All About Me

My favorite kind of science is _____.

I am curious about _____

_____.

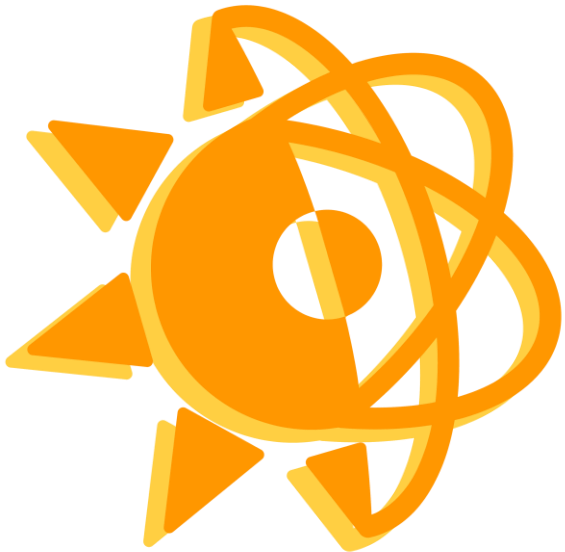
When I grow up I want to _____.

Draw something you like to do in the summer!

Step 1: Fold along center dotted line
Step 2: Hole punch or staple the circles

PACIFIC SCIENCE CENTER

SUMMER SCIENCE CLUB



This book belongs to: _____

Make this book your own! Color in the science icons on the inside and outside of your book. Can you add more drawings to the collage below that remind you of science topics?

Bubble Poem

Write a poem, with each line starting with a letter from the word “Bubbles”. Your poem could rhyme, but it doesn’t have to.

B

U

B

B

L

E

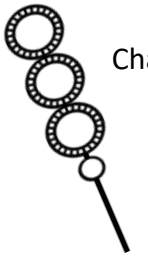
S

Design a Wand

Plastic circle bubble wands might be the most common, but bubble wands can be made using different shapes and materials. Here are four different wand types to make and test. Record what happened when you blew bubbles with it.

Using short straws, make a Cluster Wand.

What happened? _____



Challenge: make a Triple Wand.

How you made it: _____

What happened? _____

Use something weird for a wand (like a fork or a piece of paper with lots of holes!)

Item you used: _____

What happened? _____

Using pipe cleaners, make a wand that isn't round.

Shape you made: _____

What happened? _____

Welcome to the Club!

How to use this booklet:

Print out the pages double-sided **(flip on short side, fit to printable area)** and in color if possible. Follow the folding and hole punch instructions to put your booklet together with brads or string. Look in the lower corners to help you keep track of page order.

This booklet has 10 weeks of activities. Spread them out, or do them all at once. Share your creations with us on social media by tagging @pacsci, or email them to us at edprograms@pacsci.org.

With Curiosity,
The Science Club at PacSci!

Week 1

Pollinators

This week we are getting outside, and being curious about Pollinators! A pollinator is an animal that moves pollen from one flower to another. Pollinators do this as they are getting food, but moving the pollen around to different plants also helps the plant reproduce and make more plants!

Pollinators have a really important job. Without pollinators, we'd have fewer plants.

Next time you eat berries, apples, bananas, nuts or chocolate, think of the helpful pollinators that make foods like these possible!

Bubble Challenges

For each Bubble Blowing Challenge that you complete, including a challenge you create, color in the bubble.

Blow a bubble as big as your head

Make a bubble wand out of natural materials, like grass or a leaf

Make a bubble wand out of string

Get 3 bubbles to stick together

Make your own challenge:

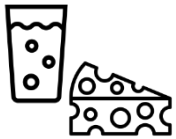
Blow a bubble in another bubble *(hint: use a straw)*

Bubbles Bubbles!

For our final week of the summer, we are just *popping* with excitement about bubbles. Bubbles are made when a thin layer of liquid surrounding air or another type of gas. Bubbles occur in lots of places:

Some bugs make a foamy, bubbly cover that keeps them moist and protects them from predators.

Snapping shrimp make air bubbles that travel so fast they can stun small prey.



Bubbles can occur in all sorts of food and drinks.

You can even find bubbles in rocks.

For activities this week, you'll need bubble solution. You can use bubbles you already have, or you can make your own. There's a lot of recipes online to try- here's a simple one:

- 5 cups water
- 2.5 cups dish soap
- ¾ cup corn syrup

Be sure to mix well with a spoon: if you shake it you'll get a bubbly mess!

Pollinator Scavenger Hunt

Look for pollinators near your home or in a park.

Which of these pollinators can you find?

