



Science 3 Syllabus

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Location:Rm 132

Credit:None(Middle School)

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NOTE: This syllabus is subject to change throughout the year.

A. Course Description

In this class, students will explore how our planet works—from the land beneath our feet to the weather above us and even out into space. We'll learn about earthquakes, volcanoes, rocks, oceans, weather, climate, and how humans affect the Earth. Students will also study the solar system and Earth's place in space. During our space unit, students will complete a book study on local hero Alan Shepard, the first American in space, using *Alan Shepard: Higher and Faster* from the Heroes of History series. This biography connects science to real life and highlights how curiosity, courage, and leadership helped shape space exploration.

B. Course Objectives

Learn how Earth's land, water, air, and living things all work together

Understand natural events like earthquakes, volcanoes, and weather, and how they affect people

Explore how humans impact the planet and what we can do to protect it

Discover Earth's place in space and how it moves and interacts with the sun and moon

Practice asking questions, doing experiments, and using data to figure things out

Build skills in observing, measuring, and explaining science clearly

Foster curiosity and scientific thinking

Build foundational knowledge for future science courses

Encourage collaboration and problem-solving

Apply scientific concepts to everyday life

C. How this Class Supports Founders' Mission and Themes

The Middle School Earth Science course supports The Founders Academy's mission by helping students become informed, thoughtful citizens who understand the natural world and their role in it. Through the study of Earth's systems, climate, and human impact, students learn to think critically about real-world challenges and how science can guide responsible decision-making. The course encourages personal responsibility through hands-on learning, collaboration, and problem-solving, while also respecting each student's individual learning journey.

During the space unit, students engage in a book study on Alan Shepard—a New Hampshire native and American hero—connecting science to character, leadership, and historical achievement. This aligns with the Academy's emphasis on learning from great individuals of the past and understanding how courage, curiosity, and innovation contribute to liberty and progress. By combining scientific inquiry with historical reflection, the course fosters principled leadership and prepares students to lead by example in their communities.

Mission Statement:

The Founders Academy is a public charter school encompassing grades 6-12 that is free and open to all New Hampshire students. The academy develops citizens and leaders, who understand and apply the lessons of the past, demonstrate exceptional character, participate knowledgeably in community activities, and lead by example. The Academy recognizes the importance of balance in the development of each person and respects each student's individual journey.

Principled leadership and good citizenship are fostered by means of a curriculum of classical studies that includes analyzing the lives of great men and women of history, mining the rich classical ideals of the Western tradition, and tracing the evolution of the precious and costly idea of liberty.

The Vision:

The Founders Academy prepares wise, principled leaders by offering a classical education and providing a wide array of opportunities to lead.

Leadership Code of Conduct:

The students at The Founders Academy created and adopted the following "Leadership Code of Conduct" in January, 2015:

1. Be responsible
2. Be respectful
3. Be honest
4. Be lawful
5. Be determined
6. Be polite
7. Be open-minded
8. Be courageous
9. Be confident
10. Be helpful

Policy: As outlined in the Student Handbook, students are to follow Section 3.0

D. Texts and Class Supplies

Pens(blue/black), Pencils, Colored Pencils, Markers, Glue Sticks, Ruler, Notebooks, Composition Notebook, and small Index Cards, One Green Folder, One Blue Folder to keep in class

Optional Community Classroom Supplies:

Last Name A-E Sandwich Ziploc Bags

Last Name F-J 1 extra package colored pencils

Last Name: K-O 1 extra package of pencils

Last Name: P-Z Quart size Ziploc

E. Grading Scheme, Homework, Mid-Term and Final Assessments

*In this class, students are graded based on two main types of work: **formative assessments** and **summative assessments**. Formative assessments are the everyday work that helps students practice and improve—things like homework, classwork, quizzes, and group discussions. Summative assessments are the bigger assignments that show what students have learned, such as tests, projects, presentations, and lab reports.*

In the first and third quarters, grades are based on 60% summative work and 40% formative work. This helps students build skills and stay engaged while working toward mastering the

material. In the second and fourth quarters, the grading shifts to include major exams: 30% formative work, 45% summative work, and 25% from the midterm or final exam.

This grading system is designed to support students as they grow into independent learners and thoughtful problem-solvers, while also encouraging responsibility and strong work habits.

Homework

Homework is assigned to help students practice what they've learned, build important skills, and think independently. Assignments are designed to be manageable and meaningful, with respect for students' time outside of school. Homework is expected to be turned in on time, but late work may be accepted within one week of the due date (see Part G for details). Students who are absent when homework is assigned will receive special consideration.

Extra help is available during the school day by appointment, and after-school support is offered in the library on Mondays and Wednesdays until 5:00 p.m. Students must schedule ahead of time to attend.

