

## GRIFFIN MIDDLE SCHOOL



## LEWISVILLE INDEPENDENT SCHOOL DISTRICT

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### Robotics & Programming

Course Description: Through the study of Robotics and Programming, students will learn technology-related terms, concepts, and computer programming languages. Students will be required to make informed decisions about technologies and their applications towards the creation of a robot and a video game. Students will effectively identify task requirements, programming strategies, and engineering concepts. Furthermore, students will use Lego NXT Mindstorms software to create and program their robot and both Alice and GameMaker software to create video games. Students will then present their creations to diverse audiences.

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**Teacher:** Brad Kralik, M.Ed.

**Email:** [kralikb@lisd.net](mailto:kralikb@lisd.net)

**Website:** <http://kralikclassroom.com>

**Conference Period:** 3<sup>rd</sup> (10:40-11:30 MTF, Room #1401)

**Robotics Lab:** 4:15-5:00 (*Must schedule in advance*)

**Tutoring:** 8:15-8:45 (*Must submit tutoring form*)

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### Course Requirements

Six weeks grades will consist of two categories: Daily grades count (40%) and Major grades count (60%). There are no semester exams.

The teacher will check to make sure students are meeting the daily objectives of each project. Major project grades will consist of the completed final product of each assigned project. Students will be held accountable to ensure they have covered all the objectives of the project.

### Supply List

- USB Flash drive (*Recommended*)

## **Classroom Management**

1. Students will often work in pairs or teams for all projects. Students will be given detailed teacher-directed objectives for each project. After practicing these objectives through hands-on applications during class, students will be required to incorporate these objectives into their projects.
2. Students will be assigned deadlines to complete each project. Along the way, they will also be given target dates to complete certain portions of the project. This is done to keep students from procrastinating and trying to complete assignments at the last minute. The teacher will constantly monitor students' progress and check for understanding.
3. Students will be held accountable for meeting set objectives, target dates, and deadlines. If students fail to meet project objectives, target dates, and deadlines, they will be awarded with grades accordingly.
4. Throughout the semester, students will keep notes and returned assignments in a composition notebook, kept in the robotics lab or on their person. These notebooks will be assessed on a regular basis to ensure students are maintaining documents over time. These documents will be essential, as students will need them to study for quizzes and other assessments.
5. Attitudes and traits students should acquire while taking this class to ensure their success should consist of being responsible, punctual, self-disciplined, self-motivated, good natured, supportive, accommodating, honest, trustworthy, accountable, prideful and a team player.
6. Students will be required to turn in all assignments as specified; this may be in-person, through Google Classrooms, or through the teacher's website. Students are allowed to backup and transfer approved files and data using a personal flash drive.
7. It is the responsibility of the student to contact the teacher via email, or to come in to class before school starts to find out what assignments and tests were missed on the day(s) of absence. Arrangements will be made accordingly. Students will receive one day for every day absent to make up an assignment. Makeup tests will be given at an agreed-upon time when the student returns to class. Projects that were assigned prior to the recorded absence and given a set deadline for completion will not waver. No exceptions. Students may check Google Classrooms or the teacher's website for assignment due dates.
8. Students will receive a 10-point deduction off their assignment for each day it's late. If an assignment is not turned in after the second day, the student will be required to contact a parent/guardian. On the third day late, the student will receive a zero for a missing assignment. Many times one part of a project builds into the next, therefore it is imperative that students stay current on assignments.

## **Classroom Rules**

Please see the detailed list of Classroom Rules at the end of this document.

Code of Conduct violations will be handled according to the procedures stated in the Student Handbook.

## **Academic Integrity**

Academic dishonesty includes cheating, plagiarism, falsifying records/documents/signatures, or actions that are intentionally design to provide an advantage or better grade for the student.

1. Cheating includes, but is not limited to, intentionally giving or receiving aid or notes on quizzes, exams, papers, assignments, or class projects intended to be individually completed. Cheating also includes the unauthorized copying of tests papers, or reviews.
2. Plagiarism occurs when a student obtains someone else's work, thoughts, words, or graphics, and presents them as his or her own work. All works should be properly cited, including accurate sources from the internet.

## **Communication**

Every attempt will be made to respond to emails within 24 hours, usually sooner. In order to communicate effectively with parents, each student must have on file a *Student Agreement for Participation in an Electronic Communications System*.