- ☐ **Hummingbird**
- ☐ **Beetle**
- ☐ **Butterfly**
- ☐ **Pollinating Fly**
- ☐ **Bumble Bee**
- ☐ **Other:** _____

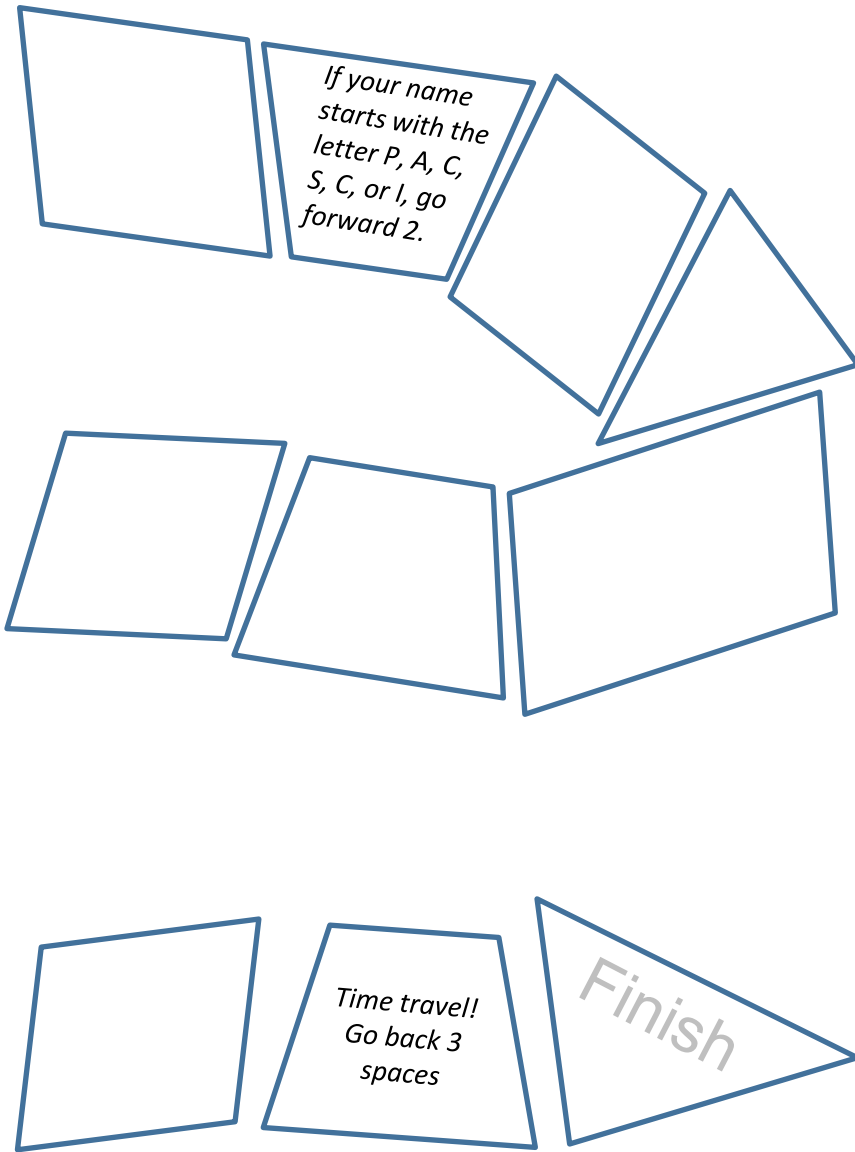
Color these!

Draw a Pollinator

Look closely at a pollinator you've found and draw it here. Add notes about what it is doing. Can you figure out what it's called?

