Mary Queen of Peace School
Science Curriculum Grade 7 (2012)

Subject	Grade	Unit Name
Science	7	Astronomy

Stage 1: DESIRED RESULTS

Established Goals / Content Standards

2.1 A. The motion of an object is described as a change in position, direction, and speed relative to another object.

2.2 B. Every object exerts a gravitational force on every other object.

6.1A. The Earth's, Sun, and Moon are part of a larger system that includes other planets and smaller celestial bodies.

6.1B. The Earth has a composition and location suitable to sustain life.

6.1C. Most of the information we know about the universe comes from the electromagnetic spectrum.

6.2A. The apparent position of the Sun and other stars, as seen from Earth, change in observable patterns.

6.2B. The apparent position of the Moon, as seen from Earth, and its actual position relative to Earth change in observable patterns.

6.2C. The regular and predictable motions of a planet and moon relative to the Sun explain natural phenomena of a planet, such as day, month, year, shadows, moon phases, eclipses, tides, and seasons.

6.2D. Gravity is a force of attraction between objects in the solar system that governs their motion.

7.1A Scientific inquiry includes the ability of students to formulate a testable question and explanation and to select appropriate investigative methods in order to obtain evidence relevant to the explanation.

7.1B Scientific inquiry relies upon gathering evidence from qualitative and quantitative observations.

7.1C Scientific inquiry includes evaluation of explanations in light of evidence and scientific principles.

7.1D The nature of science relies upon communications of results and justification of explanations.

8.1B Advance in technology often result in improved date collection and an increase in scientific information.

8.1C Technological solutions to problems often have drawbacks as well as benefits.

8.2A People of different gender and ethnicity have contributed to scientific discoveries and the invention of technological innovations.

8.2B Scientific theories are developed based on the body of knowledge that exists at any particular time and must be rigorously questioned and tested for validity.

8.3A People, alone or in groups, are always making discoveries about nature and inventing new ways to solve problems and get work done.

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Understandings

The sky is full of things we can see from the earth and things that are not apparent to the naked eye.

Technology has greatly increased our knowledge and understanding of the number, interaction and makeup of astronomical interties.

Essential Questions

What causes us to have seasons?

What do we mean by the beginning of time?

What is the life of a star?

Are we unique in the sky?

How has humans changed in their view of the sky ?

Knowledge

Scientists that have influenced our current knowledge of the sky.

Gravity's properties and what influences its strength.

How gravity plays an important role in the characteristics and behavior of celestial bodies.

The characteristics of our solar system.

Properties of stars, galaxies, solar systems, black holes, meteorites, quasars and how has mankind been able to obtain such information.

Skills

Recognize common constellations.

Stage 2: ASSESSMENT EVIDENCE

Performance Tasks

Group project of our solar system.

Other Evidence

Test

Contribution to class discussion

Class notes and notes from reading

Key Criteria

Demonstrated understanding of galaxies, stars, planets, pulsars, binary stars, black holes and asteroids.

Stage 3: LEARNING PLAN

Mary Queen of Peace School
Science Curriculum Grde 7 (2012)

Subject	Grade	Unit Name
Science	7	Earth's Surface

Stage 1: DESIRED RESULTS

Established Goals / Content Standards

1.1A Objects, and the materials they are made of, have properties that can be used to describe and classify them.

1.1B Properties of mixtures depend upon the concentrations, properties and interaction of particles.

1.1C Properties of matter can be explained in terms of moving particles too small to be seen without tremendous magnification.

1.1D Physical changes in the state of matter that result from themal changes can be explained by the Kinetic Theory of matter.

1.1G Properties of objects and states of matter can change chemically and /or physically.

1.1I Mass is conserved during any physical or chemical change.

5.1A. The Earth's crust is composed of various materials, including soil, minerals, and rocks, with characteristic properties.

5.1B. The hydrosphere is composes of water (a material with unique properties,), gases, and other materials.

5.2A. The Earth's surface features are changed through a variety of external process.

5.2B. There are internal processes and sources of energy within geosphere that cause changes in Earth's crustal plates.

5.2D Changes in the Earth over time can be inferred through rock and fossil evidence.

5.3A. Earth's materials are limited natural resources affected by human activity.

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Understandings

The Earth's surface has and is changing due to mechanical and chemical weathering, erosion, and deposition.

Soil is the result of many forces.

Fossils have given us a record of changes over time.

Maps are man's representation of the surface of Earth.

Essential Questions

What forces shape the surface of the Earth?

How do we get soil?

Why are soils so different in composition?

Knowledge

Composition of soil.

Forces that change the earth's surface.

Types of erosion and deposition.

Fossils have given us a record of the past.

The major changes in the Earth's geologic time scales.

Technologi's contributions have greatly changed today's map making.

Skills

The ability to interpret a topographical map.

Students create comparison of pixels to understand digital pictures.

Recognize the different types of soils.

Stage 2: ASSESSMENT EVIDENCE

Performance Tasks

Students create a presentation showing geologic time and Earth's major changes in that time.

Other Evidence

Test

Contribution to class discussion

Class notes and notes from reading

Key Criteria

Demonstrated understanding of maps and changes in the earth's surface.

Stage 3: LEARNING PLAN

Mary Queen of Peace School
Science Curriculum Grade 7 (2012)

Subject	Grade	Unit Name
Science	7	Weather

Stage 1: DESIRED RESULTS

Established Goals / Content Standards

1.2A Forms of energy have a source, a means of transfer.

1.2C Electromagnetic energy from the Sun (solar radiation) is a major source of energy on Earth.

1.2F Energy can be transferred within a system as the total amount of energy remains constant.

2.2C Magnetic forces are related to electrical forces as different aspects of a single electromagnetic force.

5.1C. The atmosphere is composed of a mixture of gases, including water vapor, and minute particles.

5.1D. Climate is a description of average weather condition in a given area over time.

5.2E. Changes in the form of water as it moves through Earth's systems are described as the water cycle.

5.2F. Climate is a description of average weather conditions in a given area due to the transfer of energy and matter through Earth's system.

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Understandings

Weather is experienced by all.

The prediction of weather is a complicated process.

What happens in one area of the land, may greatly change the weather in another.

Essential Questions

What causes wind?

What causes rain?

What is the difference in air masses?

What is weather and climate?

Why do different regions of the world experience different weather and climate?

How do meteorologist record and predict the weather?

What are the safety measures we should take in response to different weather?

Knowledge

The atmosphere has layers and each one has different characteristics.

Warm and cold air masses cause wind and precipitation.

The greater the difference in temperature of air masses the more severe the weather it may cause.

Instruments used to measure and predict the weather.

Characteristics of hurricanes, tornados, thunderstorms and floods.

Safety precautions to take for hurricanes, tornados, thunderstorms , and floods.

Characteristics of different fronts, and their symbols.

Skills

How to interpret a weather map.

How to read a thermometer..

How to read a barometer.

How to use a sling psychrometer.

Weather date collection.

Stage 2: ASSESSMENT EVIDENCE

Performance Tasks

Collection and graphing of weather data.

Other Evidence

Test

Contribution to class discussion

Class notes and notes from reading

Key Criteria

Demonstrated understanding of the causes and impact of weather.

Stage 3: LEARNING PLAN