

## PARENT LETTER FOR ELECTRIFYING MAZE OF MYSTERIES

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Dear Parents,

We have lots of exciting, fun and educational activities for your child! Please note that the order will be different than listed here. Check with your child or their teacher to see what they are working on!

Also, see the science summary following the Technology description!

Remember that this class will alternate approximately every three weeks between Science and Technology.

## TECHNOLOGY, ROBOTICS AND PROGRAMMING PARENT SUMMARY

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### CODING

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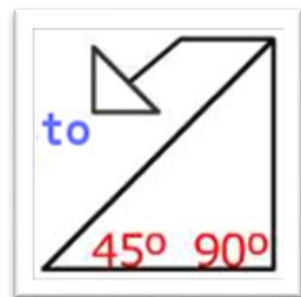


How great would it be if you had been able to start writing code at an early age?

**Monster CodeSchule** is a new coding game that we are happy to offer to our students. Learning sequences, loops and algorithms students will write code that makes Spooky the ghost move from one block to another. Spooky's job is to light lanterns along the dark path, just like the lights in the brain turn on with every correct code sequence! As we progress along the path we meet more characters, they change with every accomplished challenge. This app is slightly different than others that we have used before as it requires the student to be very accurate with commands from the very beginning. We love this new game and are sure your child will too! As with all our programming and coding apps

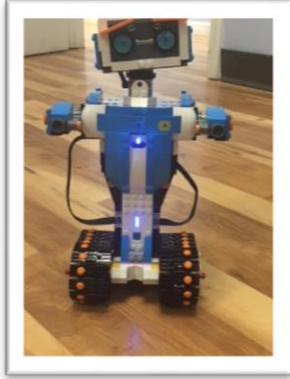
Monster CodeSchule is free in your app store.

**MSWLogo:** With everything they learned in CodeSchule your child will move on to actual coding languages with Logo using MSWLogo. Beginning with basic syntax your child will understand how each step is important and needs to be written correctly through their prior play with Spooky and friends. Don't you wish you were offered coding classes when you were younger?



## BOOST ROBOTICS

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We are so pleased to be able to bring **LEGO® Boost®** to our students at Imagine That! Boost is the newest robotics kit available to our younger robotics kids. Students will build a base robot as they begin to learn the programming process. All instructions and programming are on the Boost app by LEGO. The Hub of the robot can connect to the tablet using Bluetooth. These simple bots also use sensors that detect Color and Distance.



Once students get the hang of programming we will offer some simple builds like the Doggy Cart. This activity is driven by the motor turning the connected axle. This axle will turn the gears in the housing that contains the worm and 24 tooth gears that make the puppy's legs move. At first, the app will show the kids how to program specific moves, but as they build the bots, students can use what they have learned and program on their own. We are so excited to get building and programming with Boost and your students. Come and join the fun!

## WEDO ROBOTICS

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**LEGO® WeDo Construction Set** activities are all about adventure this session! The "Bungee Jumper" is wound up and waits for activation. This happens when the motion sensor is triggered. The motor starts to turn the worm and cam gears, which trigger the slinging of the bungee jumper who is then stopped using a ratchet and pawl. This ceases the action lowering the jumper. If we didn't stop the jumper from falling he might hit the floor!

The “Canoe” will ride the rapids when your student programs the robot to turn in a cranking motion using the motor and some gears. The crank will be attached to the underside of the canoe causing it to rock back and forth with the imaginary waves.

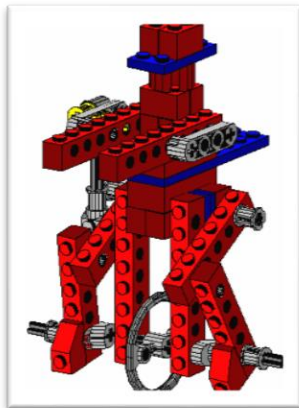


Next adventure, skiing behind the “Ski Boat”!! A crown gear at an angle will deliver all the power to turn those wheels. Once your student programs the ski boat the kids will connect the skier behind the boat and off they go. For your students the adventure is *Here!*



## MACHINES

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LEGO Dacta<sup>®</sup> Technic builds feature human figures doing day to day things! Our first attempt in building, the Unicycle Man, will not be motorized. We will focus on how levers (his legs) work to turn the single wheel that he is riding on. What is the pivot point or fulcrum? What about the load and how do you identify it when it just looks like the man's leg?



