

# CHRIS KALLAL'S STREAM THINGS

IDEAS FOR

OUTDOOR ED  
& STEMiNESS



# CHRISTOPHER KALLAL



**Chris is the Executive Director at Camp Good News in Washington, IL. This was his 6th summer there. Overall, Chris has been in the Camping Ministry for 19 years, that includes 10 years as the Program Director of Camp Manitoumi in Lowpoint and 3 years as the Executive Director of Ingersoll Scout Reservation in London Mills.**

**Chris started attending Camp right after 3rd grade and enjoyed his 29th summer spent at Camp this year.**

**When he finds time, he loves to search Pinterest, Facebook, and other websites for the newest, neatest ideas to implement into his Camp. As well, he has visited multiple camps over the years to “steal” ideas from them!**

**Currently, Chris co-hosts a Podcast, Summer Camp Programming, where he talks all things program! Chris has been teaching “Steal This” classes all over the US; The CCCA IL Conference 2017, NARBC 2017, Great Rivers Fall Conference 2017, CCCA National Conference 2017, CCCA Super Sectional 2018, ACA Midstates 2018, NARBC 2018, SummerCampCon 1, ACA Nationals 2019, CCCA IL Sectional 2019, ACA Midstates 2019, GrandCamp Conference 2019, NARBC 2019, and at SummerCampCon 2!**

**He and his wife Carrie have a total of 4 children; Rowan, Emmalina, Autumn, Aurora, and 3 amazing Foster children, Kahliah, Jahmiah, and Harlyn!**

**Email: [christopherkallal@yahoo.com](mailto:christopherkallal@yahoo.com)**

**Download Packet: [iheartcamp.org/stealthis](http://iheartcamp.org/stealthis)**

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# OUTDOOR EDUCATION

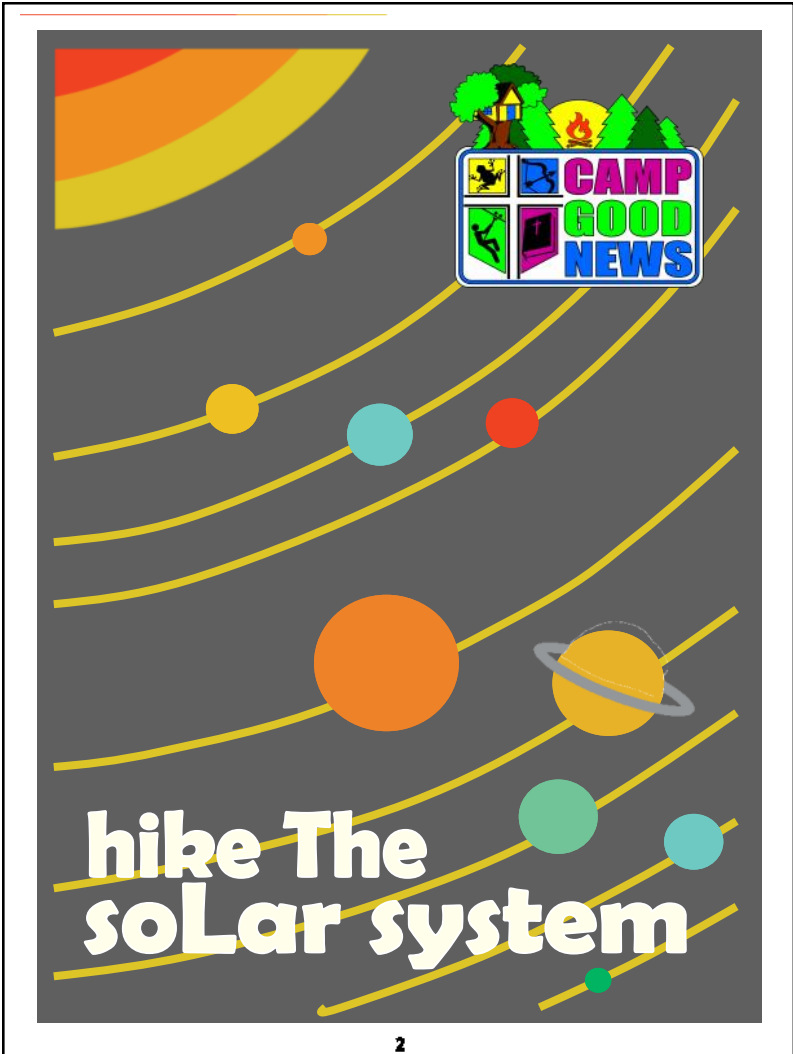
## CAMPFESSION

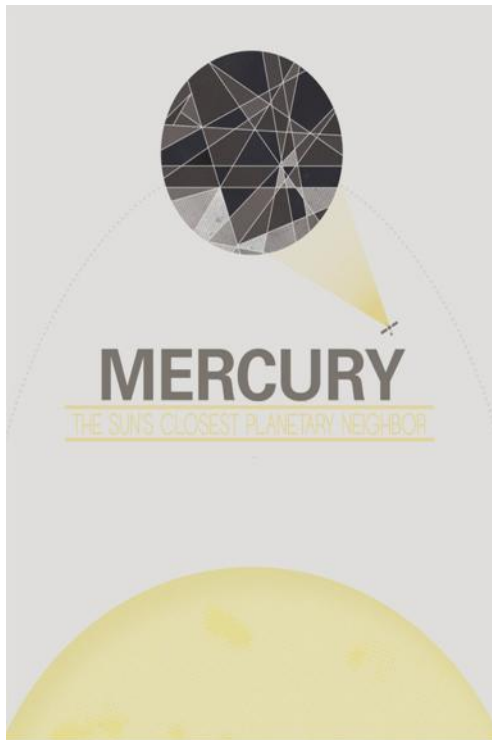
I CAN'T EVEN TELL YOU HOW  
MANY TREE ROOTS I'VE  
ALMOST DIED TRIPPING OVER

# Hike the Solar System

<http://thinkzone.wlonk.com/SS/SolarSystemModel.php>

[http://www.exploratorium.edu/ronh/solar\\_system/](http://www.exploratorium.edu/ronh/solar_system/)



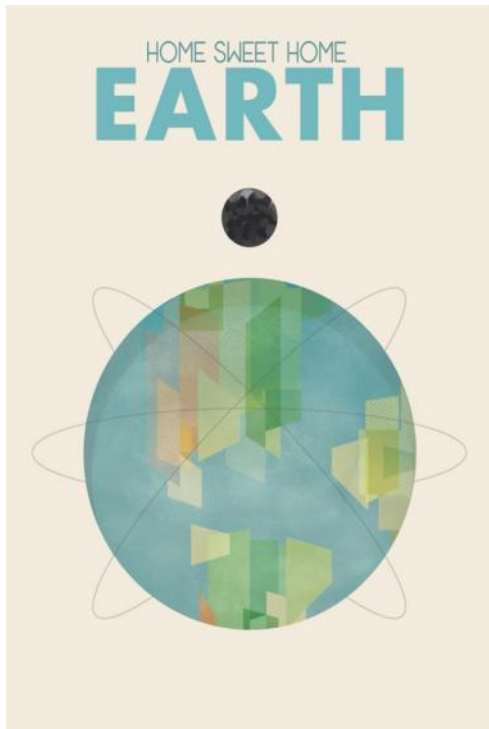


## Mercury

Location at Camp:	Memorial Sign
Camp Scale Diameter:	0.0131 inches
Camp Scale Comparison:	Grain of Salt
Camp Scale Distance from Sun:	13 ft
Actual Diameter:	3,032 miles
Actual Distance from Sun:	35 million, 980 thousand miles

### Fun Facts:

- Doesn't have any moons or rings
- Your weight on Mercury would be 38% of your weight on Earth. So if you weigh 100lbs here you would only weigh 38lbs on Mercury
- A day on Mercury lasts 176 Earth Days
- A year on Mercury takes 88 Earth Days
- Beside Pluto (which is now considered a Dwarf planet) Mercury is the smallest
- Even though it's closest to the sun, it's not the hottest. Because Mercury doesn't have an atmosphere, it doesn't stay hot.
- The side facing the sun can reach 800°F while the side away from the sun is -280°F
- Mercury is the most cratered planet. While most planets "self-heal" through natural geological processes, Mercury does not. The craters are also named after famous writers and artists.
- Mercury is 1 of the 5 planets visible with the naked eye from Earth
- Mercury has Wrinkles.
- Mercury has a molten core
- Only 2 spacecraft have ever visited Mercury.