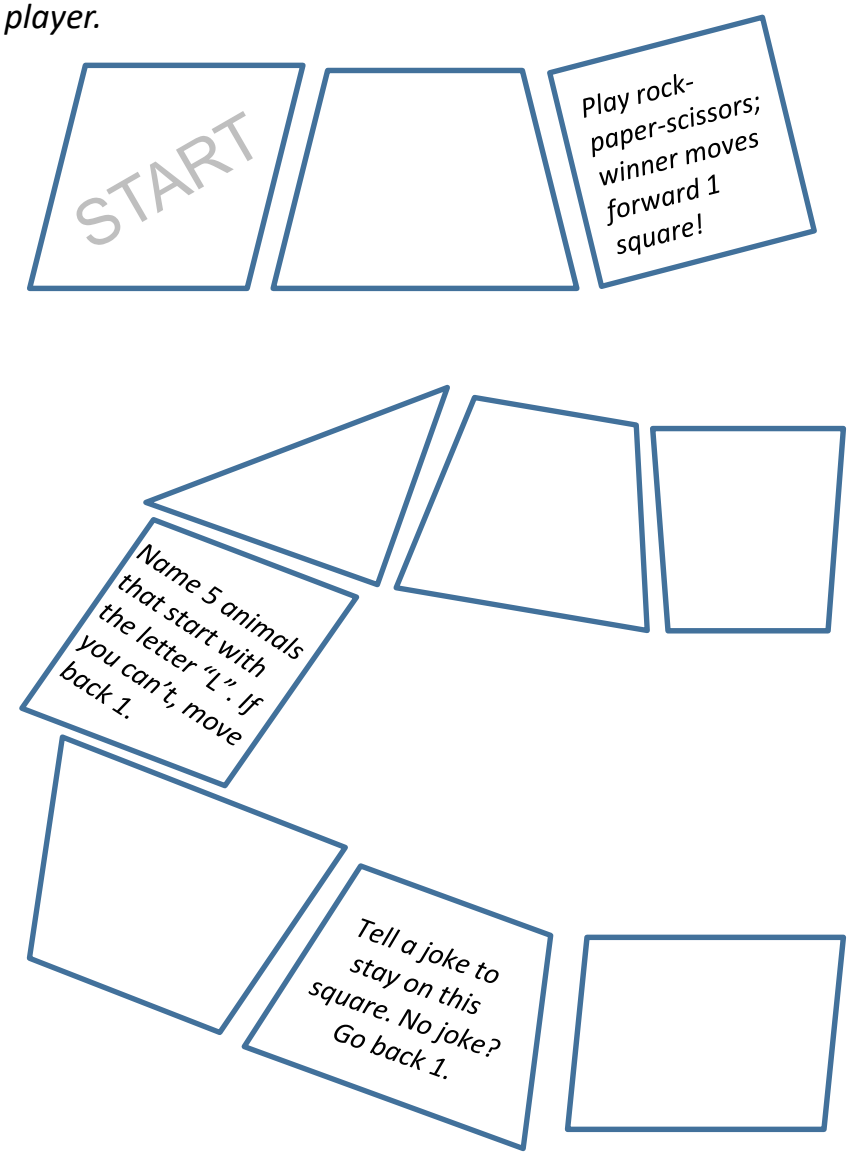
My pollinator is a: _____

Start your tokens where it says "Start". The person who goes first flips their coin: on heads move one space, and on tails move forward two spaces. Each time you land on a square you must do that challenge. First person to the end wins! (You can change the challenges so it's different every time.)



Design your own game!

Fill in each square with a challenge to do (we've filled a couple as examples). Decorate the rest of the page: it could look like a forest, a rainbow or outer space! All you need is a coin to flip and a token marker for each player.



Pollinator Word Hunt

How many words can you make from the letters in **pollinator**?

proton

tan

Color Color Color Color

Color is all around us at PacSci, and sometimes in places that surprise us! Did you know the stars in the sky can be different colors, based on how hot they are? Or that the different colors we create in a stage show depend on different metals used (this is true in fireworks too!). And the butterflies in our Tropical Butterfly House see color in a different way than we do.

Below is one of our favorite color activities- try this with another person.

***Directions**: Read the words out loud in order.*

PURPLE	GREEN	BLUE	YELLOW
ORANGE	BLACK	BROWN	PURPLE
BLUE	ORANGE	BLACK	PINK
GREEN	YELLOW	PURPLE	BLUE

Now try it again, but this time say the COLOR it's written in, not the word.

Which is harder? Why do you think that is?

Scratch games

We love Scratch as a tool for creating games and seeing what other people have made. On a computer head over to **scratch.mit.edu** to build a game! Click "Create" to get access to some cool tutorials.

Need some inspiration? Flip a coin to choose what to make! Make a game about:

Heads: A Dinosaur 

Tails: A person 

Heads: In space

Tails: Indoors

Heads: Catching something

Tails: Dancing

Heads: Avoiding a shark 

Tails: Collecting bananas 

Make something fun?
Share it with *PacSciTinkerTank* on Scratch!

Games!

Week 9

We love games of all kinds at PacSci. This week, you can learn about games, play games, and even create and play your own game! First, we want to hear from you, what are your favorite kinds of games, like board games, video games, card games, or group games, tell us below! What's your favorite game to play…

…with a large group:

…outside:

…when you have a lot of time:

…by yourself:

Hidden Color

What colors are hidden inside black markers? Try this test to find out!

Materials

- Coffee filter or paper towel, cut into strips about 3 inches long and ½ inch wide
- Water-soluble black markers
- Cup of water
- Pen or pencil

Procedure

- ❑ Place a dot of the black marker 1 inch above the end of the coffee filter strip.
- ❑ Tape onto pen or pencil and place in cup with strip just touching the water.
- ❑ Wait 5 minutes and record what you observe.
- ❑ Repeat this test with other black or colored markers. What differences do you notice?

