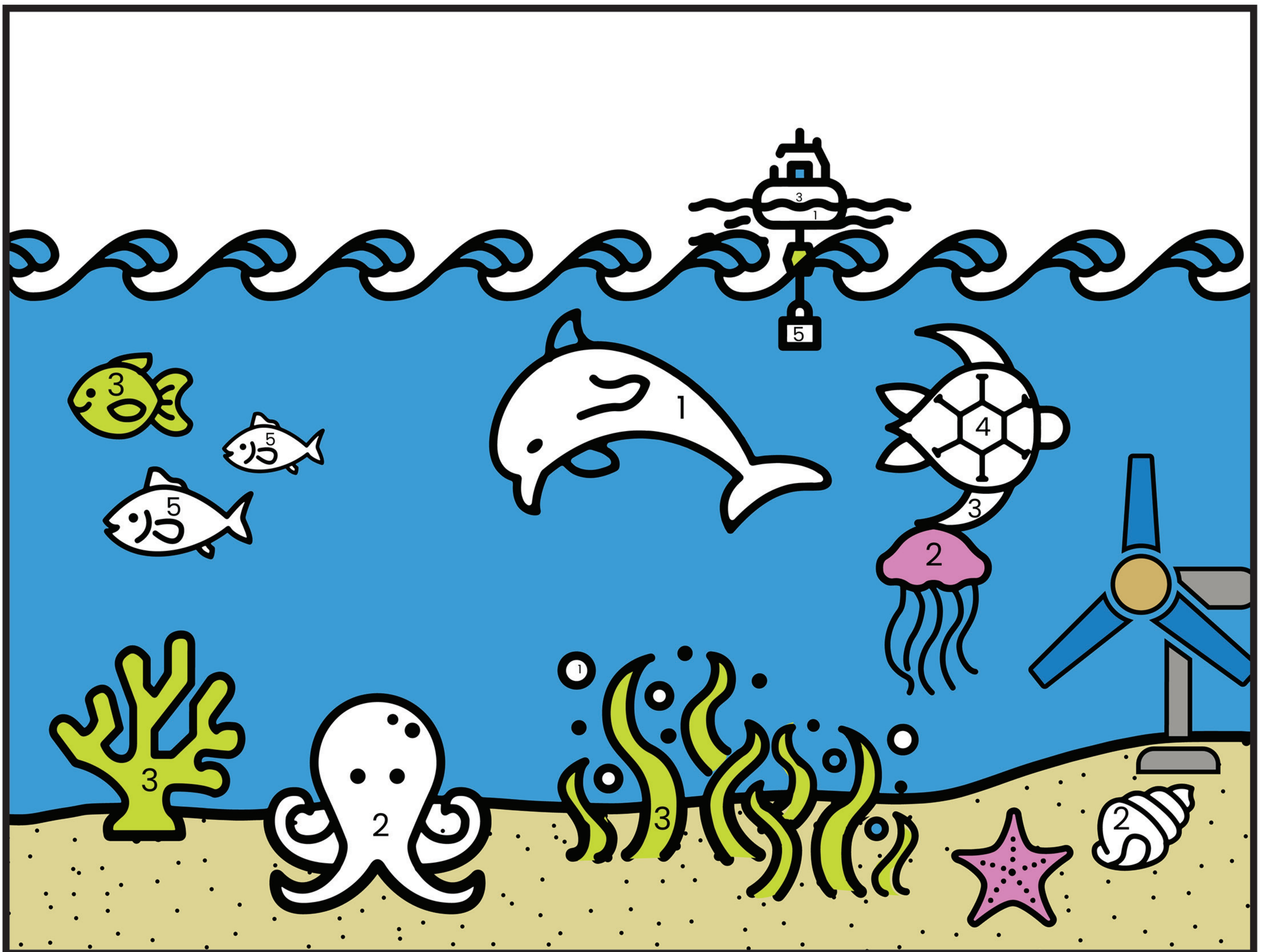
Start here

Tidal Energy: Riding with the Waves, going with the Flow



Do you know that some sea animals ride with the flow of sea water, like dolphins, turtles, and whales? This flow is what we call sea currents. Sea currents make the waves we see at the beach. That movement of water creates motion energy that can turn fans underneath the sea, and these fans can even transform that energy into electricity!

Now, let's have some fun! Help us complete the picture by coloring the page with the missing colors. Use the key at the bottom of the page to color the picture and make it even more amazing!



1. Blue 2. Pink 3. Light Green 4. Dark Green 5. Orange Color the rest freely

The Secrets of Oil

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

Electricity
 Energy
 Oil

Petroleum
 Plants
 Sea

Animals
 Steam

Heat
 Fuel

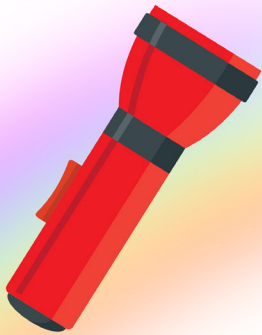
Oil is one source of energy. We know we need oil to cook food, but did you know it can also be burned to transform heat into electricity?

Search for the words associated with it by looking vertically, horizontally, or diagonally and encircling them when you find them!

SENSE OF LIGHT

Do you know that you can get a lot of energy from the sun?

Look at each picture. Circle the pictures of objects that have to do with the sun and with light.



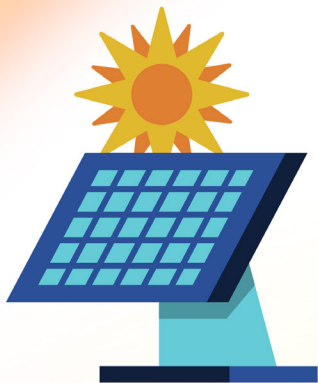
Flashlight



Star



Apple



Solar Panel



Chair



Sun



Key



Plant



Rainbow



COLOR SORTING

Connect the pictures to the box with their matching color.

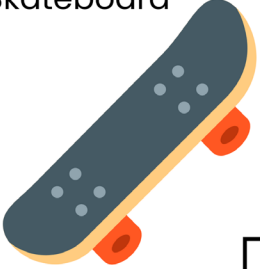


Things that Need Fuel

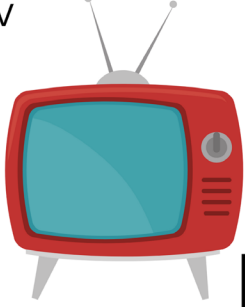


Look at the pictures below. Put an X the things that need oil or gas to run or turn on.


Skateboard




TV




Stove




Car




Phone




Bike



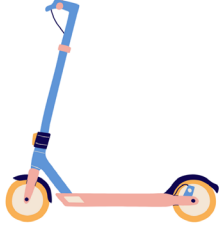
Gas Lamp




Motorcycle




Scooter




Airplane



Electric Train



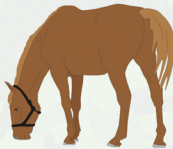
Speedboat



WHAT DO THEY MAKE?

We know that plants and animals produce certain things. But do you know that animal poop and plant fiber waste can also be burned to produce heat and electricity?

Match the plants and animals to what they produce!



Did you know that the Oil & Gas that we use for fuel are like treasures from under the sea?



Help Captain Nakira identify the objects in the picture as she goes on a journey across the seas.

Sea Adventure

Look at the adventure map and the number on each object. Identify the object name from the right side of this page and write it down.

1



Falls

2

Island



3



Shark

4

Coconut



5



River

6

Snake



7



Crocodile

8

Oil Rig



9



Bear Cave

10

Dolphins



11



Ship

12

Cloud & Lightning



PUT SOME HEAT ON THE TRASH

Non-biodegradable waste are basically trash that are not from animals or plants or food. Do you know that non-biodegradable trash or waste can be turned into energy when burned? As long as it is done in a closed space.

Look at each picture. Circle the pictures of objects that are non-biodegradable or made out of plastic.



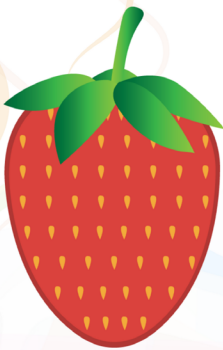
Mango



Lollipop



Toy Car



Strawberry



Soda Can



Milk



Cookie



Water Bottle



Shampoo

BATTERIES EVERYWHERE!

