**Honors Science 8 Pacing Guide 2019**

**Course: Honors Science Grade:8**

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| **Months/Days** | **UNITS** | **STANDARDS** | **CONTENT****Topics being covered? What do students need to know? (*nouns*)** | **ACTIVITIES****w/Integration of Technology & Career Ready Practices** | **ASSESSMENTS****What evidence (formative/summative) is utilized to establish that the content, standards, & skills have been mastered?** |
| September  & October | Unit 1:Cell structure and function |  MS-LS1-1MS-LS1-2 | -Organisms are made of cells-Microscopes-Living vs. non-living- Cell Theory-Organelles-Plant and animal cells-Transport in cells-Osmosis and Diffusion | Metric System notes-Conversion between English and metric system-Microscope notes-Microscope Mania- Microscope Measurement lab-Letter e lab- Characteristics of life notes- Lab on Characteristics of Life-Cell notes- Cell Theory Lab-Cell model lab-Plant and animal cell lab-Cell Illustrations- Cell Story - Osmosis notes-Osmosis Egg Lab-Design your own lab- NewsEla-Kahoots-Ed-Puzzle-Virtual Labs | Metric QuizMicroscope labs-Microscope quiz- Characteristics of life project-Cell Model lab-Cell Quiz-Cell Story- Create your own experiment project |
| November | Unit 2: Genetics and Traits | MS-LS3-1MS LS 3.2 | DNA in our cells-Sexual Reproduction-Asexual reproduction-Punnett Squares-Di-hybrids-Co-dominance-Sex-linked traits--Mutations-Genes-Genetic Disorders-GMO’s-Biotechnology | Intro to genetics notes-Super Hero lab-Punnett square intro-Dragon Genetics lab-Sponge bob genetics-Di-hybrid genetics-Corn Crop Genetics-DNA lab-Sex-linked traits notes-Sex-linked penny lab-DNA on a chain lab- Introduction to Asexual and Sexual Reproduction and Mutations-Sexual and Asexual lab- Click and Clone labDNA and Protein Synthesis-Code Busters Lab -Biotechnology notes-Biotechnology viewpoint research ( Pick a side)- Corriel Field Trip -NewsELA-Kahoots-Ed-Puzzle-Virtual Labs-Web-quest | Vocabulary  Quiz-Punnett square quiz-Labs-Blood type quiz-Genetics Test-Gmo essay-Cotton Candy Grapes NewsELA |
| December & January | Unit 3: Human Body | MS-LS-1.3MS-LS-1.8 | Connection of the systems to each other Nervous System- types of Neurons-Parts of the brain-Memory storage-disorders-stem cell research Muscular System-Types of muscles-Voluntary vs. involuntary-Disorders Digestive System-Parts and functions-Mechanical vs. chemical-disorders Circulatory system-Parts and functions- heart- Disorders-Parts of blood-Blood types Respiratory System-Parts and functions-Disorders-Lung capacity  Excretory System-Parts and functions-Disorders  | Muscular system-Intro notes-Types of tissue lab-Blinking lab-Kahoots-Web-quest-Ed-Puzzle- Bill Nye Digestive system-Intro notes-Enzyme  lab-Digestion chart- Kahoots-Web-quest-Ed-Puzzle- Bill Nye  Circulatory SystemIntro notesHeart  EssayTrace pathway of bloodHeart Dissection labParts of blood notesBlood transfusion lab-Kahoots-Web-quest-Ed-Puzzle- Bill Nye  Respiratory systemIntro notesLung capacity lab-Kahoots-Web-quest-Ed-Puzzle- Bill NyeExcretory systemIntro notesUrine lab-Kahoots-Web-quest-Ed-Puzzle- Bill Nye | 3-D Organ ProjectCirculatory system quizExcretory system quizDigestive system quizRespiratory system quizNervous system quizDesign a helmet challengeDigestion Story ProjectHuman Body TestInformational Text  |
| February  | Unit 4:Earth Science | MS ESS 1.4MS ESS 2.1MS ESS 2.2MS ESS 2.3 | --Continental shapes-Sea floor spreading-Plate Tectonics-Earth quakes-Mountain chains-Plate Boundaries-Weathering-Erosion-Same fossils in Africa and NJ-Evidence of plate movement-Convection currents | Rock Intro Notes-Mystery Rock Lab-Sugar Cube Rock lab-Explore Rocks in New Jersey-Weathering and Erosion lab-Plate Tectonics notes-Notes on Earth’s Core (energy) through convection currents-Mapping earthquakes and volcanoes-Convection Currents Lab-Fossil notes-Create a fossil lab-Fossil identification lab-Kahoots-Web-quest-Ed-Puzzle- Bill Nye | Rock cycle quizErosion and Weathering quizLabsEarth science testInformational Text |