Please note: There are no retakes for exams once they've been taken, and extra credit is not offered in this course.

"The academic year is divided into four quarters. The school will email end of quarter report cards only to 'primary contacts' and students on @tfanh.org email addresses." See Student Handbook, section 2.2.

For classes not eligible for high school credit, mid-term and final assessment grades will be factored into quarters 2 and 4 and graded according to the testing standards set by individual faculty.

Quarter 1 – 25%
Quarter 2 – 25%
Quarter 3 – 25%
Quarter 4 – 25%
Full Year Grade – 100%

For classes that are eligible for high school credit, mid-term and final exam grades are factored into final grades as follows:

For Full Year Courses:	For One Semester Courses:
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Quarter 1 – 20% Quarter 2 – 20% Mid-Term – 10% Quarter 3 – 20% Quarter 4 – 20% <u>Final Assessment – 10%</u> Full Year Grade – 100%	Quarter 1 or 3 – 40% Quarter 2 or 4 – 40% <u>Final Assessment – 20%</u> Final Grade – 100%
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The Grade Scale used at Founders is as follows:

A+ - 98–100%	A+ = 4.33
A – 94-97%	A = 4.0
A- - 90-93%	A- = 3.67
B+ - 87-89%	B+ = 3.33
B – 84-86%	B = 3.0
B- - 80-83%	B- = 2.67
C+ - 77-79%	C+ = 2.33
C – 74-76%	C = 2.0
C- - 70-73%	C- = 1.67
D+ - 67-69%	D+ = 1.33
D – 64-66%	D = 1.0
D- - 60-63%	D- = 0.67
F – 59% and below	F = 0

See The Founders Academy Student Handbook, section 2.2 for more information

F. Mastery

Definition of Mastery at The Founders Academy

Mastery is the acquisition of a deep level of knowledge through meeting content specific benchmarks. Students develop a thorough understanding of the subject matter by consistently applying their skills and demonstrating strong command of the material.

Why “mastery?”

Mastery ensures that the goal of a rigorous curriculum and high expectations are maintained at The Founders Academy. We do not simply require that students “pass” a course, but that they “master” the content of each course. Additionally, the process allows students whose mastery is in question at the end of a quarter or course to continue to work towards mastering the content, and to demonstrate their mastery for the purpose of moving forward to the next level of instruction in a particular subject area.

What is the “process?”

1. The process includes benchmarks for assessment. This includes an assessment of mastery at the end of each quarter; students who earn grades of a B- or above are considered masters of the content automatically. Mastery must be demonstrated in all courses in order to pass the course or to receive high school credit. The only exceptions to this policy are in middle school art, band, or chorus courses.
2. Students who earn cumulative grades of C- to C+ may still demonstrate mastery by completing additional work, at the teacher’s discretion. The additional work must be completed within a specified window of time.
3. The process includes both teacher and student reflection. Quarterly benchmarks allow students, parents, and teachers to address any deficiencies in progress as the school year progresses. All should work to monitor student progress towards final course mastery through the school year.
4. Supplementary instruction is pivotal in this process. Students who do not demonstrate mastery with a semester or course grade of a B- or above may have the opportunity to demonstrate mastery at the end of the course by completing supplemental instruction, provided by the teacher.

Course Mastery:

At the end of a semester-long or full-year course, students who earn a grade of a B- or above will be considered masters of the content and automatically be promoted to the next level within that course’s subject area (if there is one).

Students who earn a grade of C- through C+ will only pass the course/receive high school credit, and be allowed to proceed to the next level (if applicable), by completing additional

work at the teacher's discretion to demonstrate mastery. The only exceptions to this policy are middle school art, band, and chorus courses.

For semester-long courses that are completed at the end of Semester 1, attempts for Mastery must be completed within 2 weeks of issuance of quarter 2 report cards. For courses that are completed at the end of the school year, mastery work must be completed within two weeks of the issuance of end of year report cards.

If a student demonstrates course mastery through completing supplementary work, their cumulative grade does not change.

Forms of demonstrating mastery may include:

Projects, Oral Exams, Written Exams, Exam Re-takes, Khan Academy, After School Tutoring, and other assignments deemed appropriate by teachers.

Necessary Steps to Success of the Mastery Process:

- Teachers must explain Mastery to their students clearly and frequently during the school year. It should be emphasized even more than the numeric value of the grade the student earns, as only mastery is used to determine if students progress to the next level in a subject area.
- Students must understand that a letter grade of a B- or higher at the end of the course determines whether mastery is automatically recognized.
- At the end of the course, only students who have earned a grade of C- through C+ may complete additional work to demonstrate mastery.
- Students are highly encouraged to initiate the request to do extra work to demonstrate mastery by emailing their teachers once they have received their report cards. Student initiation demonstrates student responsibility and commitment to their academic success.
- By the deadlines mentioned above, teachers will determine if mastery has been achieved through the supplemental work completed by the student.