A battery is a sort of container that stores energy in the form of chemicals inside. When the battery is used, the chemical energy changes into electric energy.

Identify the objects that would need batteries to run, by encircling them.



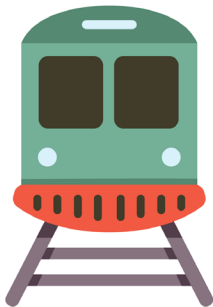
Camera



Watch



Moped



Train



Laptop



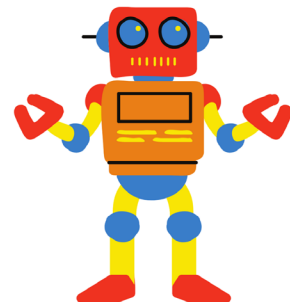
Cellphone



Television



Roller Skates



Toy Robot



Geothermal Energy



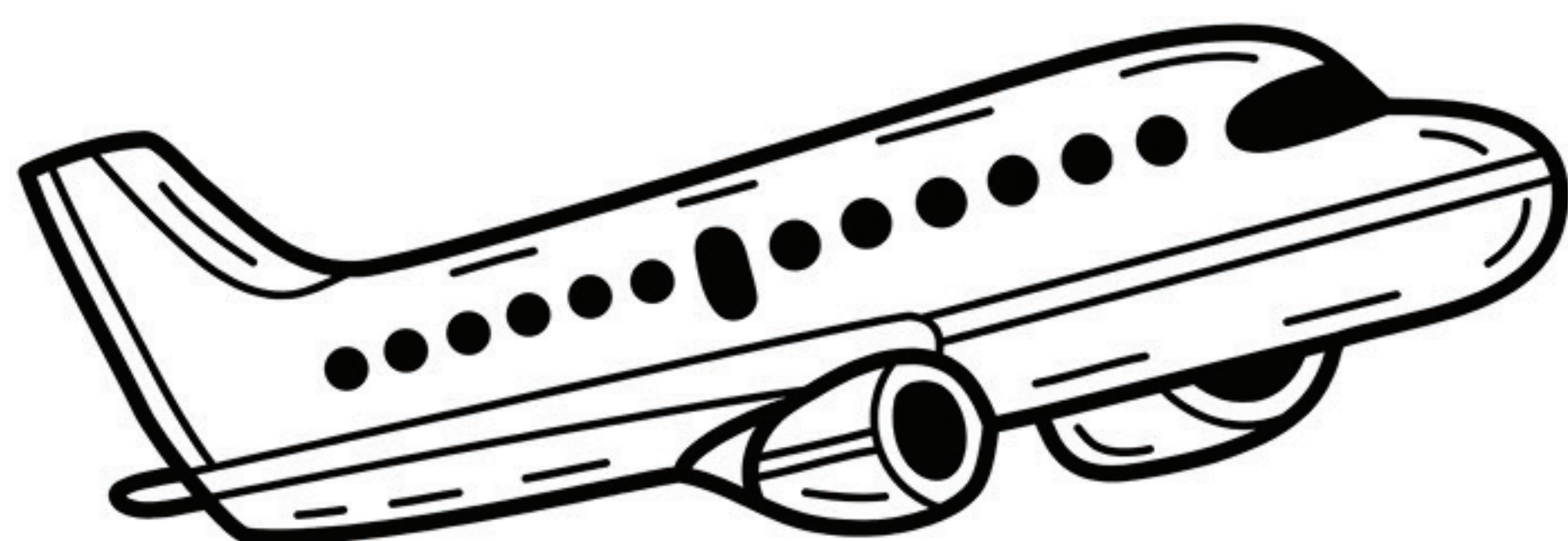
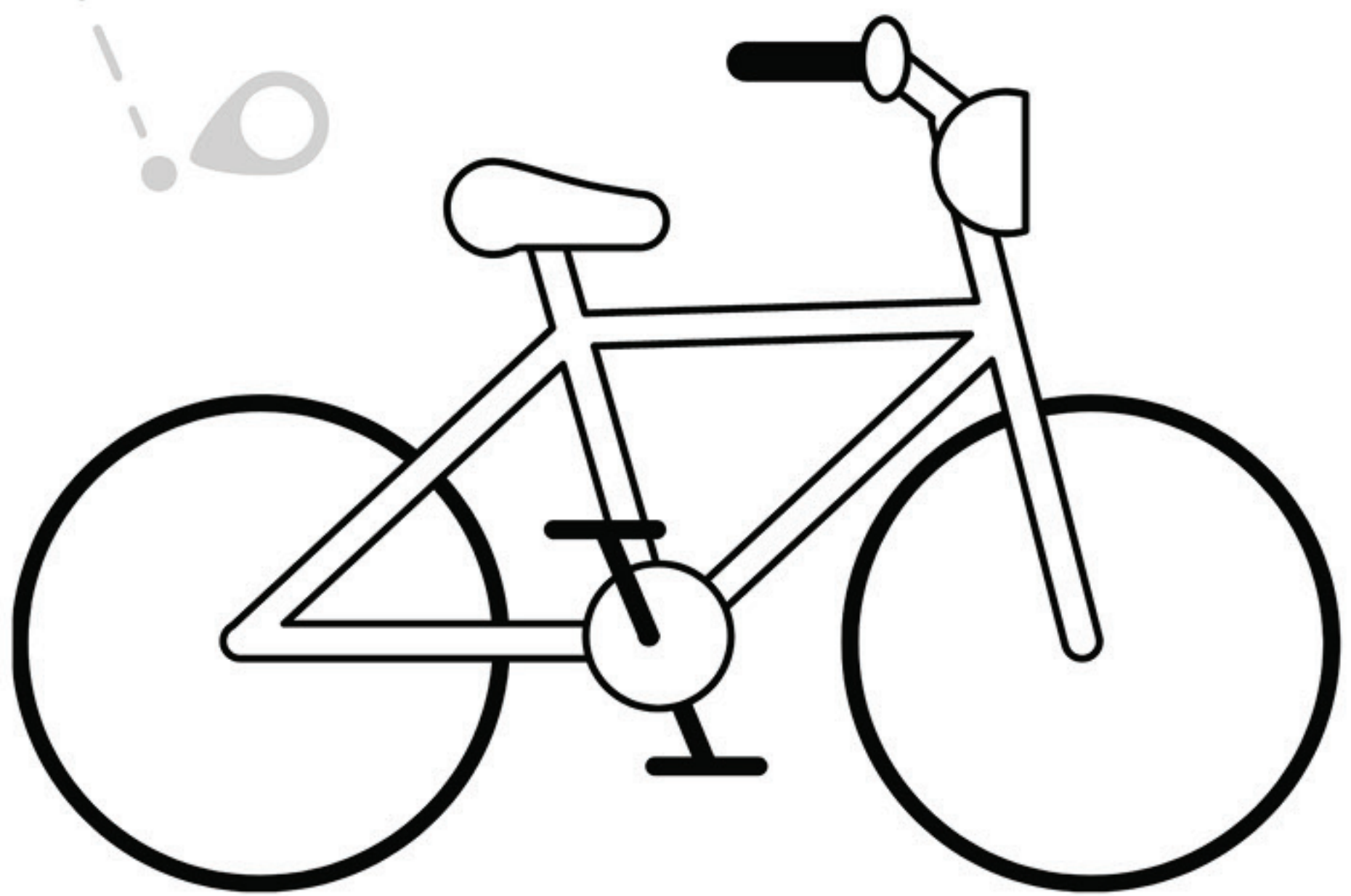
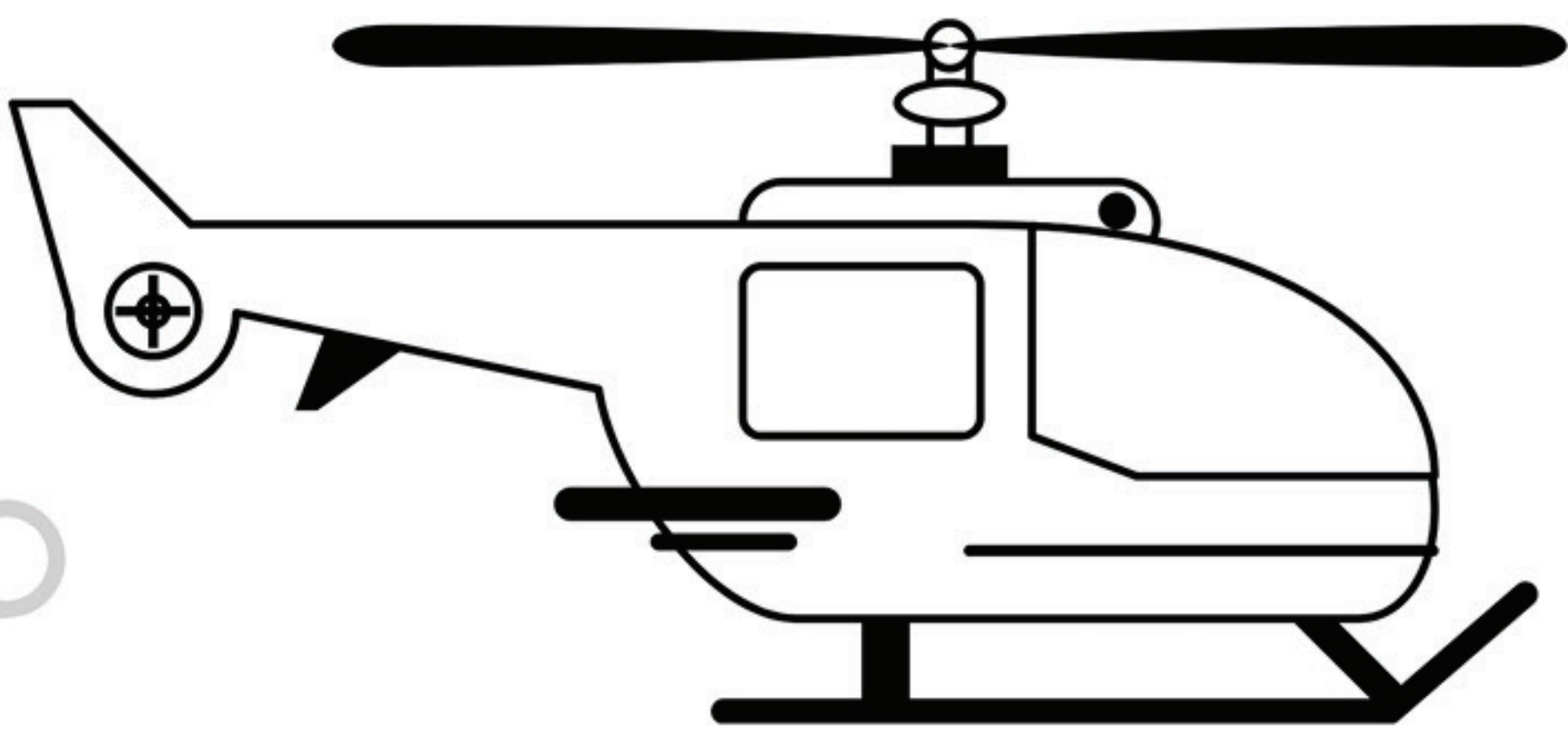
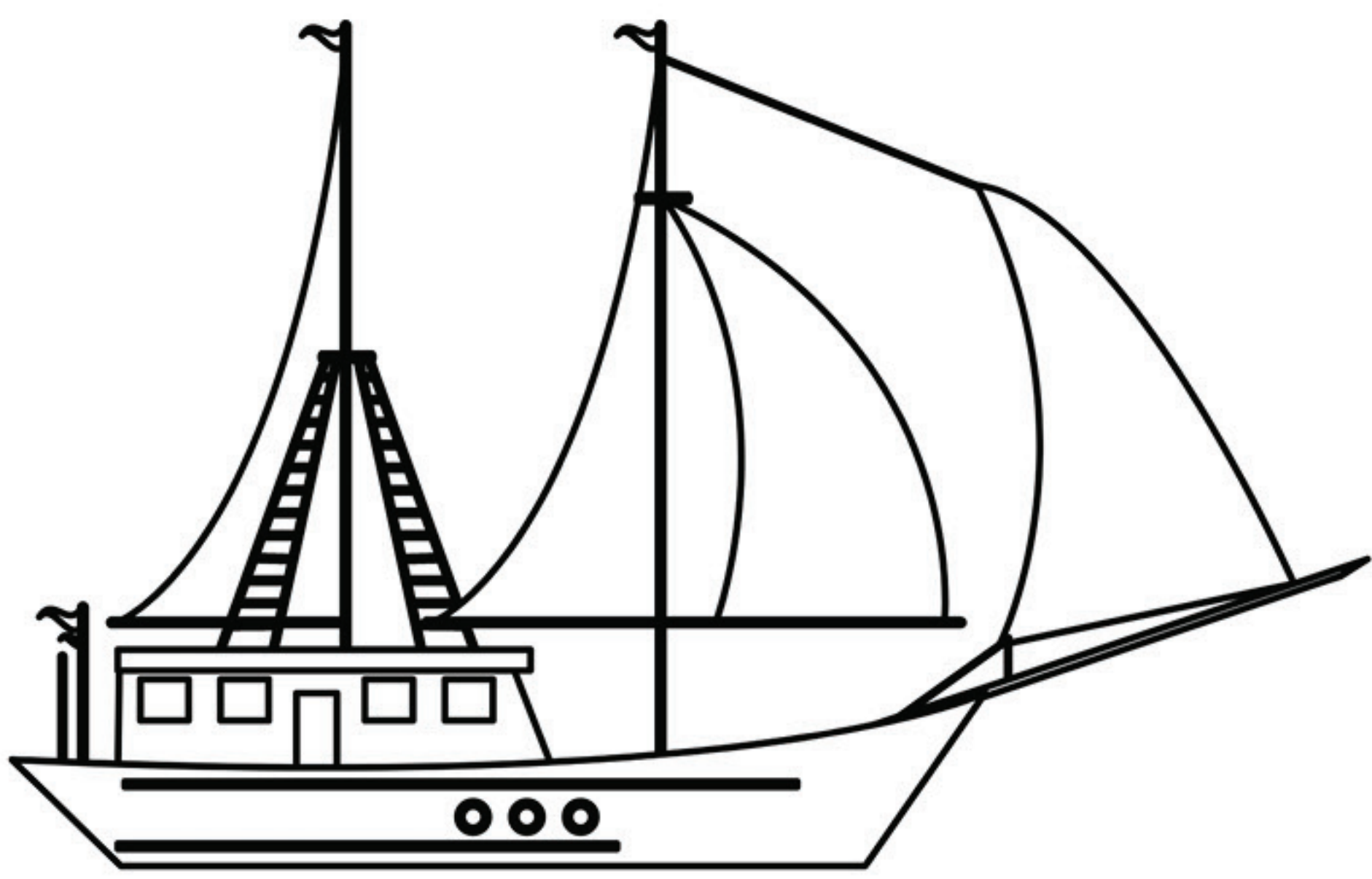
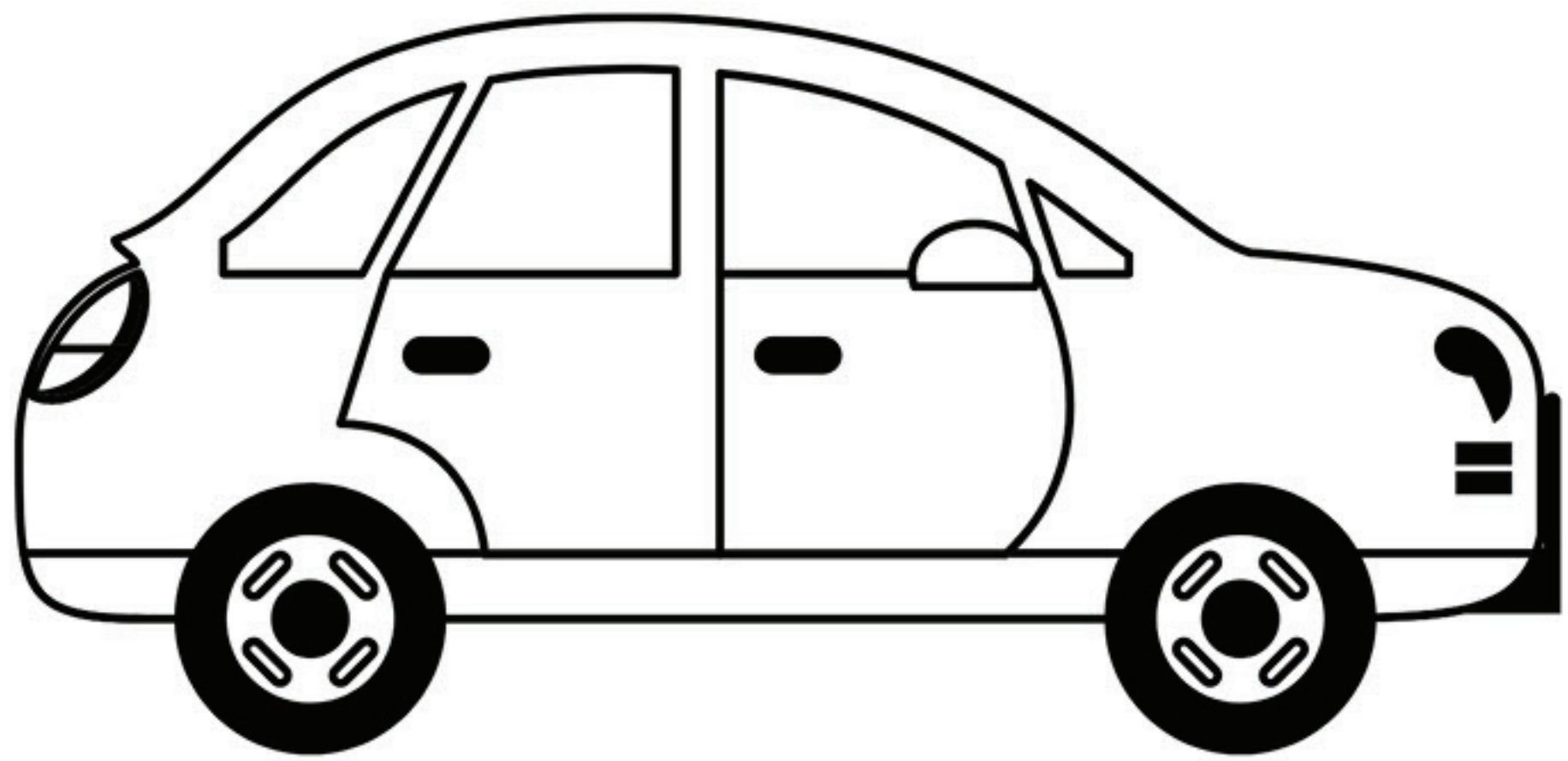
Geothermal energy is heat coming out of the ground, just like the smoke and lava that comes out of volcanoes. Here we have an example, but something is missing! Find the differences between two pictures.



