



Orange Center Elementary STEM Magnet Program K-5 Parent Handbook

Vision

The vision of the STEM magnet program at Orange Center Elementary School is to produce students who are equipped to succeed in a 21st century career as leaders and innovators by providing a rigorous and stimulating learning environment in the areas of science, technology, engineering and math.

Magnet Description

The Orange Center STEM Program – the only school in Orange County with this specialization – provides a foundation for students who are interested in enhancing their knowledge and skills in science, technology, engineering and math (STEM). The critical thinking skills cultivated in this program help to prepare students for higher education and leading roles in 21st century careers. The program provides opportunities for hands-on experiments and activities focused on real-world application. Our science instruction incorporates both the Scientific Method and the Engineering Design Process to expose students to the diverse pathways of solving real-world problems and expanding upon current research results. The technology classes are focused on the integration of cross curricular content using digital tools to problem solve, as well as engineering new innovative products. Furthermore, math focuses on mathematical processes through real-world situations, and musical math notation. These courses each provide rigorous instruction focused on the specific areas of science, technology, engineering and math, simultaneously implemented by a team with a cohesive focus.

STEM Curriculum by Grade Level

	Semester 1	Semester 2
KG	Structure and Function: Human Body Design a Cast Students use the design criteria presented in the story to design and build a cast for Angelina. They work through a design process as they complete their work. With teacher support, students document their progress in their Launch Logs, compare their work to the work of other students, and evaluate the success of their designs.	Light and Sound Communicating with Light and Sound Students follow the design process as they design a device that uses light or sound to communicate across a distance. Using technology, students document and describe the steps they used to create and test their design.
1st Grade	Pushes and Pulls Pushes and Pulls Students follow the design process to sketch, build, test, and reflect on a model that uses pushes and/or pulls to move rocks from one place to another.	Take Cover! Students design and build a model of a playground that provides areas of shelter from the Sun's harmful UV rays. They will use the UV-sensitive beads and a UV flashlight to determine the effectiveness of their design to protect students playing on the playground at midday.
2nd Grade	Properties of Matter Save the Ice Pop! Demonstrating the knowledge and skills they have developed, students work in small groups to design and test a prototype to insulate a frozen ice pop in this problem. Using technology, students document and describe the steps they used in the design process to create and test their design.	The Changing Earth Save the City! In this design challenge, students design, build, and test a solution to prevent water from changing the shape of the land. Students work to save a city from a possible landslide created by a pending rain storm. They choose materials that are best suited for the purpose of preventing erosion and explain why they believe they have made the best choice in material and design.
3rd Grade	Variation of Traits A New Species Students select four traits for two fictitious parent animals. Then, they identify the genotype and phenotype of the parent animals' traits. With this information, students follow the design process to explore, sketch, build, and evaluate the fictitious parent animals' offspring that are able to survive in their environment.	Stability and Motion: Science of Flight In this module, students design, build, and test an experimental model glider as they learn about the forces involved in flight. In addition, students apply the engineering design process to the problem of airlifting supplies to a remote area.
4th Grade	Energy Conversion Students learn about conversion of energy as well as the conversion of a variety of fuel sources from stored energy to usable electrical energy. After students have explored energy conversion and	Input/Output Computer Systems Game Time! Students participate in a class hackathon and follow the design process to design a game for children to play on a digital device. Students document their progress in their PLTW Launch Logs, share their

	transfer, they are presented with a design problem involving moving large amounts of donated food from a truck to a food pantry.	games with others to receive peer feedback, and evaluate the success of their programs.
5th Grade	Patterns in the Universe Space Science Exhibit Students follow the design process to research, design, and evaluate an exhibit that teaches and engages an audience on an area of space science. Students present their exhibits to their classmates or the larger school community.	Infection: Detection Disease Detectives Students follow the design process to determine the chain of infection among students who are sick at school.

STEM Courses (Project Lead The Way)

Each PLTW module is broken down into 3 activities that assist students in building the background knowledge and necessary skills to complete their final project based on a real world problem. These activities are done throughout the grading quarters, with the culminating project being completed at the end of the grading semesters. All projects are assessed using a rubric system.

