

INVENTERPRISE



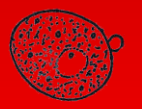
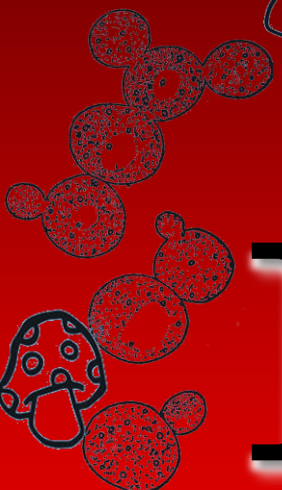
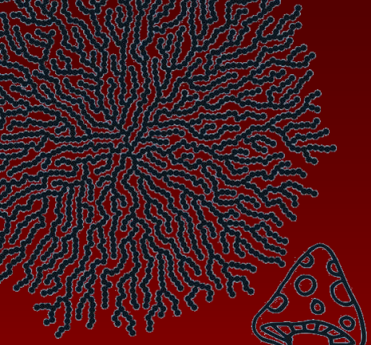
LONZA 2023



There's fungus among us.

Nature has inspired many modern-day innovations. What will you invent that draws inspiration from fungi?

884 students participated in this year's contest.
Here are the winning entries!



Kindergarten



Willow Barton

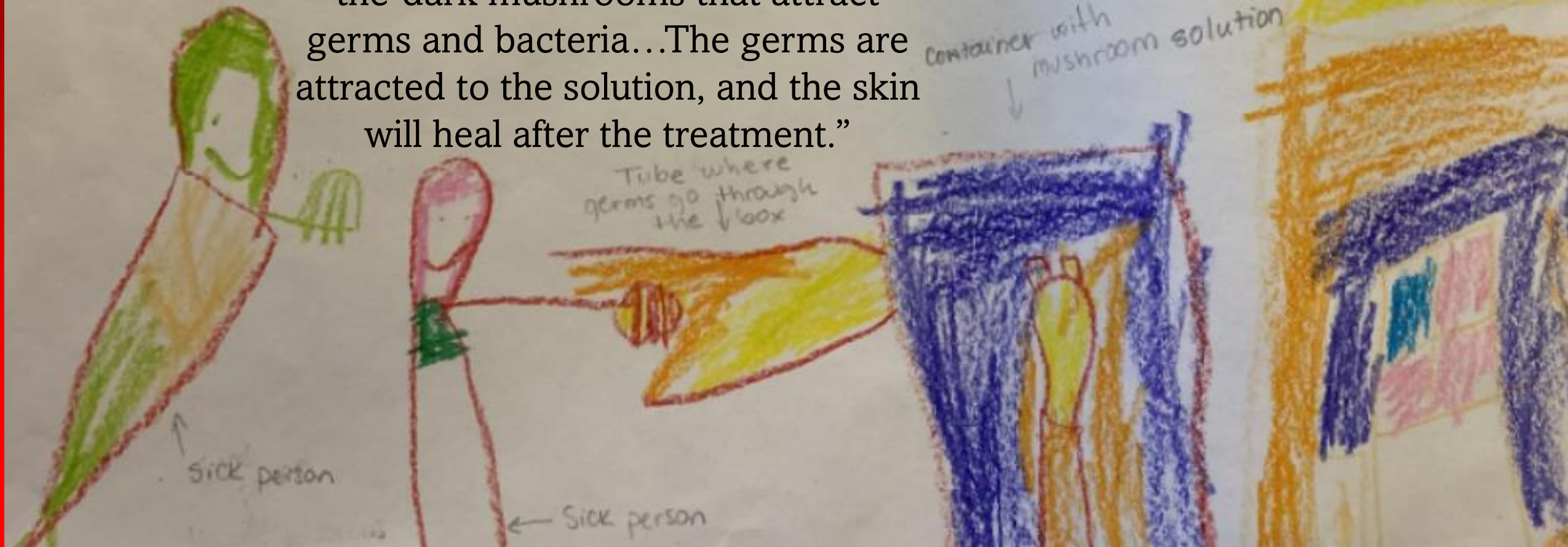
Mycellium Eaters

“Mechanical worms can eat mycelium of mushrooms that are killing forests.”

Hunter Petersen & Jackson McClain

Fungi Calling Out Germs

“A solution is made out of glow-in-the-dark mushrooms that attract germs and bacteria...The germs are attracted to the solution, and the skin will heal after the treatment.”

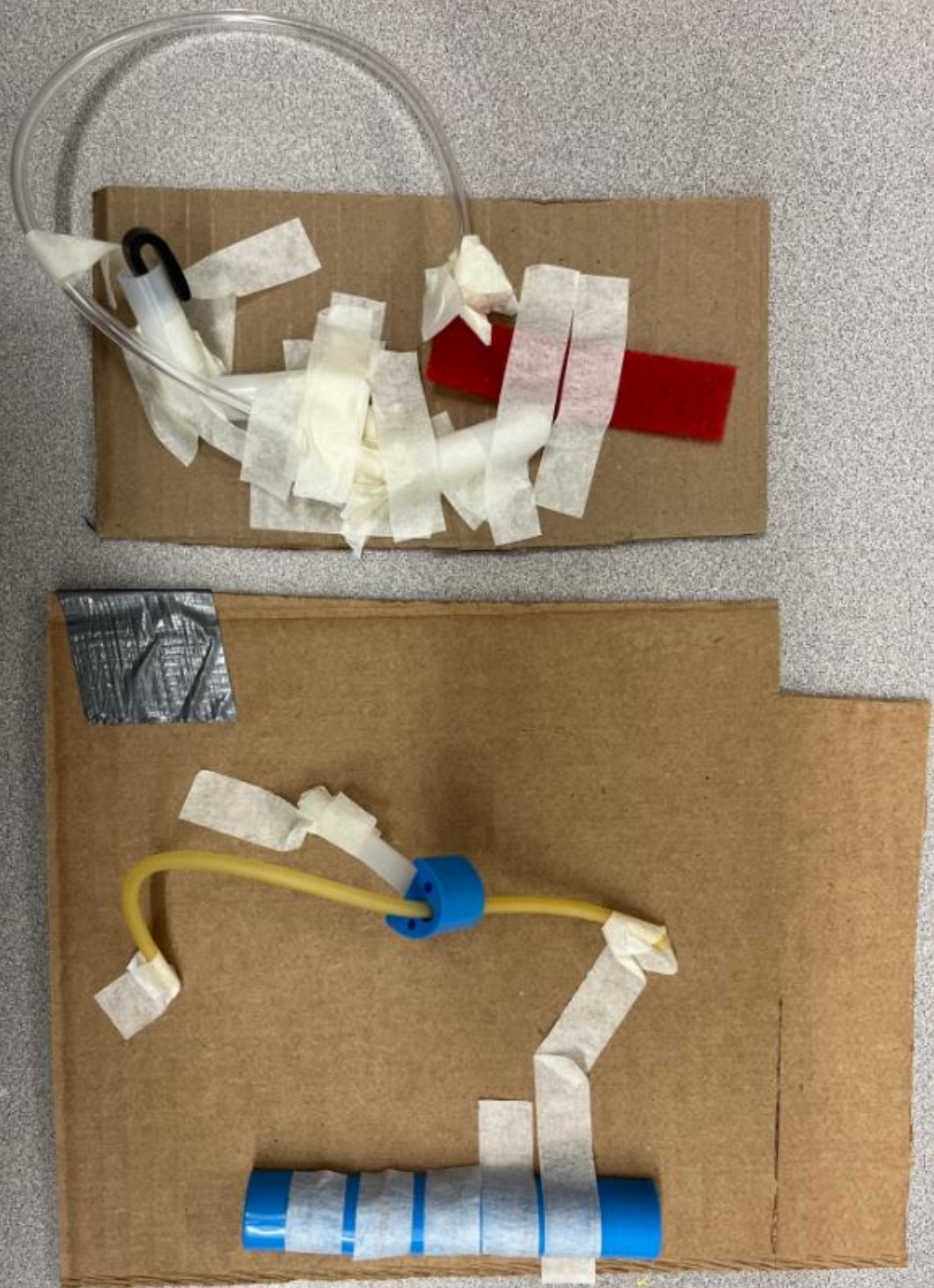


Jayce Hill

Mushroom Picking Machine

“The Mushroom Picking Machine identifies which mushrooms are poisonous & which are edible & only picks edible mushrooms.”

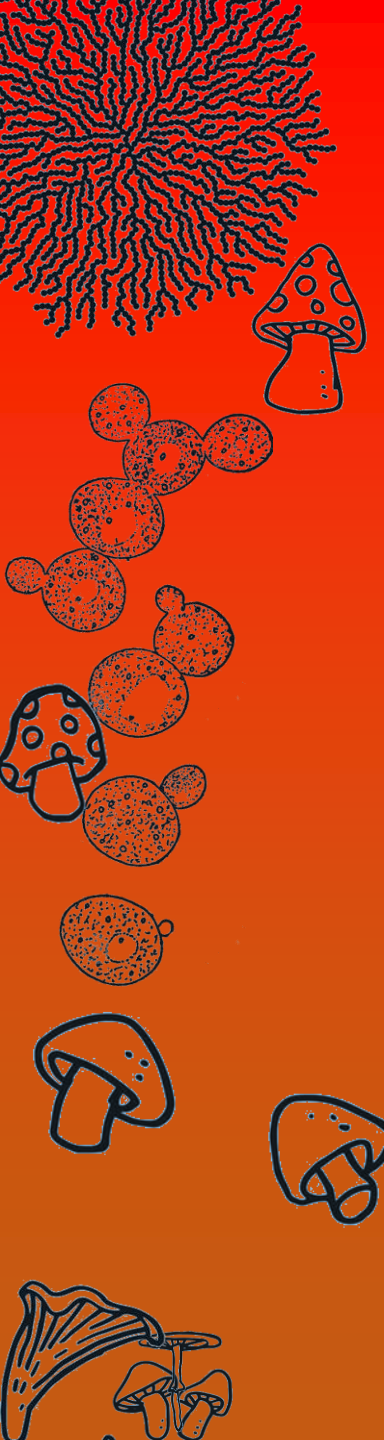




Luca Martucci

*The Water Drinker and The
Super Drinker*

“The Super Drinker goes into the river. This one sucks up the oil into the fungi. The fungi sucks down the oil and puts it into the dirt.”



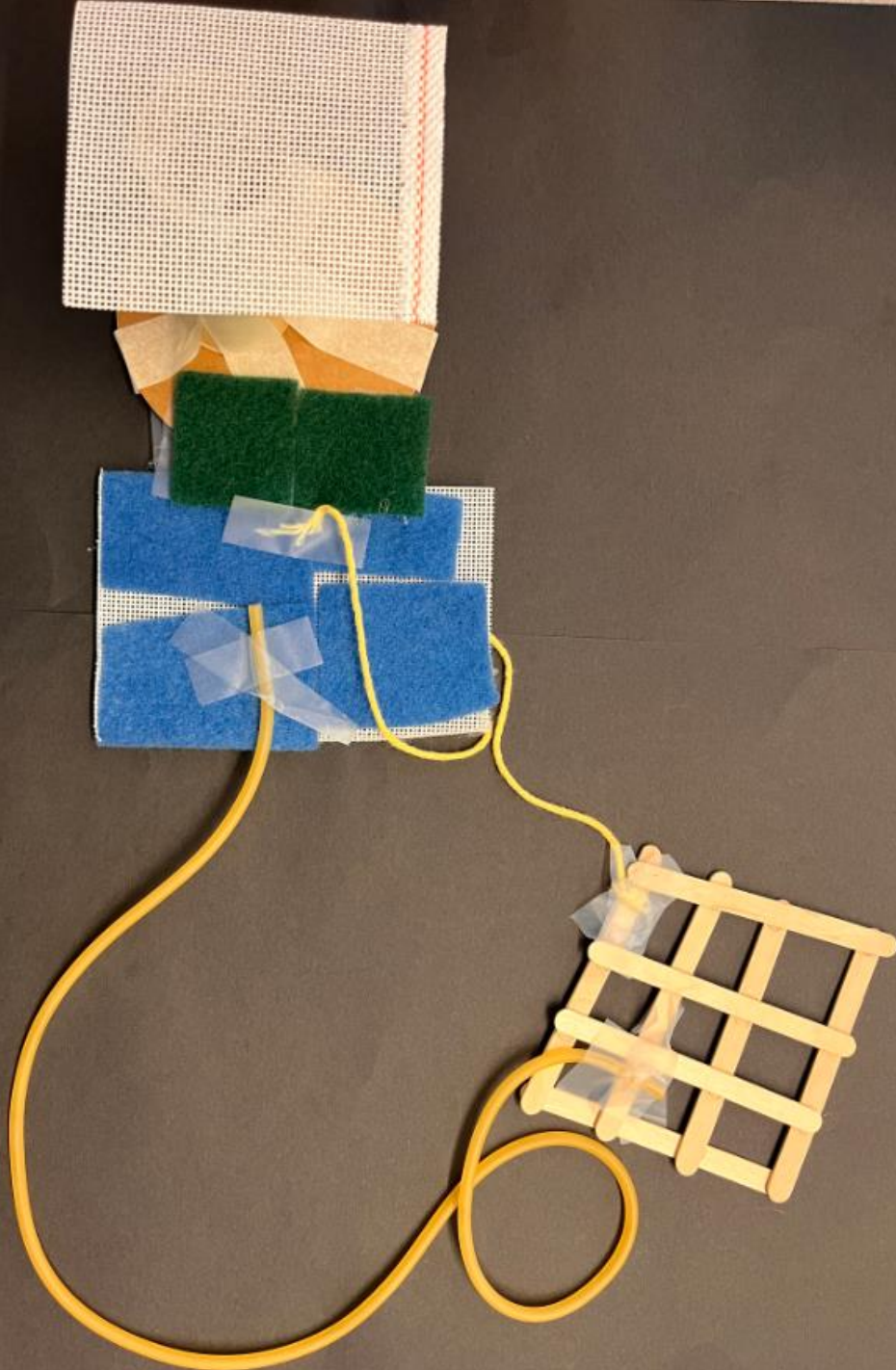
1st

Grade

Miles LeBrun

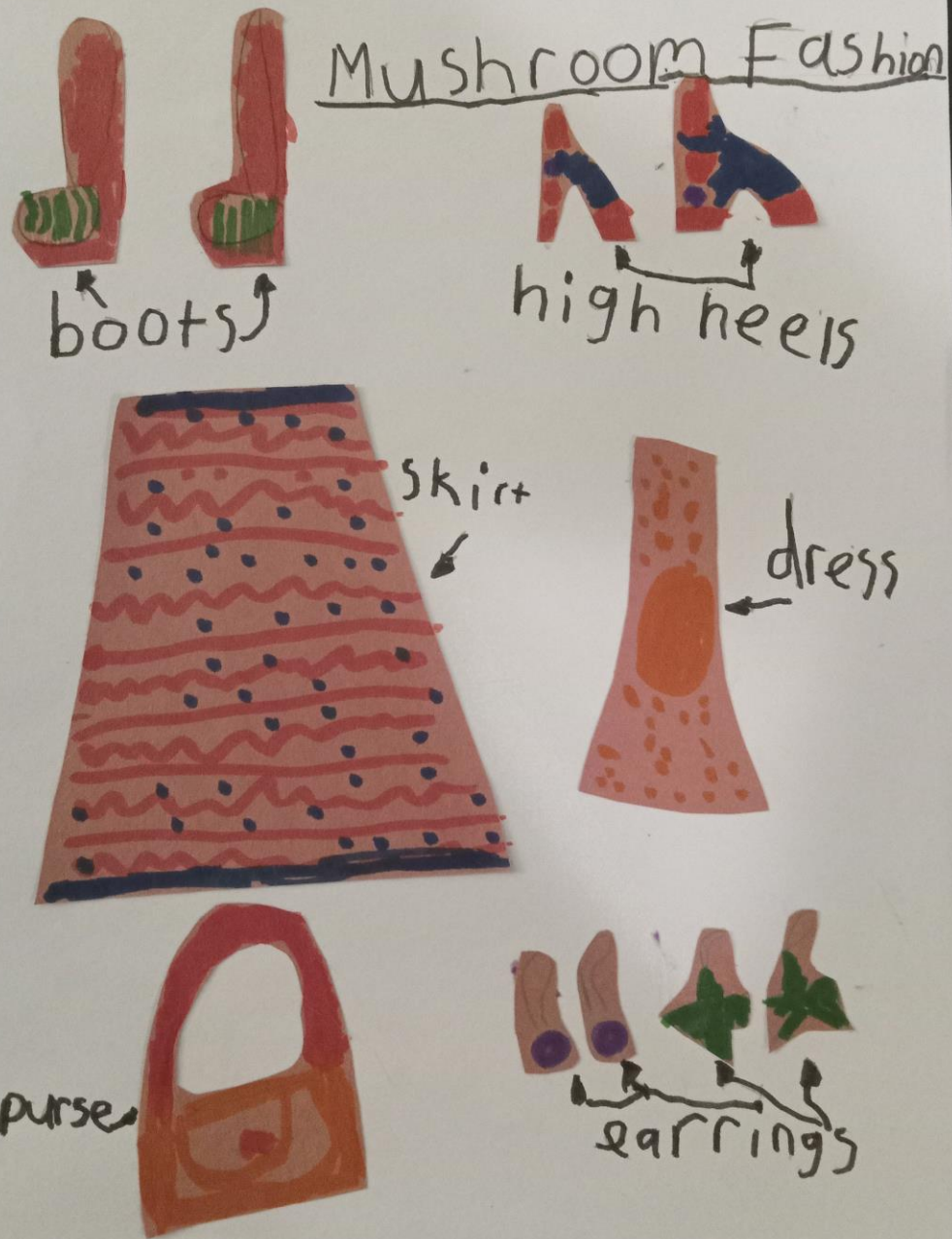
Storm Drain to River

“The leaves can go down the pipe and the mushrooms break down the leaves and it turns into soil and then there is a machine that throws the soil out of it and puts it next to trees on the ground so trees can grow.”



