

**2020-2021**

# McMillan Magnet Center



## Course Directory



**Monarchs get Ready to Roar!!!**



## McMillan Magnet Center Math, Technology and Engineering

This directory is designed to help you in planning a program of study that will best meet your needs and interests. Parents, teachers, and counselors will help you select and make decisions regarding particular courses for your student schedule.

Your directory contains complete information about course requirements and materials needed, as well as descriptions of each course being offered at McMillan. Read and carefully study the course offerings before registering. Course choices become commitments and it is difficult to make changes. Careful consideration now will help assure you of a program that satisfies your needs and interests.

The magnet center curriculum is designed to encourage exploration in a variety of subject areas. The curriculum at McMillan Magnet Center reflects the infusion of multicultural nonsexist educational material consistent with the philosophy adopted by the Board of Education.

We hope this directory will prove an effective tool in selecting your plan of study. The courses you select in middle school are most important to your future goals and endeavors.

Dr. Monica Green  
*Principal*

Luke Dillon  
*Assistant Principal*

Mr. Curtis Weber  
*Assistant Principal*

Mrs. Sarah Castanos  
*Dean of Students*

Mrs. Kala Peyton  
*Dean of Students*

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***Las Escuelas Públicas de Omaha no discriminan basados en la raza, color, origen nacional, religión, sexo, estado civil, orientación sexual, discapacidad, edad, información genética, estado de ciudadanía, o estado económico, en sus programas, actividades y empleo, y provee acceso equitativo a los "Boy Scouts" y a otros grupos juveniles designados. La siguiente persona ha sido designada para atender estas inquietudes referentes a las pólizas de no discriminación: El Superintendente de las Escuelas, 3215 Cuming Street, Omaha, NE 68131 (402-557-2001).***

Visit our website at <http://www.mcmillan.ops.org>

## Program Planning Worksheets

Before registration, carefully review the program of study and course descriptions in this handbook and plan a program with your counselor and parents. The sequence of required courses has been outlined on the worksheet provided on this page. You will want to add the elective courses you choose.

<b>SIXTH GRADE Tentative Schedule</b>		
	<b>A-Day</b>	<b>B-Day</b>
<b>Core Block</b>	English/Language Arts	English/Language Arts
<b>Homeroom</b>	Pride	Pride
<b>Core Block</b>	Math (2 Levels)	Intro to PLTW Math
<b>Core Block</b>	Social Studies 6	Science 6
<b>Elective</b>	Art (1 semester)	Physical Education 45 min
<b>Block</b>	PLTW CS Innovators & Makers (1 semester)	Choice (Band, Strings, Chorus, Reading) 45 min

	<b><u>SEVENTH GRADE</u></b>	<b><u>EIGHTH GRADE</u></b>
1	Language Arts or Honors	Language Arts or Honors
2	Language Arts or H Special Projects	Reading/Spanish/H Special Projects
3	Math (3 levels)	Math (3 levels)
4	Social Studies	Social Studies
5	Science 7 or Honors Science 7	Science 8 or Honors Physical Science
6	Physical Education	Physical Education
7	PLTW CS App Creators	(Elective) or Reading 8B
8	(Elective) or Reading 7B	(Elective)
9	(Elective)	(Elective)
10	(Elective)	(Elective)
11	(Elective)	(Elective)

### **PROMOTION GUIDELINES**

For promotion from the seventh to eighth and the eighth to ninth grades, students must earn a minimum of 5 credits per semester.

⇒ A student can earn 1 credit for passing a semester class.

⇒ At least 2 credits its must be from Math, Science, Language Arts or Social Studies.

## ELECTIVES

Students select elective courses to fill their remaining schedule. They may choose one of these options: 1) full year electives, 2) one semester electives, or 3) a combination of full year electives and one semester electives.

### SEVENTH GRADE ELECTIVE COURSE DESCRIPTIONS

#### **Honors Special Projects 7**

**Length: All year**

**Teacher Recommendation**

This course offers a wide variety of experiences that align with gifted and talented programming standards. Learning opportunities meet grade level objectives in problem-solving, critical thinking, creative thinking, inquiry, cultural proficiency, metacognition and affective skills.

#### **Art 7**

**Length: One semester**

Throughout this course, students will experience a wide variety of artistic materials and examine the artistic communication and expression of identity by several artists, past and present. Aesthetic theories of Expressionism and Imitationalism will also be studied in depth. As they do so, they will be creating their own artwork about personal identity.