Electives

- **Beginning Strings Orchestra:** This course is open to students in grades 4-5 who have never played a stringed instrument before. Students may choose to play violin, viola, cello, or bass. They will learn the fundamentals of string playing, note reading, rhythm, and musicianship. Students will perform in a minimum of three concerts per year.
- **Choir (3rd, 4th, 5th grade):** This course is open to students in grades 3-5, regardless of previous experience. Anyone can learn to sing! Students will learn basic, healthy vocal technique, and they will also explore a wide range of music genres.
- **Chess Club (3rd, 4th, 5th grade):** This club is open to students in grades 3-5. Students learn the fundamentals of the game of chess including skills such as; visualization, critical thinking, and problem solving.
- **Gardening:** This course is open to all STEM students in grades K-5. Students research produce/herbs that will grow best in the Florida climate. By cultivating our school garden, students learn about the plant growth process and healthy eating habits. Monthly nutrition lessons led by an Orlando Health certified nutritionist help to reinforce the importance of healthy eating.
- **Coding & Robotics Club (Grades 3-5) :** This course is open to all students in grades K-5, however Robotics club and competitions are reserved for students in intermediate grade level. Students learn the foundation of coding & robotics using the First Lego Education curriculum.
- **National Honor Society :** The National Elementary Honor Society (NEHS) provides an opportunity for students to earn recognition for their academic excellence and to benefit from participation in activities designed to improve the lives of all of their peers at school.

General Program Expectations

- Magnet students are required to earn and maintain a C or higher in all core subject areas (As reflected on the student's report card).
- Magnet Students are expected to earn a C or higher in all electives and STEM courses.
- Magnet students will maintain excellent citizenship and behavior.
- Magnet students will participate in STEM competitions/events.

Student Appearance and Dress Code

STEM magnet students are required to wear the school uniform as instructed. a monogrammed STEM Magnet polo shirt (Kelly Green or Tan) with khaki or blue pants, shorts, or skirts. School spirit shirts with jeans may be worn on FRIDAYS or for designated school events (field trips/assemblies). Failure to abide by the school dress code may result in probation.

Academic Probation

Magnet students are required to take the most rigorous course load available and must maintain an overall, minimum, **quarterly and semester** GPA of 3.0 or higher in all courses.

Students who do not earn an overall, minimum, **quarterly and semester** GPA of 3.0 will be placed on probation until the end of the next grading period. If sufficient progress is not made, the student is subject to removal from the STEM magnet program.

All students who are removed from the STEM magnet program will be required to withdraw from the STEM Magnet Program and enroll in their zoned school.

Disciplinary Probation

STEM students are expected to abide by the student code of conduct. Violations of the code of conduct may result in a student being placed on probation.

Academic & Disciplinary Probation Process

- A formal meeting will be scheduled with the STEM teachers (s), Parents (s), Students, School Administrators/ STEM Coordinator. Upon being placed on Academic Probation all meeting participants will sign the probation contract.
- A student is removed from Academic Probation when the next report card shows sufficient academic progress for that nine-week marking period.

Academic Resources

- **Skyward/ Canvas-** Parents and students are both provided with login information to Skyward/ Canvas where each student's grade summary and a detailed report for each class can be viewed and printed. Skyward will provide grades for all assignments which have been completed and turned in as well as show which assignments are missing. Students and parents are encouraged to check Skyward weekly.
- **Inform Teachers/ Staff that help is needed.** Students should let their teacher know if they feel overwhelmed with a subject and need extra help understanding the material. Students are also encouraged to speak to the Magnet Coordinators, and/or Guidance Counselors regarding any area of the school in which they are struggling. The teachers and staff want each student to succeed and often have resources that can help achieve success.

STEM Magnet Benefits

- Membership in a community with high behavioral and academic expectations.

- Promote 21st Century Skills in critical thinking/problem-solving.
- Membership in a community of focused learners with common goals.
- Easier transition to Middle & High School magnet programs
- Increased exposure to extracurricular opportunities in STEM, Science and Math competitions.

