



# TGR LEARNING LAB

## 2021 VIRTUAL MIDDLE SCHOOL SUMMER CLASSES

June 28 – July 29

Registration Deadline: June 11, 2021



At the TGR Learning Lab, we are focused on opening your mind to potential careers and college majors available to you. Instructors at the TGR Learning Lab Anaheim site will be offering FREE virtual summer classes for students across the nation. These classes will be offered to students who will be in **grades 6-8** starting in Fall 2021. We ask that by registering, you understand this is a four-day per week commitment to yourself and your future. Your next step is to select the course(s) which are located on pages 2-5 you would like to participate in and register using the Eventbrite links listed.

**Timeframe:** All virtual classes will be 90 minutes long. Classes will be held Monday – Thursday from 9:00 a.m. – 10:30 a.m. PDT / 12:00 p.m. – 1:30 p.m. EDT **or** 1:00 p.m. – 2:30 p.m. PDT / 4:00 p.m. - 5:30 p.m. EDT depending on the week. Students can only participate in one class per week.

### **Technology Requirements:**

To participate in virtual summer classes, each registered student will need a computer or device with internet connection. The Zoom video conferencing platform will be used to conduct the class, so this software needs to be downloaded prior to the class. It is also highly recommended that students have a webcam and microphone so that s/he can be active participants in the class. Some classes may require a tablet/cell phone to participate in certain activities.

Once a student has registered, a separate email will be sent with safety and security guidelines to review as well as Zoom access information a week before the class begins.

If you have any questions or concerns, please email Gyla Bell at [gbell@tgrfoundation.org](mailto:gbell@tgrfoundation.org).

We hope to see you virtually this summer!

### **2021 Virtual Middle School Summer Weeks**

**June 28 – July 1: Classes from 9:00 am – 10:30 am PDT / 12:00 pm – 1:30 pm EDT**

**July 12 – July 15: Classes from 1:00 pm – 2:30 pm PDT / 4:00 pm – 5:30 pm EDT**

**July 19 – July 22: Classes from 1:00 pm – 2:30 pm PDT / 4:00 pm – 5:30 pm EDT**

**July 26 – July 29: Classes from 9:00 am – 10:30 am PDT / 12:00 pm – 1:30 pm EDT**

# 2021 VIRTUAL MIDDLE SCHOOL SUMMER CLASSES

June 28 – July 1:

Classes from

9:00 am – 10:30 am PDT / 12:00 pm – 1:30 pm EDT

Registration Link: <https://tgrlljune28summerms.eventbrite.com>



## Health & Fitness Fusion

Have you been working out and eating healthy during your time at home? Step into the kitchen and learn the science behind what keeps your body energized. Create new healthy habits and explore foods at home that are beneficial to your body. Discover a variety of fun workouts such as yoga and HIIT training to get your heart rate up and be active at home!

### Additional Technology requirements:

- Mobile device (cell phone or tablet) with internet access
- Goosechase app downloaded (free app)

## Human Body Lab: Exploring Biomedical Careers

Are you interested in applying your passion for science to improve people's health and well-being? From participating in a live-streamed dissection to designing prototypes for biomedical challenges, we will explore the anatomy of the human body, the cause and spread of diseases and the variety of careers in health care. You will walk away with a better understanding of how you can help yourself and others live a healthy life.

### Additional technology requirements:

- Mobile device (cell phone or tablet) with internet access
- Goosechase app downloaded (free app)

## Space Science

Look up into the night sky and what do you find? If you have ever wondered what is really out there, this is the class for you. Come build a simple rocket, explore light and spectrometry and learn about how scientists explore the Earth, Solar System and the Universe.

### Additional technology requirements:

- Mobile device (cell phone or tablet) with internet access
- Goosechase app downloaded (free app)

## Technology for Good: Artificial Intelligence to Help the World

From self-driving cars to personal computer assistants like Siri, artificial intelligence has arrived. In this course, participants will dive deeper into the technology by exploring different online apps that implement artificial intelligence such as voice and image recognition. Participants will also be given the opportunity to learn how artificial intelligence is created through machine learning and neural networking. With new insights gained, participants will discuss the ethics behind artificial intelligence and how the technology could be used for good.