**NOTE: Enrollment in any music class requires mandatory participation in our concerts, which are held in the evening in December and in May in our auditorium. Additional performances may be scheduled.**

#### **Chorus 7**

**Length: One semester**

Chorus 7 is available to seventh grade students who have special interests and abilities in choral singing. Vocal skills are introduced through appropriate unison, two and three-part singing. Musical independence is encouraged through increasing emphasis on musical notation. Performance opportunities are an extension of the classroom experience.

#### **Intermediate Band 7**

**Length: All year**

**Teacher Recommendation**

**Materials Needed: Instrument**

This course is offered to seventh grade students who began instrumental music instruction in their respective elementary schools or for eighth grade students who began instrumental music in seventh grade beginning band. Instrumental technique and musical understanding focus on the second volume of standard instrumental studies and appropriate band arrangements. Performance is included as an extension of the classroom activities.

#### **Intermediate Strings 7**

**Length: All year**

**Teacher Recommendation**

**Materials Needed: Instrument**

This course is offered to seventh and eighth grade students who have successfully completed several years study. Instrumental technique and musical understandings focus on standard string method studies and appropriate string orchestra selections. The instrumentation includes violin, viola, cello and string bass. Students with previous instrumental experience may begin changeover instruction on the low string instruments. Performance may be included as an extension of classroom activities.

#### **Music Technology 1**

**Length: One Semester**

**Prerequisite: Keyboarding**

This course is designed for students interested in music and its related computer applications. No previous experience in computers or music is necessary. Students will explore electronic musical instruments, computer-assisted instructions, MIDI sequencing and music notation.

## SEVENTH GRADE MAGNET ELECTIVE COURSE DESCRIPTIONS

### **Honors Enrichment Math 1**

#### **Length: One Semester**

This course is designed to prepare 7th and 8th grade students for mathematics competitions. Offered 2nd semester, students will prepare for the MathCounts competition and a national on-line competition. The focus this semester is on problem solving and mathematical explorations. Students will work on material that supercedes any coursework available to middle school students. Students will be required to complete projects to earn credit for the course.

### **Honors Enrichment Math 2**

#### **Length: One Semester**

This course is designed to prepare 7th and 8th grade students for mathematics competitions. Offered 2nd semester, students will prepare for the MathCounts competition and a national on-line competition. The focus this semester is on problem solving and mathematical explorations. Students will work on material that supercedes any coursework available to middle school students. Students will be required to complete projects to earn credit for the course.

### **Introduction to Architecture and Engineering Design**

#### **Length: One Semester**

This pre-engineering course is an introduction to architecture, sketching skills, and drafting tools. Students will learn about the process of architecture, different architectural styles, as well as, careers associated with architecture and computer-aided design. Students will create virtual three-dimensional models of homes by learning to use computer-aided design and drafting (CADD) software. Students will work together to build a scaled, physical model of a home. This course is recommended for pre-engineering (PLTW) students or any student interested in applied mathematics and engineering.

### **PLTW Science of Technology**

#### **Length: One Semester**

This 7th grade pre-engineering course explores the science of electricity, the movement of atoms, circuit design, and sensing devices. Knowledge and skills in basic circuitry design and explore the impact of electricity in everyday life are acquired. Students study the mechanics of motion, the conversion of energy, and the use of science to improve communication.

### **PLTW Flight and Space**

#### **Length: One Semester**

The exciting world of aerospace comes alive through Flight and Space. Students explore the science behind aeronautics and use their knowledge to design, build, and test an airfoil. Custom-built simulation software allows students to experience space travel.

### **PLTW Medical Detectives**

#### **Length: One Semester**

Medical Detectives (MD) explores the biomedical sciences through hands-on projects and labs that required students to solve a variety of medical mysteries. Students investigate medical careers, vital signs, diagnosis and treatment of diseases, as well as human body systems such as the nervous system. Genetic testing for hereditary diseases and DNA crime scene analysis put the students in the place of real life medical detectives.

### **General/Vocal Music**

#### **Length: One Semester**

General/Vocal Music 7 extends the sequential development of musical concepts and skills introduced in the elementary grades. This course explores all aspects of musical development including singing, listening, creating, rhythmic activities, musical notation and playing instruments.

## EIGHTH GRADE ELECTIVE COURSE DESCRIPTIONS

### **Honors Special Project 8**

**Length: Semester**

### **Teacher Recommendation**

This course offers a wide variety of experiences that align with gifted and talented programming standards. Learning opportunities meet grade level objectives in problem-solving, critical thinking, creative thinking, inquiry, cultural proficiency, metacognition and affective skills.