## Earth

Location at Camp:	One Way Sign
Camp Scale Diameter:	0.0343 inches
Camp Scale Comparison:	Width of an Ant
Camp Scale Distance from Sun:	33 ft, 7 in
Actual Diameter:	7,916 miles
Actual Distance from Sun:	92 million, 960 thousand miles

### Fun Facts:

- Earth is the only planet not to be named after a Greek or Roman god.
- Earth has one moon
- 30 Earths could fit inside the distance from Earth to the Moon
- Earth is the densest planet in the Solar System.
- Earth is orbited by 7,000 satellites and 300,000 man-made debris
- The Moon rotates on its own axis in exactly the same time it takes to orbit the Earth, meaning the same side always faces the Earth
- The Moon has weaker gravity, due to its smaller mass, so you would weigh about 1/6 of your weight on Earth.
- The Moon has only been walked on by 12 people; all American males.
- Earth is the only planet that God chose to create people.
- We are His chosen creation that He loves and desires for us to spend eternity with Him. (John 3:16)
- Because of our sin (Romans 3:23) we are separated from God forever
- But Christ came to Earth and lived a sinless life and was able to die in our place to be the substitute for our sins (1 Corinthians 15:3-4)
- By Grace through Faith (Ephesians 2:8-9) is the only way of Salvation. Know you're a sinner; Tell that God, Tell Him you Believe that what He did on the cross is the only way of salvation, and Call on Him to Save you. (John 1:12)

# Microscopes

Take on Hikes  
Bring to Creek  
Use in Nature Center

60-100x Magnification  
Amazon \$7.97  
<https://goo.gl/zHy1n7>



Roll over image to zoom in

SE MW10082 Pocket-Sized Illuminated LED Zoom Microscope, 60-100x Magnification

★ ★ ★ ★ ★ 3 customer review

Price: \$6.65 prime

FREE Shipping on orders over \$25—or get FREE Two-Day Shipping with Amazon Prime

Get \$40 off instantly: Pay \$0.00 upon approval for the Amazon.com Store Card.

**Only 7 left in stock (more on the way).**

**Want it Monday, Nov. 6?** Order within 13 hrs 2 mins and choose **Two-Day Shipping** at checkout. [Details](#)

Ships from and sold by Amazon.com. Gift-wrap available.

- 60-100x Zoom Magnification
- Built-in LED Light & Zoom Wheel for Added Control
- Adjustable Focus
- Carrying Pouch
- Comes with 3 AG10 Batteries
- See more product details

**New (4)** from \$5.47 + \$0.20 shipping

Report incorrect product information.

GadgetsCollection

Gadgets Collection GC30 30X Illuminated LED Pocket Microscope Magnifying Glass Jewelry Loupe

★ ★ ★ ★ ★ 3 customer reviews

Price: \$5.99 & FREE Shipping

Get \$40 off instantly: Pay \$0.00 upon approval for the Amazon.com Store Card.

**In Stock.**

**Get it as soon as Nov. 3 - 7** when you choose **Expedited Shipping** at checkout.

**Business Seller** Ships from and sold by Gadgets Collection™.

- It includes a soft carrying case & a focusing wheel to adjust to the sharpest vision
- The sliding light condenser is for transmitting light onto the object
- The transparent cover is to be placed directly on the part of the object that is being viewed
- It measures approximately 5 7/16" x 1 13/16" (138 x 41 mm) long
- Works on 2 AA batteries (not included)

**New (2)** from \$5.99 & FREE shipping.

Report incorrect product information.



Roll over image to zoom in

30x Magnification  
Amazon \$5.99

<https://goo.gl/9zdSPX>

USB 1000x Microscope  
Amazon \$18.99  
<https://goo.gl/R3jFYz>





# Stargazing

Wish.com

\$9

<https://goo.gl/9xfk5P>



G303 Green Power Green Laser Pointer Star Cap gazing Pen 2 in 1 Beam Light Lazer (Size: 2, Color: Black)

★★★★★ (8)

~~\$66 USD~~ \$9 USD

🛒 Buy

♥ Save

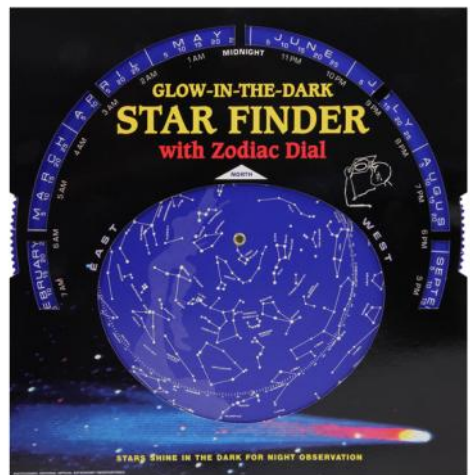


Star Finder

Rainbowresource.com

\$4.50

<https://goo.gl/dTNLaz>



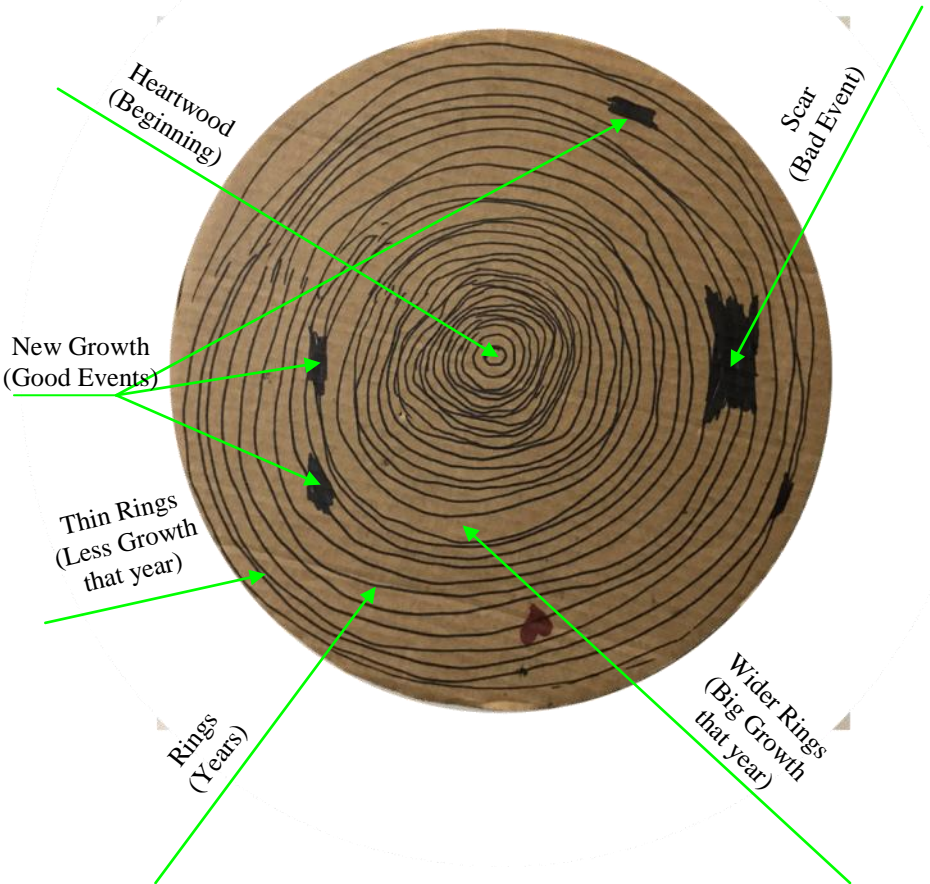
## Astronomy Activities:

- North at Night: Point out the Big Dipper and help kids know how to find it. If you follow the two end stars of the cup of the Big Dipper, and go about 5 times the space between the stars, you will find the North Star. The Romans used the Big Dipper as an eye test. If you could see two stars in the handle that meant you had good eyesight. They also named the whole constellation the Great Bear because they knew that the bears lived in the North, and that is where the constellation is. This constellation is a circumpolar constellation, so it can be seen all year long.
- Shooting Stars: Lay down and watch the sky for shooting stars after you discuss what they are. Shooting stars are bits of comet dust, space junk, (parts of rockets, etc.), that have entered our atmosphere and are burning with the friction of moving against the air.