Hint: There are 7 differences.

VEHICLE MATCHING

Match the vehicles to the place it moves on. Then color the vehicles. Hint: Some descriptions have multiple matches.



Transport Fuel



Color the mode of transportation according to the type of fuel you think they use to run it.



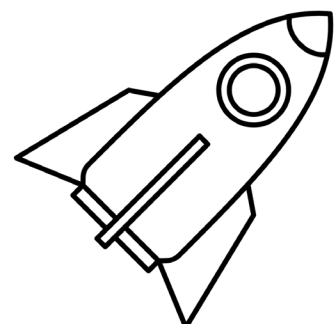
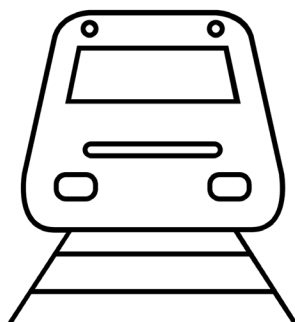
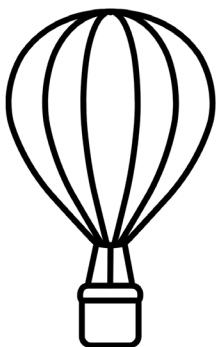
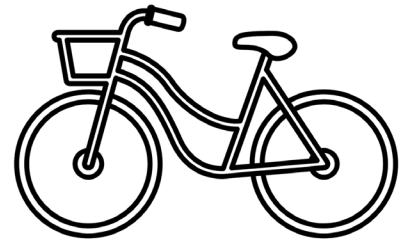
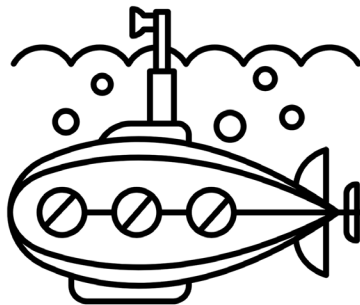
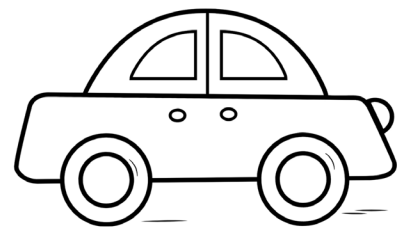
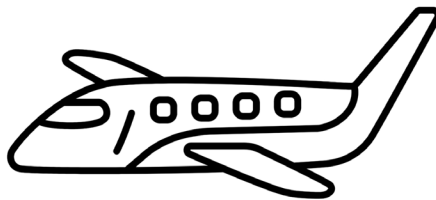
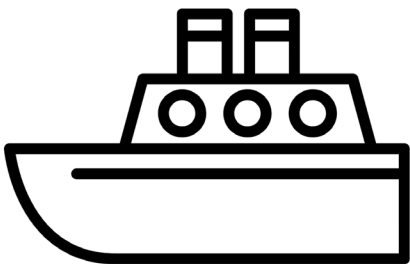
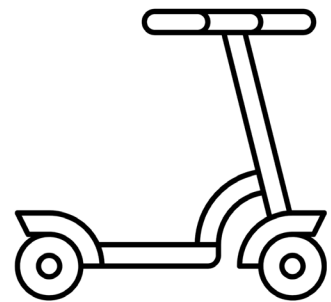
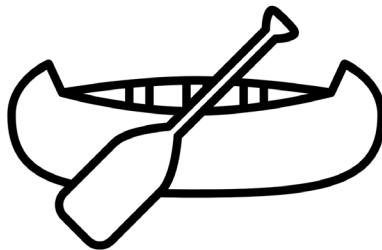
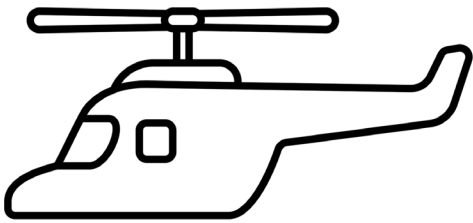
GAS



ELECTRICITY



HUMAN



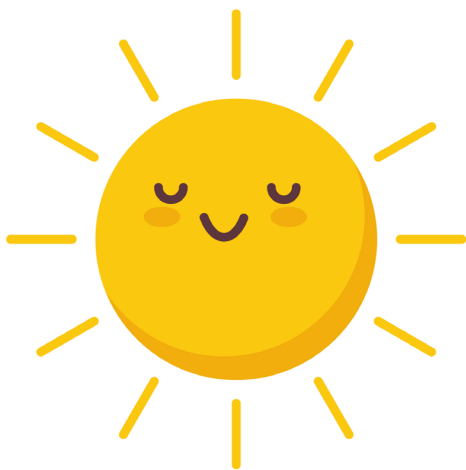
ENERGY SOURCE VOCABULARY

Identify the pictures below. Use the word bank below to name each picture.

Write the words in-between the lines.









Word Bank:

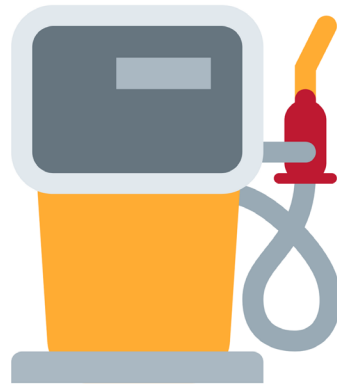
wind	sun	water	wave
------	-----	-------	------

ENERGY SOURCE VOCABULARY

Identify the pictures below. Use the word bank below to name each picture.