Looking for more hands-on activities? Visit pacsci.org/resources for dozens more activities sorted by topic and age.

Silly color names

Most of us have never heard of these color names. Can you find something in your neighborhood that is each of these colors?

Coquelicot (orange tinted red)

_____

Smaragdine (emerald green)

_____

Mikado (bold yellow)

_____

Glaucous (grayish blue)

_____

Fulvous (brownish yellow)

_____

Xanadu (grayish green)

_____

Meteorologist Predictions

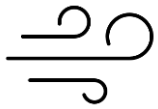
To predict the fire danger level in your area, record the following meteorology data points. You can use tools like a thermometer, weather app or website like weather.gov/.

Date and time: _____

Location: _____

Today's temperature: _____

Humidity: _____

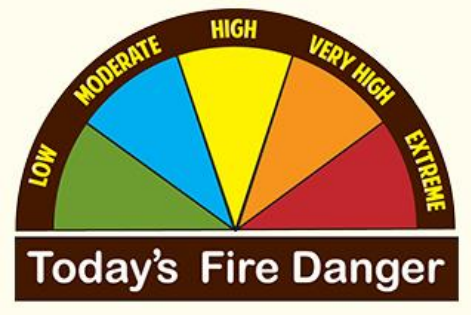


Windspeed: _____

Fuel moisture (circle one): dry moist wet

Fuel amount (circle one): many some few

Make a Prediction!



High temperatures, low humidity, many dry fuels and strong winds can all increase the likelihood of a fire to start and spread.

My fire danger prediction: _____

You can help!

Below is a list of things that can cause fires to start. For each cause, circle if it's a natural cause, or if it's human caused. Then, under each human cause, write down something you can do to prevent that type of fire!

There's a lot of things you can do!

Lightning

Human or **Natural**

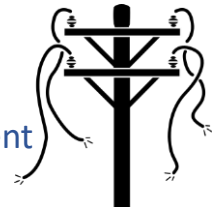
Fireworks

Human or **Natural**

Campfires

Human or **Natural**

Broken equipment



Human or **Natural**

Did you notice that most of the causes of fires on this page are by humans? That's because most fires are started by humans, often by accident. That's why it's important to be careful with things like matches and fireworks- especially on hot, dry days.

Make a color graph

Set a timer for 5 minutes, and look around you. Each time you find something that matches the color below, fill in a box in the column that matches that color.

At the end of 5 minutes check to see how many boxes you colored; did you find the same number of each color? Why or why not? What things did you find that weren't any of these colors?

Red **Orange** **Yellow** **Green** **Blue** **Indigo** **Purple**

Get Creative & Solve Problems!

Using your imagination can change things into something better, make new things, and can help solve problems.

Bridges and boats solve the same problem in very different ways, they both get people and cars across water!

Can you find two things in your home, neighborhood or community that solve the same problem in different ways? What are they?

_____ & _____

Be a Naturalist!

Wildfires have a huge effect on nature, sometimes positive and sometimes negative. Understanding more about nature helps us learn more about these impacts. The first way we understand nature is through careful observation. Find two different plants in your community and draw what you see!

Dive Deeper:

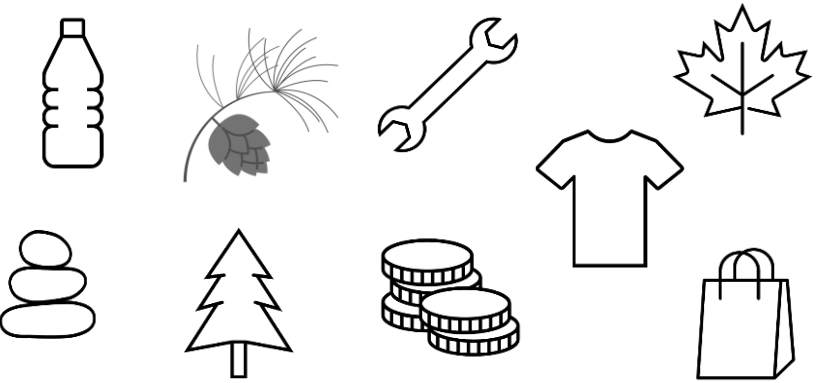
On a smartphone, download the **iNaturalist app** and help grow knowledge about what types of plants live where!

Wildfire Watch

Week 8

Do remember smoky air in past summers? What causes wildfires and what can people do to help?

Lots of dry fuels outside can contribute to fire danger. A fuel is anything that will catch on fire and burn. Circle which of these you think are fuels.