# Tree Cookies

Use Tree Cookies to give a Timeline/Testimony of your life

Buy 12" Corrugated White Cake Circle from [www.webstaurantstore.com](http://www.webstaurantstore.com)  
250/case is \$24.76



# Atlatls

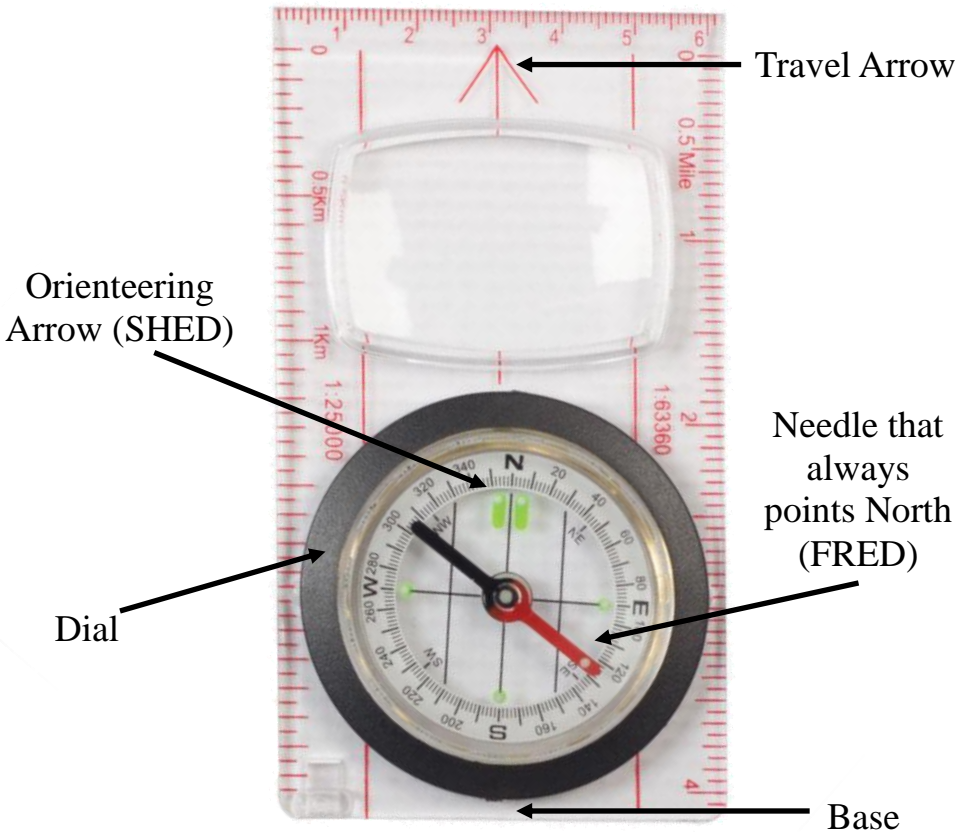


<https://www.facebook.com/atlatlmadness>

# Compass Course

1. Turn the Dial so that the degrees match with Travel Arrow at top
2. Put Compass Base in Belly Button
3. Keeping Travel Arrow pointing directly away from you turn your body around until Fred lands in his shed
4. Now, walk the way the Travel Arrow is pointing.

Misc: A Pace is roughly 2 steps-Look where you're headed, not at the compass-The more time you take making sure you're going the right way, the less time you'll waste getting lost!



# Tree Trail



- Use a sign to number trees in the woods
- Take leaves and laminated for Fall/Winter months
- Buy Tree Fandex off of Ebay (cheapest place I've found them)
- Create a "quiz" page and have kids go on trail and try to identify the trees

# Solar Balloon

A solar balloon is a balloon that gains lift or buoyancy when the air inside of it becomes heated. This heating is due to solar radiation. The dark black balloon absorbs heat. As the air inside the balloon becomes heated, the air molecules begin to speed up causing the air to become less dense than that of the surrounding air, and as an effect, the buoyant force acting on it, which is due to the denseness of the air surrounding the balloon lifts the balloon, causing it to float



Amazon.com: Tedco Toys

Secure | [https://www.amazon.com/gp/product/B00LW7WGRK/ref=oh\\_aui\\_detailpage\\_o02\\_s00?ie=UTF8&psc=1](https://www.amazon.com/gp/product/B00LW7WGRK/ref=oh_aui_detailpage_o02_s00?ie=UTF8&psc=1)

Apps | Camp | Teistar | Tech | Sites to Check out | Mr. K Links | Youth Group | DT with TubeOffline | Kids | Colony

 Roll over image to zoom in

### Tedco Toys School Children Activity 50' Solar Balloon by TEDCO

★★★★☆ 20 customer reviews | 3 answered questions

List Price: \$49.98  
Price: **\$15.35 & FREE Shipping** on orders over \$25. Details  
You Save: **\$4.63 (23%)**

Get \$40 off instantly: Pay \$0.00 upon approval for the Amazon.com Store Card.

✓prime | Try Fast, Free Shipping

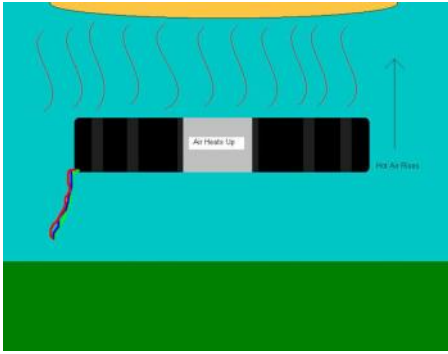
**Only 10 left in stock - order soon.**

**Want it Tuesday, Nov. 7?** Order within **12 hrs 26 mins** and choose **Two-Day Shipping** at checkout. Details

Sold by Tucker's Toy Shop and Fulfilled by Amazon. Gift-wrap available.

- Includes one 50 foot long by 29" diameter Solar Balloon, 400 feet of string.
- Great for science classes and the perfect start to a science project.
- Teaches Bernoulli's Principle and Pascals Principle.
- Complete instructions and science learning guide.
- Made in USA. For ages 14 plus.

### Step 1: How it Works



The black color of the trash bags makes the air inside heat up. Everyone knows that hot air rises, thus making

### Step 2: Materials



- 30-Gallon **Black** Trash Bags
- A large roll of duct tape (preferably black color), or a large roll of clear packaging tape
- Scissors

### Step 3: Prepare the Bags



First, take out about seven garbage bags. These will be the body of the balloon. After

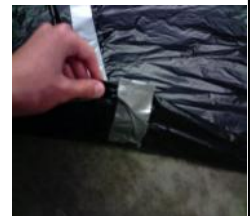
the bags are taken out, cut off the sealed ends of all but two of the bags. These are to extend the body of the tube, and also act as a coupler for each other garbage bag. Then, lay out four garbage bags, including one uncut garbage bag, on the large, clean surface. The surface needs to be clean, otherwise dust and dirt will prevent the tape from sticking to the bags. Finally, place the garbage bags inside one another, about 1 inch. Make sure that you place the bags inside one another so the air can travel through, without getting stuck in any crevices.

### Step 4: Start Taping



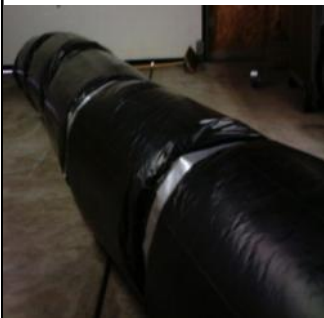
When taping the garbage bags, make sure that the sealing edge of the bags is nearly dust and dirt free. This is because when you put the tape on, you need an air-tight seal. To start off, put tape on one side of the bags, only going about 3"-4" underneath.

After you do that to all the seams in the first section, flip the bags over and do it again.





### Step 5: Inflate



Now, it is time to inflate everything! First, take your handy scissors and cut a small slit into one end of the trash bags. Make this hole just big enough to blow air into using an

air pump, shop vac, leaf blower, etc. Then, fill it up! When your entire balloon becomes completely tight, seal the hole with a piece of duct tape. Also, you might want to attach a string so it won't float away!

### Step 6: Have fun!



Take the balloon out into the hot sun and try not to get this stuck 50' high in a tree! Also, try not to take this out on a windy day so it won't float away.



# Water Rockets

<https://www.youtube.com/watch?v=gyOzvqmUs4c>



## Parts:

(All PVC is schedule 40)

6' of 1/2" Schedule 40 pvc pipe

1 1/4" x 1/2" Bushing

1 1/4" Coupling

1 1/4" x 1" Bushing

1/2" elbows (2)

1/2" caps (4)

1/2" T's (3)

.453 rim hole tubeless tire valve (auto parts store)

Small bottle pvc cement

1/8" steel rod 24" long

## Tools:

Drill

5/32 drill bit

3/32 drill bit

9/16" drill bit

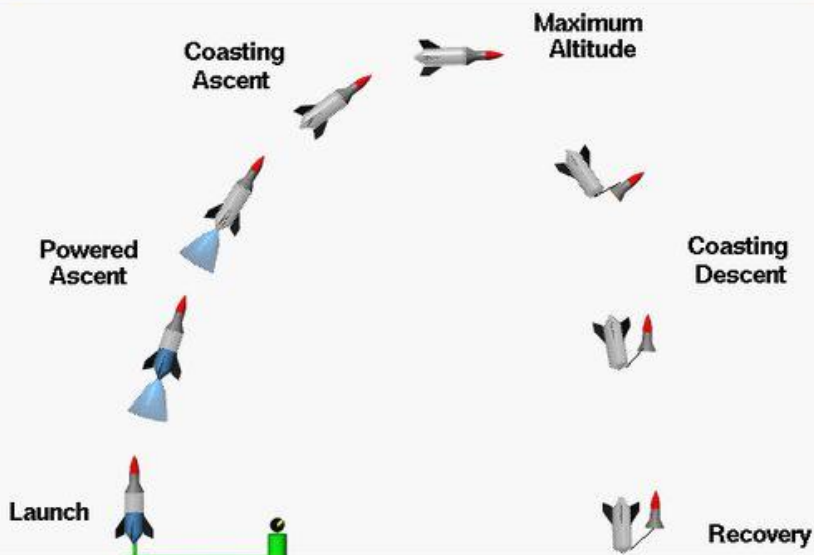
Knife

Wire Cutters

PVC Cutter or hacksaw



## Flight of a Water Rocket



## Newton's First Law Applied to Rocket Liftoff



"Every object persists in its state of rest or uniform motion in a straight line unless it is compelled to change that state by forces impressed on it."