Grace Myers

Mushroom Fabric Fashion

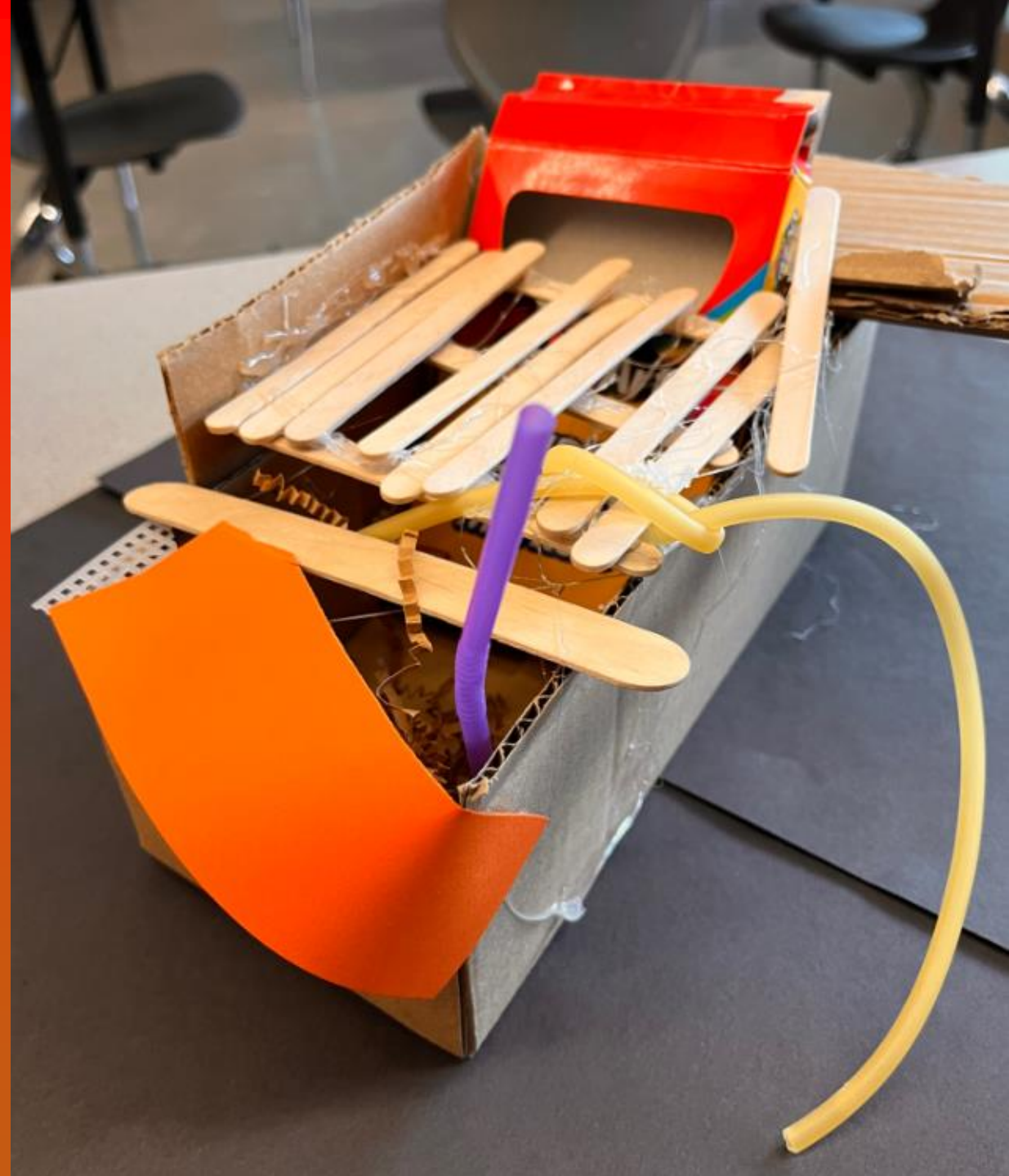


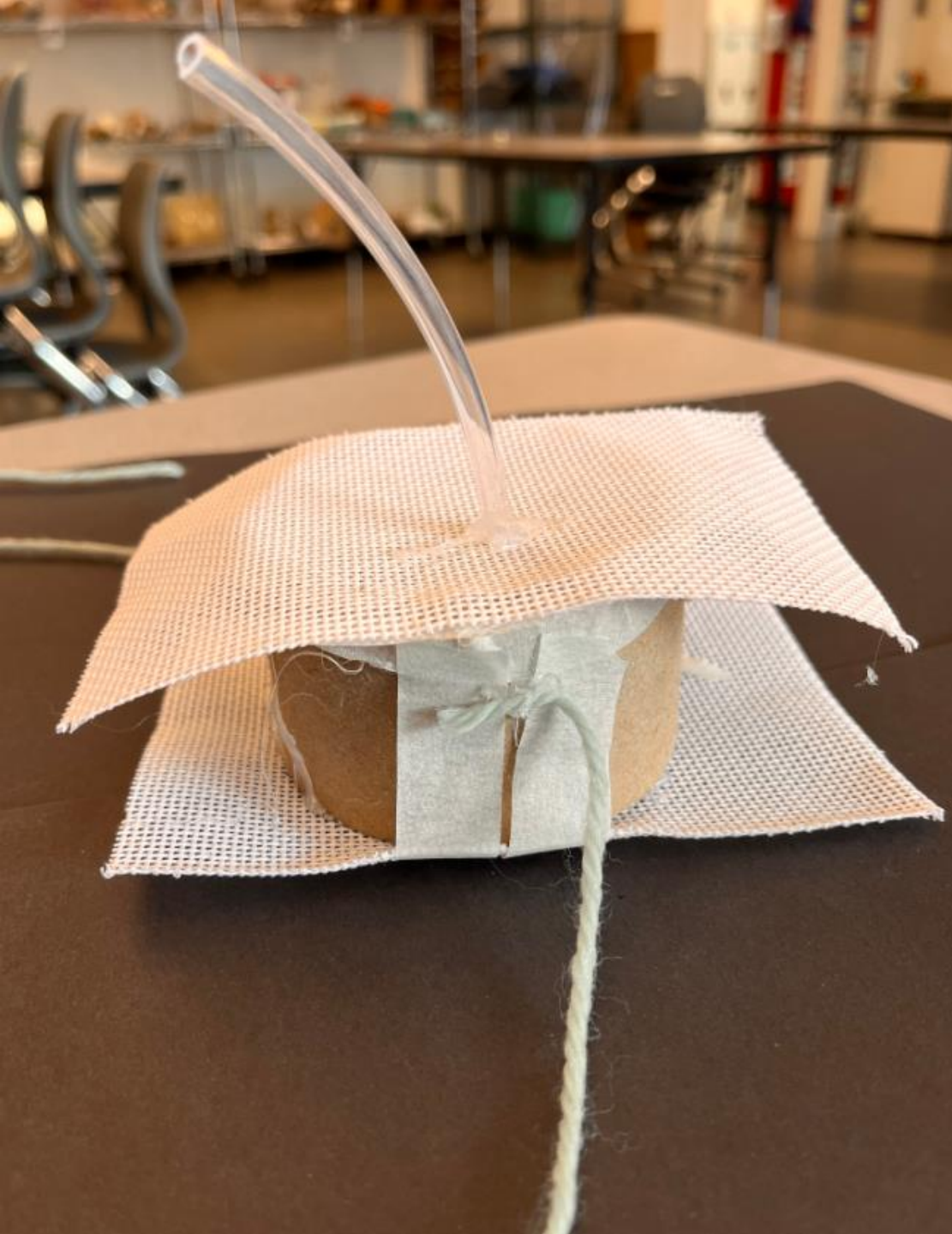
“My invention is to create organic mushroom textile and have a mushroom fabric fashion line.”

Nico Nasr

The Water Sucker 3000

“I invented the Water Sucker 3000 to clean the water and the river...The fungus is inspiring me because the straw like tube will glow so it can attract the water because it has a special thing called a water attractor.”





Levi Caplan

Filter Water

“...you tie this invention to the storm drain bars. So when the water goes down I made this straw (which is like a mushroom root) so you can test the water to see how good it is.”



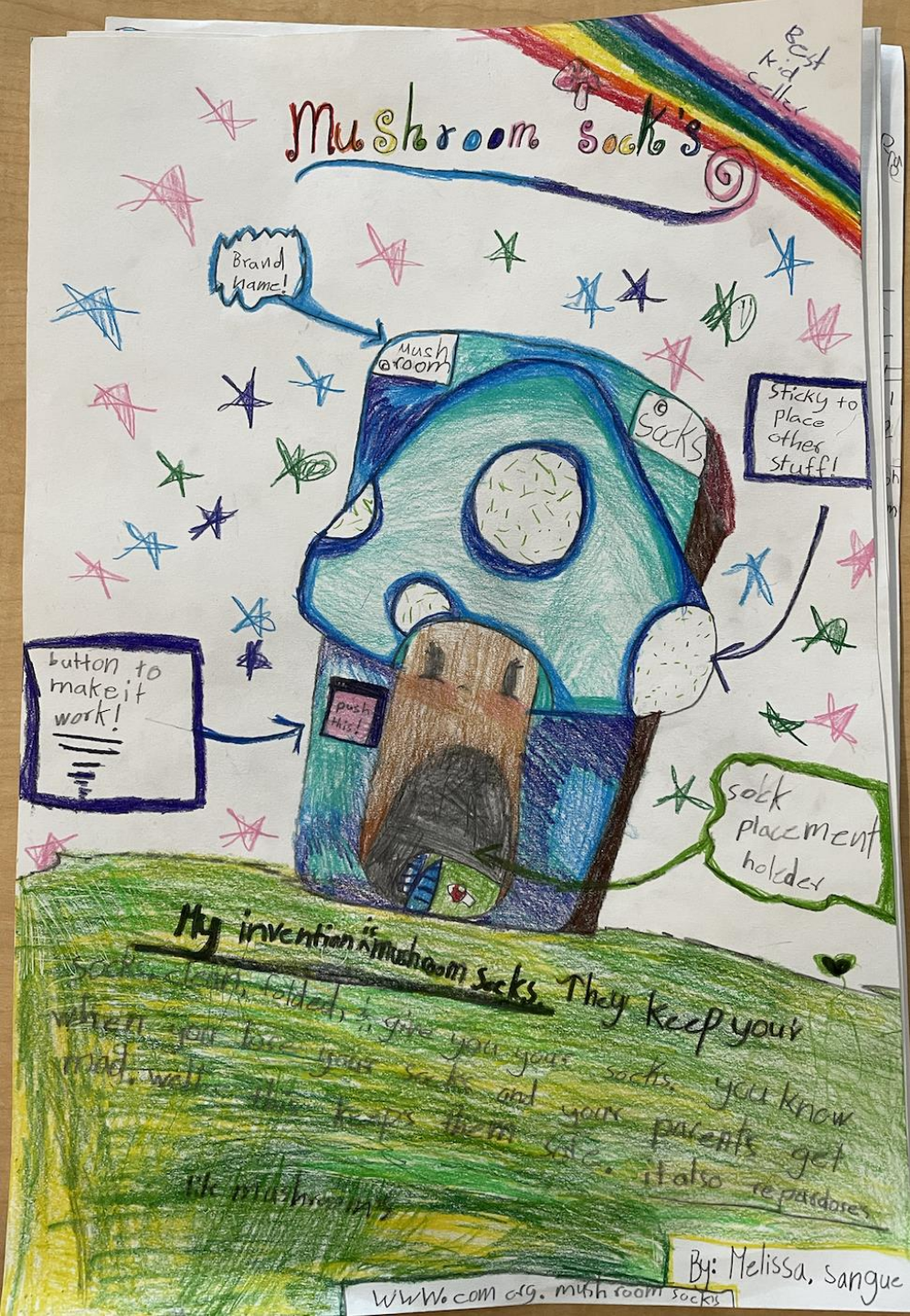
2nd

Grade

Melissa Sanguie

Mushroom Socks

“They keep your socks clean, folded, and give you your socks.”



Amelie Henninger & Caroline Koleno

Camro

“It is a camera shaped like a poisonous mushroom. It is for nature. Animals won’t eat it if they think it is poisonous.”





Ryan Smith

Mushroom Air 2.0

“...if there is a fire it has a radar on top that will shoot out these signals to real mushrooms and tell them that there is going to be a fire so they can also help the earth with the air.”



Roman Adams & Morris Townsend

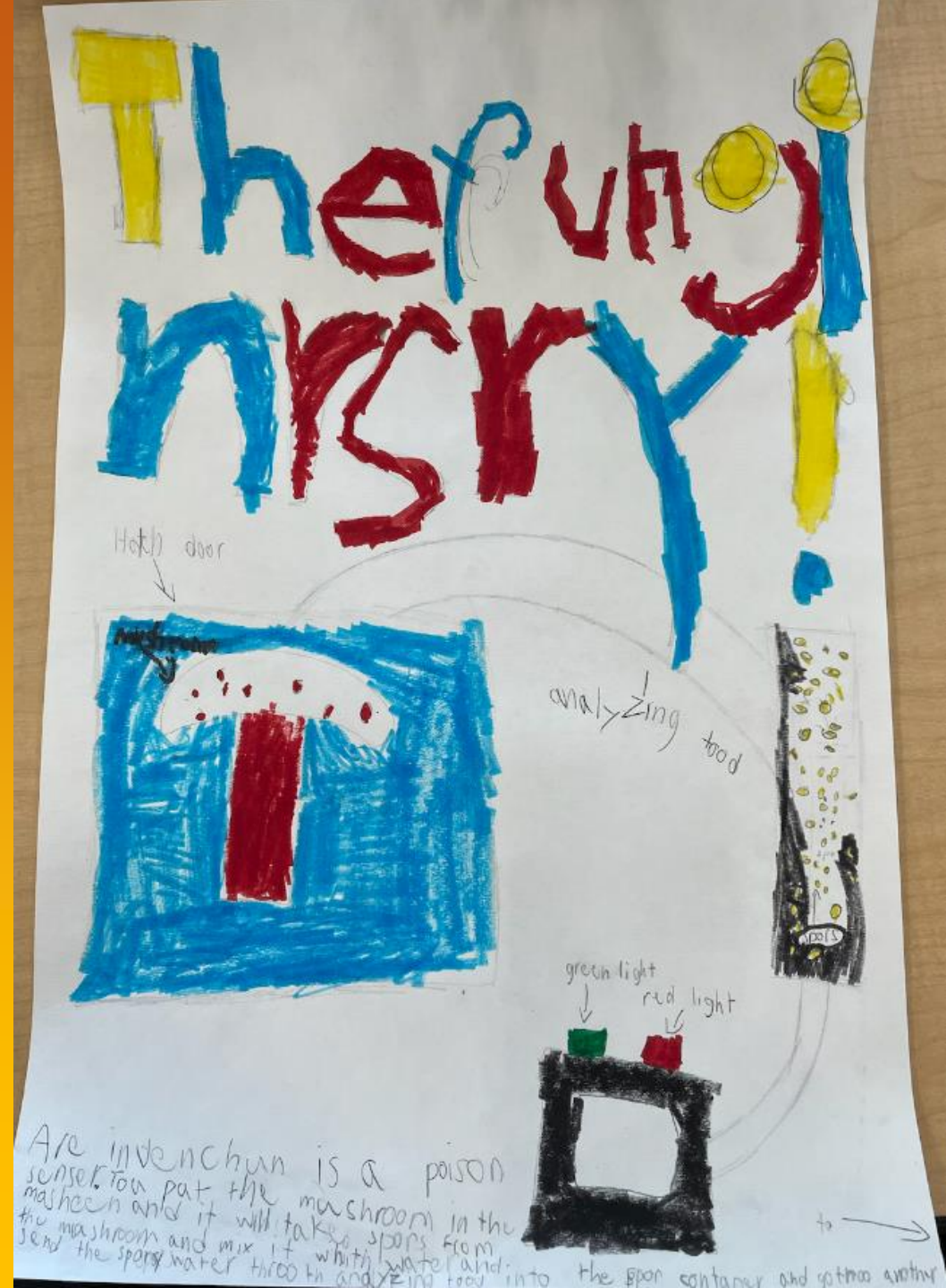
Mycelium connector

“The new way to fix neurons (during brain surgery).”

Sam Coursey & Dimas Gonzalez

The Fungi Nursery

“Our invention is a poison sensor. You put the mushroom in the machine and it will take the spores from the mushroom...If there is poisonous chemicals the light will turn red and if it isn't the light will turn green so it's safe to eat.”

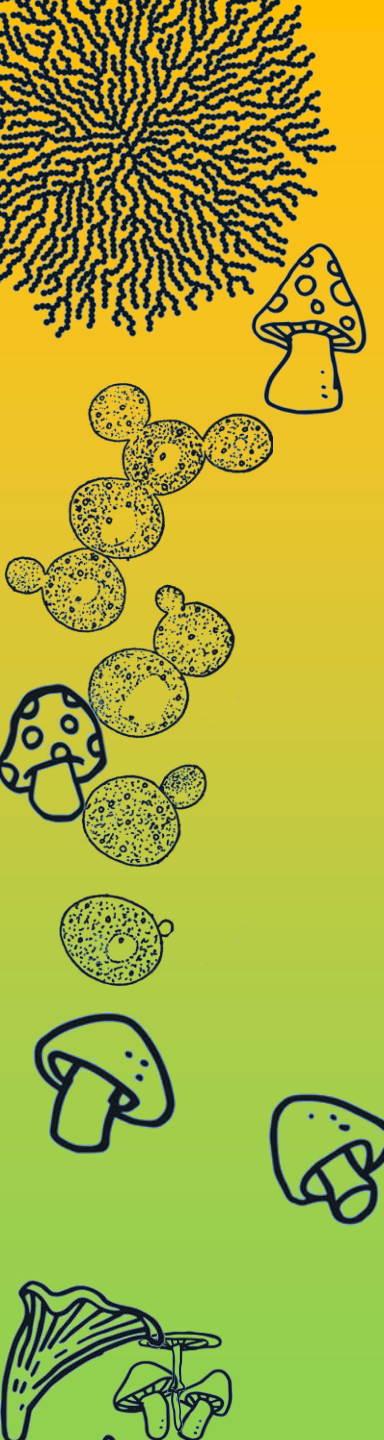


Roman Baggs & Charlie Costello

The Oil Cleaner / Trash Picker



“If there is an oil spill the machine goes over and shoots out dish soap and cotton (like fungi spores) and all of the oil goes onto the cotton...The gills on a mushroom are like the cotton that brings in the oil and then the oil goes into a tub inside the invention.”