Scientists measure the moisture level of fuels to help them predict fire danger. Observe possible plant fuels like bark, leaves or sticks near you and draw or write them here. Label if the fuels you found are dry, moist or wet.

Report your findings on the meteorologist predictions page.

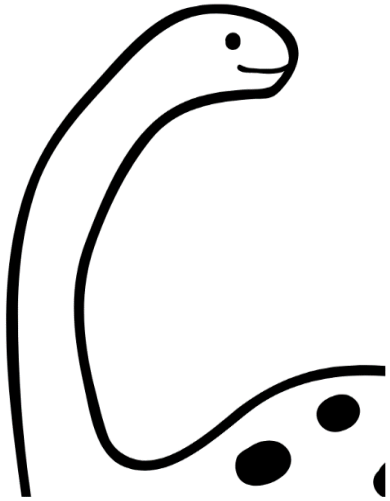
Creative problem solving

Engineers get creative all of the time when they design solutions and inventions to solve problems for others. Try it yourself! Pick a character and one of the problems below and draw an invention in the box that helps the character with their problem.

Elephant	Wants to breathe underwater
Alien	Needs a way to hold a book
Squid	Wants to fly

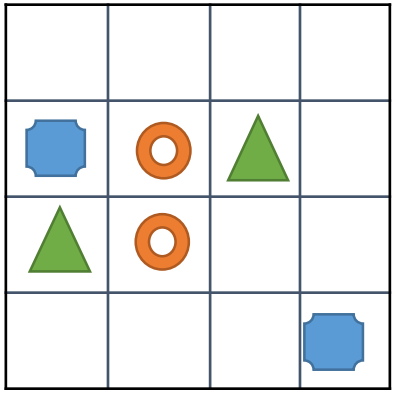
Design a Dino

We've started a drawing below- can you finish it?

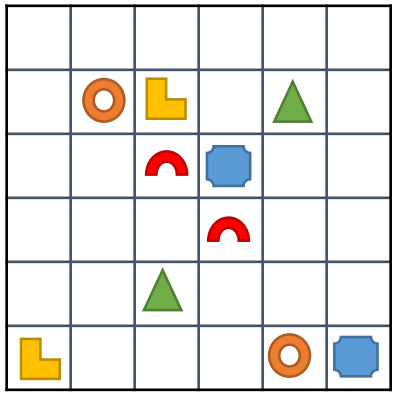


Flight Path Planning

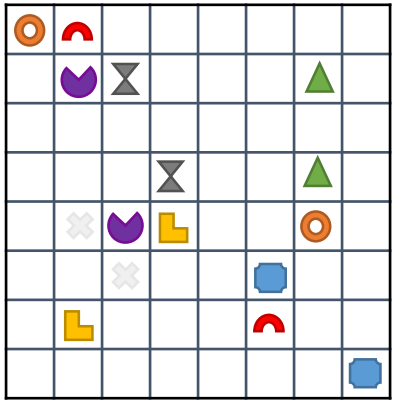
Planes need to plan their flights so they don't run into each other. Can you connect the like symbols without crossing paths?



Beginner



Intermediate



Advanced

A

B

C

E

D

F

Rotocoptor Challenges:

How can you change your rotocopter's speed?

Can you have it land on the same spot twice in a row?

Create more challenges for your rotocopter, and write them here:

Get Silly!

We have big ponds of water at PacSci. If you were in charge, what goofy things would you do with those ponds?

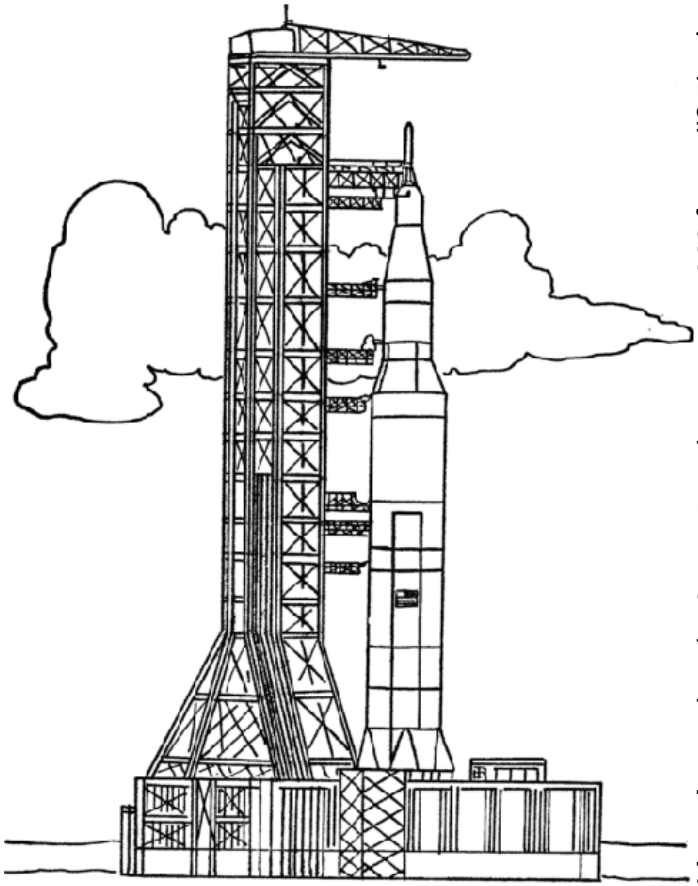
Can you think of 11 silly things? *(We already filled out the first one)*