### *Before firing:*

Object in state of rest, airspeed zero.

### *Engine fired:*

Thrust increases from zero.

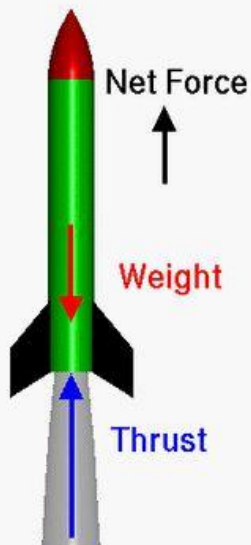
Weight decreases slightly as fuel burns.

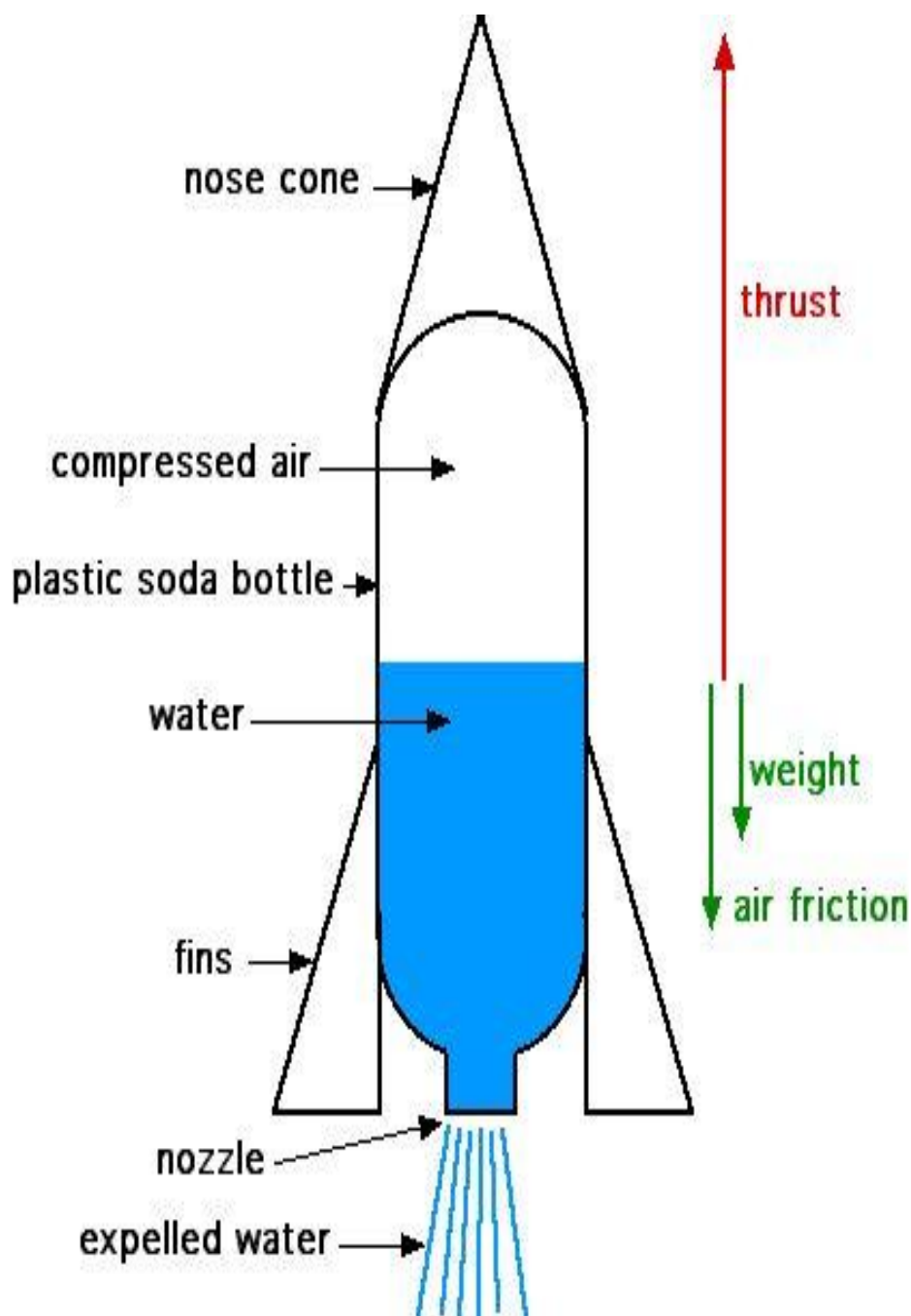
### *When Thrust is greater than Weight:*

Net force (Thrust - Weight) is positive upward.

Rocket accelerates upward

Velocity increases





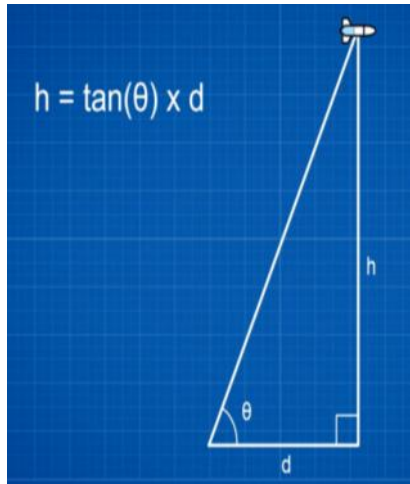


Table of tan(angle)

Angle	tan(a)
0.0	0.00
1.0	.0175
2.0	.0349
3.0	.0524
4.0	.0699
5.0	.0875
6.0	.1051
7.0	.1228
8.0	.1405
9.0	.1584
10.0	.1763
11.0	.1944
12.0	.2126
13.0	.2309
14.0	.2493
15.0	.2679
16.0	.2867
17.0	.3057
18.0	.3249
19.0	.3443
20.0	.3640
21.0	.3839
22.0	.4040
23.0	.4245
24.0	.4452

Angle	tan(a)
25.0	.4663
26.0	.4877
27.0	.5095
28.0	.5317
29.0	.5543
30.0	.5773
31.0	.6009
32.0	.6249
33.0	.6494
34.0	.6745
35.0	.7002
36.0	.7265
37.0	.7535
38.0	.7813
39.0	.8098
40.0	.8391
41.0	.8693
42.0	.9004
43.0	.9325
44.0	.9657
45.0	1.000

Angle	tan(a)
46.0	1.0355
47.0	1.0724
48.0	1.1106
49.0	1.1504
50.0	1.1918
51.0	1.2349
52.0	1.2799
53.0	1.3270
54.0	1.3764
55.0	1.4281
56.0	1.4826
57.0	1.5399
58.0	1.6003
59.0	1.6643
60.0	1.7321
61.0	1.8040
62.0	1.8907
63.0	1.9626
64.0	2.0503
65.0	2.1445
66.0	2.2460
67.0	2.3559
68.0	2.4751
69.0	2.6051
70.0	2.7475

Angle	tan(a)
71.0	2.9042
72.0	3.0777
73.0	3.2709
74.0	3.4874
75.0	3.7321
76.0	4.0108
77.0	4.3315
78.0	4.7046
79.0	5.1446
80.0	5.6713
81.0	6.3138
82.0	7.1154
83.0	8.1443
84.0	9.5144
85.0	11.430
86.0	14.301
87.0	19.081
88.0	28.636
89.0	57.290
90.0	infinite

# Nature Center

## Top 5 Animals

### 1. Bearded Dragon

- Pros - Easy, Friendly
- Cons - Big Tank, Smelly



### 2. Axolotl

- Pros - Unique
- Cons - Fragile, Can't Touch



### 3. Corn Snake

- Pros - Tame, Soft Bite
- Cons - Snake, Eats Mice



### 4. Leopard Geckos

- Pros - Easy, Friendly
- Cons - Tail



### 5. Hissing Cockroaches

- Pros - Easy, No teeth
- Cons - Fresh Food



# Solar Prints

Amazon.com

\$11.99 for 40

<https://goo.gl/NJhySZ>

## What you need:

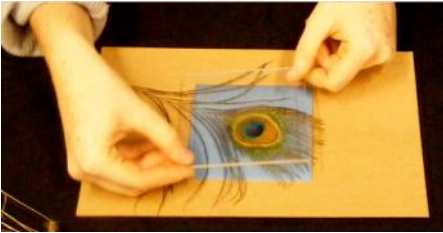
- sunprint paper
- acrylic sheet
- Cardboard
- a tub full of water
- fun and interesting objects to print.



**Step 1** Arrange your objects on a piece of Sunprint paper out of the reach of the sun.

The blue molecules embedded in the paper are sensitive to ultra-violet light. For best results, prepare your print in a place where the sun's light cannot reach the paper as you arrange objects on top of it.

