



LINCOLN-WOODSTOCK COOPERATIVE SCHOOL DISTRICT COURSE SYLLABUS

Course Name: Grade 7 Integrated Science

Semester: Full Year

Teacher: Ms. Steeves

Course Description: This course is a combination of physical, life, and earth science topics, along with the general science skills and processes. Through studying these areas, students perform experiments, tests, research, and data collection that strengthen their lab skills, critical thinking, and analytical reasoning. Technology is also woven in using measuring tools, computer simulations, building kits & challenges, and computer models. Grade 7 is the second year of the spiral curriculum design for science in middle school.

NGSS Standards Assessed:

Weather Patterns

ESS2-4: water cycling

ESS2-5: weather

Sun, Earth, Moon System

ESS1-1: sun-moon-Earth system

ESS1-2: gravity

ESS1-3: scale properties/how we know what we know

ESS1-4: (shallowly) Earth's history

PS2-4: gravitational interactions

Ecosystems & Energy

LS1-5: environmental factors affect growth, abiotic/biotic

LS1-6: photosynthesis

LS1-8: nervous system

LS2-1: resource availability-populations

LS2-2: symbiotic patterns across ecosystems

LS2-3: matter cycles, energy flows (food webs, energy transfer)

LS2-4: population dynamics, interdependence, resilience

LS4-4: genetic variability- adaptation-natural selection

PS1-5: (revisit) chemical reactions: photosynthesis

Engineering Design

ETS1-1: criteria, constraints, & limitations of a design

ETS1-2: evaluating designs

ETS1-3: analyze data

ETS1-4: developing models



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Cross-cutting Concepts:

1. Patterns.
2. Cause and effect
3. Scale, proportion, and quantity
4. Systems and system models
5. Energy and matter
6. Structure and function
7. Stability and change

Science & Engineering Practices:

1. Asking questions (for science) and defining problems (for engineering)
2. Developing and using models
3. Planning and carrying out investigations
4. Analyzing and interpreting data
5. Using mathematics and computational thinking
6. Constructing explanations (for science) and designing solutions (for engineering)
7. Engaging in argument from evidence
8. Obtaining, evaluating, and communicating information

Anchor Texts or Major Curriculum: Some use of *Amplify Science* unit kits & digital resources, Science-saurus; additional materials created & compiled by teacher.

Course Outline (major units of study):

Unit Title	Essential Question or Overarching Understanding
Earth's Systems: Weather & Water	What will the weather be today and why? <ul style="list-style-type: none">• <i>Basic understanding of weather factors</i>• <i>Multiple pathways of the hydrologic cycle</i>• <i>Air masses & uneven heating of surface air and water on Earth</i>• <i>Catastrophic events & hazards</i>
Earth & our Neighbors	How do Earth, the sun and the moon interact? <ul style="list-style-type: none">• <i>Cyclic patterns of movement & phases</i>• <i>Scale properties of objects</i>• <i>Influence of gravity on objects in the</i>



LINCOLN-WOODSTOCK COOPERATIVE SCHOOL DISTRICT
COURSE SYLLABUS

	<i>solar system</i>
Ecosystems: NH Wildlife	<p>What animals live in NH and why? How do they interact with each other and the environment?</p> <ul style="list-style-type: none">• <i>Influence of resource availability on organisms & populations</i>• <i>Interactions among organisms</i>• <i>Biotic and abiotic components, to include the cycling of energy and matter & related chemical reactions</i>• <i>Importance & strategies to maintain biodiversity</i>•
Engineering Design	<p>What is the question or solution I need an answer for?</p> <ul style="list-style-type: none">• <i>Building challenges that involve limited resources</i>• <i>Prepared and original experiments</i>

Portrait of a Learner

Independent Learner

I make thoughtful plans and do my best to reach personal goals using feedback to work through challenges.

Responsible Collaborator

I work with others to achieve shared goals by listening actively, contributing ideas, and managing conflict.

Critical Thinker

I analyze information, ask thoughtful questions, and apply reasoning skills to solve problems and make decisions.

Effective Communicator

I express ideas clearly, adapting strategies based on the audience, setting, and/or purpose.

Global Citizen

I show that I care and take responsibility by helping in my community and the world around me.

Additional Classroom Expectations:



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Deer Data collection for NH Fish & Game & other citizen science projects; various labs supplied by the teacher and also designed by students. Lab Safety protocols to be followed at all times.

Students must participate in lab safety lessons, pass a lab safety quiz, and practice lab safety habits whenever in the science classroom.