Write the words in-between the lines.









Word Bank:

steam	petroleum	gas	coal
-------	-----------	-----	------

Find the Safe Way



Your parent needs to drive you to school because it takes too much energy for you to walk. But first, he needs to pass by the gas station to get fuel and energy for the car.

Find the safest way for the car to get to school. Look at guide below.

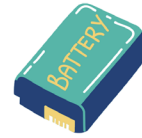
Closed path Open path Construction (do not pass) Stop (do not pass)

Home

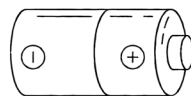
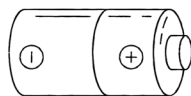
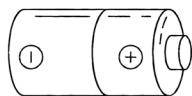
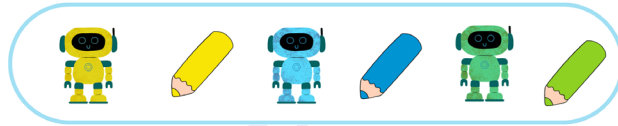
Gas Station

School

COLOR BY ROBOT



The 3 toy robots need batteries to refuel their energy. Follow the paths to find the owner of the batteries. Use the key to color the batteries.



ON THE BEACH





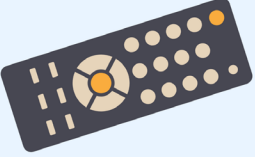




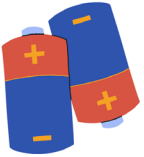





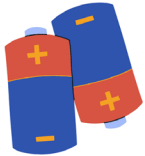
At the beach you will find different types and sources of energy. There is light (sun), sound, heat, water, waves, motion, and many more.

Look at the pictures below and circle the differences. Hint: There are 14 differences.



Source of Energy

Identify the pictures on the blue column. Can you tell where they get their energy from? Circle the correct answer.

 <p>electric fan</p>	   <p>electricity food sunlight</p>
 <p>remote control</p>	   <p>sunlight batteries food</p>
 <p>plant</p>	   <p>batteries sunlight electricity</p>
 <p>people</p>	   <p>food electricity batteries</p>

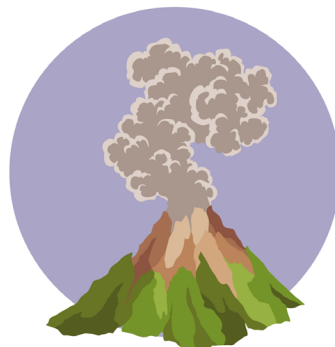
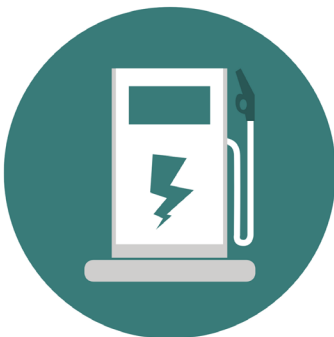
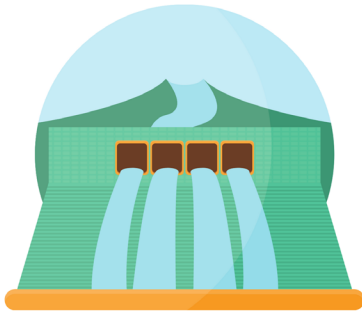


ENERGY TYPES



We've learned a lot about energy so far. Can you remember what kind of energy source they use? Write it down in the circle.

Sun Wind Water Coal Oil (Petroleum) Gas
Geothermal (Heat from the ground) Tidal (Waves)



ENERGY BINGO

Complete the bingo card by drawing directly on the page OR you can cut & paste your own images from elsewhere to show example that match the specified type of energy or common location.

POTENTIAL	KINETIC	EITHER	KINETIC	KINETIC
mechanical energy	thermal energy	kinetic or potential? chemical energy	radiant energy	 a kid skiing down the icy mountain
 a bottle on a table	in the ocean	the ability to do work	in the kitchen	thermal energy
sound energy	it can move or change matter	WHAT IS ENERGY?	It can be in at rest (potential) or already in use (kinetic).	electrical energy
	sound energy	It can transfer energy from one form to another.	 a stone dropped	sound energy
in the sky	electrical energy	kinetic or potential? mechanical energy	on the beach	mechanical energy
in your classroom	mechanical energy	 kinetic a pulled arrow	an example on the road	in a theme park

ENERGY BINGO

Answer Key/Sample Answer

POTENTIAL

KINETIC

EITHER

KINETIC

KINETIC



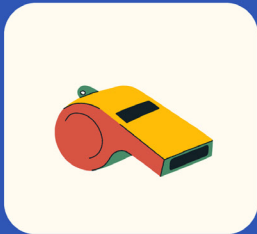
a kid skiing down the icy mountain



a bottle on a table



It is the ability to do work.



It can move or change matter.

WHAT IS ENERGY?

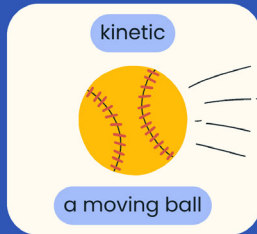
It can be in at rest (potential) or already in use (kinetic).



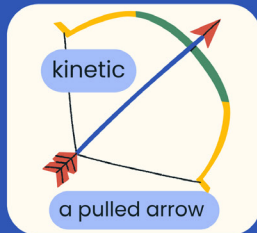
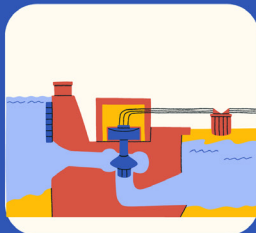
It can transfer energy from one form to another.