Direct sunlight will expose the paper quickly, but even ambient light in the shade, or in a room with a big window will cause slow exposure of the paper.



**Step 2** Place the acrylic pressing sheet on top to flatten and hold your items to the Sunprint paper.

Using the acrylic pressing sheet when taking prints of flat or almost-flat objects will help to sharpen the edges between blue and white in your final print. The ambient sunlight outdoors will find its way underneath the edges of your objects if they are not

pressed firmly to the paper, and you will get Sunprints with blended edges.

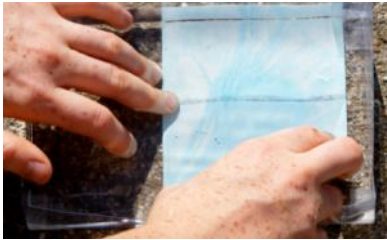


**Step 3** Take your Sunprint outside and lay it in direct sunlight for 2-5 minutes.

The areas of the paper exposed to the sun will fade from blue to white. When you see most of the color disappear from the paper, your print has been fully exposed. If no direct sunlight is available, don't worry—just expose your print a little longer and wait for the same fading effect.

Under cloud cover, the process will take 5-20 minutes depending on the thickness of the clouds.

What is happening in this step? Two crucial molecules in the paper are interacting, forming a new molecule. Their interaction is initiated by specific wavelengths of ultra-violet light. The new molecule is colorless so that as the blue molecules are converted, the white of the paper base begins to show through. Areas of the paper covered by your objects still contain the original blue molecule, so they remain blue.



**Step 4 Rinse your Sunprint in water.**

**Watch the white turn into blue and the blue turn into white.**

To get the deepest blue that the paper can give, leave it in the water for a while: 1-5 minutes. There are two exciting things happening underwater. First, the original blue compound is water soluble so that when

you immerse it in the bath, the water carries it away, leaving only the white paper base in those areas. Second, the colorless compound whose formation was caused by the sun's energy is not water soluble, so it cannot wash away in the water bath. It is sensitive to the water in another way. Just as the Sun's light stimulated a chemical change in the previous step, the water stimulates another chemical change. The water causes an oxidation reaction that turns the colorless compound into the deep blue of a finished Sunprint.

**Step 5 Lay your Sunprint flat on an absorbent surface and allow it to dry.**

You can use a paper towel, or a piece of cardboard as a bed for your Sunprint while it dries. Putting it on something absorbent helps to avoid the formation of water spots by drawing the water from the Sunprint paper. When you take your paper out of the water, it will probably not have finished oxidizing. The water remaining in the paper

will do the job before it evaporates. By the time it is all gone you should have a beautiful deep blue Sunprint!





# Shelter Building

## Lean-to



1. Look for a good building site.

A lean-to is a simple outdoor construction, and only requires something for branches to "lean" against.

Long boulders or fallen trees can be ideal for acting as a horizontal

brace to lean other sticks or brush against. Any large, immobile object can work.

2. Find sticks to lean against the horizontal brace.

These sticks should be somewhat sturdy, as they will form a side of the shelter. Be sure that there is enough room between them, the brace, and the ground for you to crawl inside comfortably. You should have just enough space under your brace for you to crawl into. The more extra space you have there, the harder it will be to keep yourself warm. If you can, keep the lean-to's profile low to ground. This will help keep you further out of the line of wind, and won't attract attention. This is helpful if you are trying to avoid detection, or otherwise stay out of sight.



### 3. Pile small debris over the frame.

You can use leaves, grass, and moss to build a wall on the outside of your lean-to. These will provide further insulation and protection from the elements. Nearly any small forest debris will work. Just make sure to pack it tightly on the wall frame so it won't blow away readily.

You can pile more of this debris on the floor and interior of your lean-to to provide extra insulation.



## Debris Hut



### 1. Find a good location.

You'll need a tree stump, or a tree with a low crook that you can comfortably lodge a branch into. In addition, you'll need to be in an area with lots of sticks and debris to cover your frame. Make sure you are away from falling branches or other hazards. Your debris hut will trap heat and keep you warm, but won't protect well against falling objects

## 2. Prop a branch against the stump.

You'll want a long branch, probably close to 8 feet, that is sturdy enough to support your weight without breaking. The space underneath this branch between where it rests on the tree and sits on the ground should be just large enough for you to fit in.



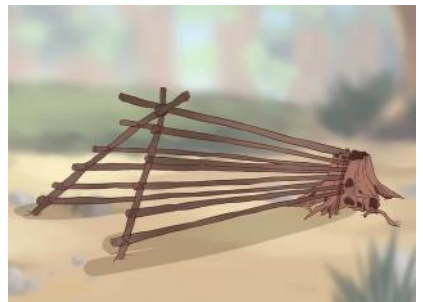
## 3. Set up ribbing sticks.

Find long sticks to create the frame, or ribbing, of your hut. These sticks should be long enough to lean against the horizontal branch. As you get further away from the tree stump,

they will get shorter. These sticks only need to lean against the branch, but if you have rope or twine you can bind them together for a little more stability. Make sure you leave space between two of the ribs for an entranceway to your hut. The ribbing sticks need to be spread widely enough apart so that you can fit underneath them. Six inches on either side of your body is a good rule to follow. Additionally, they should be steep enough to let water or snow run off.

## 4. Fill out the frame.

After you have set up this frame, add more sticks perpendicularly on top of this wall frame to create latticework. This will give you something to pile debris on without having it fall on top of you while sleeping.





## 5. Pile debris on the frame.

This will be any natural material you can find nearby, so leaves, grass, or pine needles. Ideally your debris layer will be 3 feet thick to provide solid insulation. Thicker is always

better. Just remember to leave an entranceway for you to get in. After you finish the outer layer, build another insulation layer on the inside walls of your frame. This interior insulation should be about 6 inches thick. You want your debris to be as dry as possible. If you don't have enough dry material to cover the whole hut, make sure the driest and softest material is inside your hut, closest to your body. If you are in deep winter, or an Arctic-type environment where there is little debris, you can pile thick snow on the frame instead. The snow needs to stay cold so it doesn't melt, potentially soaking your stuff, or collapsing on top of you.

## 6. Add more branches to the outside.

Once you have packed your debris tightly on the frame, lay a few more branches on top of your hut. This will help keep your insulation material from blowing away in strong winds.



# Fire Starting

Piece of Flint

Amazon.com

\$12.50

[https://  
goo.gl/8KgWnc](https://goo.gl/8KgWnc)



Primitive Fire  
English Flint Stone for Flint and Steel Firemaking  
★★★★☆ 79 customer reviews

Best Deal

Price: \$12.50 & FREE Shipping on orders over \$25. Details

In stock on March 27, 2018.

Order it now

Sold by Primitive Fire. \* and Fulfilled by Amazon. Gift-wrap available.

- High-quality English Flint Piece.
- Sparks easily!
- Organic and irregularly shaped. (Pictures are examples)
- Between 2-3 inches long and 1-2 inches wide.
- May come in one or two pieces.

New (1) from \$12.50 & FREE shipping on orders over \$25.00. Details



Budget Prepper  
Solar Powered Lighter Camping Fire starter And Survival  
Tool

★★★★☆ 6 customer reviews

Available from these sellers.

fire starter

New (3) from \$9.48 & FREE shipping

Report incorrect product information.

Construction and  
Landscaping Event  
Shop now



Solar Lighter

Amazon.com

\$9.50

[https://goo.gl/  
ycUcQ8](https://goo.gl/ycUcQ8)

Flint Ligher

Walmart.com

\$5.40

<https://goo.gl/xdTETH>



Dry Oakum

Grannystore.com

\$8.00 lb

<https://goo.gl/4xwtPX>

# Toad Painting



- **Materials:**

- Card Stock or Matte Paper
- Cheap Acrylic Paint from Walmart
- Toad (Frogs jump too high & are too slippery)

- **Instructions:**

- Paint bottom of Toad with small amount of paint
- Place on paper & Let it hop around or kindly encourage it to
- After Less than 1 min, place toad in water and make sure to get all paint off
- Repeat
- (Toad most likely will pee on your paper! Congratulations, now you have a watercolor!)

# Cloud ID

Cloud Viewer Window  
Teachers pay Teachers  
\$FREE  
<https://goo.gl/tEFtDh>

Lesson & Standards  
Nature Watch  
\$FREE  
<https://goo.gl/uzimYf>



# Mad Science

5 Gallon Air Cannon  
The King of Random  
<https://goo.gl/tERw4n>

50 Gallon Air Cannon  
The King of Random  
<https://goo.gl/8LuzQT>

Oobleck  
Instructables  
<https://goo.gl/yZXv3Y>

States of Matter Lesson Plan  
<https://goo.gl/5241Wf>





# Clay Creations



- If you have a creek or pond, find a shoreline near it where the dirt turns into a good claylike substance
- To harvest, dig out with a shovel and put into plastic bags. Add about 3 tablespoons of water to keep the clay moist and close the bag so that it is air secure
- Bring out when ready to make something. Tell Campers that they will need to knead the clay quite a bit to make it moldable. As well they will need to remove any rocks as they are kneading.
- Have some cups of water around to help with smoothing of surfaces as they create. Let campers know not to use too much water because as it dries it will cause it to crack and break.
- When they begin to create, give them toothpicks and kabob sticks for skeletons inside their creations.
- As clay dries. If some parts are thicker than others, it will take longer to dry and crack. To fix, you can cover with a plastic shopping bag that forces it to dry slower<sup>22</sup> and more evenly.

