

STEM CAMP

PARENTS GUIDE TO ACTIVITIES

What will your child be doing this summer at STEM Camp?

...and why?

...and how?

...and why do we do it that way...



Introducing...

THE STEM CAMP PHILOSOPHY

- **STEM Camp believes in the power of curiosity and wonder**
- **STEM Camp believes that children need to explore the world around them**
- **STEM Camp believes that curious kids become confident, creative adults, who can think critically and help change the world**

STEM Camp provides learning experiences through fun, engaging programming that encourages children to explore their sense of wonder. Children are introduced to hands-on, engaging STEM activities that promote discovery, reward curiosity, and leave children amazed at what they can do.

STEM Camp encourages a child's curiosity and sense of wonder, and inspires them to explore and learn about the world around them.

Our philosophy is to give children a problem, some materials, and let them figure out multiple solutions to a problem. We don't believe in step by step instruction and we do believe that STEM is not just technology and robots - it's an approach to problem-solving and critical thinking

At STEM Camp...

- there is something new and cool to discover every day
- activities and projects are based on things you know and love (robots, space, food, etc.)
- you can try things yourself. Make a mess. Clean up. Make a mess again. Have fun.
- you will work on fun projects and make new friends

Discover...

SUMMER OLYMPICS WEEK

Since 1896, Canadian athletes have won 302 medals at the summer olympics. Wow! Everyone knows that Olympic athletes are incredible athletes but what about the STEM behind the olympics? During summer olympics week our team has created an amazing lineup of activities such as making the olympic rings, building archery equipment, coding obstacle courses, making electric sports drinks, coding a robotic race track, designing your own sport and making an exceptionally strong medal. A few sporting activities will be thrown in to keep you active and energized as well. Who knows, maybe the next olympic athlete will be a STEM Camp graduate!



Code An Ozobot Race Track

Activity: This is a coding activity in which campers will use their coding skills to design a race track for the 2020 Summer Olympic Games.

Why are we doing this activity? Because it relates to the curriculum links: coding, mathematics (measurement) and mathematics (patterning and algebra). And because coding is fun and is, and will be, an integral part of the world around us.

How are we doing this activity? We will be using tiny robots called Ozobots for this activity. Campers will be taught rudimentary coding methods and then given a problem of how to code their robot to design a race track. They will need their critical thinking skills, their imagination, and some problem-solving ability.

Why are we doing it that way? It is important for children to develop these skills early in life. At STEM Camp we believe campers should be provided with some tools to help figure out problems but then use their imagination and skills to actually solve the problem. More than one solution can usually be found.

Be amazed by...

HARRY POTTER WEEK

Good morning Mr. Potter! Did you bring your best wizardry skills to camp today? You may be called upon at any time to help defend Hogwarts against the dark arts. No? Forgot your wand at home? No problem. This week at STEM Camp you will learn how to make magical masking fog, prepare a magic potion, create muggle water, use invisible ink and use herbology to defend Hogwarts! You will also play a game of quidditch by shooting the golden snitch and design and build your very own Hogwarts! Will you be the next amazing wizard in your house?



Prepare a Magic Potion

Activity: This is a hands-on activity in which campers will use their imagination and knowledge of compounds to make their own magical potion!

Why are we doing this activity? Because it relates to the curriculum links: science and technology (understanding matter and energy) and mathematics (measurement). And because mixtures and solutions are hands-on and fun. And because finding great math activities is important for a child's future where they will use math every day!

How are we doing this activity? We will be going outside to find natural materials in nature to use in their potions. Then they will be discussing and experiencing what a compound is; the different types of mixtures and what they can do (homogenous and heterogenous). They will need their critical thinking skills and their imagination for this activity.

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Have fun at...

FORTNITE WEEK

Where else can you have an opportunity to save the world by using your creative and imaginative brains! Be the hero of planet Earth and protect us all by fighting off zombie-like creatures and defending objects with fortifications you can build; be creative by designing worlds and battle arenas that will make you the champion of the universe! But...you will need help. During Fortnite week, campers will launch air rockets, design Fortnite vehicles and gliders, do basic IF-THEN coding, design their own Fortnite skin and build a a Fortnite pirate cannon to help them in their quest. Fortnite week is a chance you to hone your STEM skills in the ultimate quest of defending your home planet!*

Please be mindful that the Fortnite theme inspires our hands-on STEM experiments. There is NO SCREEN time at STEM Camp, except for short videos to introduce concepts in selected activities.



Create a Fortnite World for Edison

Activity: This is a coding activity in which campers will use their coding skills to learn about programming and robotics through barcode scanning and clear instructions to see if Edison (the Robot) can travel through the Fortnite world they create.

Why are we doing this activity? Because it relates to the curriculum links: coding, mathematics (measurement), mathematics (patterning and algebra) and science and technology (understanding earth and space systems). And because coding is fun and is, and will be, an integral part of the world around us.

How are we doing this activity? This is a more advanced coding and programming activity to further develop camper's skills. They will be tasked with building cool tracks and obstacles for Edison to travel through just like in Fortnite: Creative! They will need their critical thinking skills, their imagination, and some problem-solving ability. Ready for the fun?

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Be inspired at...

AVENGERS WEEK

Boom! Crash! What is that in the sky? Is it a thunderstorm? Is it a tornado? No! It's Thor, God of Thunder, and he is here with the Avengers to save the day! As "Earth's Mightiest Heroes", the Avengers, have lots of super powers. During Avengers week, campers will learn and re-create (STEM Camp style) super powers such as incredible strength, the ability to fly and Iron Man's rocket capability. Campers will also have a chance to build Captain America's shield, create Spiderman's web, make lightning and build a Tony Stark vortex cannon.



Build a Stark Vortex Cannon

Activity: This is a hands-on activity in which campers, as new engineers of Stark Industries, will use their imagination and technical knowledge to make a vortex cannon!

Why are we doing this activity? Because it relates to the curriculum links: science and technology (understanding structures and mechanisms), science and technology (understanding earth and space systems) and mathematics (measurement). And because vortex cannons are cool! And because finding great math activities is important for a child's future where they will use math every day!

How are we doing this activity? We will be talking about what particles are and why they are important and what role they play in a vortex cannon. Our young engineers will use cardboard, styrofoam and fog machines to create their own cannons and test which designs work the best and why. They will need their critical thinking skills and their imagination for this activity.

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