### Additional technology requirements:

- Webcam to capture images for image identifying project.
- Computer with microphone to record sound for voice recognition project.
- Able to connect to these web sites.
  - Machine Learning for Kids - <https://machinelearningforkids.co.uk/#!/welcome>
  - Machine Learning for Kids Scratch Page - <https://machinelearningforkids.co.uk/scratch3/>
  - Google Teachable Machine - <https://teachablemachine.withgoogle.com/>
  - Google Experiments: AI Collection - <https://experiments.withgoogle.com/collection/ai>
  - A.I. Duet - <https://experiments.withgoogle.com/ai-duet>
  - Blob Opera - <https://experiments.withgoogle.com/blob-opera>
  - Goart - <https://goart.fotor.com/>
  - Motion and Word - <https://www.billtjonesai.com/?experiments>
  - Twine - <https://twinery.org/>
  - Code.org AI for Ocean - <https://code.org/oceans>

# 2021 VIRTUAL MIDDLE SCHOOL SUMMER CLASSES

July 12 – July 15:

Classes from

1:00 pm – 2:30 pm PDT / 4:00 pm – 5:30 pm EDT

Registration Link: <https://tgrlljuly12summerms.eventbrite.com>



## Engineering Construction Design

Have you always wanted to know how to build the perfect bridge? What about how to build the tallest tower or how a parachute works? Learn all this and more in our Engineering Construction Design class! Using the engineering design process, we will be constructing a bridge, tower, parachute and even a basketball. We will be using common household items, so the hands-on activities can be done at home! Let's become engineers!

### Supplies Needed:

- Tower: 1 sheet of Newspaper, 12" of tape
- Bridge: 20 plastic straws, 1 small sheet of paper/foil, tape, scissors, ruler, pennies
- Parachute: 1 sheet of newspaper, 1 pair of scissors, tape, 1 24-inch-long piece of string, weights (pennies)
- Basketball: 1 ping pong ball, 2-3 plastic straws, 5 pipe cleaners, 3-5 rubber bands, 5 popsicle/craft sticks, 2-3 index cards, tape, 1 small paper/plastic cup

## Introduction to Cybersecurity

Our world is digitally connected through computers, smart phones, video game systems and many other smart devices. This is the marvel of technology, but it can also be an unsafe place if we don't understand how to carefully navigate it. In this interactive class, you will learn about the internet, how it works, digital footprints, binary code, encryption and careers. With the gained Cybersecurity knowledge, you will understand the importance of privacy, protecting personal data and how to stay safe online.

### Supplies Needed:

- Paper or index cards
  - 8.5x11 paper – (3 sheets)
  - 3x5 index cards – (16 cards)
  - extra cards in case of mistakes
- Scissors
- Marker, pen, or pencil
- Skewer, toothpick, or paper clip
- Ruler
- One-hole punch

## What's 'App'ening in Computer Science

Computer science knowledge is a high-demand skill in today's job market. In this class, you will learn fundamental computer science concepts such as algorithm, conditional statement, variable, function and Boolean logic through engaging hands-on activities. You will apply what you learned by programming an app using the AppLab on Code.org. The completed app can be shared with classmates, friends and family at the end of the session.

## Zoology

Are you interested in working with animals? Come join our Zoology class to explore various careers that work with animals and learn what to expect as a zoologist. You will be able to experience some projects that professionals in this field may encounter and learn about the steps you can take if you are interested in pursuing zoology as a career!