1. Fill them with Jello and give out spoons
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____

Space Travel!

Week 4

Rockets help spaceships leave Earth's surface and get out into space. The Saturn V rocket launched the Apollo 11 mission, taking people to land on the moon for the first time.



The huge Saturn V on the launch pad.

Did you know that the Saturn V rocket was over 363 feet tall? That's the same as a 30-story building!

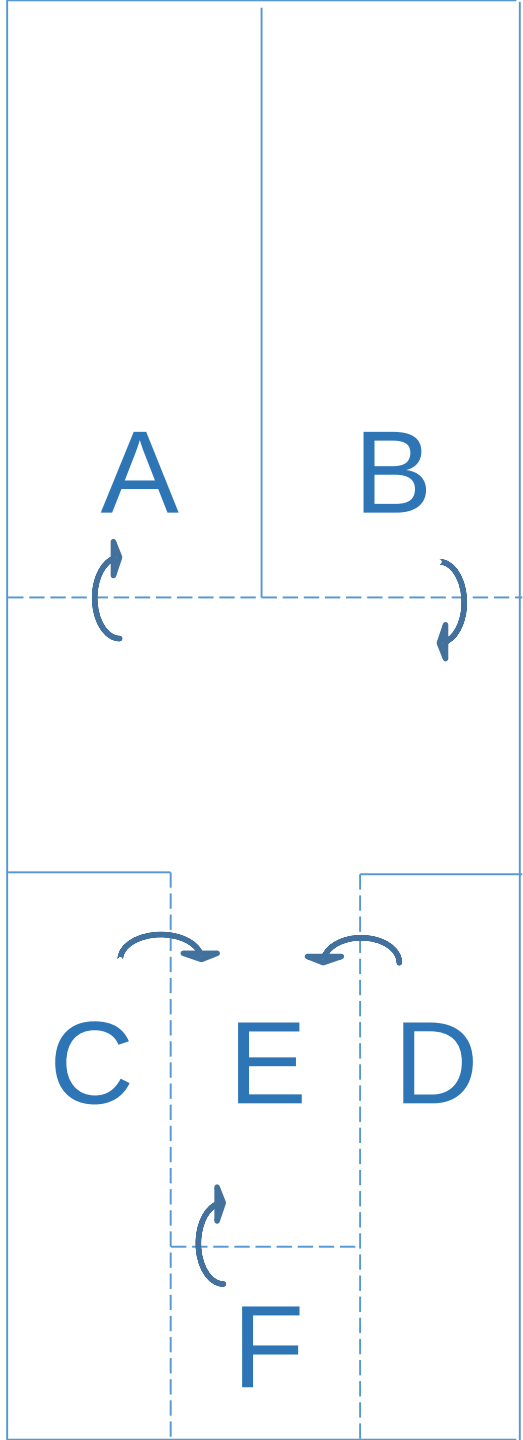
The rocket's top speed was 25,000 miles per hour; at that speed you could travel all the way around the Earth in less than an hour!

Image courtesy of www.usa-printables.com

Make a rotocopter!

1. Cut on the solid lines
2. Fold on the dotted lines
3. Fold A away from you and B toward you
4. Fold C and D on top of E, and Fold up F
5. Fly your rotocopter!

Turn the page for flying challenges.

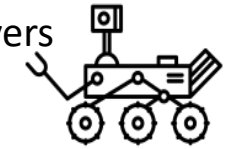


Up in the Sky!

What would the world look like if you could fly? Imagine you can fly, and you were in the sky right over your neighborhood. In the space below, draw and color what you would see: you might include buildings, trees and sidewalks.

When done, use Google maps (or a similar program) to zoom into your neighborhood and compare to your drawing- how did you do?