a stone dropped



a moving ball



kinetic

a pulled arrow

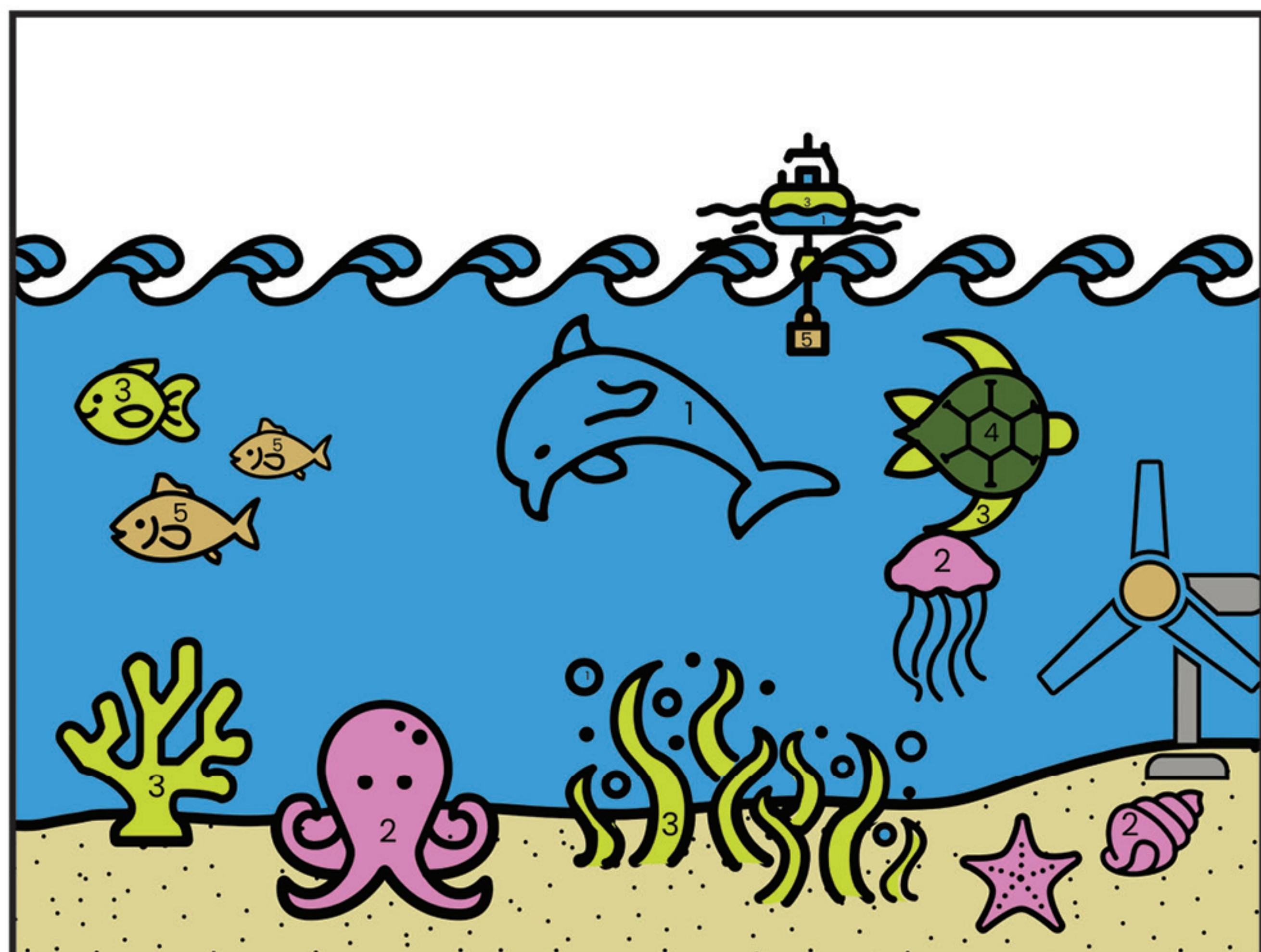


Answer Key

Tidal Energy: Riding with the Waves, going with the Flow

Do you know that some sea animals ride with the flow of sea water, like dolphins, turtles, and whales? This flow is what we call sea currents. Sea currents make the waves we see at the beach. That movement of water creates motion energy that can turn fans underneath the sea, and these fans can even transform that energy into electricity!

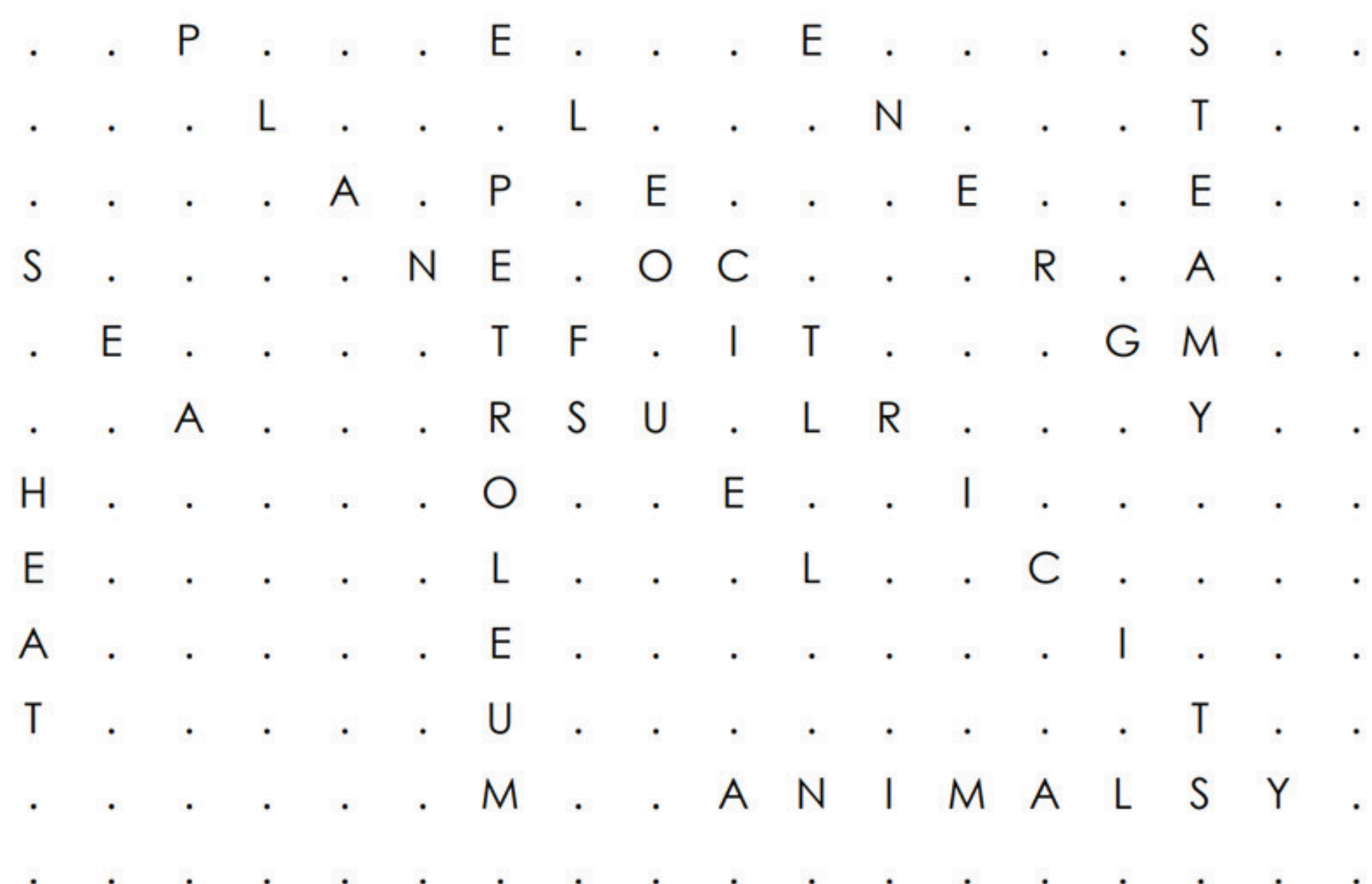
Now, let's have some fun! Help us complete the picture by coloring the page with the missing colors. Use the key at the bottom of the page to color the picture and make it even more amazing!



1. Blue 2. Pink 3. Light Green 4. Dark Green 5. Orange Color the rest freely

8

The Secrets of Oil



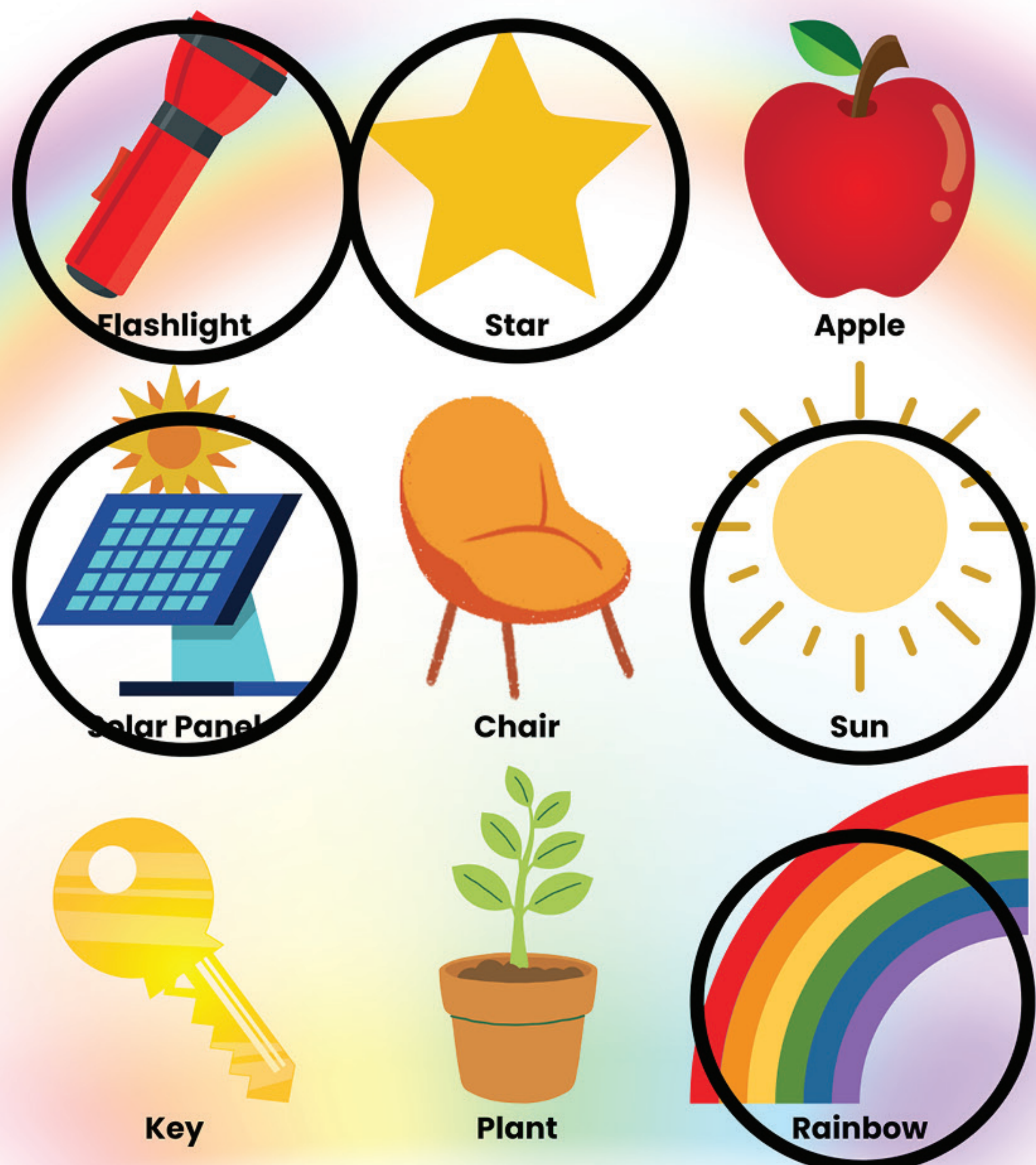
Electricity Petroleum Animals Heat
Energy Plants Steam Fuel
Oil Sea