3rd

Grade

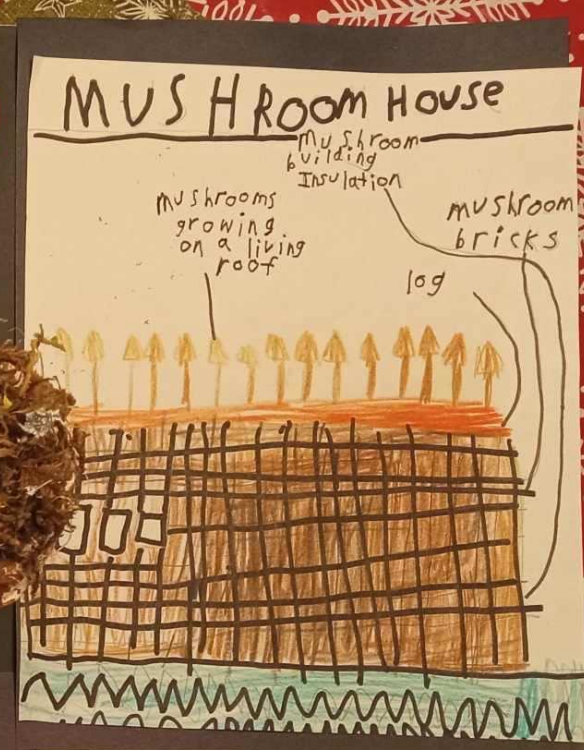
Mercy Myers

Mushroom House

“My invention is using mushrooms as building material...The bricks are made of the mycelium (like roots) and recycled corn husks.”

- My invention is using mushrooms as building material. The living roof has live mushrooms growing on it. The bricks are made of the mycelium (like roots) and recycled corn husks. The house's insulation is made of mushroom spores, straw and water glands. The mushroom house grows fast in two weeks.
- It is warm and dry - the perfect house!

MUSHROOM HOUSE



Advantages of a Mushroom Home

- Fungal Bricks are cheap, fire resistive, and they absorb sound
- The mushroom living roof gives habitat for animals, it lowers heating and cooling costs and it repairs itself.

• The mushroom spores make the insulation COZY

toad stool house



Architecture Options

- Button Bungalow
- crimini Cabin
- Portabello Pueblo
- Maitake Mansion
- Hedgehog Hotel
- Beech Barn

Theo Booker, Jackson Edwards, & Eamon Galbraith

Filtshroom 5,000™

“Equipped with three filters, one for big trash, one for really small trash, and one for oils and micro plastics. Fungi inspired us...because it spits out water like the enzymes and nutrients traveling through the hyphae and from the glow in the dark spots that are like the bioluminescent mushrooms.”





Keegan Connor, June deLaski, & Cora Sharp

The Mushinator

“...The Mushinator...sucks the dirty water up in a tube and then all of the dirty water gets filtered. Fungi inspired our team because fungi have gills under the cap and it looks like a filter to us.”

Ava Roscoe

Glow Detergent

“My glow detergent is made out of bioluminescent fungi that is mixed with regular laundry powder...it will make people more easily seen in the night time.”





Alexander Baldwin

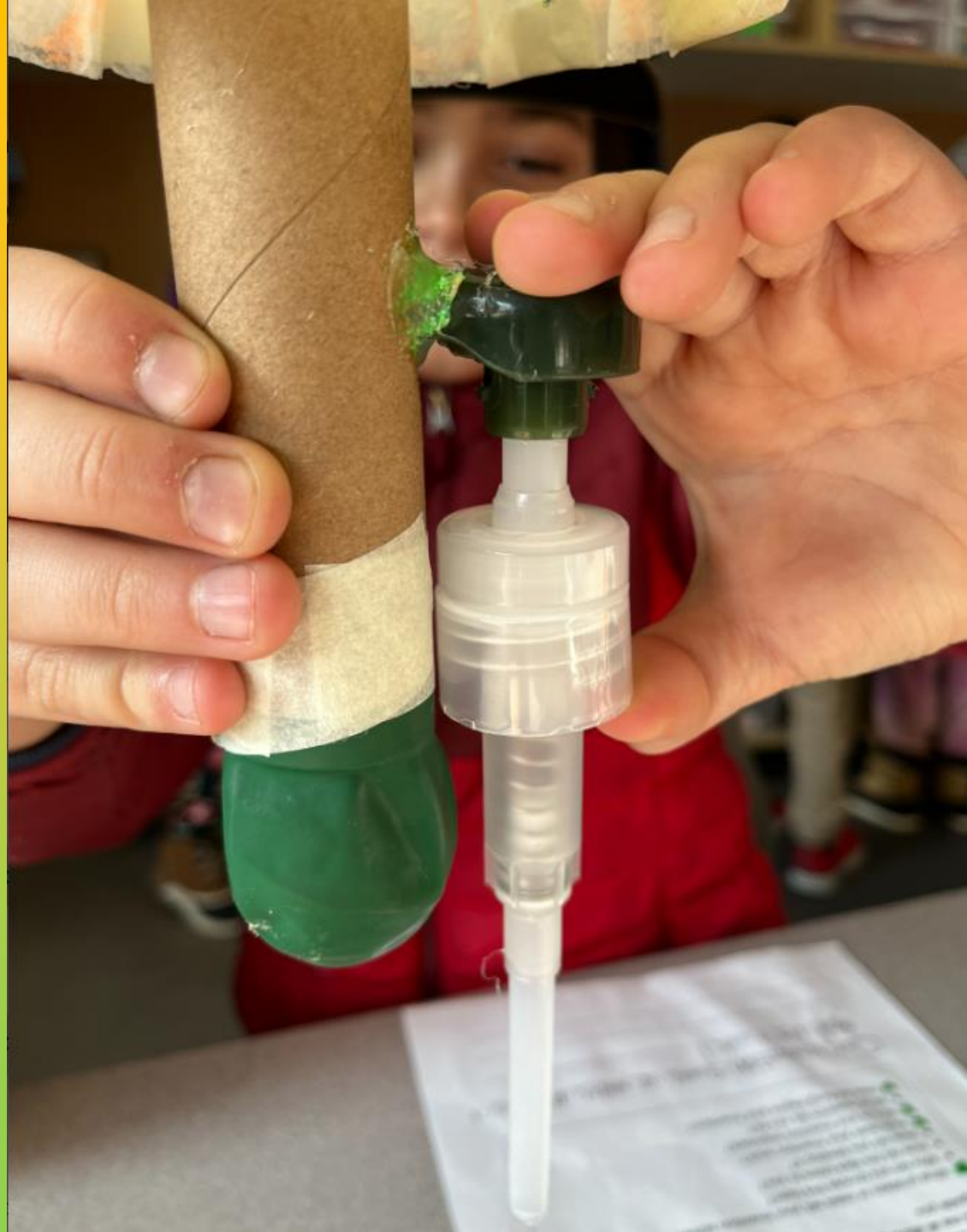
The Yummy Plate

“Once you are done eating your main meal, you can then soak the mushroom-made plate in water, reheat the mushroom pieces...with butter, and eat your fungi vegetables!”

Remington Gelb & River Sutter

*The Yeetus McCleutus
(Prototype Number 1)*

“It sucks up water through a tube which then leads to a filter, goes into the body of the invention which goes into a launcher and then it launches all of the fresh clean water out. The puffball fungi inspired us...to have the clean water launch out.”

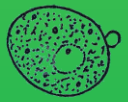
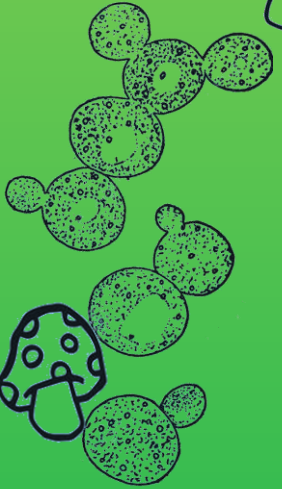
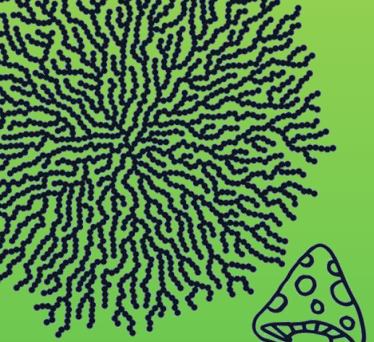




Margaret Gricius

Spore Sprayer

“This magical spray mist spray spores out and grows glow in the dark mushrooms anywhere you spray it. These bioluminescent mushrooms help lead the way on at night nature hike or can help you see at night when you’re camping.”



4th

Grade

Atalie Erickson

The Fungus Bat Multi Tool

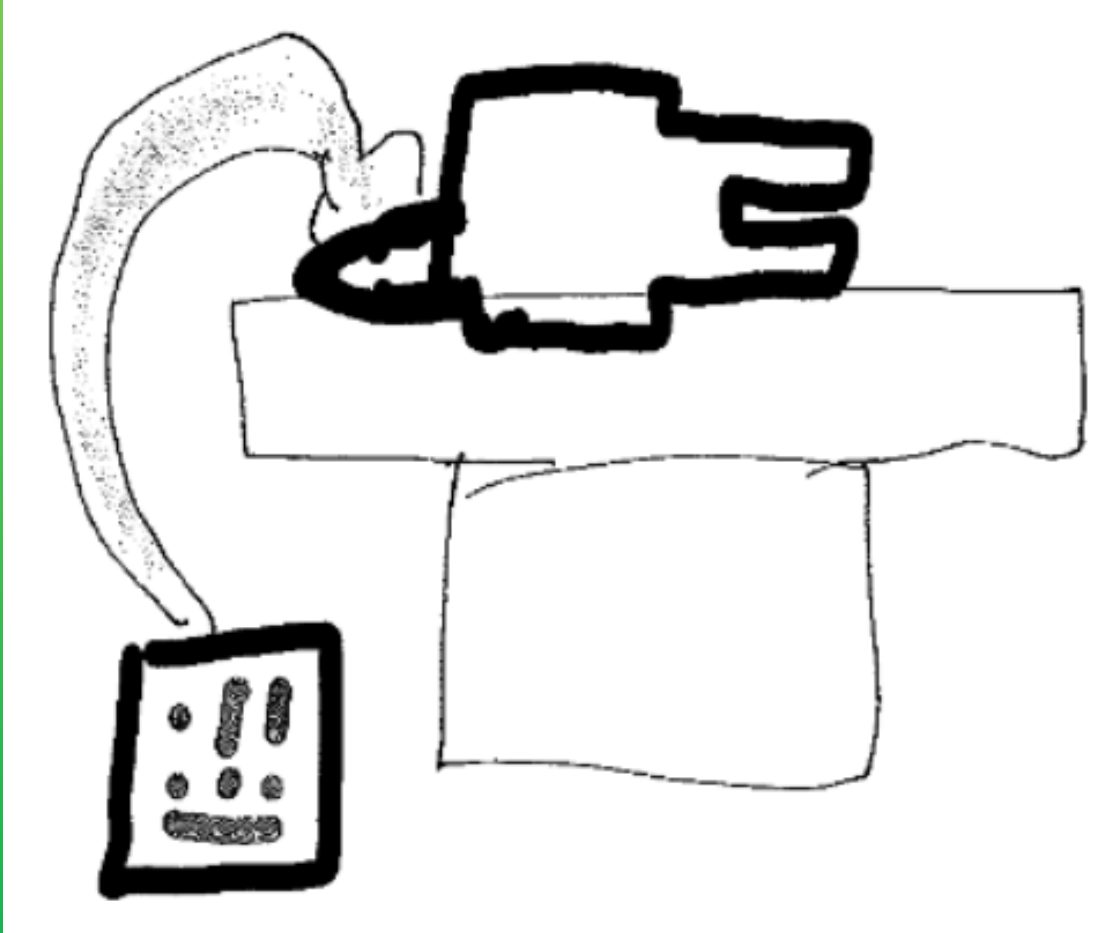


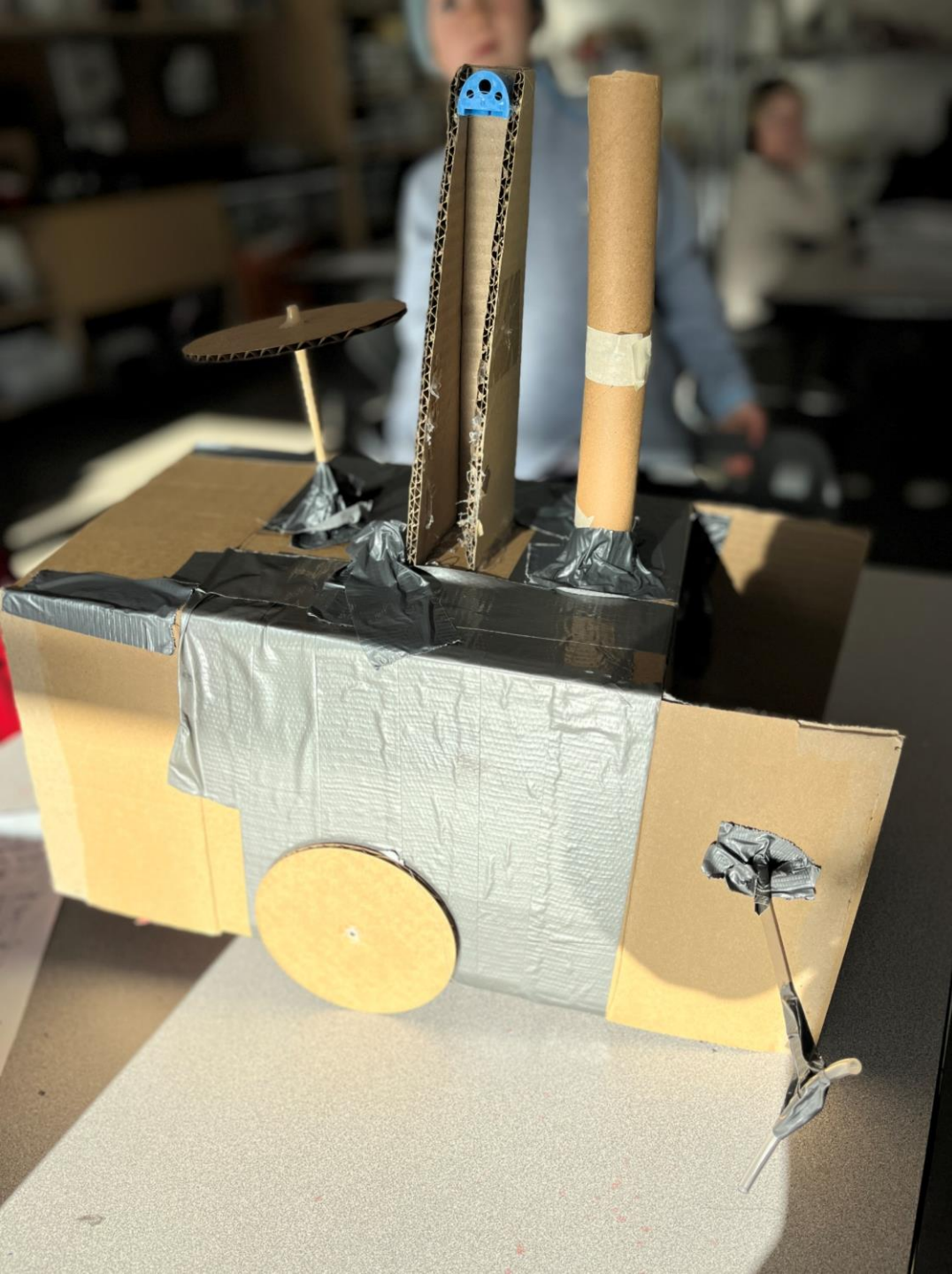
“So I have this detector so that I can check the bat to see how much the fungi has affected it...The camera can video the fungi so you know what the fungi can do to bats so you can post it and let people know about the white nose syndrome so more people can help.”

Enrique Urtiz & Frankie Zolfo

Anesthesia X

“We invented Anesthesia X, a mushroom based gas...that is used for medical services...it will use almost all natural anesthesia.”





Thielsen Groza, Lily Smith, & Cleo Souter

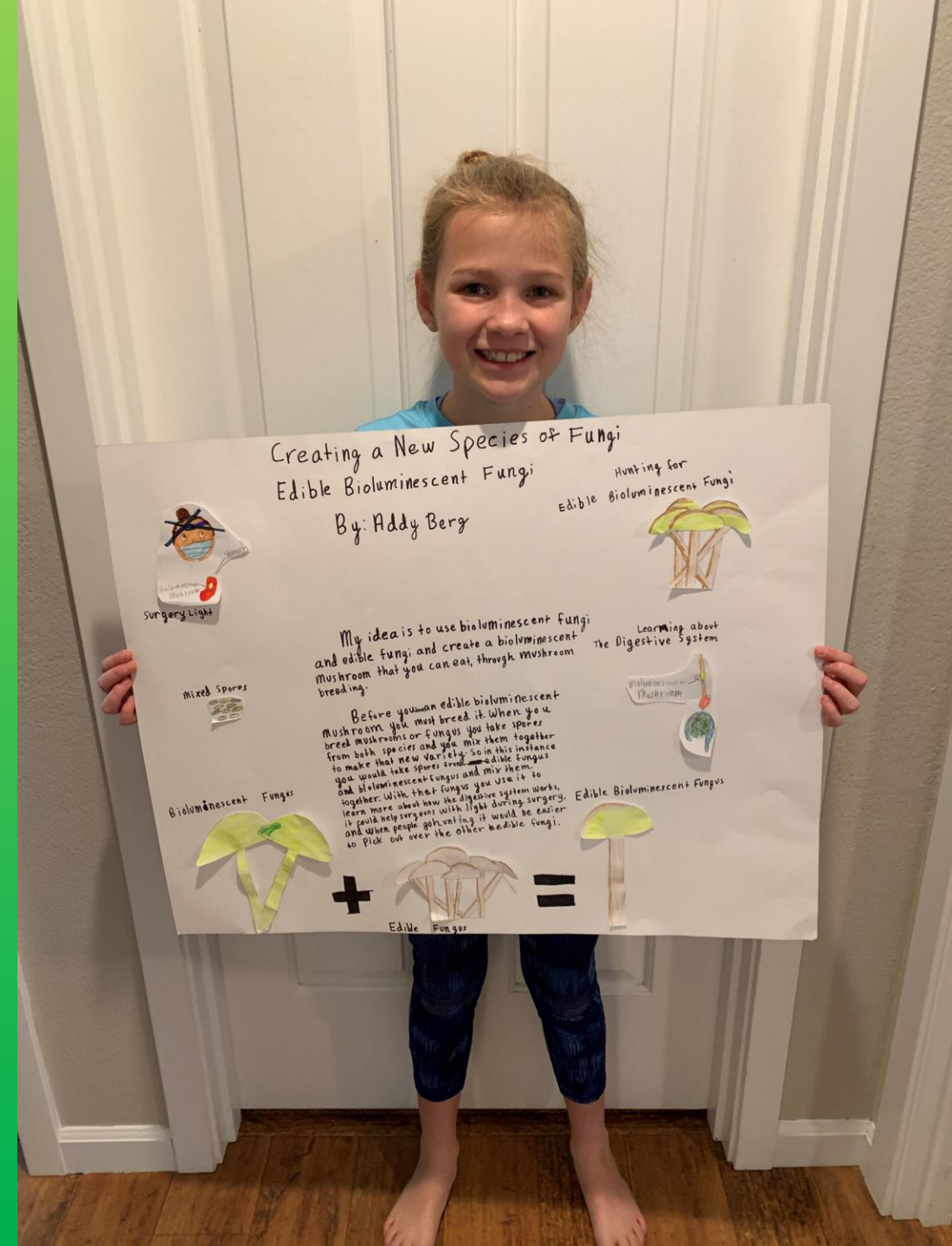
The Plastic Degradator 1.0

“How our invention works is that it rolls along the bottom of different bodies of water and it can move on land. Once it takes the trash in it turns it into soil.”

