



Summer Learning Institute Program Course Outline

Laser Camp

Lasers can be found all throughout our modern world, from medical technologies to cutting-edge astronomical research, to playing your favorite movie in your home DVD or Blu-ray player, or even the source of light in a laser show at a planetarium. We will explore how lasers have shaped our lives in this hands-on class where students have a unique opportunity to create, design, and orchestrate their own music laser show. The students will become their own "Laserists," as they mix lights and sound together to create a fun and dazzling show that will be displayed on our Lohman Planetarium dome. Throughout the class, these young "Laserists" will learn the fundamentals and physics of light, laser safety, and digital editing skills, that will allow them to create an entertaining show that will premiere at the end of the camp.

All program classes are organized to address the following aspects:

- STEM/STEAM Education.
- Cultivate an interest in Art, Science, and History.
- Continued knowledge and comprehension regarding Volusia County School Standards.
- Develop interpersonal skills such as teamwork and problem solving.
- Foster curiosity and imagination of the world around us.

Pre-requisites: None

Software/Materials/Books/Media: Handouts and materials provided in class.

Exhibits/Galleries that correspond with camp:

- Lohman Planetarium

Course Objectives:

Students will:

- *Learn about the physics of light and lasers.*
- *Understand laser safety.*
- *Learn how to storyboard.*
- *Learn how to develop, create, and edit laser animations.*
- *Learn how to sync music and lasers together.*
- *Debut their laser show creations to their families in the Lohman Planetarium.*

5 Day Course Outline Example:

Schedules must consider, lunch time, snack time, free play, and lessons in the gallery. All movies/shows must be approved by MOAS staff prior to viewing.

- Day One:
 - Introduction
 - Discuss the physics of light: perform light demonstrations with filters and prisms
 - What is a laser? Work with lasers and play with mirrors and other objects to understand laser physics
 - Watch a laser show in the Lohman Planetarium
 - Discussion on laser safety and protocol
 - Brief introduction to the laser editing software
- Day Two:
 - Discussion on storyboarding and show development
 - Hands-on time with the laser editing software and classroom laser projector
 - Form groups and begin laser song development (song/music choice, storyboard, planning visuals)
 - Watch a laser show in the Lohman Planetarium
- Day Three:
 - Allow groups to continue their laser song development and creation
 - Watch a laser show in the Lohman Planetarium
- Day Four:
 - Continuation of laser song projects
 - Editing and begin testing of laser songs in the Lohman Planetarium
 - Watch a laser show in the Lohman Planetarium
- Day Five:
 - Finalize laser song projects and assemble full show
 - Test student created show in the Lohman Planetarium
 - Watch a laser show in the Lohman Planetarium
 - Present full student created laser show to their families
- Day Six: (Optional)
 - Present full student created laser show on the Saturday night after class for friends and families

Assessment:

Student's ability to demonstrate the following:

1= Below Expected Outcome

3= Meets Expected Outcome

5=Exceeds Expected Outcome

The Student Has:	1	2	3	4	5
Demonstrated ability to use simple laser technology.					
Demonstrated ability to put together their own show.					
Demonstrated an effort for teamwork and communication.					