# Creek Study

## Outcomes::

Cooperation, Environmental awareness, Observation skills, Respect

## Objectives:

1. Explore a small creek
2. Examine living organisms
3. Discuss observation skills and camouflage

Age: 6 and up

Number of Participants: 6-8

Time: Approximately 1 hour

## Equipment/Materials:

- Strainer or catching net
  - Magnifying Glass
  - Pond Scope
  - Observation Pan
1. Locate a slow moving, very shallow creek with a few spots where the water is eight inches to a foot deep.
  2. Before disturbing the water, find a place, where the group can sit quietly near the water for a few minutes. Ask the group to see if they can spot any

wildlife. What do they hear? Where is this water coming from? Where is it going? Are there any signs that animals have been near the stream?

Frogs will probably be the first to spot them and hop into the water. Snakes or turtles may be sunning themselves. It is better not to disturb them by trying to catch them. If your area has any dangerous snakes be sure to check the area carefully.

3. Divide the group into pairs and explain that they should work with their buddy. They should also stay close to the leader while near the water so they can share what they find and everyone will be safe. Explain that if everyone tramps in the water it will get muddy and they won't be able to see anything.
4. First stand at the edge and look in. What kinds of bugs do they see? Are they on top of the water? Flying? Swimming under the water? (water boatman) Do they see any fish? Are they easy to see?
5. Use the pond scope to look into deeper areas. Why does this help them to see better under water? (sunlight reflects on the surface)
6. Turn over a few rocks and see if they discover anything else. They might see crawdads or small fish.
7. Use the strainer to scoop up a little debris from the bottom and put it in the observation pan. Examine it with the magnifying glass. Some aquatic crea-

tures are so small they can't be seen without a magnifying glass or microscope. Be sure they return the animals to the water where they found them.

8. Discuss with the participants what they saw. Was the water clear? What would it look like after a rain? Why? Did they see any water striders? How do they stay on top of the water? Did they see water boatmen? Why are they called water boatmen?
9. Ask the participants: Why is it important to return animals to where they found them? {Stress the importance of every living creature in the food cycle.} Ask them if their observation skills improved as they began to look more carefully?

## Add-Ons

### Materials:

- Large can with top and bottom removed and inside spray-painted black
- large rubber band
- clear plastic bag
- Scissors
- two sheets of newspaper
- one half sheet of colored construction paper

### Pond Scope Instructions:

1. To make a pond scope, cut the plastic bag so that it is flat and use the rubber band to secure it around the bottom of the can.
2. Immerse the pond scope so that the bottom of the

can is slightly under water. It will be easier to see beneath the surface because you are keeping the sunlight from reflecting on the surface of the water.

### Fish Camouflage Activity:

1. Take a sheet of newspaper and cut out six to ten fish shapes.
2. Cut two fish out of the half sheet of colored paper.
3. Scatter all the paper fish on the other sheet of newspaper and lay it on the ground.
4. Line the participants up and ask them to close their eyes.
5. Lead them in a circle around the newspaper.
6. Tell them that on your signal they are to open their eyes and count the number of fish they see.
7. Count to 10 and then tell them to close their eyes again. Ask them how many fish they saw.
8. Let them open their eyes to check out their answers.
9. Did they see any fish besides the colored ones? Talk about camouflage

# Night Hike

Psalm 56:3 - When I am afraid, I put my trust in you

Psalm 27:1 - The Lord is my light and my salvation; whom shall I fear?

Job 12:22 - He uncovers the deeps out of darkness and bring deep darkness to light.

## Black as Night?

Have the whole group form a circle and link hands. Look down at the ground. Talk for a moment about the things the group will be exploring on this night exploration. Remind the group that it is a dark night, and that some people even talk about things being as "black as night..." but is it really? As the group, as they still stare at the ground, what color the sky is. Many people will say "Black." Ask the group to slowly look up at the sky. They will realize that the ground, and the silhouette of the trees may appear black but the sky is a bright navy blue.

## Pirate Eye Patch

Why do pirates wear patches? The answer is simple, the pirates cover one eye until they capture a boat. Then as they head into the dark black hull of the ship, they uncover their eye and search for hiding enemies or hidden loot. The story below gives students a chance to play with their night vision. Have the campers sit in a circle and cover one eye with a hand. This is the patch that blocks out all light. Now light a candle and tell a story for about 1 minute.

Blow out the candle and have the campers switch their eye patch. Look around. Now switch from eye to eye. Which

eye has better night vision, the eye with the patch or the eye that sees by candlelight? It takes people about 45 minutes to fully gain their night vision, so pirates keep one eye in the dark, under a patch.

### Disappearing Head

Disappearing Head Trick: Pair up campers and have each focus on his/her partner's face. They will notice their partners' heads begin to disappear. Simply shift your eyes back and forth to make the head reappear.

What would happen if you stared straight ahead on the trail? It would disappear because the cones in the center of our eyes need light to work. To avoid getting lost at night, use your peripheral vision, the rods.

### Night Vision

How has your night vision changed since the night hike began? Are you able to make out different shapes? Can you see any colors? Many will believe they can see color, but the next activity will prove them wrong. Explain that light allows us to see color, referring back to cones in our eyes. Rods give us night vision but only allow us to see shades of gray.

Give each camper a piece of white or colored scrap paper and an unwrapped crayon. Ask them to draw a picture of something they enjoy about camp. On the other side, write what crayon color they think they have. Return the crayons to the bag and have the campers put their drawing in their pocket. At the end of the hike they can use a light to see if the color they wrote matches the color of the drawing.

### Smell at Night

Nocturnal animals have ways to better see and hear in the dark. Canines have a strong sense of smell for hunt-

ing food and sniffing out danger in the dark. Fox, coyotes, and even pet dogs have cold, wet noses that attract and hold scent molecules, making them excellent odor detectors. These animals keep their noses to the ground or high in the wind following scent tracks as they hunt for prey. Pass around a mildly scented canister or natural object (garlic mustard, pine needles, etc.). Next, place a drop of water on each camper's finger to wet his/her nose. Snow is a good substitute in the winter. Again pass around the same object to be smelled. Which gave a stronger sense of smell, a dry nose or a wet nose?

### Scent Hike

If there are two hike leaders, one leader can lay a short trail participants can follow from tree to tree using only their sense of smell. Vanilla Extract or Lemon Juice work especially well for this activity.

### Sparkle Party

Give the students pieces of Wintergreen Lifesavers (Wintergreen Altoids also work, with an extra kick!). Campers should try to dry their mouths before chewing to better their sparking ability. Why does it spark? It's called triboluminescence and is the result of fracturing sugar crystals. The spark is a safe and natural chemical reaction, giving off a small burst of energy that is visible to our eye.

*Please find a partner and face them, holding out your hand. Unwrap your candy, but leave the piece in your hand. Open your mouth and breathe in and out several times to dry out your mouth. On the count of three, place them in the back of your mouth and crunch down with your mouth open so your partner can witness the secret! 1...2....3....*



## Solo Hike

Gather the group in a dark spot of trail. Point out that you can often see where the trail is not by looking DOWN, but by looking UP and seeing where the trees are thinner overhead. Allow the campers to spread out on the trail while you lead the way. Form a line and give each camper a few feet of space. Walking in silence, the campers will experience a sense of being alone in the woods. Remember to have an adult in the back to keep the group together.

*Modifications:* For a nervous group, use a rope that everyone can hold on to with a few steps between each camper.

## Insects at night

Have two kids hold a white sheet between them and shine a flashlight against the sheet behind them. Wait and see how many different insects there are that fly to the light.

## Animal feeders

Fill feeders and lay honey/peanut butter mixture out on logs to attract animals. Using a red covered flashlight, see if anyone will take the bait. Discuss who would be out at night to hunt or be hunted.

## Watcher in the Road

Station one person in the road with a dim flashlight as the watcher. This person is blindfolded. All else should try to sneak past without being caught. If the watcher hears someone, they wave a flashlight in that direction. If the hit someone with their beam, that person starts back at the beginning. The first to sneak past to a designated area is the new watcher. Discuss ways of sneaking/being silent after the game.