Addy Berg

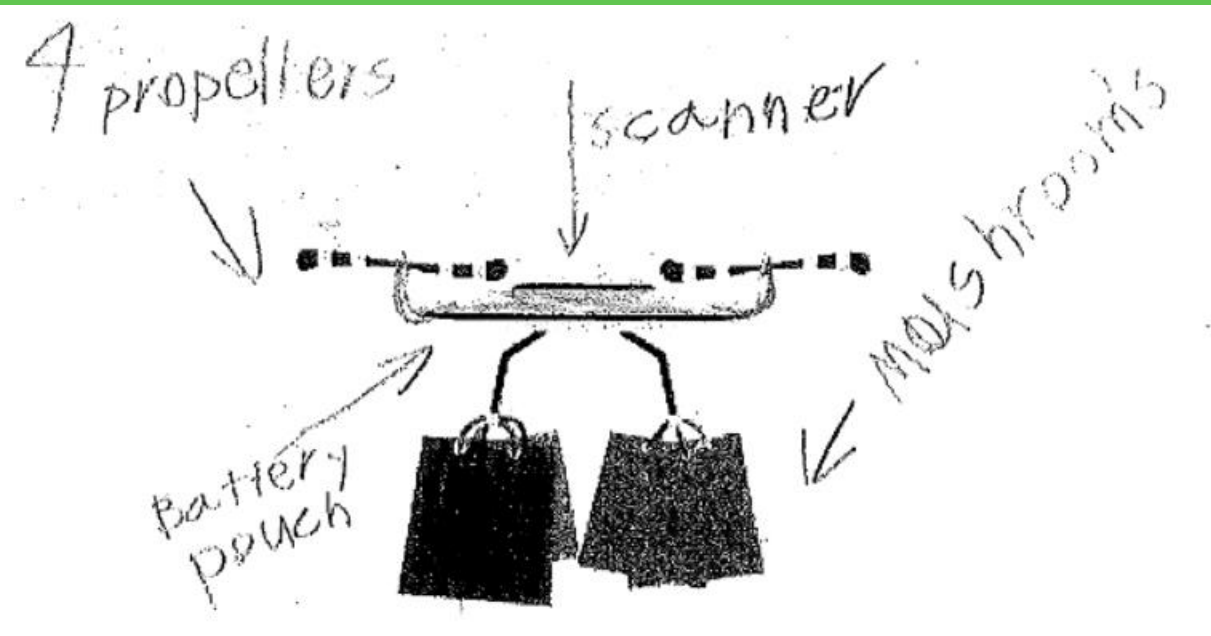
Creating a New Species of Fungi

“My idea is to use bioluminescent fungi and edible fungi and create an edible bioluminescent mushroom...It could help with surgery by the patient eating the mushroom before the surgery and the surgeon would not be needing a headlamp because that body part would be glowing inside.”



Huck Oliver

The Shroom Drone



“The Shroom Drone (SD-22) scans the mushroom and if edible, it drops the mushroom into a sack. Once the sack is full, the drone delivers the mushrooms to a restaurant and deposits the money to the drone owner.”

Jameson Smith

My Healthy Plastic Garden

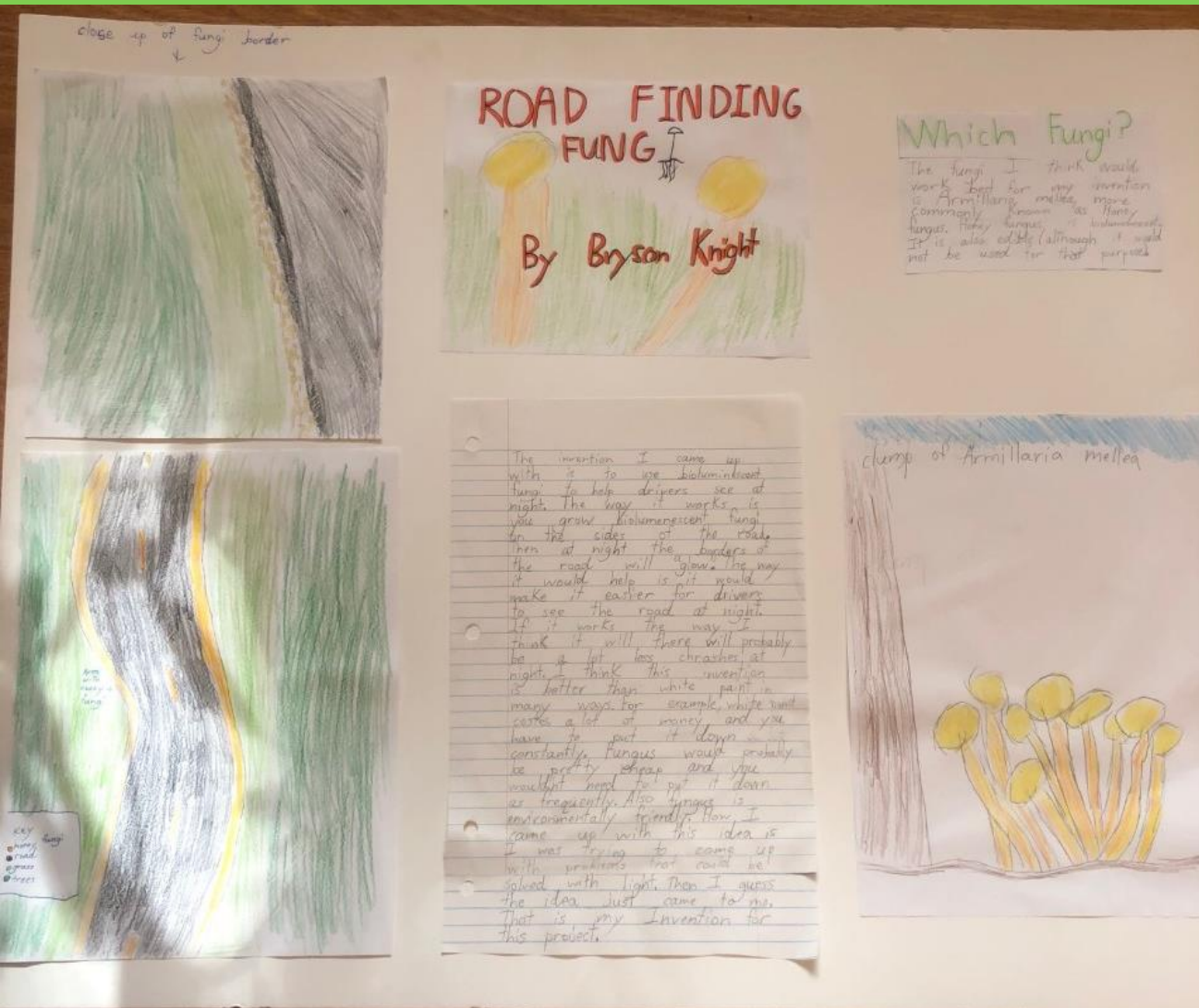
“A pilot test for how the ordinary oyster mushroom can help solve the world’s plastic pollution problem.”



Bryson Knight

Road Finding Fungi

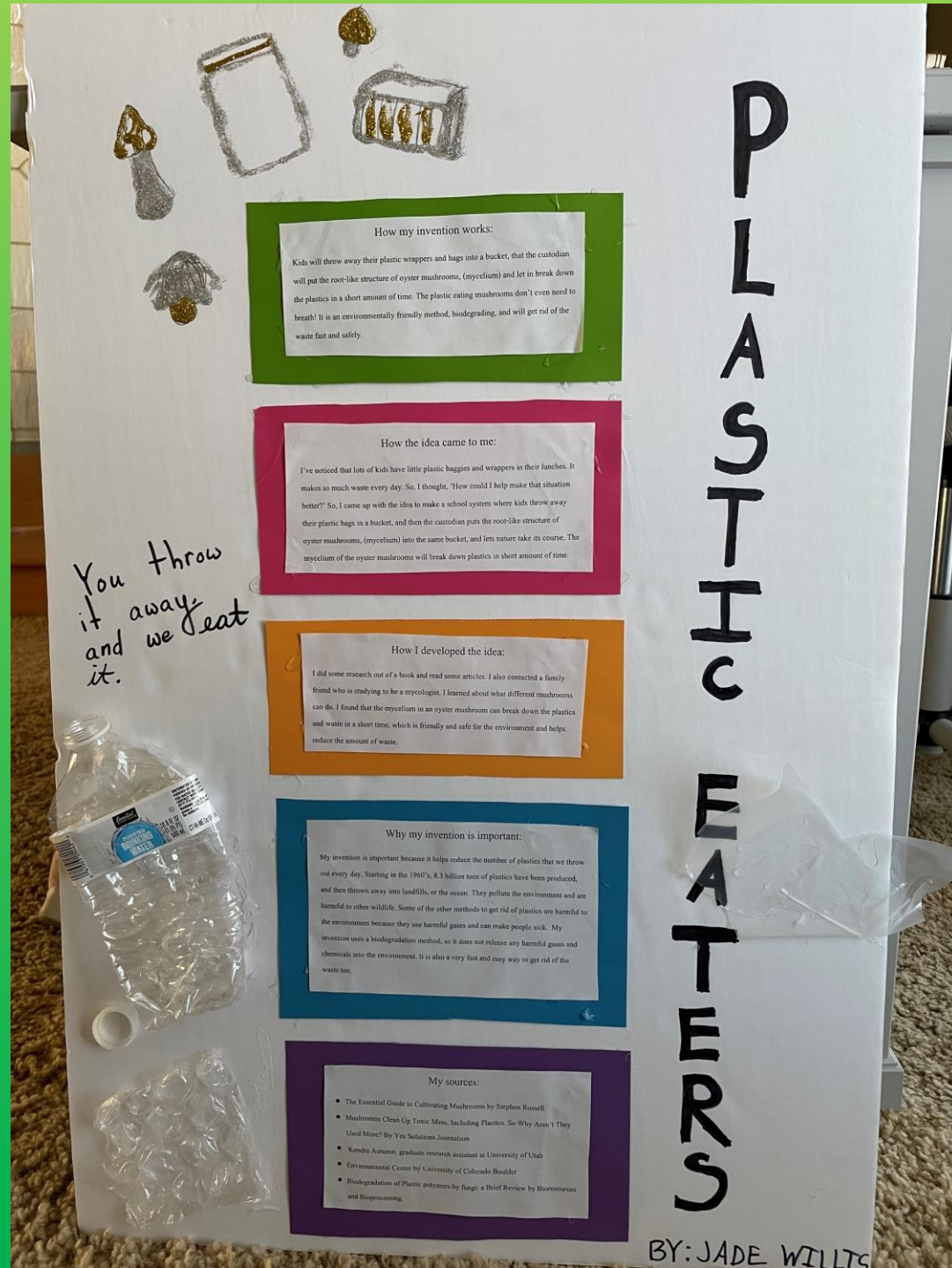
“The way it works is you grow bioluminescent fungi on the sides of the roads. Then at night the borders will “glow”. The way it would help is it would make it easier for drivers to see the road at night.”



Jade Willis

Plastic Eaters

“How my invention works is that kids will throw away their plastic garbage wrappers from their lunches into a big box that the custodian will take and put the root-like structure of an Oyster mushroom, and let the mycelium in the mushroom break down the plastics in a short amount of time.”



Dillon Ostendorff

The Shroom Light

“The Shroom Light grows bioluminescent mushrooms inside a tube and dish to provide light naturally for people who cannot afford electricity. The lamp includes a "spore packet" and growing area to re-grow mushrooms over time.”

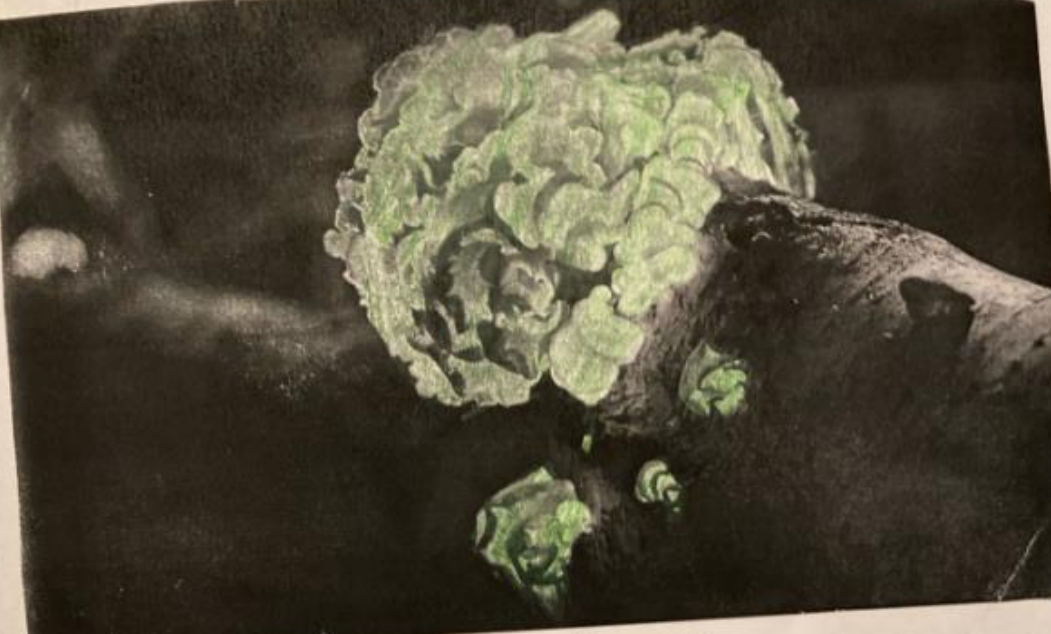


Alyx Burnett

Glow Chips

“To make a glow in the dark playground you have to:

1. Get about 5 cubic yards of bark chips.
2. Get about 240cc of liquid Bitter Oyster cultures.
3. Put the bark chips in barrels or a different large container.
4. Squirt the liquid Bitter Oyster on the bark chips.
5. Let the Bitter Oyster grow. While you do that, you would have to spray the bark chips with water using a hose or spray bottle every day.
6. Put the bark chips on the playground and keep spraying it with water every day.
7. You have a glow in the dark playground!”



Glowing Panellus
Scripticus (Bitter Oyster)

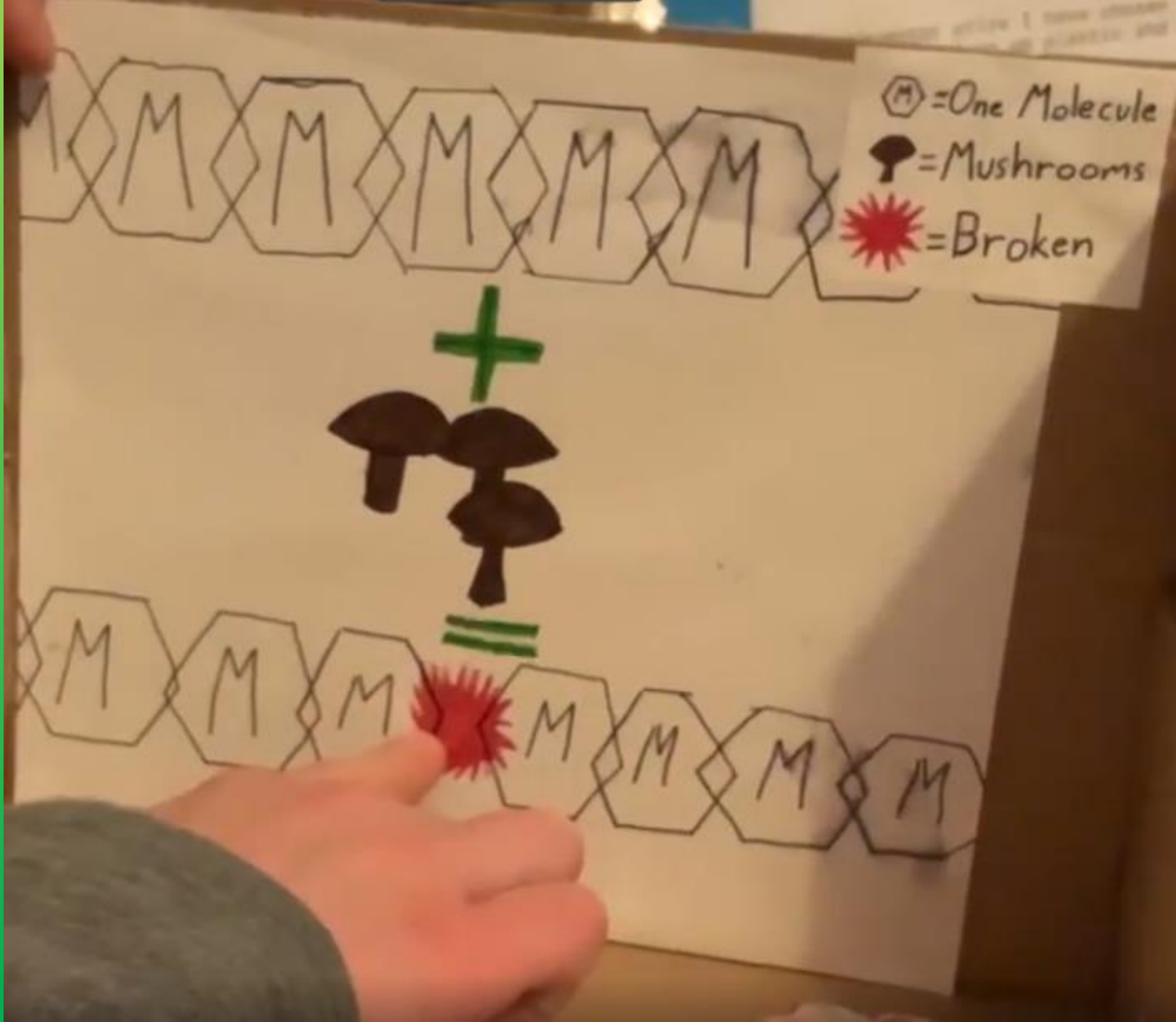


Kids playing on a
bioluminescent play-
ground (Glow Chips)

Claire Osborn

Clean Planet

“Inside the box we will place Pestalotiopsis spores and mycelium...when you can't see any more plastic pick up the mushroom box...and mash the mushrooms until they look like applesauce. Then separate the plastic chemicals...and make a new chain and a new plastic product!”