### **Journalism**

**Length: Semester**

### **Teacher Recommendation**

This course focuses on introducing students to the print aspect of journalism. Students will take part in developing, writing, revising, editing and publishing print materials ranging from brochures to a school newspaper and yearbook. Based in the belief that the more one writes, the better one writes, this is first and foremost a lab for writing. Distinguishing between and among the different purposes one has for writing will be the primary basis for this class.

### **Spanish 1-2**

**Length: All Year**

### **Teacher Recommendation**

This course in World Languages at the first-year level stresses interpretive, presentational, and interpersonal communication abilities to develop survival skills in the target language. Students become aware of the personal and economic opportunities that knowing a second language will bring them and how that knowledge will enable them to function better both in the United States and globally. They also begin to develop an awareness and appreciation of the various cultures associated with that language as well as the impact these cultures have made on their own community, country, and world.

### **Middle School Service Learning**

**Length: One semester**

This course is a hands-on study of the practice and intent of service learning, the integration of community service, and related academic study. Students will spend one semester actively developing, planning, implementing, and evaluating service learning experience. Principles of civic engagement will be added to provide students with a well-rounded learning experience. Teachers are advised to have attended the UNO Service Learning Academy or received training in service learning or project based learning.

### **Art 8**

**Length: One semester**

This course allows students to be innovative and reflect on their own experiences as many American artists have and do today. American artists were and are on the forefront of shaping America's identity through recording the human experience in innovative ways. Throughout this course, students will continue to develop their artistic voice and style and explore how they do and will play a part in society. Students will examine art and artists throughout American history focusing on America's diversity and influence. Aesthetic theories of Instrumentalism, Expressionism and Formalism will be studied as well.

**NOTE: Enrollment in any music class requires mandatory participation in our concerts, which are held in the evening in December and in May in our auditorium. Additional performances may be scheduled.**

### **Chorus 8**

**Length: One semester**

Chorus 8 is available to eighth grade students who have special interests and abilities in choral singing. Choral music is introduced in two and three parts that include bass clef participation. Vocal emphasis is placed on the introduction of the male changing voice and greater extension of all voice ranges. Performance opportunities including the All City Music Festival are an extension of the classroom experience.

**Advanced Band 8****Length: All year****Teacher Recommendation****Materials Needed: Instrument**

This course is offered to seventh and eighth grade students with advanced abilities secured through several years of instrumental music participation. Music introduced includes technique studies and selected concert music with full instrumentation appropriate to the classes and ability. Membership is achieved by the recommendation of the instructor. Performance is included as an extension of the classroom activities.

**Advanced Strings 8****Length: All year****Teacher Recommendation****Materials Needed: Instrument**

This course is offered to eighth grade students who have demonstrated advanced ability in playing a string instrument. Technique studies and selected concert music advance both technical and musical understandings. The instrumentation includes violin, viola, cello and string bass. Membership is achieved by the recommendation of the instructor or successful completion of Intermediate Strings. Performance is included as an extension of the classroom activities outside of the school day.

**Music Technology 1****Length: One Semester**

This course is designed for students interested in music and its related computer applications. No previous experience in computers or music is necessary. Students will explore electronic musical instruments, computer-assisted instructions, MIDI sequencing and music notation.

**EIGHTH GRADE MAGNET ELECTIVE COURSE DESCRIPTIONS****Honors Enrichment Math 1 and 2****Length: One Semester****Teacher Recommendation**

This course is designed to prepare 7th and 8th grade students for mathematics competitions. Offered 2nd semester, students will prepare for the MathCounts competition and a national on-line competition. The focus this semester is on problem solving and mathematical explorations. Students will work on material that supersedes any coursework available to middle school students. Students will be required to complete projects to earn credit for the course.

**PLTW Medical Detectives****Length: One Semester**

Medical Detectives (MD) explores the biomedical sciences through hands-on projects and labs that required students to solve a variety of medical mysteries. Students investigate medical careers, vital signs, diagnosis and treatment of diseases, as well as human body systems such as the nervous system. Genetic testing for hereditary diseases and DNA crime scene analysis put the students in the place of real life medical detectives.