| March | Unit 5: Fossil Record  through evolution | MS LS 4.1MS LS 4.2MS LS 4.3 | Identify “key events” in the evolution of life on Earth.-Explain how evolution is linked to how closely two species are related.-Fossil record shows diversity-Embryological development-Fossil dating-Are birds and dinosaurs related-What factors cause adaptations in organisms-History of Life on Earth | The History of Life on Earth: DVD Evolutionary Theories- comparing the evolutionary theories of Lamarck and Darwin -Compare and summarize the theories of Lamarck and Darwin -Class discussion about fossils, examples, what they show about evolution, why there are gaps in the fossil record. -Evolution of Dragon Fossils activity -Evidence from Anatomy and Embryology (all video clips come from PBS evolution at http://www.pbs.org/wgbh/evolution/library/04/index.html ) The Great Fossils Find Lab-Dig for Fossils Lab-Geological Timeline -Kahoots-Web-quest-Ed-Puzzle- Bill Nye | Fossil record and Evolution quizInformational Text Labs |
| March  | Unit 6: Natural Selection and Adaptation | MS LS 4.4MS LS 4.5 MS LS 4.6 | Genetic variations can change a population size Humans can influence variations within a species Natural selection and evolution are closely linked | -Intro notes-Bird beak Lab-Toothpick Fish Lab- Natural Selection Virtual Lab-Peppered moth lab-Kahoots-Web-quest-Ed-Puzzle- Bill Nye-Informational Text  | Design your species STEM lab Vocabulary QuizLabsNatural Selection and Adaptation Test |
| April  | Unit 7: Energy flow in Ecosystems | SCI.MS-LS1-6SCI.MS-LS1-7 | -Photosynthesis and cycles of matter-How food is rearranged in chemical reactions-Plants use energy from light | Introduction notesElodea labChromatography labVirtual labBall and stick modelCarbon cycle gamesKahoots-Web-quest-Ed-Puzzle- Bill Nye | LabsInformational TextQuiz |
| April  & May | Unit 8: Ecosystem Interactions , Energy and Dynamics | SCI.MS-LS2-1SCI.MS-LS2-3SCI.MS-LS2-4SCI.MS-LS2-5 | Biotic and abiotic factors-Energy Pyramids-Food webs-Cycles-Biodiversity-Dynamics of Ecosystems | Levels of organization notes-Food web and energy pyramids practice-Owl pellet lab-Animal Cracker  lab-Cycle notes-Cycle comic strips-Symbiosis notes-Symbiosis card lab-Symbiosis wanted poster-Sampling population notes-Mark and recapture lab-Population goldfish lab-Biodiversity notesKahoots | Food webs and energy pyramid test-Cycles quiz-Symbiosis project |
| May  | Unit 9:Environmental Resources and Stability on Earth | MS-ESS3-1MS-ESS3-2MS-ESS3-4 | Natural Hazards and weather -Some events are predictable, others are not -Renewable and nonrenewable resources -Human population growth and its effect on the environment Changes to the environment can affect many species | Renewable and non-renewable resources notes -Oil Spill lab -Global warming notes-Global warming lab-Water quality Lab-Crystal Creek Lab-Natural resourcesKahoots-Web-quest-Ed-Puzzle- Bill Nye | Global warming assessmentResource quizEvaluate green energyPick a Side Project |
| June | Unit 10:Human Impact on the environment and design solutions | MS-ESS3-3MS-ETS1-2 | Humans and the environment -Similarities and differences between alternative energy -Pollution -Land uses - Extinction of species -Discussing What Can Be Done About Mass Extinction | Environmental Issues notes-Human population growth graphing- Water Pollution Lab -Wind Turbine competition Kahoots-Web-quest-Ed-Puzzle- Bill Nye | Solar car project Human impact test |