Thomas Dawson

My Fantastic Fungal Feeder

“The way my feeding machine would work is that it is a camouflaged box attached to a tree. When the motion sensor sees an animal approach it dispenses Oyster mushrooms for them to eat.”

FUNGAL FOOD CRITICS

By Thomas

WHO LIKES WHICH MUSHROOMS?

THE VOTERS:



GOATS



JILL

DARIA



CHICKEN



RABBITS



RANGER

THE MUSHROOMS:



THE RESULTS:

Mushroom	Bunny 1	Bunny 2	Bunny 3	Goat 1	Goat 2	Goat 3	Goat 4	Goat 5	Chicken 1	Chicken 2	Dog	TOTAL
A	0	2	2	1	3	1	3	4	0	4	4	24
B	1	2	3	4	4	4	3	4	3	3	3	34
C	4	0	2	4	1	1	3	3	4	3	3	28
D	1	2	2	1	1	1	3	4	3	4	4	28
E	4	4	4	4	3	3	3	4	4	3	4	40
TOTALS	10	10	13	14	12	10	16	19	14	17	18	

- A Baby Bella
- B Shiitake lentils
- C White Blanc
- D Portabella
- E Oyster

IDEA:

I GOT MY IDEA FROM EATING MUSHROOMS. ALL DELICACIES AROUND THE WORLD!

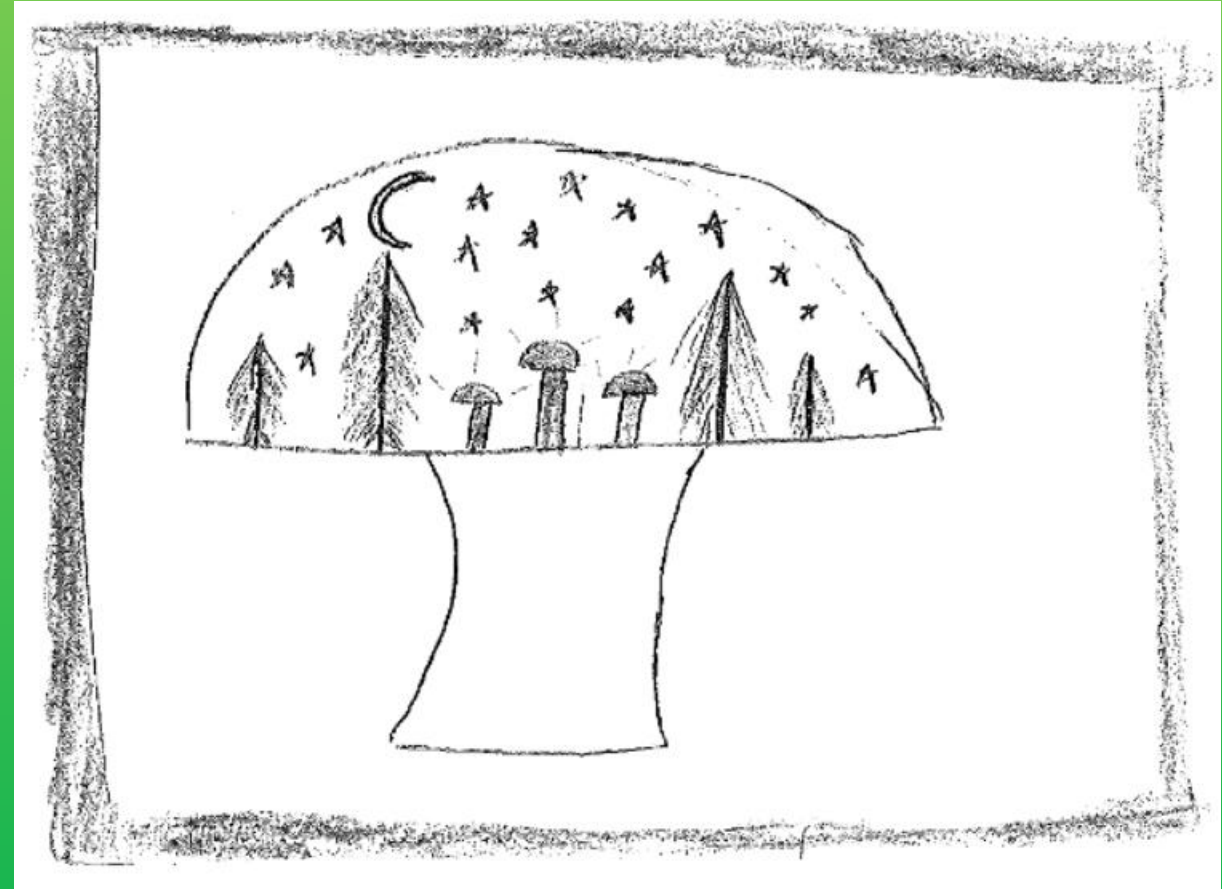


SO OYSTER WON WITH 40 POINTS, I WILL FILL MY FANTASTIC FUNGAL FEEDER AND UP THERE I WILL EXPLAIN HOW IT WORKS

Stevie Marquez, Mila Pompei, & Khaya Reel

The Fungi Night Light

“We invented a mushroom night light that is powered by bioluminescent mushrooms...When it becomes night, the blue light of the mushroom shines through the stars and moon cut outs and reflects on your ceiling.”



Presley Lester

Spoes

“Not only are they made from leather from mushrooms, they spread spores with the compartment in the sole. When you don't want to spread spores, close the compartment.”





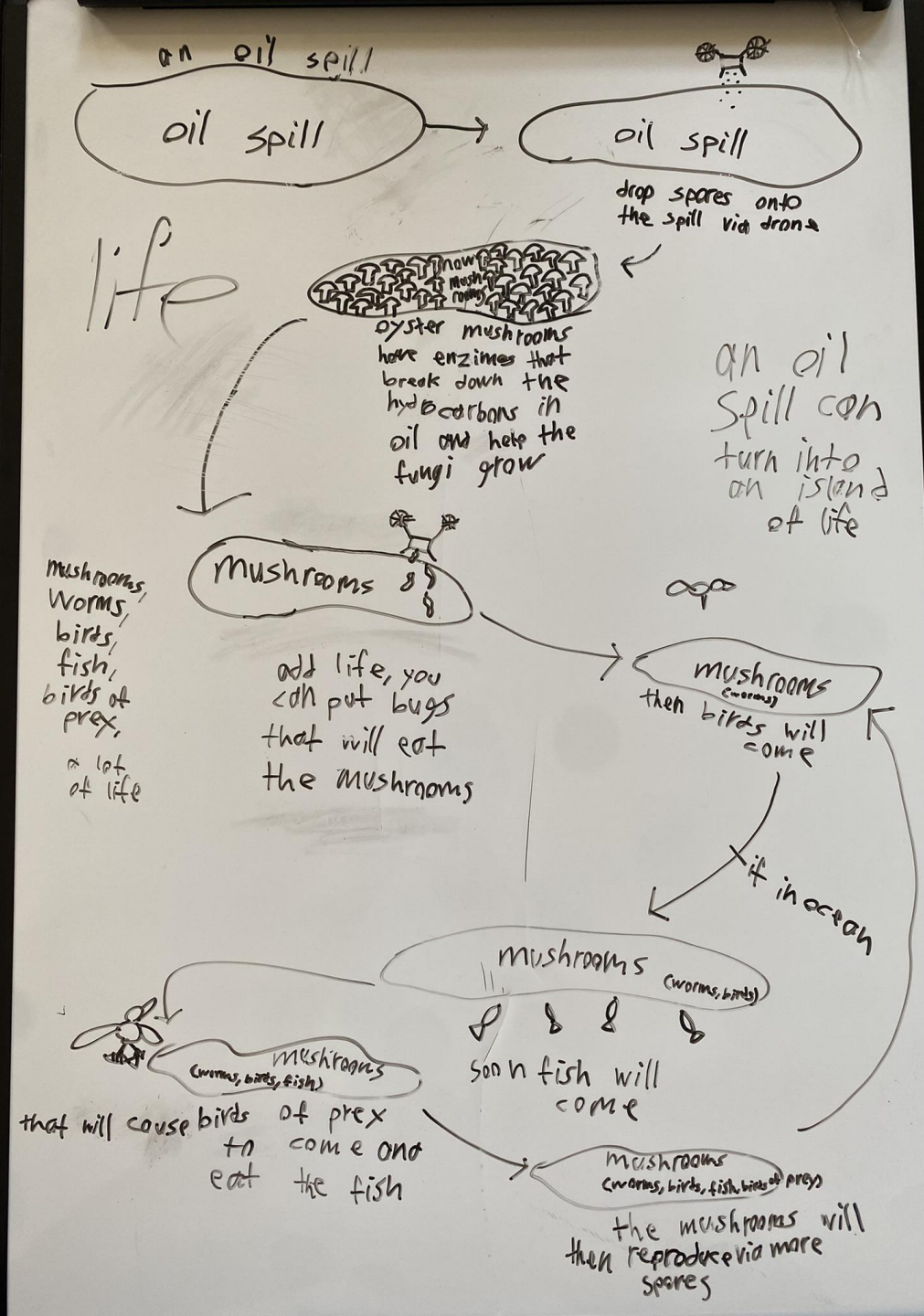
5th

Grade

Kai Sampson-Higgins & Wade Smith

How Mushrooms Can Save the Planet

“Oil spills are a huge problem and the enzymes in these mushrooms can break down the hydrocarbons in oil. This process can be enhanced by dropping mushroom eating insects on the mushroom patches with the help of drones. These insects will then attract fish and birds creating a new cycle of life on the mushroom patch.”



Zoe Clements & Nolan Shouse

The Bee Hospital

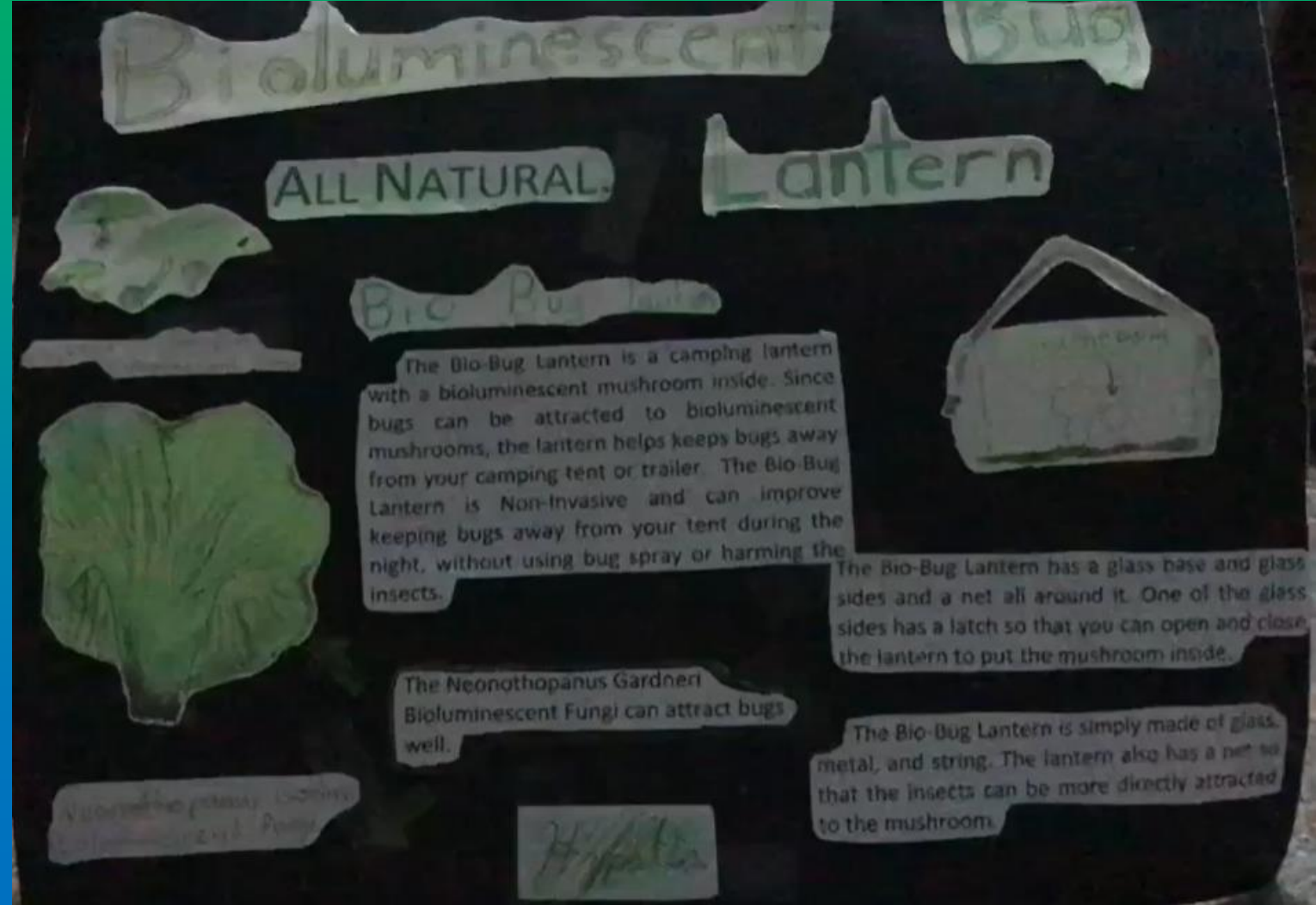
“There is a new way to make bees healthier using mushrooms...It’s designed to look like a hive so it’s familiar to the bees.”



Hypatia Evans

The Bioluminescent Bug Lantern

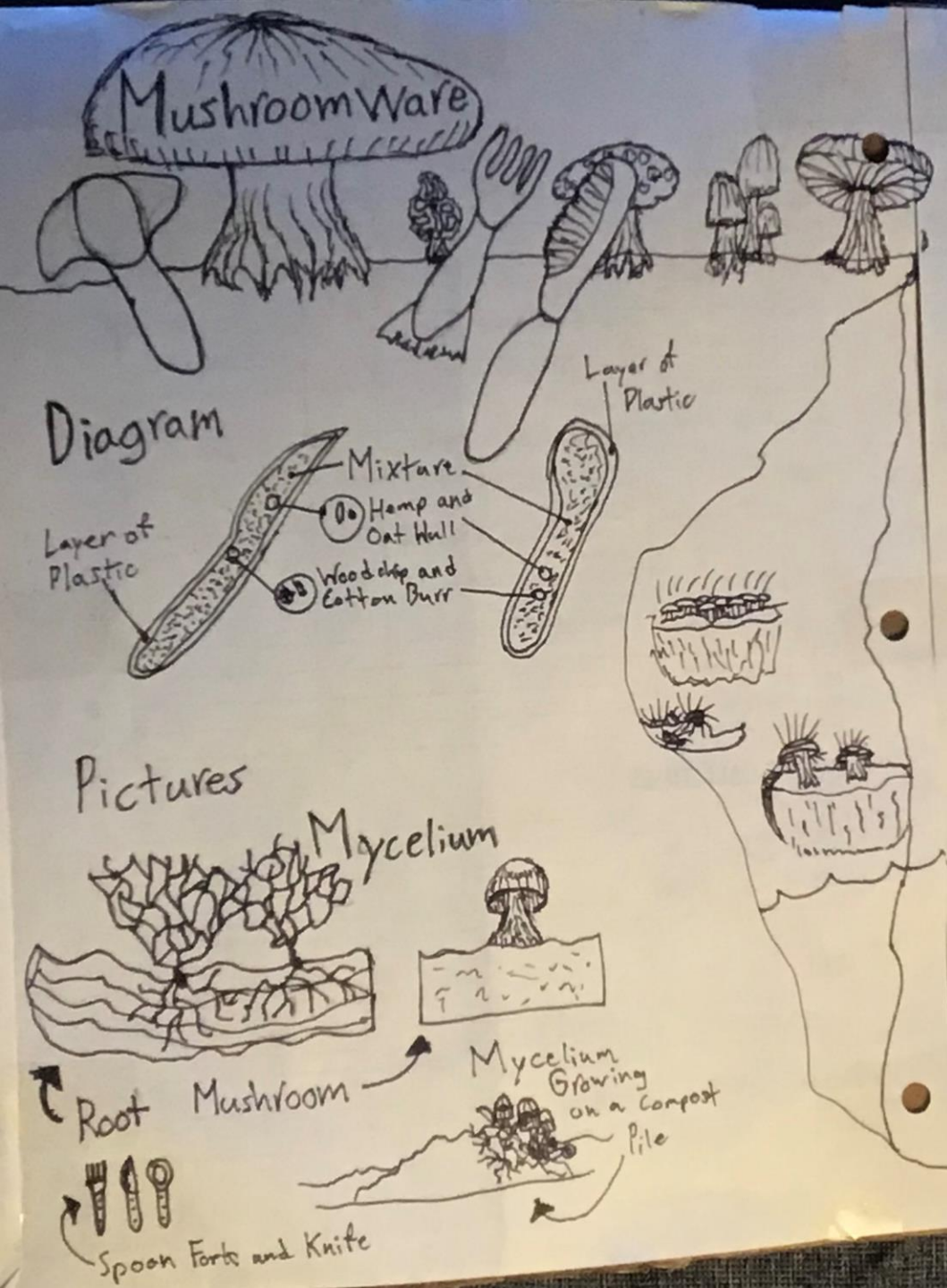
“...the Lantern helps keep bugs away from your camping tent or trailer...without using bug spray or harming the insects.”