Oil is one source of energy. We know we need oil to cook food, but did you know it can also be burned to transform heat into electricity?

Search for the words associated with it by looking vertically, horizontally, or diagonally and encircling them when you find them!

SENSE OF LIGHT

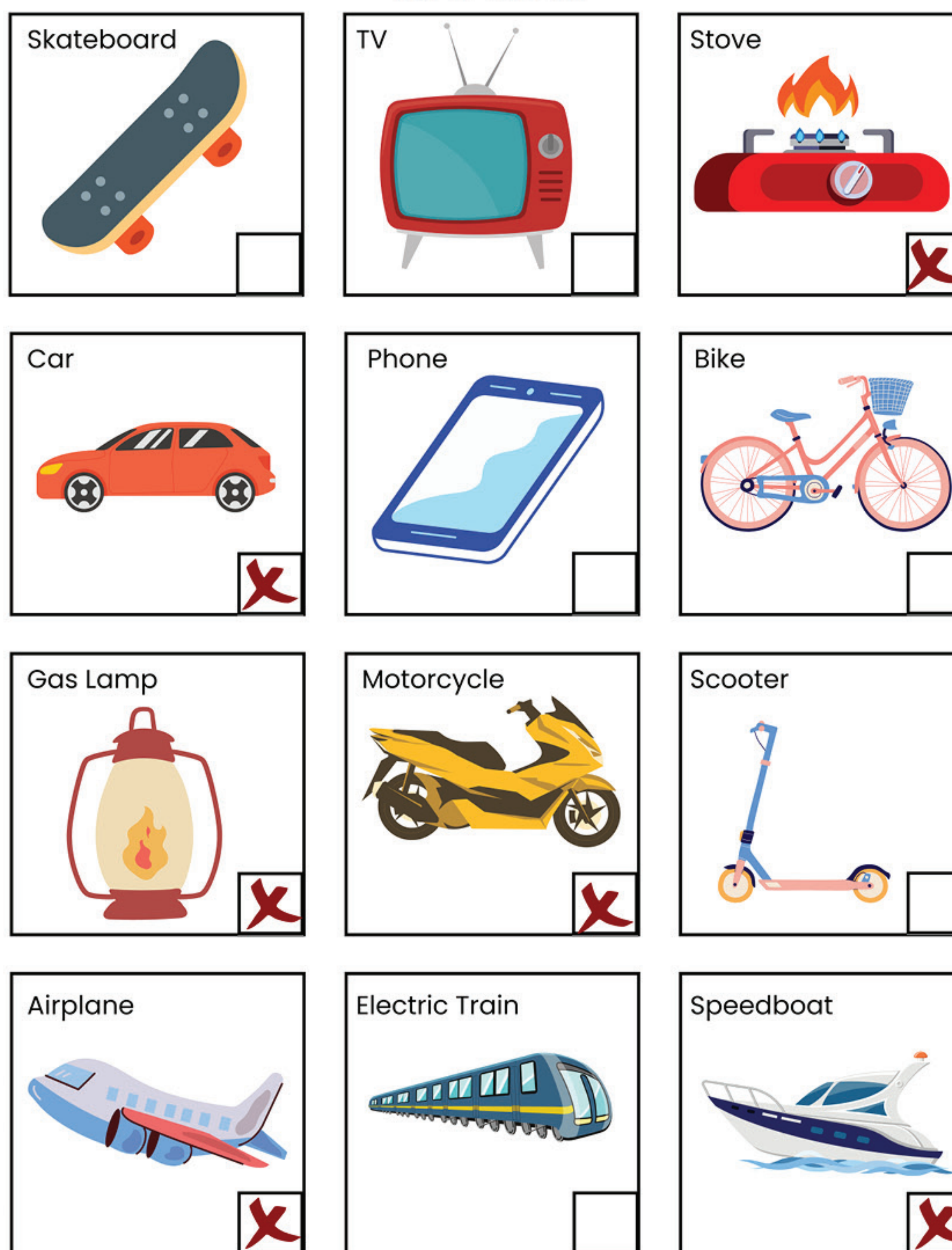
Do you know that you can get a lot of energy from the sun?
Look at each picture. Circle the pictures of objects that have to do with the sun and with light.



Things that Need Fuel



Look at the pictures below. Put an X the things that need oil or gas to run or turn on.

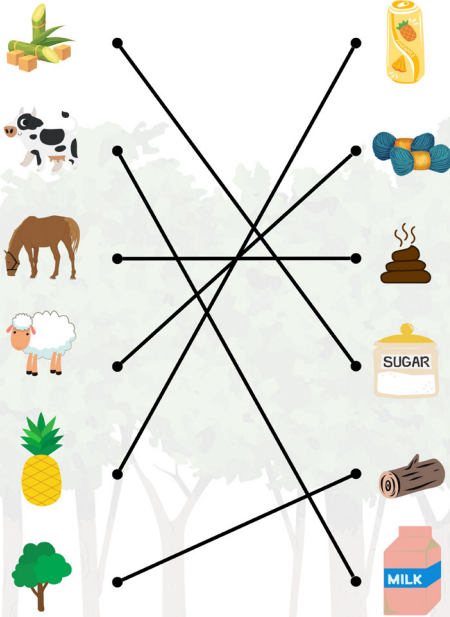


Answer Key

WHAT DO THEY MAKE?

We know that plants and animals produce certain things. But do you know that animal poop and plant fiber waste can also be burned to produce heat and electricity?

Match the plants and animals to what they produce!



Did you know that the Oil & Gas that we use for fuel are like treasures from under the sea?

Sea Adventure Map

Help Captain Nakira identify the objects in the picture as she goes on a journey across the seas.

PUT SOME HEAT ON THE TRASH

Non-biodegradable waste are basically trash that are not from animals or plants or food. Do you know that non-biodegradable trash or waste can be turned into energy when burned? As long as it is done in a closed space.

Look at each picture. Circle the pictures of objects that are non-biodegradable or made out of plastic.



BATTERIES EVERYWHERE!

A battery is a sort of container that stores energy in the form of chemicals inside. When the battery is used, the chemical energy changes into electric energy.

Identify the objects that would need batteries to run, by encircling them.



Answer Key

Geothermal Energy

Geothermal energy is heat coming out of the ground, just like the smoke and lava that comes out of volcanoes. Here we have an example, but something is missing! Find the differences between two pictures.



VEHICLE MATCHING

Match the vehicles to the place it moves on. Then color the vehicles. Hint: Some descriptions have multiple matches.