Helpful Robots & Rovers



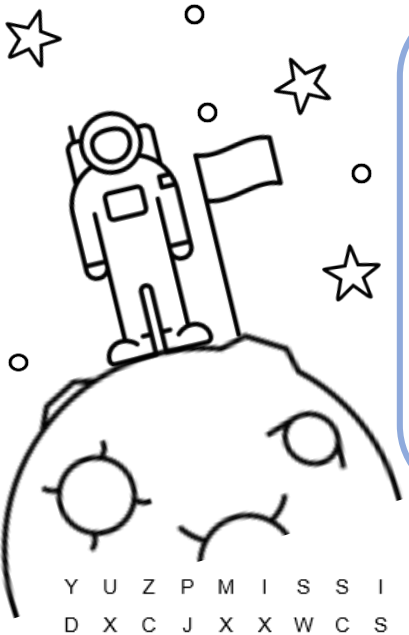
Astronauts and NASA have used rovers and robots to help us explore other planets and the moon.

What type of technology would you take to another planet? Draw your helper robot or rover below and label its parts.

Your rover or robot must help you *(choose 2)*:

Collect rocks	Hold air tanks	Drill a hole
Carry rocks	Store a rake	See in the dark
Move over the rocky ground		Take pictures

Rocket Word Search!



APOLLO
ASTRONAUTS
CAPSULE
CURIOSITY
DISCOVERY
EARTH
ENGINEERING
EXPERIMENT
EXPLORATION
FUEL
GRAVITY
INNOVATION
LUNAR
MISSION
MOON
QUESTIONS
ROCKET
SCIENCE
SHUTTLE
SPACE
SYSTEM
TEAMWORK
TECHNOLOGY

Words are forwards, backwards, up, down, and diagonal.

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

What is your constellation?

Complete the sentences below

My animal is a _____.

Before it was in the sky, it would _____

_____.

It is in the sky because _____

_____.

When people see it in the sky they think about

_____.

I like it because _____

_____.

My constellation's name is _____.

Tell a friend or family member your constellation story!

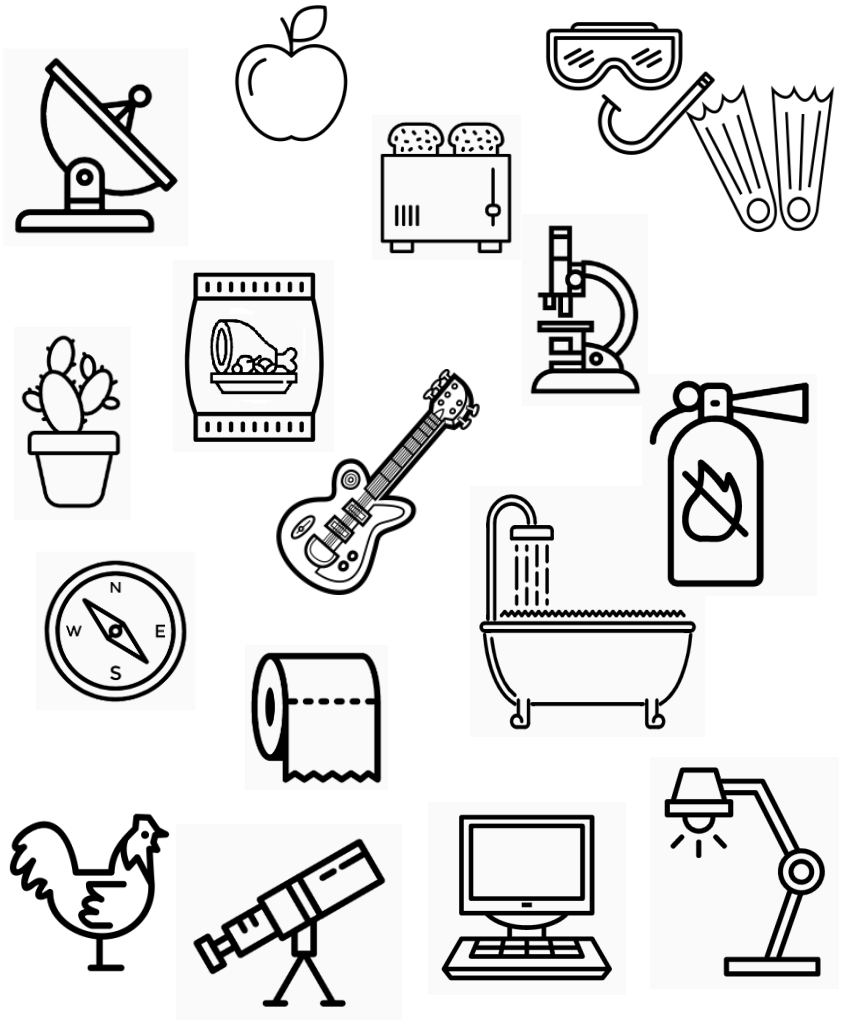
Animals in the Sky

*A **constellation** is a group of stars in the sky that people have grouped together to make a shape. People all over the world have made constellations in the sky, and many are of animals.*

Connect the dots below to make a new animal constellation. Then color it in, and write about it on the next page.