Then, we get to build a Saw Man. He will saw all day long without getting tired. As we saw in the Canoe, a crank motion is used to create the back and forth of the saw. A very simple 2 gear system creates the force to bring on the movement. Now, how could we add a motor to the saw man? Ask your student how we made it happen!

## SCIENCE SUMMARY

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The students will complete activities not taught in fall at your child's school. To see which activities were not completed, please see the flyer for your child's class.

### SOUNDS LIKE FUN!

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We will start with a **thunder tube** that will light up their eyes as they see how sound can be amplified.

We will explore how sound works and how our ears pick up on the sound with an exciting array of experiments. We have to use sonar to find the location of our Dr. Lipid's underwater lab. But first we must understand how sound can work to accomplish this mission.

Next we will explore **how we hear** with our model eardrum and special sound games.

Back to our sound amplification with some very exciting and funny experiments such as **a talking cup** and **screaming balloon**. **Just how does sound travel?** We will explore with a sound symphony, sonar search and eavesdropping activities.

We will finish our Sounds Like Fun! Portion with an understanding of **frequency and resonance** with our strange band of Singing Bottles, Singing Tubes and Palm Pipes.

Whoever knew sound could be so much fun!

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### BEES, BUTTERFLIES, DRAGONFLIES AND FLUORESCENCE!

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We will sing our favorite song: The Nature Lover Song and then make a Tie Dye Butterfly Magnet. What do you think they will name it?

Who said food cannot be fun and educational? We will learn about pollination as the children get "pollen" all over their hands trying to get the snack in the middle of the bowl!

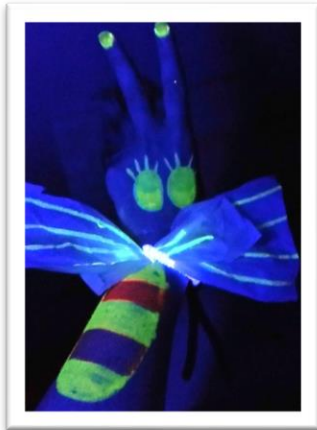
You may want to show up for the fun as the children enact the bee buzzing dance! They will show the rest of the class where to find the food! Don't worry we will make sure they know all of the Bee Safe rules! We also have

lots of fun bee songs.

What is it like to see through the eye of a bug? Children will find out!

On to the butterflies: The children will love becoming a butterfly as we enact a metamorphosis. This is an all-time favorite activity!

We learned how to see like a bug now we will also learn how to drink like a bug. Have them show you how!



Imagine how dangerous it is to be a beautiful butterfly! How do they avoid being eaten? We will find out in our camouflage game.

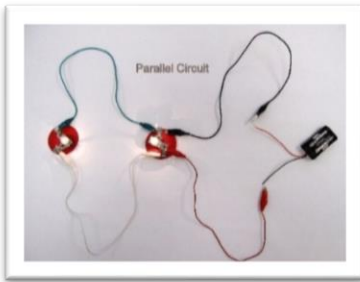
Children will experience how to safely catch bugs by practicing with nets and popcorn. When nets won't work they will learn how to catch one in a jar without injuring the animal. Have the children sing you the Mammal Song! This will help them grasp the difference between a mammal and other animals.

When you pick the children up today, make sure you get to see your little **lightening bug glow in our fluorescent** room with bioluminescence.

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## ELECTRICITY AND MAGNETISM

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We feel that the engineers on board our submarine need to know how to fix the electrical system if something goes wrong. We also may need to be able to make our submarine into a magnet. Can we do that?

Children always love magnets but we have some with a new and exciting twist. Can we make an object a permanent magnet then remove those properties? Have they ever seen Ferrofluid? Hmm, I don't think they will forget that one! How about the apparent science magic of an eddy current where things move in an unexpected time warp. The children

will even make their own compass.

We will explore the relationship between electricity and magnetism. Do you know how electricity creates a magnetic field and how a charge moves down a wire? Be sure to ask your child at the end of this session. We will make an electromagnet and test how to improve its properties.



We will investigate series and parallel circuits, make a fuse and test insulators and conductors.

We will make our kids hair stand on end with an electrostatic generator... Hmm and make paper to stick to a wall and make cans move.

Next we will introduce Snap Circuits Lights! See the amazing and colorful creations your child will create!

Do you want to come to our class with your child now?