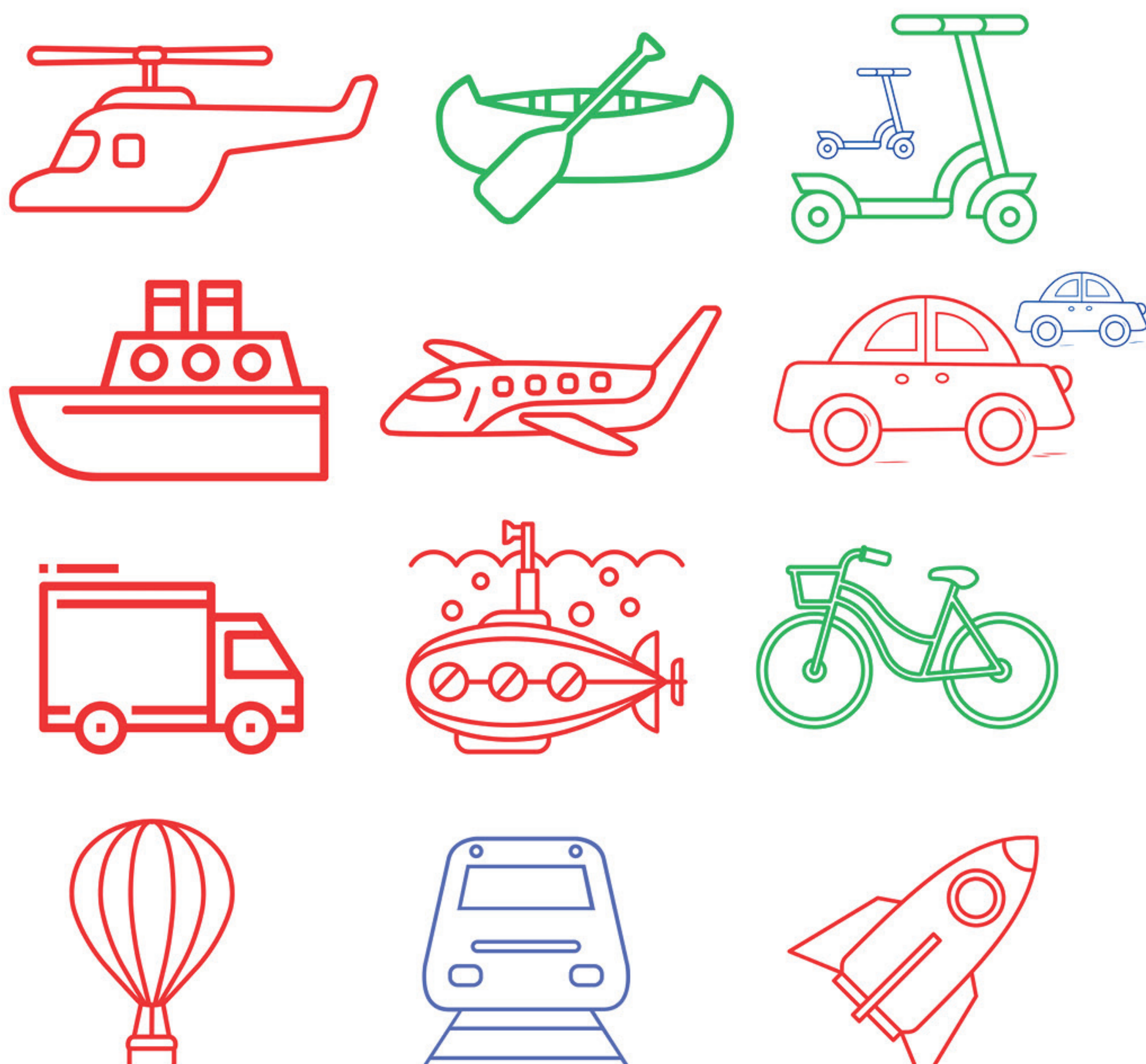
The matching connections are as follows:

- Car is connected to the road scene.
- Sailboat is connected to the beach scene.
- Helicopter is connected to the sky scene.
- Bicycle is connected to the cave scene.
- Airplane is connected to the sky scene.

Transport Fuel

Color the mode of transportation according to the type of fuel you think they use to run it.

RED GAS BLUE ELECTRICITY GREEN HUMAN



Find the Safe Way



Your Parent needs to drive you to school because it takes too much Energy for you to walk. But first, he needs to pass by the gasoline station to get fuel and energy for the car.

Find the safest way for the car to get to school.

The safe route is indicated by red arrows:

- Start at Home.
- Go right, then down.
- Turn left at the Gas Station.
- Go left, then down.
- Turn right at the bottom.
- Go right to reach School.

Legend:

- Closed path (dashed line)
- Open path (solid line)
- Construction (do not pass) (yellow sign)
- Stop (do not pass) (red sign)

Answer Key

ON THE BEACH

At the beach you will find different types and sources of energy. There is light (sun), sound, heat, water, waves, motion, and many more.

Look at the pictures below and circle the differences. Hint: There are 14 differences.



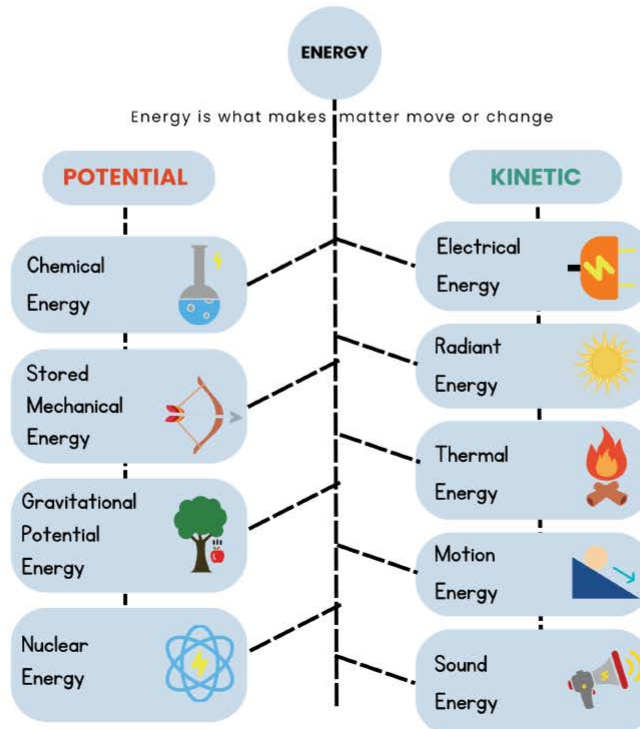
ENERGY TYPES

We've learned a lot about energy so far. Can you remember what kind of energy source they use? Write it down in the circle.

Sun Wind Water Coal Oil (Petroleum) Gas
Geothermal (Heat from the ground) Tidal (Waves)

	<input type="text" value="Sun"/>		<input type="text" value="Wind"/>
	<input type="text" value="Tidal"/>		<input type="text" value="Coal"/>
	<input type="text" value="Oil"/>		<input type="text" value="Geothermal"/>
	<input type="text" value="Gas"/>		<input type="text" value="Water"/>

Let's review what we've learned so far:





Continue with more adventures with Nakira
and her friends at:

 [@nakirasworld](https://www.instagram.com/nakirasworld)

 [@nakirasworld](https://www.youtube.com/nakirasworld)

 [@nakirasworld](https://www.tiktok.com/@nakirasworld)



Initiative of Represented Collective

"Zap into the Energy Zone: A Fun-Filled Workbook for Young Adventurers!" is a high quality, full colored, and fun educational toy designed for kids from ages 4–8 years old.

Enhances creativity, strengthens literacy, and fosters cognitive, sensory, scientific, technological, and artistic development.

Zap into the Energy Zone contains 34 separate, fun page lessons that teach:

- Energy
- Types of Energy
- Colors
- How is Energy Transferred and Transformed
- Sources of Energy
- Energy Fuels
- Vehicles
- Words (Energy-related Vocabulary)

Through Various Modes to Challenge and Educate:

- Words
- Spelling
- Coloring
- Mazes
- Matching
- Word-finding
- Selection
- Finding Differences

Highly recommended as a support tool/material for parents homeschooling their kids, for fun activities at home, for teachers in early education, and for businesses and organizations who are focused on Energy-literacy and STEM learning.

Follow us on social media for more STEM activities, animations, products & more!

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