

PARENT LETTER FOR ROCKETS AND ROBOTS SUMMER 2018



This amazing camp combines rocket science, robotics, stop motion videos, and coding!

The first portion will review the Rocket Science, followed by the Technology.

ROCKET SCIENCE

ROCKET SHIPS PART 1:

After our introductions, your child will get to hear the week's story and will be initiated into the **O.X.Y.S** (Only Excellent Youth Scientist) group. As we begin our mission we must learn as much as we can about the galaxies and rockets so that we're prepared to stop Dr. Lipid as he prepares to go into space.

We will.....

1. Complete an Astronaut Boot-Camp.
2. Create Space Pendants.
3. Do the Gravity Table activity using magnets.
4. Learn about the difference between Potential and Kinetic energy.
5. Explore air pressure and potential energy.
6. Broaden our understanding on the concept of Inertia and Friction by doing an Inertia Chips activity.
7. Gliding Seeds and Leaves activity.
8. Learn about velocity by doing the Paper Wing activity.



ROCKET SHIPS PART 2



We will begin our day reviewing lessons from the previous day. We will then continue our quest to stop Dr. Lipid in his tracks! We are now ready to learn about G Forces, Centripetal Forces, Orbital Forces, and Gravity Effects We will.....

1. Investigate rockets by exploring various types of rockets.
2. Learn about Earth's gravity and the Rocket Power by doing the Rocket Fuel activity.

3. Creating and observing various rockets including a Rocket Balloon Model that shows Newton's Third Law (that action and reaction is equal and opposite).
4. Do the Tricky Trajectories activity in which children will gain an understanding of the difficulty of landing on the moon.
5. Learn about the Solar System and Big Earth.
6. Do the Rope Solar System activity in which we will discuss the 9 planets.

ROCKET SHIPS PART 3

We will begin our day by reviewing the previous day lessons. We will then continue our quest to stop Dr. Lipid in his tracks! We are ready to board the Starship IMAGINE THAT! We will.....

1. Begin our day with the Blast Off activity!
2. We will explore the Big Bang Theory and do the Expanding Universe activity.
3. Create a Glittering Galaxy map!
4. Explore the Constellation and do a Dot to Dot Constellations activity.

TECHNOLOGY: ROBOTICS, CODING AND STOP MOTION VIDEOS

Our students will have the opportunity to build several different activities while learning how machines, programming and coding works.

BOOST ROBOT



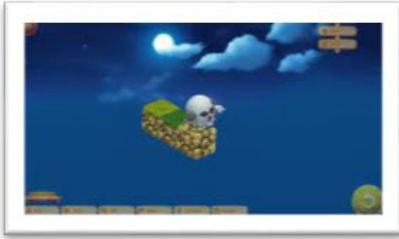
Watch our [Video!](#)

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 an App called Boost by Lego. The Hub of the robot can connect to the tablet using Bluetooth. Once they comfortable moving their bots they will add a sensor that detects Color and Distance. It

can also double as a light...

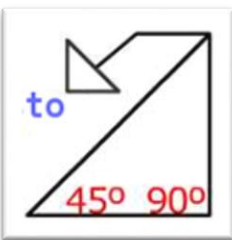
Next, we will expand their experience by building a Car. Adding an exterior motor and a sensor, it's up to our students to see what the car is capable of. At first, the platform will show the kids how to program specific moves, but as they build the bot students can use what they have learned and program on their own. We are so excited to get building and programming with Boost and your students. Come and join the fun!

CODING



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.



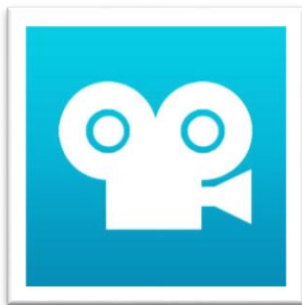
MSWLogo: With everything they learned in CodeSchule your child will move on to actual coding languages with Logo using MSWLogo. Beginning with basic syntax your child will understand how each step is important and needs to be written correctly through their prior play with Spooky and friends. Don't you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



After all the building and experimenting students can have a great time with **Scratch!**

Scratch programming is a fun and entertaining way to learn more about the thought processes needed for clarity and precision to create productive command sequences. We know, it sounds like a mouthful! It's surprising to think that we use sequences of steps every day without even thinking about it, like, just getting out of bed!

STOP MOTION



Then we are on to an introduction to Stop Motion Videos where students will create their own stop motion film. Students will need to use their Sequential Reasoning capabilities and thought processes to create their video. First, students need to lay out a plan that starts with a story-line followed by the storyboard. As students begin to set up their stage they will have to check and test all equipment for glitches! Pictures of each movement will be taken of the characters. In stop motion filming, every step must be taken in the correct order, one small movement at a time, just as a robot is programmed to

move from point A to point B. These pictures are download to an app that will speed the flow

of vision, creating the look of fluid movement. This helps students to gain an understanding of the concepts introduced in coding! Using logic and creativity results in all around great fun!