Orange Center Elementary School Communication Methods

- Website <https://orangecenteres.ocps.net/>
- Classdojo
- Talking Points (OCPS)
- Student Handbook/Planner

This has a yearly calendar and is where students copy their homework assignments and agendas for each week. This also has the schools Policies and Procedures.

- Skyward/ Canvas

This is where students and parents can check on their progress in class and see current grades.

Parent/Teacher Conferences

Conferences with your child's teacher(s) may be arranged by calling the front office at (407) 296-6480. Conferences will be scheduled as timely as possible. Conferences are normally scheduled for before or after school, unless other arrangements are made with the teacher(s). Telephone conferences are encouraged if time is of the essence. Your child's teachers will provide you with their voicemail numbers so that you may contact them for a telephone conference, if necessary. Teachers may also provide you with an email address if you wish to communicate in this manner.

PTSA/SAC/ADDitions

The administration and staff encourage all parents to get involved in your child's school. The PTSA welcomes your assistance in all areas. There is also a subcommittee of SAC for parents of STEM students. The ADDitions Volunteer Program is a district-wide effort that encourages and promotes community involvement in Orange County Public Schools. Please go to www.ocps.net to sign up to be a volunteer or contact OCPS for more information.



Orange Center Elementary STEM Magnet Handbook Receipt

Orange Center Elementary STEM Magnet provides a safe and welcoming learning environment and a quality education for all students. To ensure both a positive learning environment at all district sites, as well as effective classroom management, all stakeholders have an important role. Please sign acknowledging that you have read this handbook and understand the duties of both you and the student.

Students

- Believe in your unlimited potential for greatness.
- Build and maintain positive, trusting relationships with school staff.
- Plan and organize your daily routines in order to be successful.
- Accept responsibility and learn to be accountable.
- Show respect to other students and all staff.
- Tell an adult when you need assistance.
- Observe and follow school rules and procedures.
- Come to school every day on time.
- Arrive ready to learn, with a positive attitude and ready to give your best effort.
- Use school resources and equipment with care.

Parents/Guardians

- Believe your child has unlimited potential.
- Establish a positive relationship with someone at the school – this may be a principal, teacher, support staff counselor or advisor.
- Work with staff in a mutually respectful way focusing on student success.
- Seek help if you don't understand or need clarity on a situation.
- Attend parent-teacher conferences, or if unable to attend, ask a family member to attend in your place.
- Respect and support the learning environment and emphasize the importance of your child being prepared for school.
- Foster your child's academic success and behavior in school by stressing the importance of following school rules and procedures.
- Make sure your child arrives at school on time each day ready to learn.

_____ Yes, I received the STEM Parent Handbook and I agree to abide by the Shared Responsibilities

Child's Name: _____

Parent/ Guardian Signature: _____

Date: _____



PARENT LETTER OF COMMITMENT AND CONSENT

Parent Name: _____

Student Name: _____ Grade _____

I decided to enroll my student in the STEM Magnet Program at Orange Center Elementary for the 2023-2024 school year. In consideration of that, I agree to abide by the terms of the Parental Commitment as described below. I recognize that I, as well as the faculty and staff members of STEM, are an integral part of the educational career of my child.

As the parent/guardian of _____, I agree with the following statements.

1. I will ensure that my child arrives at school on time each day.
2. I will ensure that my child does not have more than 5 unexcused absences.
3. I will communicate with my child's teacher and respond to faculty and staff members in a timely manner.
4. I will attend all scheduled parent/teacher conferences.
5. I will ensure that my child meets the uniform policy by being in uniform each day.
6. I will volunteer when volunteer opportunities become available.
7. I will comply with the Code of Conduct and School Policy Guidelines as outlined in the parent handbook.
8. Students who fail to meet the requirements of this program, including academic, disciplinary and uniform guidelines, will be placed on probation for one grading period. If there is insufficient improvement at the conclusion of probation optional placement options may need to be discussed.

Upon reading the above, I/we understand and agree to abide by the provisions in this agreement.

Parent or Guardian Signature

Date