## Brightest Match

Tell the campers that you've got the brightest match in the world. When they don't believe you, strike it and they will be surprised how their eyes, which have adjusted to the dark and dilated, react to the light. Our pupils dilate (open up) to let more in so we can see well. Nocturnal animals have a reflective coating called a tapetum that reflects light back to the rods and cones twice to stimulate them more and allow them to see much better in the dark. Humans and pigs don't have this coating.



# Knots & Ropes



Knot So Fast Game

Amazon.com

\$20

<https://goo.gl/327TxZ>

Essential Scouting Knot Videos

Scouting Magazine

<https://goo.gl/i9daeS>

Rope Making Machine

King of Random

Part 1 - <https://goo.gl/bPL145>

Part 2 - <https://goo.gl/XzZBMy>

Part 3 - <https://goo.gl/B99aVw>

Be sure to watch all 3 videos first as he changes some things in the later videos

# Backyard Buffet

Find plants in your area that are safe to eat.  
Know for certain that this is the correct plant!!!!

Some we use:

- Sassafras Tree - when you break open a leaf, it smells like Fruit Loops and the roots smell like root beer. You can boil the roots and make a sassafras Tea
- Wild Onion - Only chomp into if it really smells like onion
- Hickory Nuts - Have to crack the outer husk and inner shell to get to the brain-like nut (Taste like pecans) Make sure the nut is veiny like a pecan. Buckeyes are similar, but a smooth rounded nut, and are poisonous.
- Cattails - the roots can be cooked and are quite tasty
- Violets - the flowers are tart and can be eaten raw and uncooked
- Dandelion - Flowers (minus the green parts) are edible and have more beta-carotene than carrots. Add them to salads, bread and fry them (like mushrooms), Young leaves offer the mildest flavor and are a gourmet salad green, rich with vitamins. Harvest the roots, dry, roast and brew them for a coffee substitute.

# Scavenger Cards



1. Go out and take pictures of plants, trees, animals, etc that you would find on a hike through your woods
2. Create "Flash Cards" with the picture and name of the item on the front and information about that item on the back
3. Laminate them and use a ring to hold together.
4. Give out to groups taking hikes and have them go on a Scavenger Hunt for the items

# Outdoor Cooking

Pudgy Pie Makers

Menards.com

\$5

<https://goo.gl/zUnT1k>

Pie Iron Creations Book

Amazon.com

\$10

<https://goo.gl/JurHKp>

## Foil Dinner Instructions

1. Start the Fire (you will use the hot coals to cook, so you need time for that wood to get down to that)
2. Lay out square foil
3. Put food in it (we use hamburger, mushrooms, onions, peppers, carrots, potatoes, baby corn, water chestnuts, etc)
4. Add 1/4 stick of butter (sliced and spread throughout)
5. Add seasoning (Mrs Dash, Salt & Pepper, Lowerys)
6. Fold up sides and crimp together. Make sure to leave an air pocket inside
7. Set on hot coals for 30 min (flip at about 15 min)
8. Take out of fire, open, and let cool

# Recreational Tree Climbing



## Info About it

Tree Climbers International  
[treeclimbing.com](http://treeclimbing.com)

## At Home Training

Tree Climbers International  
\$90

<https://goo.gl/zKD7pW>

## WHY

- **Tree climbing is good exercise.** Tree climbing is not only fun, but it's also an excellent workout. Though it's not nearly as demanding as it appears, climbing is great exercise for the arms, legs, and back. Climbers work many muscle groups they often don't use elsewhere. The extra bonus to this exercise is that it is stimulating and never boring.

- **Tree climbing is very safe.** When climbers carefully follow the basic "do and don't" rules, they are virtually assured of a safe climbing experience.
- **Trees are everywhere!** You don't have to look far to find a good climbing tree, especially if you're in a natural area. Even in an urbanized setting you can usually find a tree worth climbing.
- **Trees are alive and natural.** There is something very wonderful about getting outdoors and into the branches of something which is alive. Humans find peace and relaxation there, as well as a totally different perspective on what they see during their every day lives.
- **All your senses come alive.** A whole new perspective is added to the climbing experience through the feeling of touch as the tree moves and sound as the wind whistles through the leaves.
- **Tree climbing is cost-effective.** Once you've made the initial layout for your basic gear, there are very few further expenses.
- **You don't have to build an expensive structure.** Rope courses, climbing walls, and alpine towers are expensive to build and maintain. They have to be continually inspected for defects because the structures are man-made. While trees need to be inspected every so often, there's no other work to do before you have a perfect climbing structure!
- **Tree climbing is a year-round sport.** During the hot months, you have the canopy to provide an awning for shade. In winter, the awning is taken down, and there's no barrier to the warm sunlight.



# Smoke Printing



Sounds dangerous but it is not with proper set-up and supervision. Follow the directions, have water on hand and it will be fine!

Ages: 8 and up

**Materials needed:**

- 6" or so candles in sturdy base..you need to be able to pass the paper just in the top of the flame so pillar/jar candles do not work
- white card stock cut into two 8 1/2 by 5 1/2 pieces
- scrap paper - can be used copy paper
- matches or lighter
- white or light colored cards or stationary to print on
- a couple pans of water (.1 per 4 campers is best to drop the paper in in case it starts on fire!)
- leaves or ferns. (need to be small!)

**Before Printing:**

1. Cover tables with plastic or brown roll paper
2. Place a candle in front of each child...light after demo and when they are ready to start
3. Place a pan of water in the center of the table for each 4 campers to be able to reach 4. Give each child a piece

of card stock

4. The object is to hold the ends of the paper and move it in the top of the flame to get the soot from the flame to accumulate on the bottom of the paper. Keep it moving and it will not catch on fire! (The sign you are close to burning the paper is that a small brown spot will start to show on the top of the paper. Just move it and it will not catch on fire)
5. If it catches on fire, drop it in the pan of water and start with a new piece of paper. (When you demo, it's a good idea to show them what happens when it catches on fire so they will see what it looks like and what to do with the paper, if you casually drop it in the pan it will not seem as dramatic)
6. Take the paper away from the flame and turn it over to see how black it is. Keep putting it back along the flame until it is black as you can make it.
7. When it is blackened, go to a clean table and start to do the printing.

### To print:

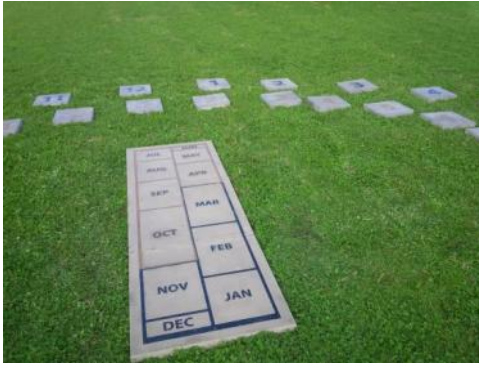
1. Set the blackened paper with the black side up on the table.
2. Set your leaf or fern on the black with the vein side DOWN.
3. Place a piece of scrap paper over the leaf and rub with your fingers all over the page to be sure to get the whole leaf/fern. You should start to see an imprint of the leaf coming through the top of the paper. Take off the paper and look at the bottom of the leaf/fern. If you think it needs more soot, put the leaf back down, put the paper on top and rub.
4. When the leaf/fern is coated in soot, throw the scrap paper away, set the leaf/fern down and wash your hands.
5. Then, take the leaf/fern and set it vein side DOWN on the card or paper where you want to print. It is important to not let the leaf/fern move once you have placed it on the clean paper.

6. Set a clean piece of scrap paper on top of the leaf and hold it down with one hand.
  7. Carefully and firmly, rub the paper with your other hand to again see an imprint on top. This will transfer the soot onto the paper.
  8. When you think you have rubbed enough, remove the paper, throw it away and carefully remove the leaf and throw it away.
  9. You will now have a lovely, gray leaf/fern print on your paper.
  10. Let it sit for about 15 minutes and it will not smear.
- If you want to print more than one leaf/fern on the same card/paper, wait the 15 minutes and then print the new leaf/fern.



CAMPFESSION  
THE DAY BEFORE I LEAVE FOR  
CAMP FEELS LIKE THE  
LONGEST DAY EVER

# Sundial



## Instructions

<http://www.sunclocks.com/>

Easiest thing to do:

1. Buy the concrete steps at a Menards/Home Depot
2. Figure out where you want it
3. Put 1 step down where you plan to have campers stand
4. At each hour, go stand up straight on that step and mark with another step where your shadow is
5. Do this for each hour.
6. If you want the sun dial to work each month, you will need to repeat this process in the middle of each month.

