

5th Grade Science Pacing Guide

Time	GLCEs	Resources, labs & activities
Sept. Weeks 1, 2 & 3	<p>P.FM.2 Force Interactions- Some forces between objects act when the objects are in direct contact (touching), such as friction and air resistance, or when they are not in direct contact (not touching), such as magnetic force, electrical force, and gravitational force.</p>	<p>T-made PPT in teacher shared file.</p>
Sept-Oct 4, 5, & 6	<p>P.FM.05.21 Distinguish between contact and non contact forces.</p> <p>P.FM.05.22 Demonstrate contact and noncontact forces to to change the motion of an object.</p> <p>P.FM.4 Speed- Motion can be described by a change in position relative to a point of reference. The motion of an object can be described by the speed and direction it is moving. The position and speed can be measured and graphed as a function of time.</p>	<p><u>Electricity and Magnetism</u>, (Glencoe) Chp. 2 Sections 1, 2, & 3</p>
Weeks 7, 8, & 9	<p>P.FM.05.41 Explain the motion of an object relative to its point of reference.</p> <p>P.FM.05.42 Describe the motion of an object in terms of direction, as the object moves, and in relation to other objects.</p> <p>P.FM.05.43 Illustrate how motion can be measured and represented on a graph.</p> <p>P.FM.3 Force- Forces have magnitude and direction Forces can be added. The net force on an object is the sum of all of the forces acting on the object. The speed and/or direction of an object changes when non-zero net force is applied to it. A balanced force on an object does not change the motion of the object (the object either remains at rest or continues to move at a constant speed in a straight line.</p>	<p>Activity: Spinning coil motor</p> <p><u>Motion, Forces, and Energy</u> (Glencoe) Chp. 1 Sections 1 & 2</p> <p>Activity: Rolling Right Along (1st Law of Motion)</p> <p>Labs in Glencoe</p>
Life Science to start in the 1st tri	<p>P.FM.05.31 Describe what happens when two forces act upon an object in the same or opposing directions.</p> <p>P.FM.05.32 Describe how constant motion is the result of balance (zero net) forces.</p> <p>P.FM.05.33 Describe how changes in the motion of objects are caused by a non-zero net (unbalanced) force.</p> <p>P.FM.05.34 Relate the size of change in motion to the strength of unbalanced forces and the mass of the object.</p> <p>Life Science: Organization of Living Things</p> <p>L.OL.M.4 Animal Systems- Multicellular organisms may have specialized systems that perform functions which serve the needs of the organism.</p>	<p><u>Motion, Forces, and Energy</u> (Glencoe) Chp. 1 Section 3</p>
end of Nov- (approx. 8-9 wks)	<p>L.OL..05.41 Identify the general purpose of selected animal systems (digestive, circulatory, respiratory, skeletal, muscular, nervous, excretory, and reproductive.)</p> <p>L.OL.05.42 Explain how animal systems (digestive, circulatory, respiratory, skeletal, muscular, nervous, excretory,</p>	<p>Tools: Stop watches, Newton spring scales, meter sticks, marbles.</p> <p>End of Trimester Exam to include GLCEs from Force and Motion ONLY. Body systems tested in the 2nd trimester.</p> <p><u>Glencoe, Human Body Systems</u> All of chp. 1-4, Chp. 5 Section 1, Chp. 6 Section 1 (reproductive covered by Health classes.</p>

2nd week of Jan.

reproductive) work together to perform selected activities.

Science Process: Inquiry Process

SI.P.M.1 Inquiry involves generating questions, conducting investigations, and developing solutions to problems through reasoning and observations.

SI to be covered in labs through trimester.

SI.IP.05.11 Generate scientific questions based on observations, investigations, and research.

SI.IP.05.12 Design and conduct scientific investigations.

SI.IP.05.13 Use tools and equipment (spring scales, stop watches, meter sticks and tapes, models, hand lens) appropriate to scientific investigations.

SI.IP.05.14 Use metric measuring devices in an investigation.

SI.IP.05.15 Construct charts and graphs from data and observations.

SI.IP.05.16 Identify patterns in the data.

Heredity

2nd week of Jan.

L.HE.M.1 Inherited and Acquired Traits- The characteristics of organisms are influenced by heredity and environment. For some characteristics, inheritance is more important; for other characteristics, interactions with the environment are more important.

through 1st week of March

L.HE.05.11 Explain that the traits of an individual are influenced by both the environment and the genetics of the individual.

L.HE.05.12 Distinguish between inherited and acquired traits.