## **Diversity Policy**

Diversity refers to the inclusion of all individuals, regardless of their differences. These differences include, but are not limited to, ethnicity, race, culture, gender, age, socioeconomic status, religion, or physical disability. The concept of diversity implies a total commitment that promotes equality, social tolerance, and the right to express different points of view. Griffin Middle School practices and celebrates diversity and creates a culture characterized by a climate of inclusion rather than exclusion, where people are involved in working together for a common good.

## **Grades**

Grades will be updated regularly, usually within 3 days of the assignment deadline, in the electronic grade book. Depending on the assignment or project, student may be able to view their grades by logging into Google Classrooms.

Excused Absences: The student will be given an opportunity to make up all work, complete tests, and/or other graded assignments that he/she missed during the excused absence.

- Students will be allowed a minimum of one day for each day of excused absence.
- Teacher discretion may be used in allowing additional days.
- If a student is suspended, the student's absence will be considered excused, if the student satisfactorily completes the assignments that were missed during the time the student was suspended.

Unexcused Absences: When an absence is unexcused, students are expected to make up all missed work to the extent required to show mastery of the missed material. The student will receive no credit for work due in class during such absences. This includes major exams, quizzes, labs, and class activities.

## **Class Overview**

### **UNIT 1: FOUNDATIONS**

- Computer Hardware
- Software & Operating Systems
- Programming Languages
- Copyright and Ethics
- Netiquette
- Concept Mapping

### **UNIT 2: ROBOTICS**

- Robotics Overview
- Robots from Concept to Completion
- Introduction to the Lego Mindstorms NXT Robot
- Lego Mindstorms NXT Labs
- Lego Mindstorms NXT Projects
- Lego Mindstorms NXT Infinity Project Labs
- BattleBot Competition

### **UNIT 3: GAME PROGRAMMING**

- Introduction to Alice
- Introduction to Game Maker
- Arcade Game Design
- Puzzle Game Design
- Platform Game Design
- Game Maker Project

### **UNIT 4: MAKERBOT 3D PRINTING**

- 3D Printing Overview
- Introduction to MakerBot
- Designing with TinkerCAD
- MakerBot Project
- Course Analysis & Review

# Mr. Kralik's Classroom Rules

- Abide by all classroom expectations.
- Be on time to class and come prepared to work.
- Respect your classmates, me, and yourself.
- Do not touch anyone else, their computer, or their personal property.
- Do not have technology out during class (iPads, phones, etc.) unless you are using it for an assignment.
- Do not bring food or drinks with you to class.
- Raise your hand if you have a question.
- Stay in your seat unless you need to use the restroom.
- Do not have headphones on while I am talking.
- Do not line up at the door 5 minutes before class ends.
- Push your chair in at the end of class.

# Classroom Expectations

## Entering the Classroom

- There is no need to announce your presence
- Do not throw your backpack, place it on the shelf where it belongs
- Check the whiteboard for activities/instructions
- DO NOT turn on your computer until I tell you to get started

## Behavior in the Classroom

- Yelling will not be tolerated. Respect your classmates and the classrooms around us.
- If you get something out, put it back where you got it before you leave.
- No foul language and no “scoring” on your classmates. I have a zero-tolerance policy for bullying.

## Technology Use

- Even though this is a technology-based class, all technology (iPads, phones, etc.) must be put away unless we are using it for an assignment.
- You may not be on any inappropriate websites at any time. This includes video games, YouTube, Facetime, etc. These are perks awarded for good behavior.
- Do not touch anyone else’s computer. Damaging a computer by improperly shutting it off is a crime and punishable offense of felony mischief.
- Do not bang on your keyboard or mouse. If you damage your keyboard you will be sent to DAEP for vandalism.

## Grading

- Assignments should be turned in on-time unless you have an approved excuse.
- You may access your grades on SKYWARD through the LISD homepage.
- Major grades are worth 40% and Minor grades are worth 60%

## Late Work

- Day 1: -10pts
- Day 2: -20pts/Parent Phone Call
- Day 3: -30pts/Teacher Assigned Lunch Detention
- Day 4: -40pts/Teacher Assigned Lunch Detention
- Day 5: -50pts/Office Referral

## Exiting the Classroom

- Do not line up at the door 5 minutes before class ends. When there is 1 minute remaining in class, and I’m not talking, you may get up and get your backpack.
- Push your chair in and clean up after yourself before you leave.

## Disciplinary Actions

- Step 1: Verbal Warning
- Step 2: Parent Phone Call & Lunch Detention
- Step 3: Write-up & Afternoon Detention
- Step 4: Office Referral