The letter grade "I" (Incomplete) may be assigned to a student who has been absent due to extenuating circumstances and has not had enough time to complete the necessary work in that marking period. Students are responsible for making up all incomplete work within two weeks of the end of the marking period. If the work is not completed, the grade may be calculated with zero credit given for the missing assignments. Written requests for extensions

may be submitted by parents/guardians stating the reason for the request (for example, severe illness). Approval of extensions is not automatic. The letter grade "NG" (No Grade) may be assigned to a student who has not completed enough of the course to receive a grade.

See The Founders Academy Student Handbook, section 2.1.

G. Attendance and Make-Up Work

Late Work

If an assignment is turned in after the due date and time, the highest score possible is 80%. If it's turned in the next school day (when class is in session) after it was due, that 80% applies. After that, 5 points are taken off for each additional school day it's late. For example, if it's turned in three additional school days late, the highest score possible would be 65%. **If a student is absent on the due date, they must speak with me to set a new deadline. If that deadline is missed, the same late policy applies.**

Retake Policy

When a student is absent (either excused or unexcused) it is the responsibility of the student to make up for all work missed, including in-class assignments. The teacher will decide on the appropriate amount of time for make-up work. Work which was assigned prior to the absence and due on the day of the absence must be passed in upon the student's return to class. Missed assignments and class work should be obtained from Google Classroom or Alma, or if further clarification is needed, the teachers.

Students absent on the day of a quiz or test must make arrangements with the teacher on the day of return for make-up. Students may not be given tests or quizzes in advance of an absence without prior permission.

The Founders Academy regulations in relationship to attendance, absenteeism and truancy are based on the following New Hampshire statutes and administrative rules, as well as additional rules as needed:

Legal References Related to Attendance:

RSA 189:34, Appointment

RSA 189:35-a, Truancy Defined

RSA 193:1, Duty of Parent; Compulsory Attendance by Pupil

RSA 193:7 Penalty

RSA 193:8, Notice Requirements

RSA 193:16 Bylaws as to Nonattendance

NH Code of Administrative Rules, Section Ed 306.04 (a)(1), Attendance and Absenteeism

NH Code of Administrative Rules, Section Ed 306.04 (c), Policy Relative to Attendance and Absenteeism”

See The Founders Academy Student Handbook, section 3.2.

H. Scope & Sequence(not limited to)

Science skills and practices	Asking questions, doing experiments, collecting data, and explaining results
Earth’s place in space	Solar system, gravity, moon phases, seasons, and Alan Shepard book study
Earth’s history and geologic time	Fossils, rock layers, geologic timeline, and major events in Earth’s past
Plate tectonics and Earth’s structure	Earth’s layers, plate movement, continental drift, and land formation
Earthquakes, volcanoes, and hazards	Causes and effects of natural disasters, safety, and prediction
Weather and the atmosphere	Water cycle, air layers, weather patterns, and forecasting
Climate and climate change	Climate zones, global warming, and human impact on climate
Water cycle and surface processes	Erosion, deposition, rivers, glaciers, and shaping Earth’s surface
Natural resources and human impact	Renewable vs. nonrenewable resources, pollution, and conservation
Environmental challenges and solutions	Real-world problems like deforestation and climate change, with possible solutions
Engineering connections (if time allows)	Designing solutions to Earth science problems using creativity and teamwork

I. References and Videos

Not limited to:

CK-12(online textbook)

Youtube Videos

Our Planet (TV-PG) – Netflix documentary series with stunning visuals of Earth’s ecosystems

Frozen Worlds (TV-PG) – Episode from Our Planet focused on polar regions and climate change

Blue Planet II (TV-PG) – BBC series exploring ocean life and Earth’s water systems

The Lorax (PG) – Animated film about environmental responsibility and conservation

Wall-E (G) – Pixar film that explores pollution, sustainability, and space exploration

Hidden Figures (PG) – Inspiring story of women in NASA during the space race

Apollo 13 (PG) – Dramatic retelling of a real NASA mission, great for space science

October Sky (PG) – Based on a true story of a student inspired by space exploration

The Martian (PG-13) – Science-based survival story on Mars (best for older middle schoolers)

Planet Earth (TV-G) – BBC documentary series showcasing Earth’s landscapes and wildlife

Alan Shepard, Academy Class of 1981, Full Interview – A personal interview where Shepard reflects on his journey, offering insight into his character, challenges, and leadership
Angle of Attack | Part Two A PBS documentary featuring Alan Shepard, John Glenn, and other astronauts. It explores the early days of NASA and the challenges of spaceflight. Excellent for connecting science and history.

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