Packing a spaceship- what would you take?

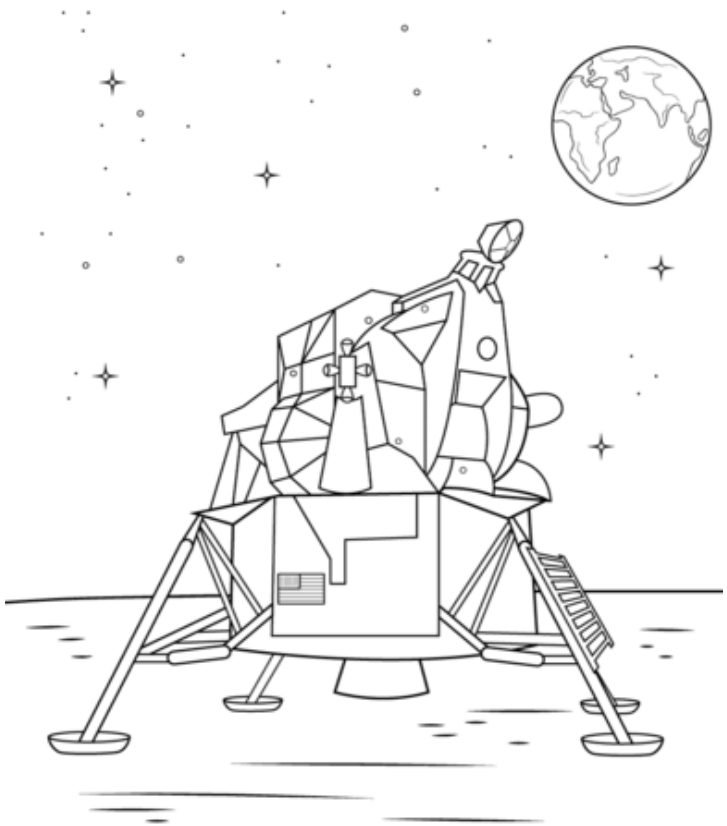
Packing a spaceship can be hard. Look at all the items below. Cross out the items you wouldn't take to space. Color in the things you would want with you on your spaceship.



Going to the Moon

In 1969 the Apollo 11 spacecraft landed on the moon, and humans walked on the moon for the first time. Now, the Artemis mission plans a return to the moon in search of new discoveries.

Would you like to go to the moon? Why or why not?



Animal Abilities

Write the name of each animal below, and draw a line to its amazing ability!

Hint: some may have more than one ability! (Answers below)

1_____

2_____

3_____

4_____

5_____

6_____

7_____

Eats a week's worth of food at once

Is super curious

Carries its house

Talks by dancing

Brings stomach outside of body to eat

Can regrow a limb

¼ of its muscles are in its jaws

1. Naked Mole Rat: ¼ of its muscles are in its jaws 2.Bees: talks by dancing
3. Hermit Crab: carries its house 4. Axolotl: can regrow a limb
5. YOU: is super curious 6. Snake: eats a week's worth of food at once
7. Sea Star: brings its stomach outside of its body to eat, and can regrow a limb.

Dogs & Snakes & Axolotls! Oh my!

The place an animal lives is called its **habitat.** Draw your favorite animal below in the kind of habitat it would like to live in. What kind of food, water and shelter does the habitat provide for this animal?

Get the Giggles

Make a friend laugh with an animal joke. Try these *(answers are below):*

1- What did the dog say to the tree?
2- What has scales but doesn't measure weight?
3- What is a snake's favorite subject?

1: "Bark"; 2: a fish, or snake, or butterfly 3: Hiss-tory

Moon Observations

People first got excited about travelling to the moon by looking up at it! Pick a couple different days, go outside, and draw the moon.

What do you notice? What changes, what's the same? What time of day was it?

Date:

Date:

Date:

Date:

Mission Patch

Did you know that every NASA mission had a mission patch designed by the astronauts? For Apollo 11 they picked the national bird, the bald eagle. The eagle is holding an olive as a symbol of a peaceful exploration. The crew didn't put their names on the patch (like most missions did) because they wanted the design to represent everyone who worked on the mission.

Color this patch!

Design your own patch

Draw YOUR mission patch below, all about your summer. You can include anything, like activities you are doing or what's important to you and your family.

My mission patch is all about:

_____

_____

_____

_____

_____