

The Weather Out There

Grades 6-12

Taped program with liver interactive component

OHIO Standards

Earth & Space Sciences (unless otherwise marked)

Rating Scale	Grade Level	Benchmark	Indicator
1 (main topic)	11	B	4. Explain the impact of oceanic and atmospheric currents on weather and climate.
2 (covered in detail)	5	A	3. Describe the characteristics of the Earth and its orbit about the Sun (e.g. elliptical orbit, tilted axis, and spherical planet).
2 (covered in detail)	12	B	5. Investigate how thermal energy transfers in the worlds' oceans impact physical features (e.g. ice caps and oceanic and atmospheric currents) and weather patterns.
2 (covered in detail)	11	B	10. Interpret weather maps and their symbols to predict changing weather conditions worldwide.
2 (covered in detail)	8	B	5. Explain that the universe consists of billions of galaxies that are classified by shape.
3 (briefly discussed)	5	A	4. Explain that stars are like the Sun, some being smaller and some larger, but so far away they look like points of light.
3 (briefly discussed)	12	A	3. Explain how information about the universe is inferred by understanding that stars and other objects in space emit, reflect, or absorb electromagnetic

			radiation, which we then detect.
3 (briefly discussed)	11	B	3. Explain heat and energy transfers in and out of the atmosphere and its involvement in weather and climate (radiation, conduction, convection, and advection).

3-5

Benchmark A: Explain the characteristics, cycles, and patterns involving the Earth and its place in the Solar System.

6-8

Benchmark B: Explain that the universe is composed of vast amounts of matter, most of which is at incomprehensible distances, and held together by gravitational force. Describe how the universe is studied by the use of equipment such as telescopes, probes, satellites, and spacecraft.

11-12

Benchmark A: Explain how technology can be used to gather evidence and increase our understanding of the universe.

Benchmark B: Describe how the Earth is made up of a series of interconnected systems, and how a change in one system affects other systems.

MICHIGAN Standards

Standard V.4 Solar System, Galaxy, and Universe (ES)

Rating Scale	S.C.# (Strand)	S.C.# Grade Level	Indicator
1 (main topic)	1	Middle School	1. Compare the Earth to the other planets and moons in terms of supporting life.
1 (main topic)	1 (V.3)	Middle School	1. Explain patterns of changing weather and how they are measured.
2 (covered in detail)	2	Middle School	3. Describe and explain common observations of the night skies.
2 (covered in detail)	3 (IV.4)	High School	3. Describe waves in terms of their properties.

2 (covered in detail)	1 (V.3)	High School	1. Explain how interactions of the atmosphere, hydrosphere, and geosphere create climates, and how climates change over time.
2 (covered in detail)	2 (V.3)	High School	2. Describe patterns of air movement in the atmosphere and how they affect weather conditions.
3 (briefly discussed)	1	High School	1. Compare our Sun to other stars.
3 (briefly discussed)	2	Middle School	3. Describe and explain common observations of the night sky.

Standard component #1: All students will compare and contrast our planet and Sun to other planets and star systems.

Standard component #2: All students will describe and explain how objects in our Solar System move.

(IV.4) Using Physical Science Knowledge - Waves & Vibrations

Standard component #3: All students will measure and describe vibrations and waves.

(V.3) Atmosphere & Weather

Standard component #1: All students will investigate and describe what makes up weather and how it changes from day to day, from season to season, and over long periods of time.

Standard component #2: All students will explain what causes different kinds of weather.

Rating Scale	L.O.	Grade Level	Indicator
1 (main topic)	1	5	Discuss how the Earth's tilt on its axis and the angle at which the Sun's light strikes the Earth determines seasonal changes.
1 (main topic)	1	7	Investigate the characteristic layers of the atmosphere.
1 (main topic)	Unit III	HS. Int. Science	Demonstrate an understanding of the different regions of the electromagnetic spectrum.
2 (covered in detail)	1	7	Compare and contrast weather fronts and their effects.
3 (briefly discussed)	1	7	Analyze the effects of the movement of winds, ocean currents, and air masses on

			weather climate.
3 (briefly discussed)	1	5	Investigate and observe constellations, and explore legends associated with them.

Grade 5

Learning Objective 1: Understands the composition and structure of the universe and the Earth's place in it.

Grade 7

Learning Objective 1: Atmospheric processes and water cycle with an emphasis on global atmosphere and weather.

Unit III: Physical Science D. Sound & Light - Science Concepts