Oliver Bertero

Mushroom Ware

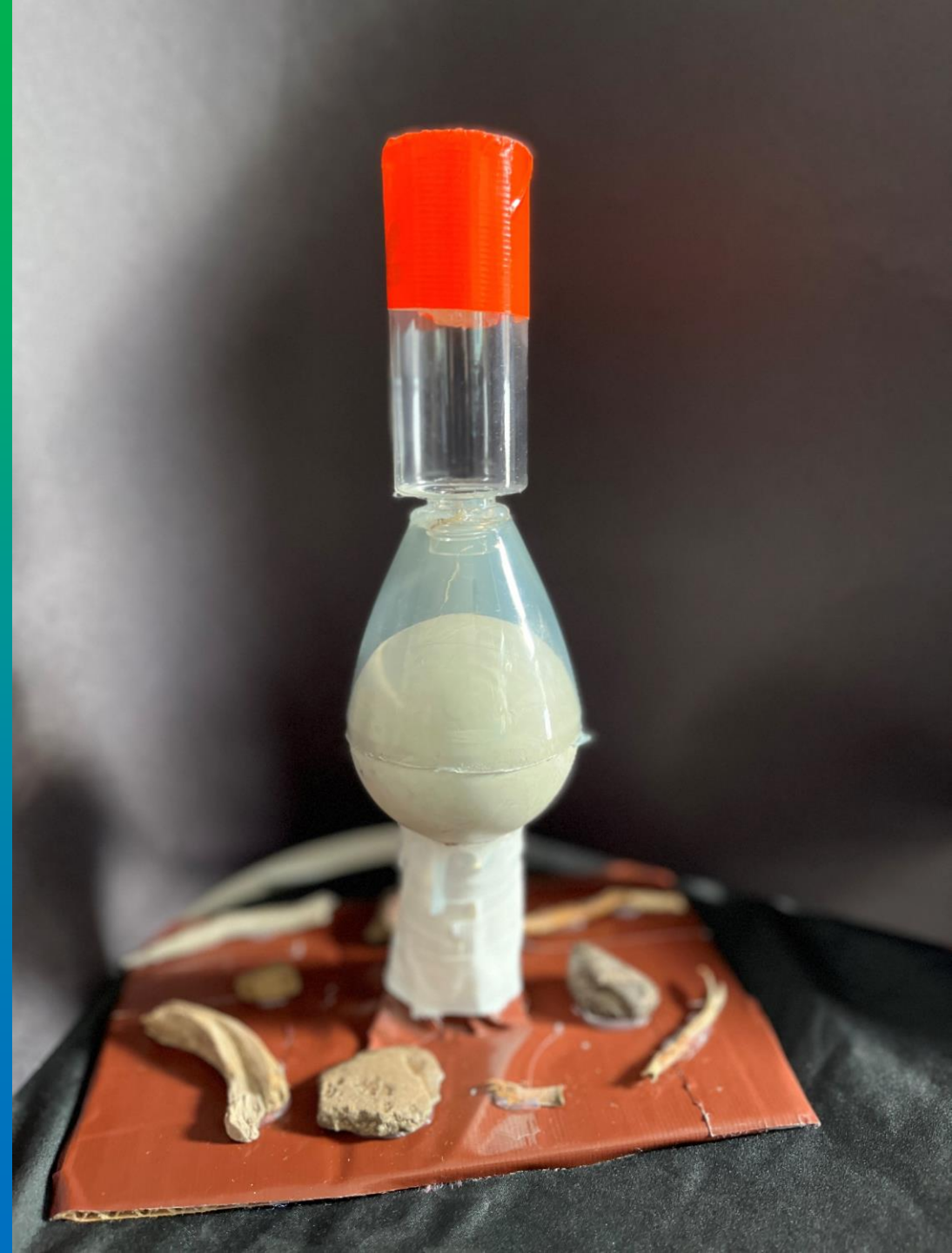
“First you put the mixture...in a mold and shape it. Then you cover it with a layer of plastic. The plastic makes it so that the Mycelium does not contaminate the food...Mycelium filled utensils...can reduce waste in the landfills by a lot.”



Ava Hershman

The Extractor 4 - 8 - 7

“This device is made to extract smoke spores from mushrooms safely so you can then relocate them to where you need something to decompose.”





Luke Gyesky

Mushroom Tubes for Nuclear Power Plant

“My invention of mushroom tubes connect to the nuclear waste bunker and run all the way to the surface to release all the non-harmful air.”

Corin Roddy

The Mold Maimer

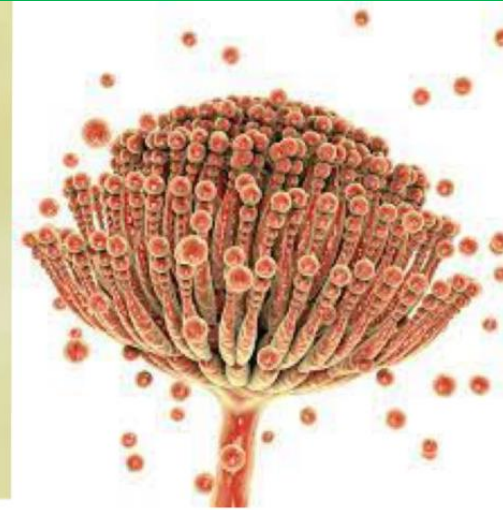
“The product would be a guide with how to get rid of mold on your clothes. It would include six of all the packets of stuff that would get rid of the mold with instructions.”



My product



Mold



Mycotoxins

Instructions

Disclaimer: Only use what is said and nothing else

Wash 1: Vinegar

White distilled vinegar kills 82% of mold since it is mildly acidic. Put in one of the packets or 1 cup of dehydrated white distilled vinegar, Regular wash.

Wash 2: Borax

Borax is derived from boron, an element that is in the ground that's not metal. Borax changes the environment on the mold, making it so the mold can't survive. Do one packet or 1 cup of borax, also regular wash.

Wash 3: Epsom salt

The Epsom salt kill the bacteria that the Vinegar and borax don't. Do a packet or one cup of Epsom salt also regular wash.

Additional rinse cycle: High concentration citrus seed extract

The citrus seed extract destroys mycotoxins, which are the mold that makes humans sick. Use the packet or around a ounce of high concentration citrus seed extract on rinse cycle.

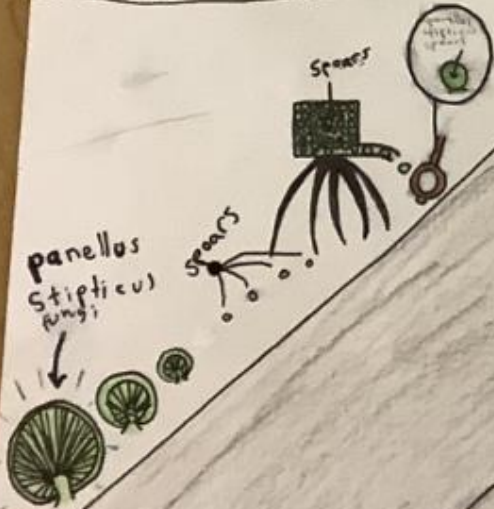
Why I would do this

Lots of people around the world have a variant of a gene called HLA-DR that makes it so that when you are exposed to mycotoxins which are made by mold and are toxic, you can get sick and even die. In fact more than lots of people. Around 25% of the population have mold illness, including my mom. We had to move to a drier place to get away from mold, and we still had to get rid of a ton of stuff that could be moldy. I would make this product to help people get past mold. The product would be a guide with how to get rid of mold on you clothes. It would include six of of all the packets of stuff that would get rid of the mold with instructions

The Spider

Crawler

The Spider Crawler also has a navigation system that tells it where to go so you can program it to crawl along the road at night.



Description:

The Spider Crawler crawls along side the road and drops panellus Stipticus spores so they can grow into glow in the dark mushrooms so cars can stay on track and illuminate the road at night

Teegan Mason

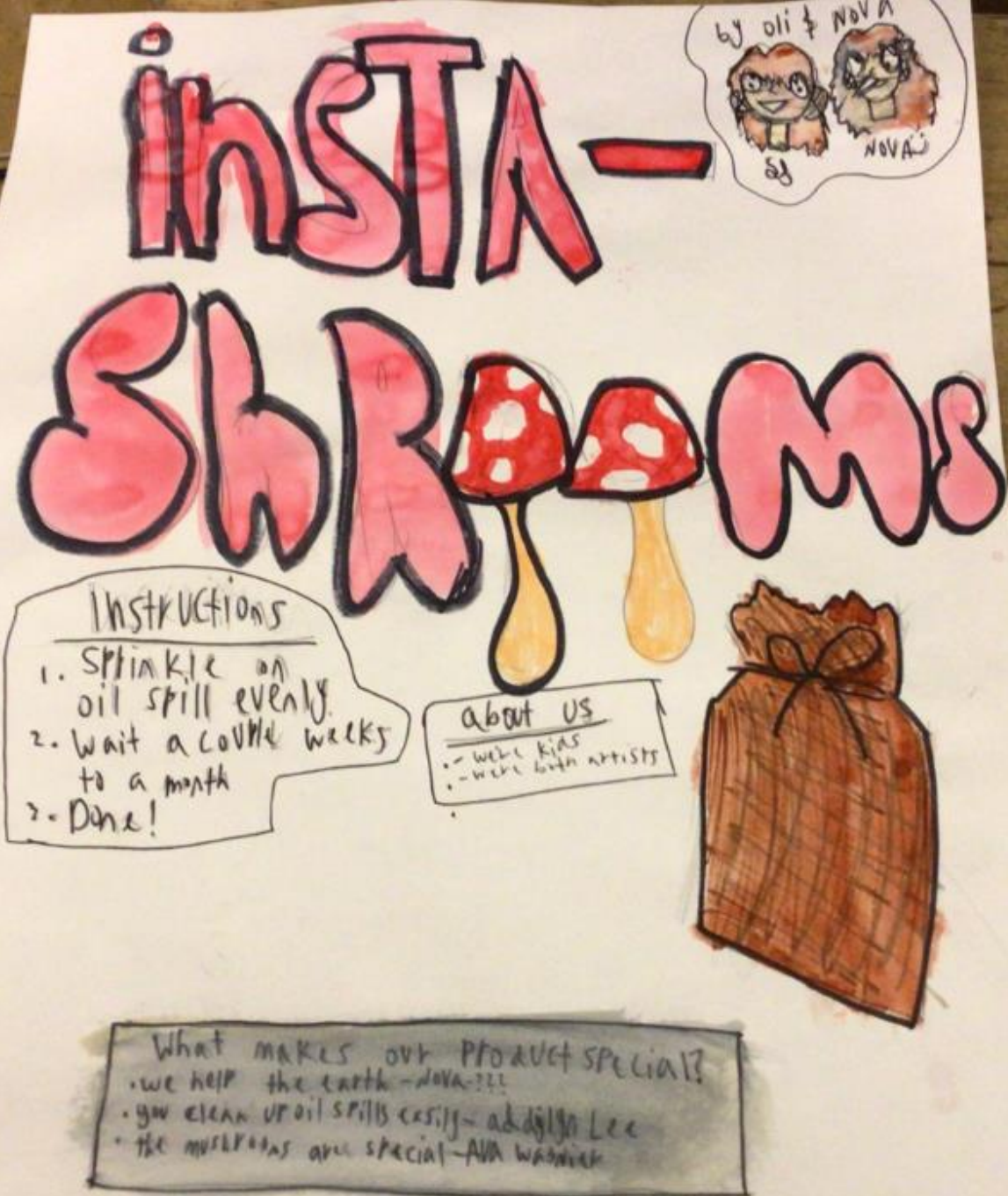
The spider crawler

“The Spider Crawler crawls alongside the road and drops panellus stipticus spores so they can grow into glow in the dark mushrooms so cars stay on track and illuminate the road at night.”

Oli Haindel

Insta-shrooms

“A bag of oyster mushroom spores that you sprinkle over oil spills.”



Amelia Malinowski & Aliyah Repucci

Mushroom Munchies

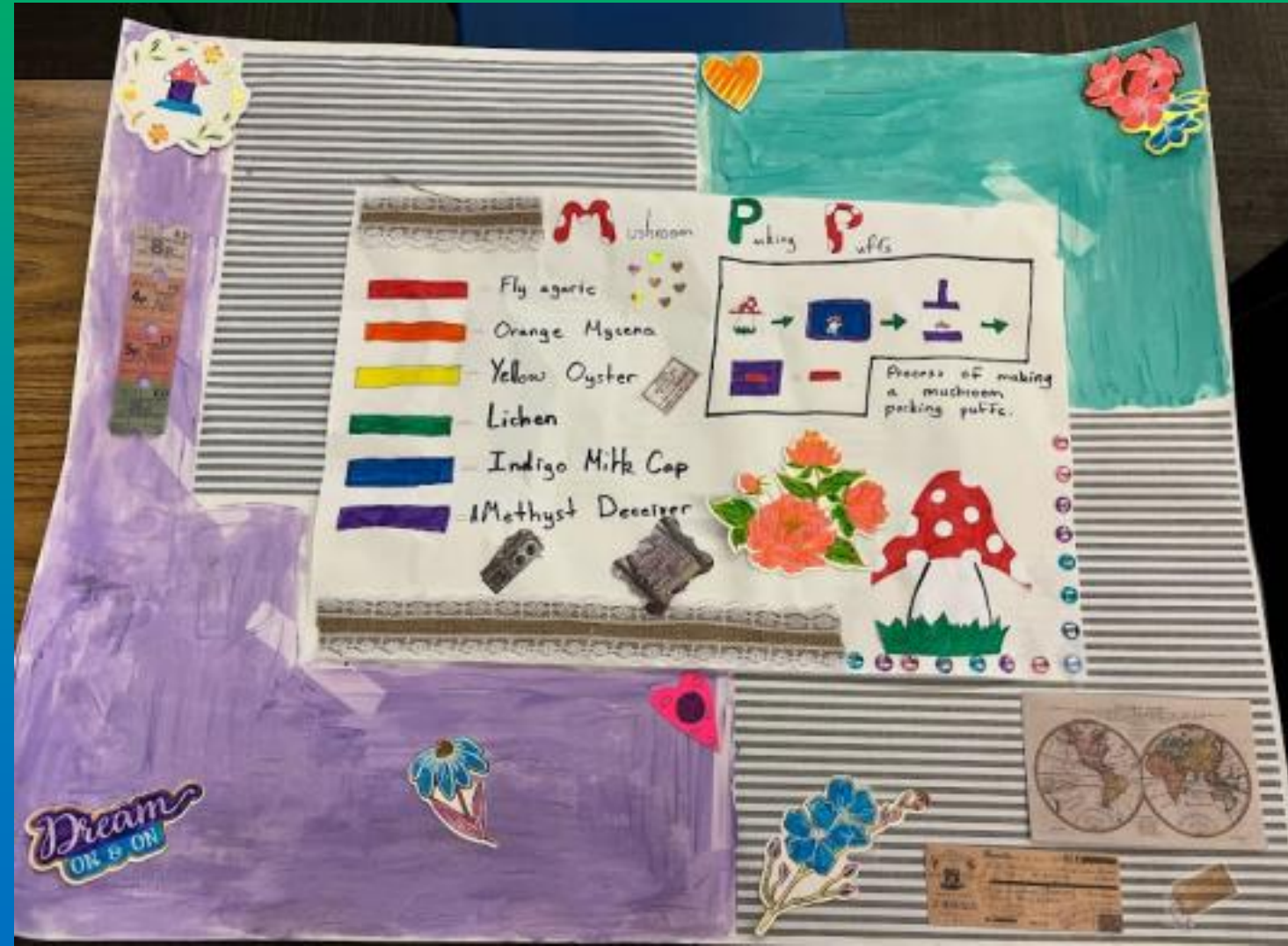
“Are you looking for a way to make more room in your trash can?... Mushroom Munchies decompose all the decomposable trash in your trash can.”

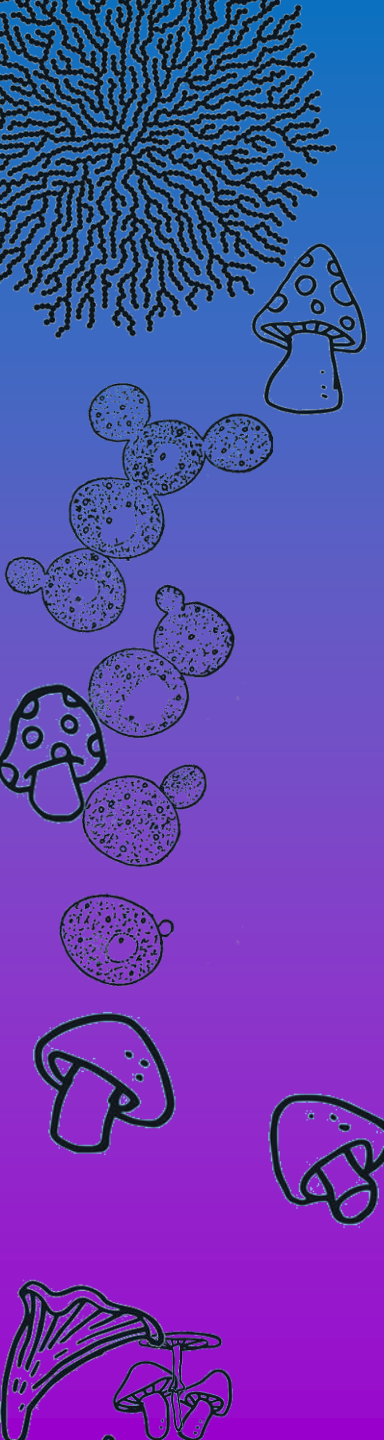


MJ Rivera, Sophia Robles, & Keira Tee

Mushroom Packing Puffs

“Instead of using styrofoam it uses non-poisonous mushrooms to replace the bad and toxic materials in styrofoam.”