# 2021 VIRTUAL MIDDLE SCHOOL SUMMER CLASSES

July 19 – July 22:

Classes from

1:00 pm – 2:30 pm PDT / 4:00 pm – 5:30 pm EDT

Registration Link: <https://tgrlljuly19summerms.eventbrite.com>



## Human Body Lab: Exploring Biomedical Careers

Are you interested in applying your passion for science to improve people's health and well-being? From participating in a live-streamed dissection to designing prototypes for biomedical challenges, we will explore the anatomy of the human body, the cause and spread of diseases and the variety of careers in health care. You will walk away with a better understanding of how you can help yourself and others live a healthy life.

Additional technology requirements:

- Mobile device (cell phone or tablet) with internet access
- Goosechase app downloaded (free app)

## Photography: Visual Storytelling

A single photograph can capture a precious moment in time, change a perspective or even move a nation towards positive change. By creating your own themed digital photobook, we will explore how to capture photographs that tell a story, while using key photography composition techniques. Develop your ability to communicate creatively and critically as a visual storyteller, which will enhance your visuals in school projects and social media posts and may even encourage you to start a portfolio for a career in digital media and more!

Additional technology requirements:

- Mobile photo-taking device (cell phone or tablet) with internet access
- Goosechase, MoShow and Animoto apps downloaded (free apps)

## Space Science

Look up into the night sky and what do you find? If you have ever wondered what is really out there, this is the class for you. Come build a simple rocket, explore light and spectrometry and learn about how scientists explore the Earth, Solar System and the Universe.

Additional technology requirements:

- Mobile device (cell phone or tablet) with internet access
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## Technology for Good: Artificial Intelligence to Help the World

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  - A.I. Duet - <https://experiments.withgoogle.com/ai-duet>
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  - Twine - <https://twinery.org/>
  - Code.org AI for Ocean - <https://code.org/oceans>

# 2021 VIRTUAL MIDDLE SCHOOL SUMMER CLASSES

July 26 – July 29:

Classes from

9:00 am – 10:30 am PDT / 12:00 pm – 1:30 pm EDT

Registration Link: <https://tgrlljuly29summerms.eventbrite.com>



## **Aerodynamics to the Rescue**

Have you ever heard the word “aerodynamics”? In this class, we will go over what the word means as well as how it applies to the real world. We will also use the knowledge learned to complete hands on activities using common household materials. From a space lander to a flotation device, the activities will be sure to be fun and hands-on. Come join us!

### Supplies Needed:

- Space Lander: 3-5 straws, 1 small paper/plastic cup, 1-2 index cards, Tape, 2 mini marshmallows
- Go the Distance: 3 craft sticks, 1 sheet of paper, 5 paper clips, 1 binder clip, 1 paper cup, 1 sheet of circle labels, 1 12” length of string, 3 marshmallows
- Invent a Vehicle: Paper, 6 drinking straws, Square of cardboard, 2-3 clothespins, 5 mailing labels, 10 rubber bands, Newspaper, 6 toothpicks, 3 cardboard tubes, 20 marbles (this is the hazardous waste)
- Flotation Device: Toilet paper rolls, 5”x7” sheet of foil, Rubber bands, 5-10 Craft sticks, Foil muffin/cupcake liners, 50-100 pennies (weights), Tape, Scissors

## **Graphic Design**

Do you have a love of design and technology? In this course, students will explore the wonderful combination of technology and art. Graphic Design is all around us, both on screen and in print. Students will discover how to apply various design principals in their own art and gain the tools to uncover new skills. We’ll explore many of the wonderful online resources that exist for growing designers. So, join us online and come learn something new!

### Additional technology requirements:

- This class won’t be using graphic design programs that require large downloads, we will only be exploring free, web-based resources.
- Account creation may be necessary if students would want to save their work virtually.

## **Introduction to Cybersecurity**

Our world is digitally connected through computers, smart phones, video game systems and many other smart devices. This is the marvel of technology, but it can also be an unsafe place if we don’t understand how to carefully navigate it. In this interactive class, you will learn about the internet, how it works, digital footprints, binary code, encryption and careers. With the gained Cybersecurity knowledge, you will understand the importance of privacy, protecting personal data and how to stay safe online.

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