**PLTW Introduction to Computer Science I****Length: One semester**

Designed to be the first computer science course for students who have never programmed before, Introduction to Computer Science 1 (ICS-1) is the starting point for the PLTW Computer Science program. Students work individually and in teams to create simple apps for mobile devices using MIT App Inventor®. Students explore the impact of computing in society and the application of computing across career paths and build skills and awareness in digital citizenship and cybersecurity. Students model, simulate, and analyze data about themselves and their interests. Pre-requisite: must have taken and passed Computer Applications with a C or better.

## **PLTW Introduction to Computer Science II**

**Length: One semester**

### **Teacher Recommendation**

In ICS-2, students continue to explore the fundamentals and principles of the stimulating career path of computer science. Students collaborate to create and develop more advanced apps that integrate the collection of data for processing and sharing across different technologies using MIT App Inventor®. Students will continue explore the impact of computing and its effects on society and the world. They will also transfer their understanding of programming gained in App Inventor® to learn introductory elements of text-based programming in Python® to create strategy games and simulations. Pre-requisite: must have passed ICS-1 with a C or better.

## **PLTW Honors Energy and the Environment**

**Length: One semester**

### **Teacher Recommendation**

This 8th grade honors-level pre-engineering course explores sustainable solutions to our energy needs and investigate the impact of energy on our lives and our world. Students will use what they've learned to design and model alternative energy sources, as well as evaluate options for reducing energy consumption. Prerequisite: PLTW Science of Technology

## **PLTW Flight and Space**

**Length: One Semester**

The exciting world of aerospace comes alive through Flight and Space. Students explore the science behind aeronautics and use their knowledge to design, build, and test an airfoil. Custom-built simulation software allows students to experience space travel.

## **PLTW Green Architecture**

**Length: One Semester**

In a world of reduced resources and environmental changes, it is important to present the concept of “being green” to the next generation of designers and builders. In this unit, students are introduced to architectural plans, construction styles, alternative materials and processes, dimensioning, measuring and architectural sustainability. Students use a 3D architectural software program to create an environmentally friendly home using shipping containers.

## **PLTW Honors Automation & Robotics**

**Length: One semester**

### **Teacher Recommendation**

This 8th grade pre-engineering honors course begins with students tracing the history and development of automation and robotics. Students learn about structures, energy transfer, machine automation, and computer control systems. Knowledge and skills are acquired in engineering problem solving while exploring requirements for careers in engineering. The course is completed by students working as a team to create and program an assembly line using Fischertechnik. Prerequisite: Concurrent with Algebra or Geometry

## **PLTW Honors Design & Modeling**

**Length: One Semester**

**Prerequisite: Concurrent with Algebra or Geometry**

This 8th grade pre-engineering honors course uses solid modeling as an introduction to the design process. Students using freehand sketching techniques and descriptive geometry, learn how to sketch components of a design in different views and create three-dimensional computer models. Using design briefs or abstracts, students create physical models and documentation to solve problems. Students taking Design and Modeling followed by Automation and Robotics will compete in the Society of American Military Engineers (SAME) Competition. Prerequisite: Concurrent with Algebra or Geometry.



## Course Placement Appeals

All Secondary Omaha Public Schools offer procedures for appealing course placement (i.e. AP, Honors, IB, etc.). Each building may have specific forms and deadlines, however, the following general procedures shall apply:

**Level One:** Counselor, Curriculum Specialist, Assistant Principal/Data, or Principal

A student or parent with a course placement appeal may first discuss the matter with the counselor, or building administrator involved, with the object of resolving the matter informally.

**Level Two:** Assistant Superintendent of Curriculum, Instruction and Assessment

If the course placement appeal is not resolved at Level One and the individual still wishes to pursue the appeal, he/she may formalize the appeal in writing addressed to the Assistant Superintendent of Curriculum, Instruction and Assessment at 3215 Cuming Street, Omaha, NE 68131.

**Level Three:** Superintendent

If the appeal is not resolved at Level Two and the individual still wishes to pursue the appeal, he/she may formalize the appeal to the superintendent of schools after receiving a written response from the Assistant Superintendent of Curriculum, Instruction and Assessment.

These steps shall be taken in a timely manner so as to accommodate the registration of courses for the school year in question.

## McMillan Mission and Vision

The **Mission** of McMillan Magnet Center is to academically challenge students and to promote student ownership of learning in a safe, diverse, and respectful environment.

The **Vision** of McMillan Magnet Center is to:

- Collaborate with school, family, and community-based partners.
- Provide an innovative, project-based, cross-curricular school setting.
- Integrate components of Science, Technology, Engineering, Arts, and Math through Project Lead the Way (PLTW).