Middle

School

**Christian Dorman,
Mallory Towell, &
Edna Velazquez Acuna**

Shroom Paint

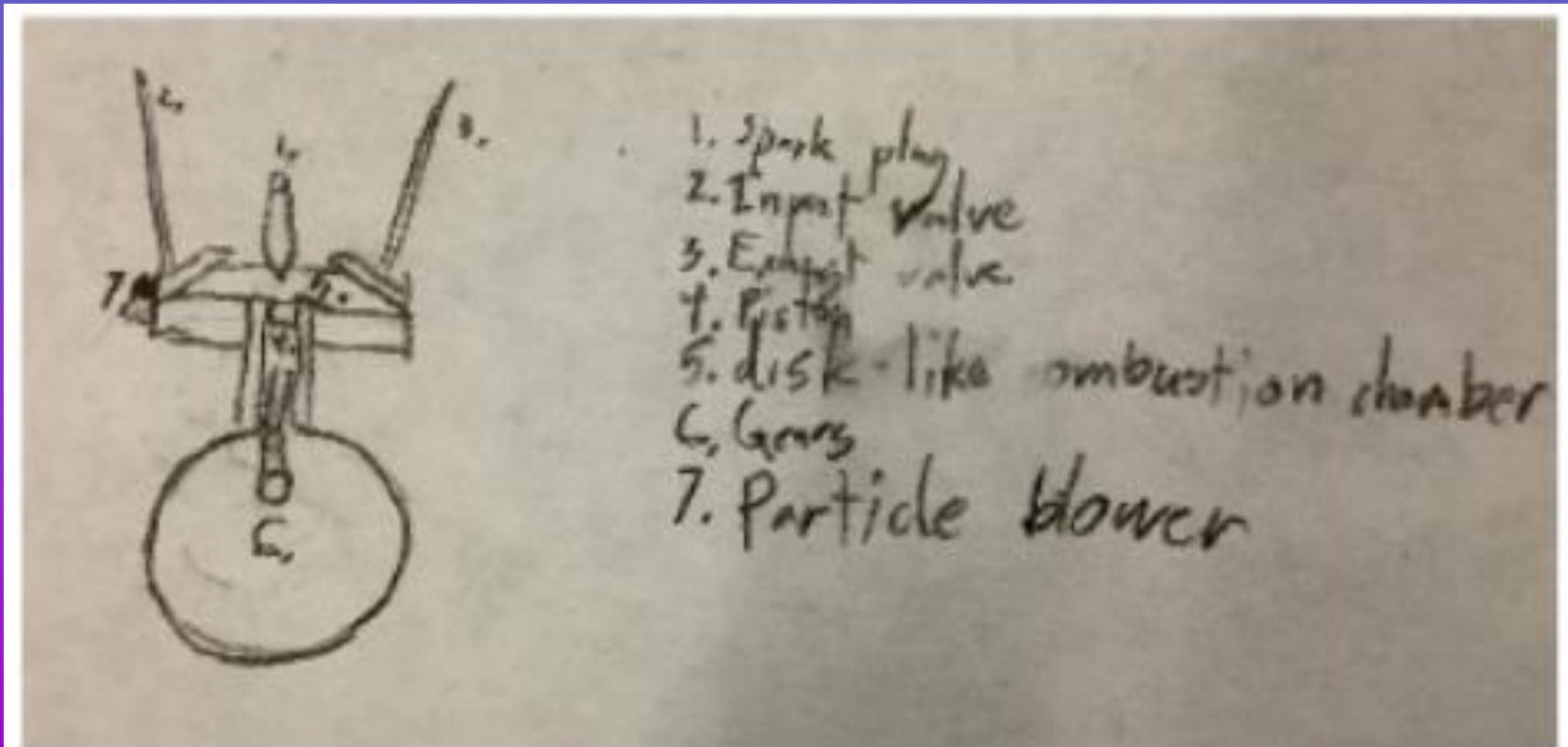
“The paint we have currently, at least in the outdoors, fades usually in 5-10 years from the Sun. Our idea is that mushroom paint will last longer than the paint we have currently.”



Elias Gilmore, Isabel Martin, & Claire Mattox

Fungi fuel

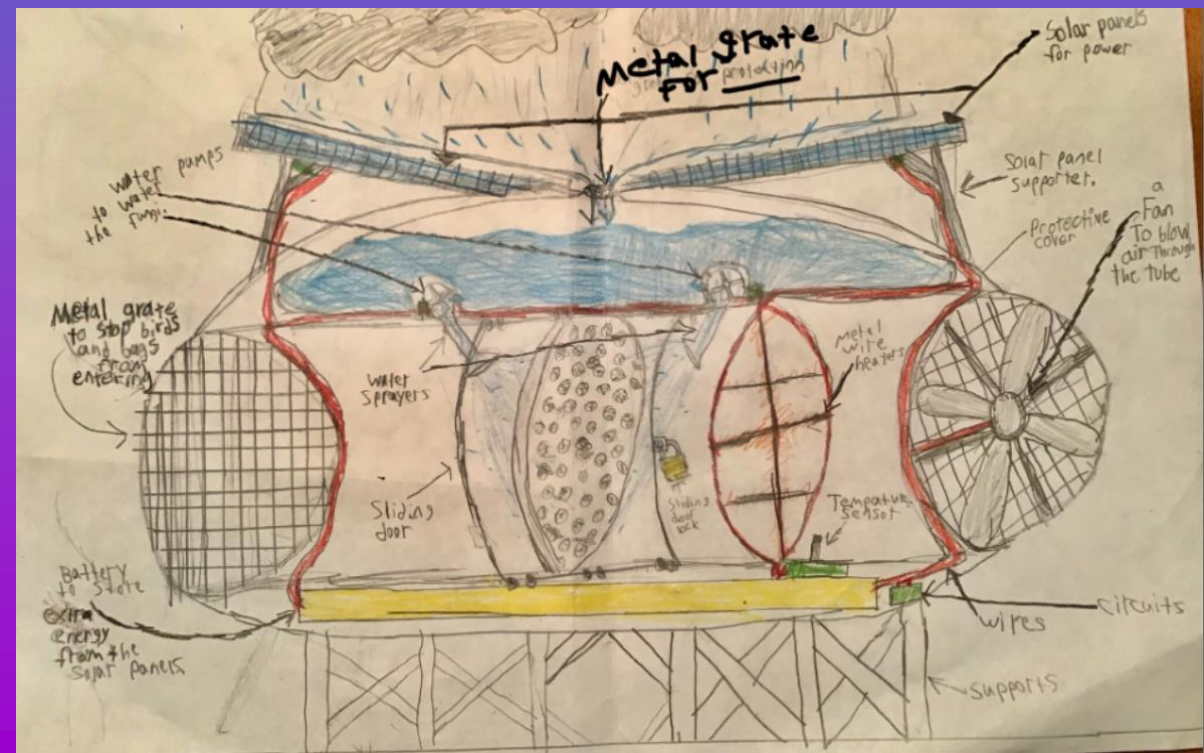
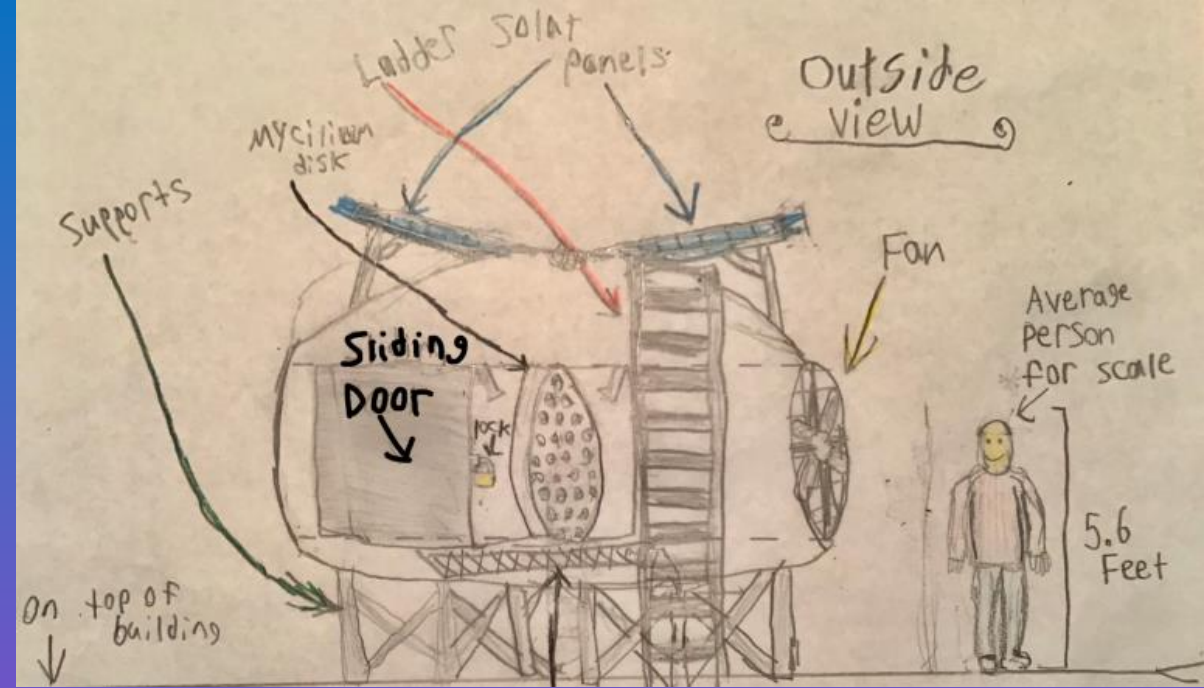
“...a fuel for small machines
made out of
mushrooms...[and] a
modified engine to fit the
needs of this fuel.”



Luke Mudie, Alexander Telford, & Thomas Telford

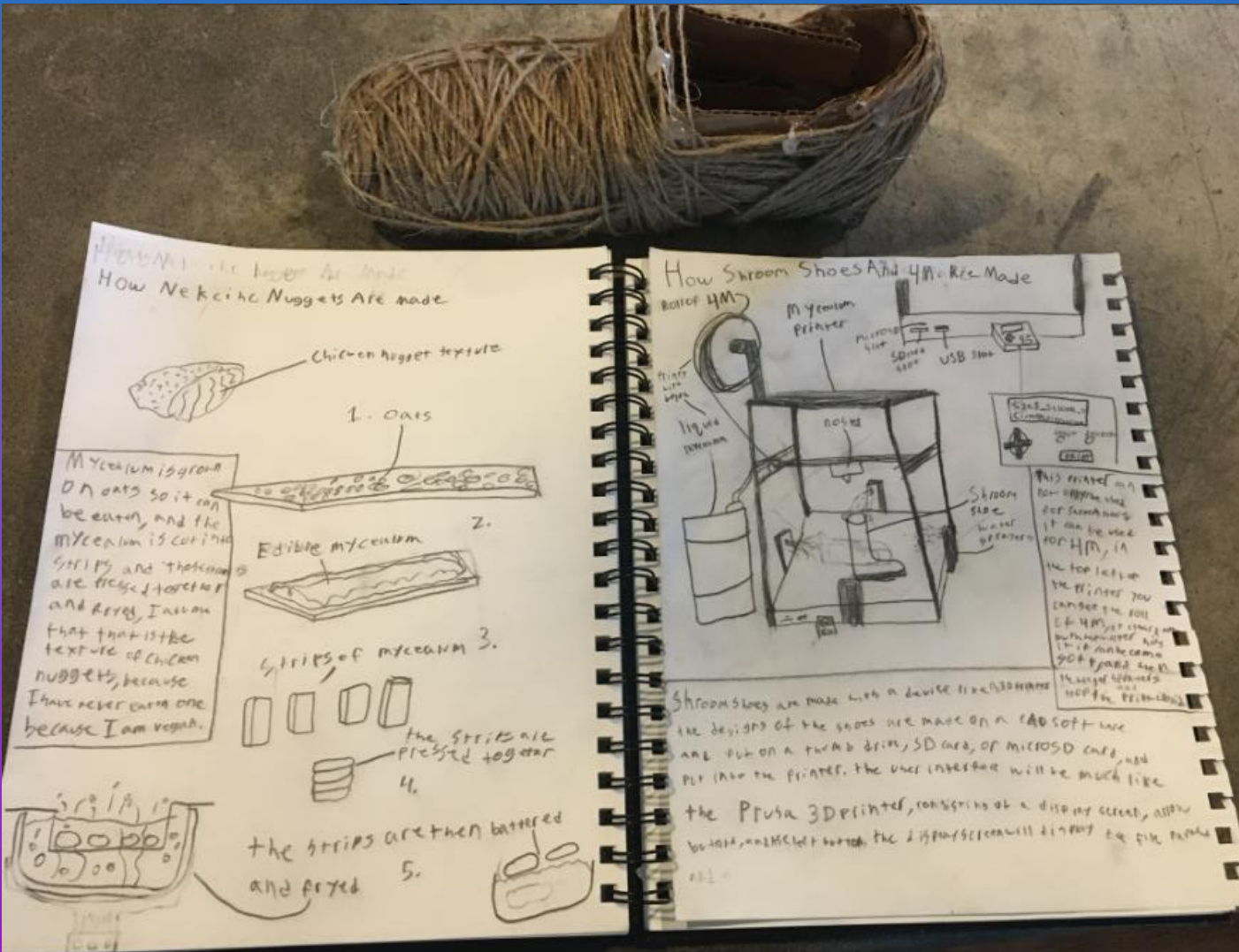
Fungi-Freshener

“The solar panels are tilted at an angle to direct rainwater through a filter...to water the fungi...The fungi grows on a plastic dish with lots of holes in it where the roots will stretch across to create a ‘cleaning net.’”



Graham Finley

Mycelium Magic

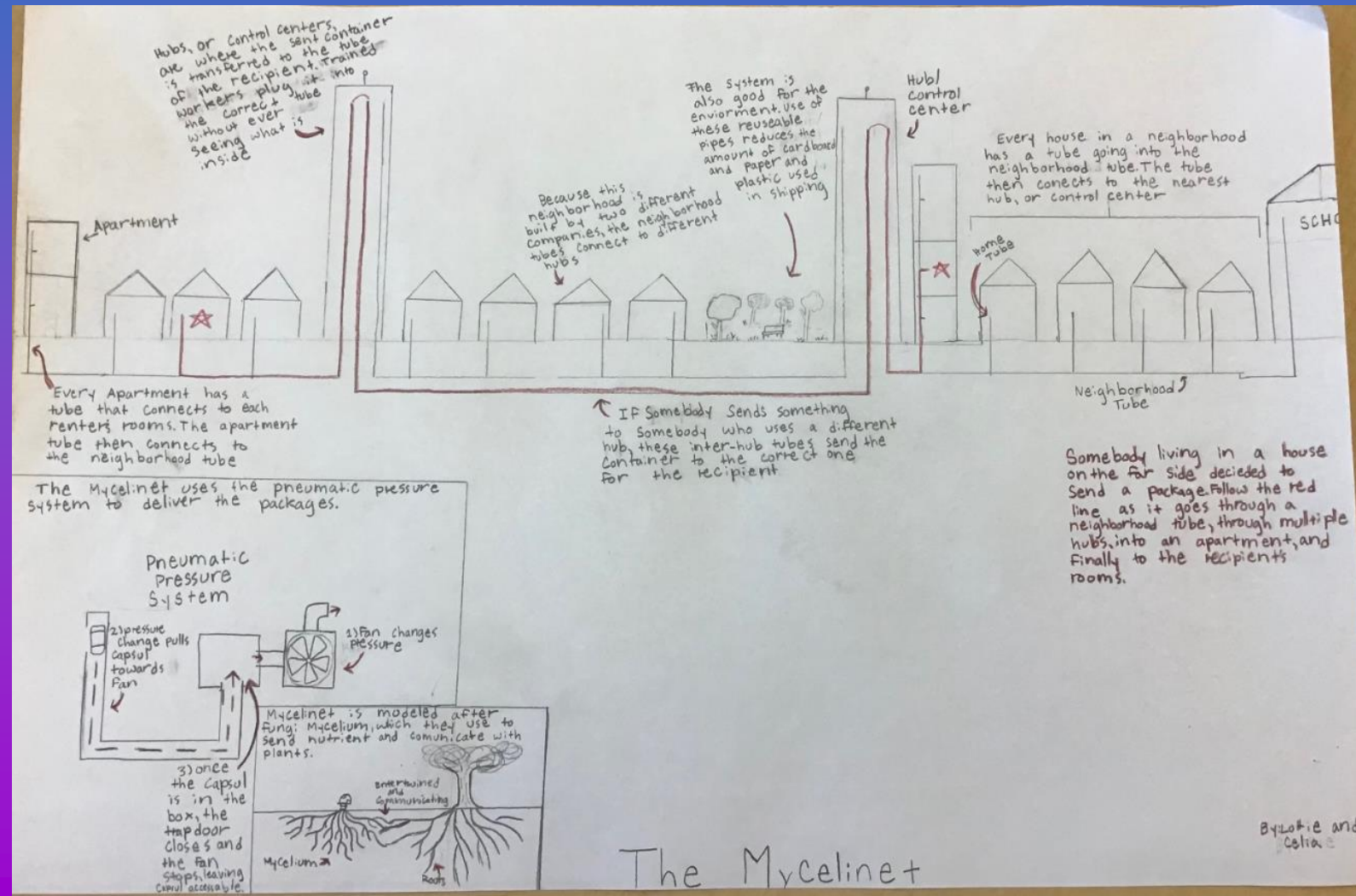


“4M (Magical Mushroom Mycelium Material) is a 3D printable material used to make Shroom Shoes and clothes.”