Evolution

L.EV.M.1 Species Adaptation and Survival- Species with certain traits are more likely than others to survive and have offspring in particular environments. When an environment changes, the advantage or disadvantage of the species' characteristics can change. Extinction of a species occurs when the environment changes and the characteristics of a species are insufficient to allow survival.

L.EV.05.11 Explain how behavioral characteristics (adaptation, instinct, learning, habit) of animals help them to survive in their environment.

L.EV.05.12 Describe the physical characteristics (traits) of organisms that help them survive in their environment.

L.EV.05.13 Describe how fossils provide evidence about how living things and environmental conditions have changed.

L.EV.05.14 Analyze the relationship of environmental change and catastrophic events (for example: volcanic eruption, floods, asteroid impacts, tsunami) to species extinction.

L.EV. M.2 Relationships Among Organisms-Similarities among organisms are found in anatomical features, which can be used to infer the

Glencoe, Life's Structure and Function, Chp. 5 Sections 1,2 & 3.

Glencoe, Lifes's Structure and Function Chp. 6, Adaptations

Sections 1,2 &3

A Links document will be placed in the t-shared file to supplement learning GLCEs.

degree of relatedness among organisms. In classifying organisms, biologists consider details of internal and external structures to be more important than behavior or general appearance.

L.EV.05.21 Relate degree of similarity in anatomical features to the classification of contemporary organisms.

Science Processes: Inquiry Analysis and Communication

S.IA.M.1 Inquiry includes an analysis and presentation of findings that lead to future questions, research, and investigations.

S.IA.05.11 Analyze information from data tables and graphs to answer scientific questions.

S.IA.05.12 Evaluate data, claims, and personal knowledge through collaborative science discourse.

S.IA.05.13 Communicate and defend findings of observations investigations using evidence.

S.IA.05.14 Draw conclusions from sets of data from multiple trials of a scientific investigation.

S.IA.05.15 Use multiple sources of information to evaluate strengths and weaknesses of claims, arguments, or data.

Spend 1-2 weeks covering the scientific method.

*model an experiment

* class example of a scientific investigation

Participation in the school science fair.

Refer to guides and website links available on the HP grant tab.

3rd Tri
2nd week
of March-
1st week
of June

Earth Science: Earth Systems

E.ES.M.6 Seasons- Seasons result from annual variations in the intensity of sunlight and length of day due to the tilt of the axis of the Earth relative to the plane of its yearly orbit around the sun.

E.ES.05.61 Demonstrate using a model, using seasons as the result of variations in the intensity of sunlight caused by the tilt of the Earth on its axis, and the revolution around the sun.

E.ES.05.62 Explain how the revolution of the Earth around the sun defines a year.

Hyperlinks to aid teaching of GLCEs to be placed in the t-shared file.

Earth in Space and Time

E.ST.M.1 Solar System-The sun is the central and largest body in our solar system. Earth is the third planet from the sun in a system that includes other planets and their moons, as well as smaller objects, such as asteroids and comets.

E.ST.05.11 Design a model that describes the position and relationship of the planets and other objects (comets and asteroids) to the sun.

E.ST.M.2 Solar System Motion- Gravity is the force that keeps most objects in the solar system in regular and predictable motion.

- E.ST.05.21** Describe the motion of planets and moons in terms of rotation on axis and orbits due to gravity.
- E.ST.05.22** Explain moon phases as they relate to the position of the moon in its orbit around the Earth, resulting in the amount of observable reflected light.
- E.ST.05.23** Recognize that nighttime objects (stars and constellations) and the sun appear to move because the Earth rotates on its axis and orbits the sun.
- E.ST.05.24** Explain lunar and solar eclipses based on the relative positions of the Earth, moon, and sun, and the orbit of the moon.
- E.ST.05.25** Explain the tides of the oceans as they relate to the gravitational pull and orbit of the moon.

Possible field trip to a planetarium.

Science Processes: Reflection and Social Implications

S.RS.M.1 Reflecting knowledge is the application of scientific knowledge to new and different situations. Reflecting knowledge requires careful analysis of evidence that guides decision-making and the application of science throughout history and within society.

- S.RS.05.11** Evaluate the strengths and weaknesses of claims, arguments, and data,
- S.RS.05.12** Describe limitations in personal and scientific knowledge.
- S.RS.05.13** Identify the need for evidence in making scientific decisions.
- S.RS.05.15** Demonstrate scientific concepts through various illustrations, performances, models, exhibits, and activities.
- S.RS.05.16** Design solutions to problems using technology.
- S.RS.05.17** Describe the effect humans and other organisms have on the balance in the natural world.
- S.RS.05.19** Describe how science and technology have advanced because of the contributions of many people throughout history and across cultures.