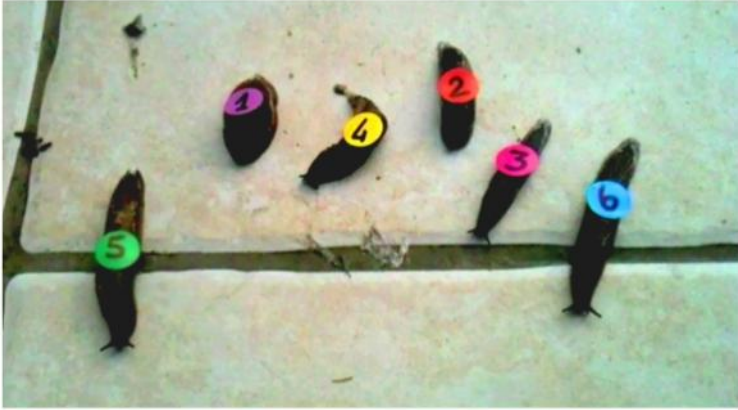
# Paint Chip Hunt



## Instructions

1. Collect lots of paint chips from your local home store (these are free for the taking but I would still ask the paint person there, they have always been willing to help us out!)
2. Divide them in color groups or even a variety for each team.
3. Send your groups out to find a match in nature
4. Added twist is give them a camera to document the process

# Slug Races



## Instructions

1. Talk to the campers ahead of time about slugs and teach them and give info.
2. Allow them a few days to catch 1 per cabin.
3. Create a race track inside a shoebox (or clear glass 10 gallon aquarium if available)
4. Use your phone or camera so you can livestream to projector (so all can watch)
5. Have a couple outgoing staff members commentate
6. This will take a while, so campers/staff can do "commercials" (skits that were prepared ahead of time)
7. Have a Golden Slug trophy to give out to winning cabin!

# BOOKS

## CAMPFESSION

SILENT CONVERSATIONS ACROSS THE  
TABLE WITH MY  
CO-COUNSELOR ARE THE KEY TO  
SURVIVAL

# Books

## *Camp Activities with a Science Twist*

By: Shannon J. Horrillo

Publisher: Healthy Learning (2018)

## *How to Play in the Woods*

By: Robin Blankenship

Publisher: Gibbs Smith (2016)

## *Hello Nature*

By: Nina Chakrabarki

Publisher: Lance King Publishing (2016)

## *Outdoor Education*

By: Susan McCarthy

Publisher: SRCM Book (October 2016)

## *Constellations of the Night Sky*

By: Bruce LaFontaine

Publisher: Dover Publications (2003)

## *The Nature Connection An Outdoor Workshop*

By: Clare Walker Leslie

Publisher: Storey Publishing (2010)

## *Predators and Prey*

By: Cindy Blobaum

Publisher: Nomad Press (2016)



*Resident Outdoor Environmental Education*

By: Jim Parry

Publisher: Healthy Learning (2013)

*Project Wild*

Publisher: Council for Environmental Education (1992)

*Project Wild Aquatic*

Publisher: Council for Environmental Education (1992)

*101 Nature Activities for Kids*

By: Jane Sanborn

Publisher: Healthy Learning (2011)

*The Kid's Outdoor Adventure Book*

By: Stacy Tornio

Publisher: Falcon Guides (2013)

*Environmental Education Activity Guide*

Publisher: Project Learning Tree (2016)

*Maker Lab Outdoors*

By: Jack Challoner

Publisher: Penguin Random House (2018)

CAMPFESSION

WE COMPETE TO SEE  
WHO HAS THE BEST  
WATCH TAN

CAMPFESSION

I HAVE A VERY REFINED AND  
PRECISE MARSHMALLOW  
ROASTING PROCESS

CAMPFESSION

I HEAR A WORD OR PHRASE  
AND BREAK INTO SONG. REAL  
WORLD PEOPLE STARE AT ME!

TECHNOLOGY

CAMPFESSION

EARLY MORNINGS AT CAMP ARE  
GLORIOUS....EARLY MORNINGS  
IN THE REAL WORLD ARE  
HEINOUS

# Websites

[Pinterest](http://www.pinterest.com/chriskallal) - [www.pinterest.com/chriskallal](http://www.pinterest.com/chriskallal)

Free to set up. Pin great ideas to your own boards. Follow me at:

[Summer Camp Programming](http://summercamppro.com) - [summercamppro.com](http://summercamppro.com)

All about summer Camp Programming. Some ideas are free, some cost. You can get involved in Round Tables and then get all the info from them free.

[Camp Group on Facebook](https://www.facebook.com/groups/camppros/) -

<https://www.facebook.com/groups/camppros/>

Over 9,000 members. Great for questions or ideas. Can post a question or search the page. Also has lots of files to download

[Patchwork Marketplace](http://patchworkmarketplace.com) - [patchworkmarketplace.com](http://patchworkmarketplace.com)

Essentially a teachers pay teachers site. You can upload your own ideas or download others for a cost. Every Tuesday they upload 3 new "free ideas for the week"

[King of Random](http://thekingofrandom.com) - [thekingofrandom.com](http://thekingofrandom.com)

Youtube video instructions on how to make some pretty awesome things for your camp

[Download Youth Ministry](http://www.downloadyouthministry.com) - [www.downloadyouthministry.com](http://www.downloadyouthministry.com)

Powerpoint games and lessons for youth

[Chinese Amazon/Ebay](http://alibaba.com) - [alibaba.com](http://alibaba.com) or [aliexpress.com](http://aliexpress.com)

Cheap stuff from China that is very similar to Amazon or Ebay

[Wish](http://wish.com) - [wish.com](http://wish.com)

Another Chinese site with cheap stuff. Also has an app. (Always scroll farther down for cheaper stuff)

# Apps

[Leafsnap](#) - Columbia University, University of Maryland, and Smithsonian  
Cost: Free

Electronic Field Guide. Contains a large collection of leaves, what they look like each season, any nuts or berries, what the bark looks like, etc. Also has a way to take a picture of a leaf to help identify it

[PlantSnap](#) - Identify a Flower Leaf or Tree

Cost: Free

Instant image-based plant identification.

[iNaturalist](#) - Connect with Nature

Cost: Free

Identify plants and animals around you

[Skyview Free Explore the Universe](#) - Terminal Eleven LLC

Cost: Free

AR app to identify stars, constellations, satellites, and planets.

[Merlin Bird ID by Cornell Lab](#) - Instant Bird Identification

Cost: Free

Bird Field Guide. Search bird by color, size, and sound. Can learn about the bird or hear what sound it does make

[Angle Pro](#) - 5.fuf5

Cost: Free

Quickly check level and check angles. Super accurate inclinometer

[Color Hunt](#) - Cody Mace

Cost: Free

Go on a Scavenger Hunt for Colors

[350 Panorama](#) - Occipital, Inc

Cost: 1.99

Take 360 degree views of places. Great to show what your camp area looks like

# Podcasts

## [Summer Camp Programming Podcast](#)

Chris's podcast he co-hosts with Curt Jackson from Summer Camp Pro. Weekly podcast with tons of ideas each week

## [Camp Code -](#)

4 seasons worth of Staff Training Ideas!

## [CampHacker](#)

Podcast for Directors. Lots of Marketing

## [Rec Heads and Camp Nerds](#)

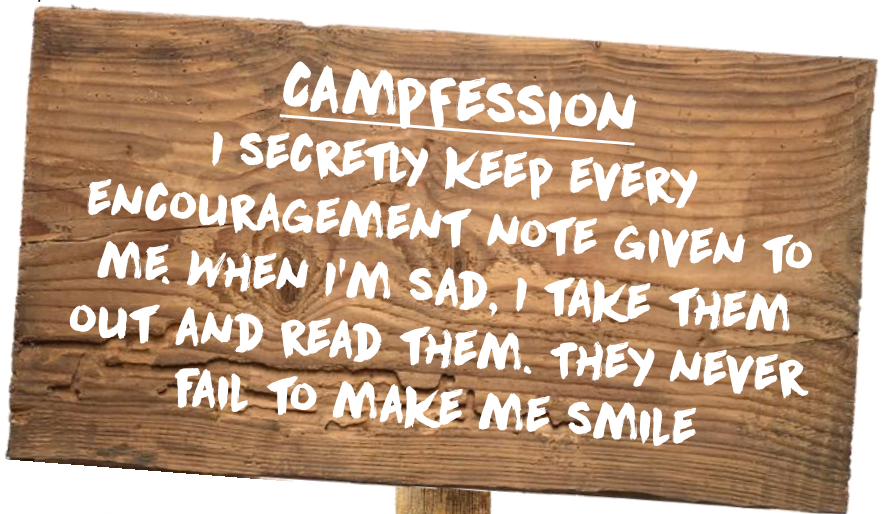
Fun Camp Ideas. Great for Program Directors

## [Summer Camp Leadership Podcast](#)

Lots on Marketing and Branding

## [Room Escape Divas](#)

Escape Room Ideas



# RANDOM PICS

CAMPFESSION  
THE LONGER YOU WORK AT  
CAMP, THE MORE "FORBIDDEN"  
THINGS YOU GET TO DO

## Leaf Art



## Nature Weaving



## Creek Cross



## Mud Tree Faces





Leaf Art



Spider Web Collect



Window Bird House



## Bark Rubbings



## Bee Hotel



## Tape Bracelet



## Color Hunt



## Outdoor Cooking



## Solar Oven



## Star Cards

## Outdoor Cooking