Lottie Anderson & Celia Fornaciari-Olsen

The Mycelinet

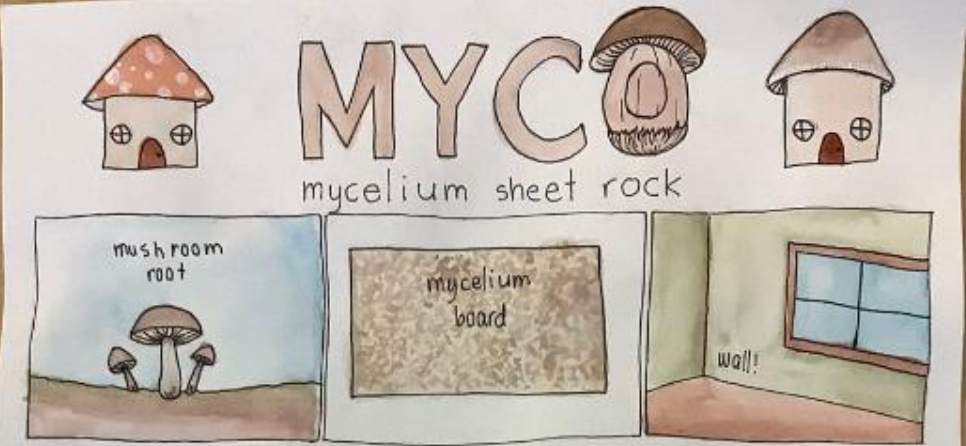
“The Mycelinet is an intricate underground system of tubing used as a public citywide delivery system. It is inspired by mycelium.”



James Heinly & Tessa Hoffmann

MYCO - mycelium sheet rock

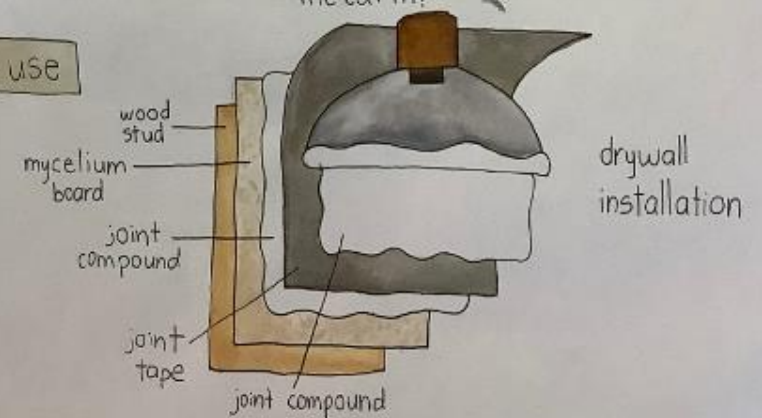
“Mycelium (mushroom roots) boards would replace gypsum boards in drywall...Mycelium on the other hand is fire-resistant, water-resistant, mold-resistant and extremely cheap!”



the why

The mycelium (mushroom roots) boards replace gypsum in drywall. When gypsum is thrown away, it creates poisonous gas (hydrogen sulfide) which can quickly cause death and contaminates the soil. The reasons its still used in drywall is because its fully fireproof and it is cheap to mine. However, mycelium is fire-resistant, water-resistant, mold resistant and extremely cheap. (Mushroom sheet rock would be almost 2x cheaper!) It lasts a long time and is very sustainable! Unlike gypsum, if mycelium gets thrown away, it will just biodegrade back into the earth!

the use



bioluminescent

bug trap



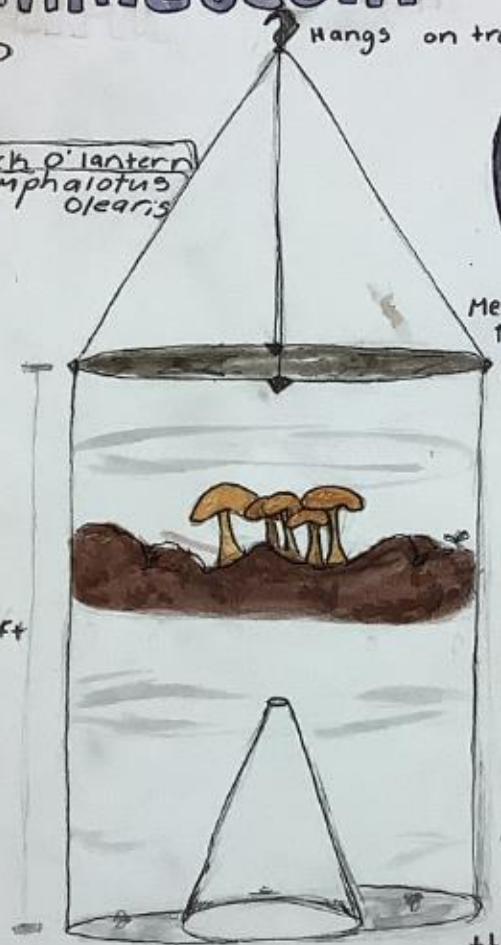
Jack o'lantern
omphalotus
olearius

Hangs on trees



Mesh lid
↑↑
Mushrooms
can breathe

16"



How the insects die

The insects are lured in by the light of the mushrooms and try to get to them by climbing/clinging up the cone and get stuck inside the cage. Then they slowly die of dehydration.

↓↓
bottom lid comes off to empty tank

about the mushrooms

The jack o'lantern mushrooms are toxic if ingested and if they are handled regularly they can get you sick. Do not eat or handle without washing your hands thoroughly afterward.

Why are there mushrooms?

The mushrooms bioluminescent glow lures insects to the mushroom so that the mushroom can release its spores onto the insects so they can be spread around and reproduce.

Zara Naerheim & Marika Sowerby

Bioluminescent bug trap

“The cylinder has a lid on the top built of mesh ensuring mushrooms have air and can be watered regularly, and the bottom has a lid made of plastic to empty the bugs corpses.”

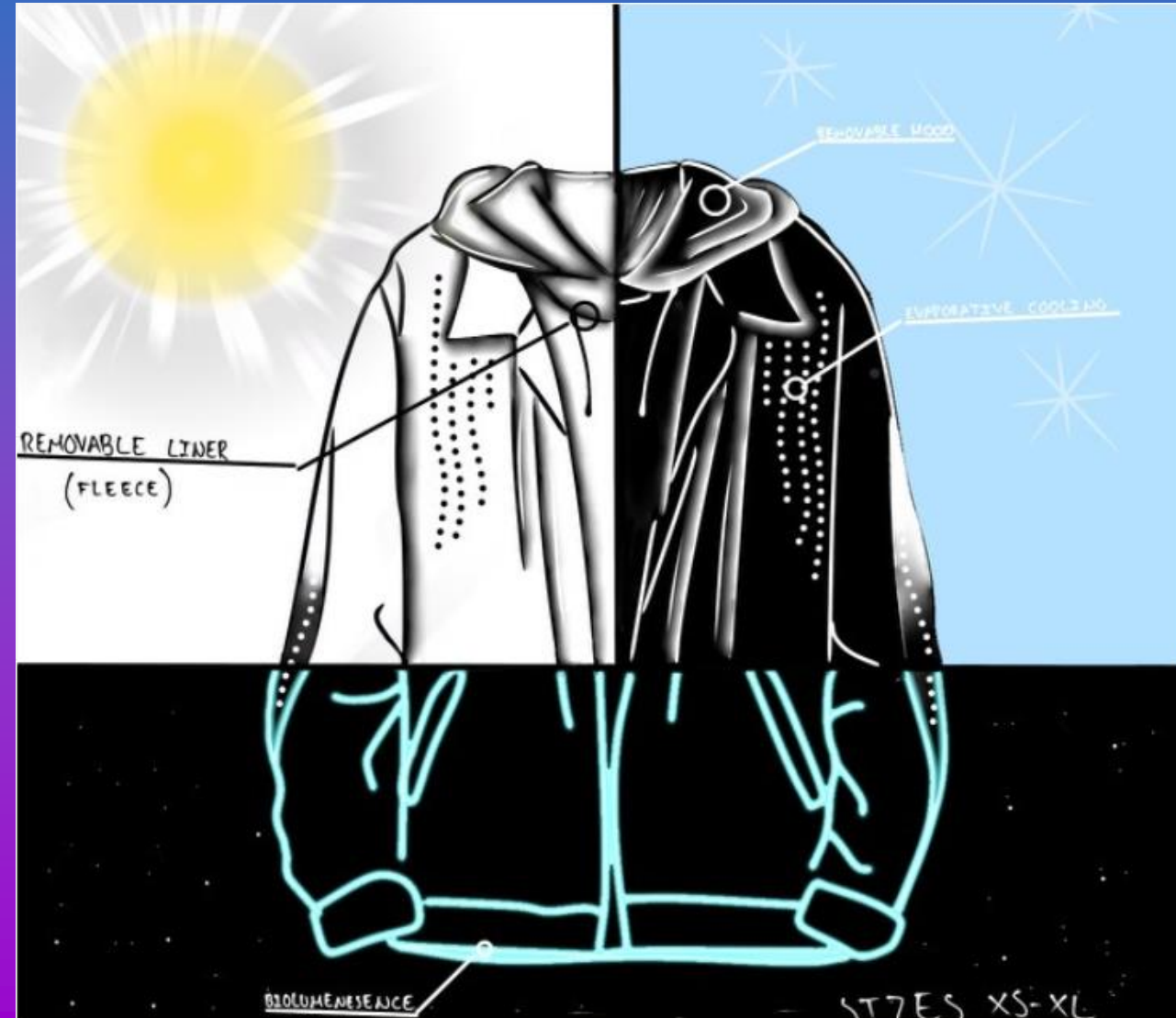


Charlie Baker & Kyra Mishler

The MiBa jacket

Grand Prize
winner!

“Mushrooms can survive and even flourish in a variety of habitats and climates...we wanted to create something that would help people do the same. This jacket...allows people to exist normally despite heat, cold, low-light, and any amount of water.”





Oliver Buchanan and Asa Jansen

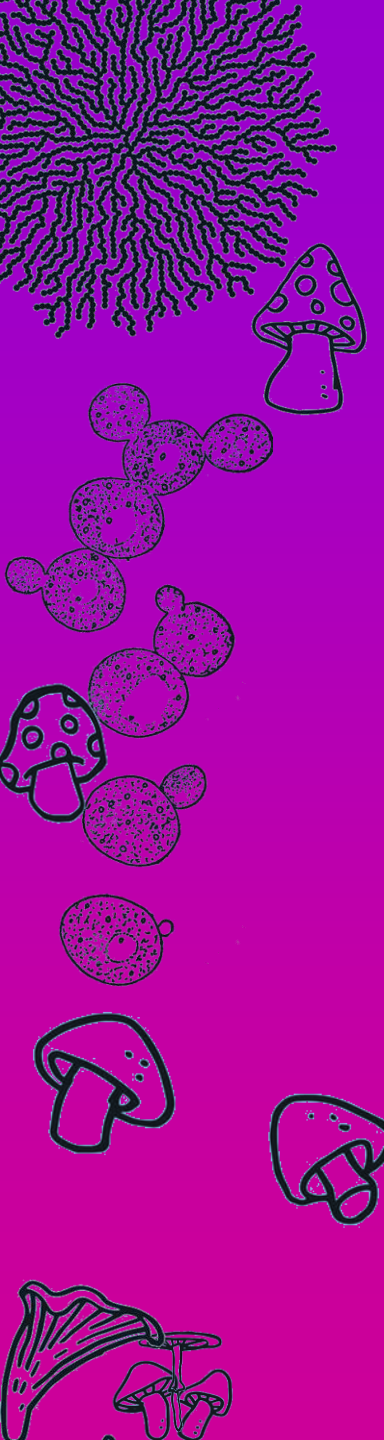
Slime Mold System of Transportation

Grand Prize
winner!



“We thought that it could be a really cool idea to make a system of transportation (fastest route) between the cities in central oregon. We are using the Slime molds ability to grow out and find its food to our advantage and we are going to use it to find the fastest route between places.”

*Quick disclaimer, slime mold is not actually a fungus, it is actually classified as a fungus-like protist so we reached out to the Invenenterprise team to make sure we could use it and they gave us the a-ok.



High

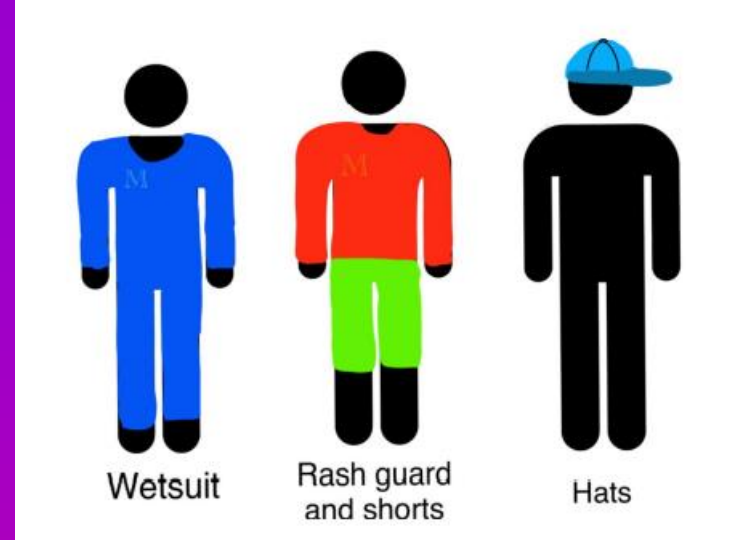
School



Skye Knox

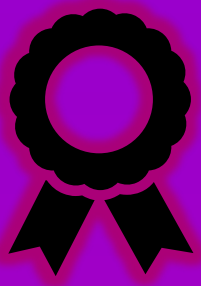
Fungus for Finery and Fidos : MUCCI

Runner-up!



“UV repellent mycelium fabric so you and your furry four legged friend can stay protected this summer!

...The materials are waterproof, durable, cost effective, flexible and strong. Now with the addition of the UV coating made from mushroom waste, the garments can effectively block out the sun...”

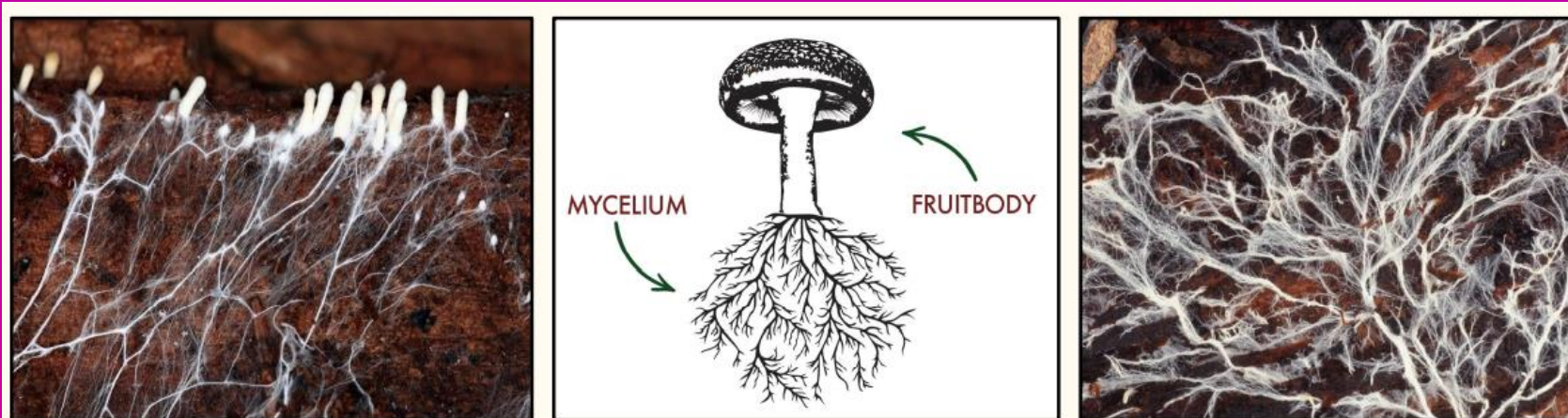
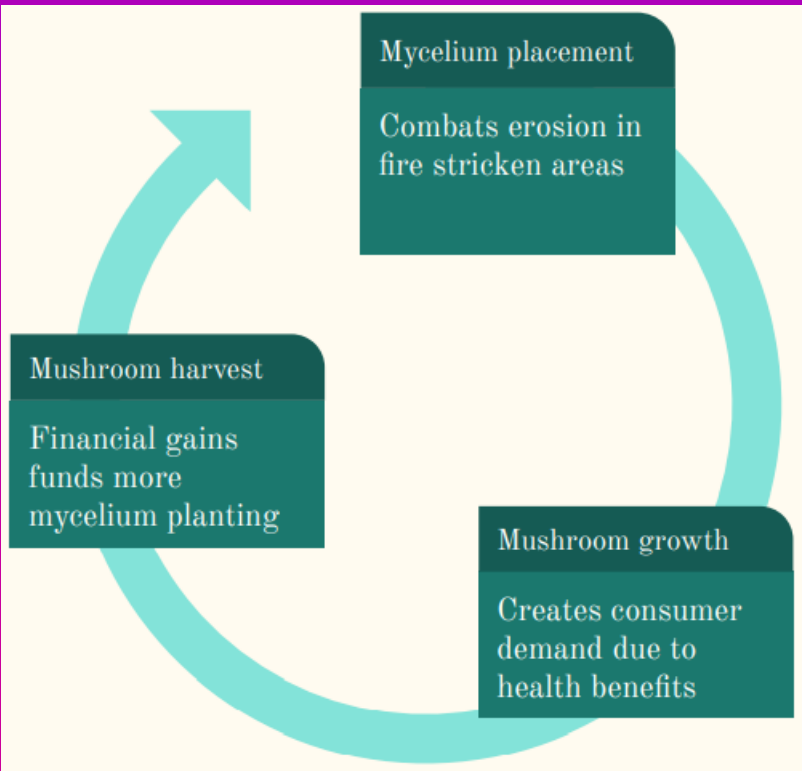


Lucy Stancliff

Mycelium to the Rescue: A Self-Sustaining Erosion Defense

Grand Prize
winner!

“My idea is to intentionally cultivate mycelium in the forest fire prone areas of Oregon, so when the forest fires come through, which they will continue to do unfortunately, there is a fire resistant structure underneath the ground that will remain there, and combat the effects of erosion.”



A HUGE thank you to all of the Lonza volunteers that help make this contest possible.



Thank you to everyone who participated, and we hope you join the Inventerprise crew again for next year's mission!