HMNS at Sugar Land Field Trip Classes 2017

(2 weeks notice is required to schedule all Field Trip Classes and contingent upon teacher availability)

Topics and Descriptions		
Grades PreK-2nd 30 mins.	Swirling Planets	Students will have class around the Science on a Sphere. They will learn about the Milky Way, the Sun and the planets while also learning about colors. Students will follow along in their own Solar System booklet as they study, color, and gain information on each of the 8 planets, Pluto, the sun and the moon.
Grades K-2nd 30 mins.	Frogs	Students will learn facts about frogs and how they live. They will study the metamorphosis of the frog life cycle and will learn how frogs adapt to their habitats as well as how and what they eat. Specific frogs found in the museum will be discussed and a trip into the frog hall will introduce them to these frogs and their specific habitats. Student activities include an activity on the life cycle and experimenting with types of adaptations.
Grades K-2nd 30 mins.	Fossils	Students observe what fossils are and where they are found. Students understand the job of a paleontologist. Student activity: Students dig for dinosaurs and make footprint trackways in Play-doh which go home with the teacher.
Grades 3rd-4th 45 mins.	Land Forms: The Shape of the Land	Students investigate forces that cause change to the Earth's surface. Students identify and compare different landforms in Texas. Student activities include interactions with a stream table and erupting volcanoes. Students will identify various landforms while reinforcing major vocabulary and geographical concepts.
Grades 3rd-4th 45 mins.	Crazy Polymers	Students will discover what polymers are. Students compare and contrast a variety of mixtures and solutions. They will discover whether the mixing of two substances results in a new substance. Students will take part in three activities using polymers such as glue, starch, polyacrylate, and Styrofoam.
Grades 3rd-4th 45 mins.	Fossils and the Paleo Hall	Students will learn how fossils explain <u>adaptations</u> in animals through time and how they enable the organisms to survive in their particular environment. Topics include fossils and how are they formed; adaptations and what can be learned from them; extinctions, mass extinctions, survivors; and relative dating. Classroom lecture (15 mins) with visuals and a guided tour of HMNS Sugar Land Paleo Hall highlighting animals and their adaptations and changes due to mass extinctions (30 mins).
Grades 3rd-5th 45 mins.	Frogs and Toads	Students will study and understand the basic characteristics of frogs and toads including their similarities and differences. They will study and review the metamorphic changes in the life cycle and how they adapt to their environments. Specific frogs and toads found in the museum will be discussed and a trip into the frog hall will introduce them to these frogs and toads and their specific habitats. Activities include: group activity on the differences and similarities of frogs and toads and experimenting with types of adaptations.

Grades 3rd-5th 45 mins.	Fueling Our Future	Students learn what energy is, what fuels are, what renewable and nonrenewable fuels are, what fossil fuels are and where they come from as well as how they are used. The historic and present use of biofuels including biodiesel is discussed. They learn some challenges to using different kinds of fuels, and trade-offs between costs and consequences in energy choices. Examples of fuel types are shown and demonstrated.
Grades 3rd & up 45 mins.	Natural Extravaganzas	Students understand the natural world of weather and earth science and the extravagant episodes that happen day to day. Students learn where a volcano starts and what causes the eruptions, the explanation behind the ring of fire; causes and types of earthquakes and their relation to tsunamis; students are able to describe how tornadoes are created in nature, how hurricanes "work" and create storm surges, and how storm surges are different from tsunamis. Student Activity: Students will simulate volcanic eruption, earthquakes and various weather events throughout the class.
Grades 4th & 5th 45 mins.	Fossil Fuels in Sedimentary Rocks	Students learn what fossil fuels are, what sedimentary rocks are, that fossil fuels are found in sedimentary rock, how fossil fuels are made, why they are so named; their uses, importance, and environmental impacts. Students understand where the fossils fuels are found around the world; they also identify the means needed to gain access to these fuels. Students observe the properties of each of these fuels. Student activities include interaction with different kinds of fossil fuel sources and simulations.
Grades 5th & 6th 45 minutes	Fossils and the Paleo Hall	Students will learn how fossils tell us about <u>adaptations</u> in animals through time and how they enable the organisms to survive in their particular environment. Topics include defining fossils and how are they formed; defining adaptations and what can be learned from them; extinctions, mass extinctions, and survivors; understanding relative dating vs radiometric dating. Classroom lecture (15 mins) with visuals and a guided tour of HMNS Sugar Land Paleo Hall highlighting animals, adaptations, and extinctions (30 mins).
Grades 5th & 6th 45 mins.	Land Forms: The Shape of the Land	Students learn about the forces that cause change to the Earth's surface. Students will understand the composition of the Earth, and the basic effects plate tectonics have on the movement of the land, and how the Earth's surface can be effected by slow and fast changes. Students identify different landforms. Activities include interactions with a stream table and identifying varying types of landforms while reinforcing vocabulary terms and concepts presented.
Grades 5th & 6th 45 minutes	Crazy Polymers	Students will discover what atoms, molecules, natural and synthetic polymers are. Students learn the difference between a solid and a liquid. Students compare and contrast a variety of mixtures and solutions. They will discover whether the mixing of two substances results in a new substance. Activities include using polymers such as glue, starch, polyacrylate, and Styrofoam.
Grades 5th & 6th 45 mins.	Rock Cycles	Students develop an understanding the composition of the earth layers and the formation of various types of rocks. Students are introduced to Tectonic Plates and how they cause major geological events. Students travel around the "rock cycle" moving from igneous, to sedimentary, to metamorphic, and back to igneous. Throughout the presentation students will observe samples of the various types of rocks while completing a rock cycle diagram along with other interactive activities.

Grades 6th-8th 45 mins.	Fossil Fuels in Sedimentary Rocks	Students learn what fossil fuels are, that they are found in sedimentary rock, how fossil fuels are made, why they are so named, their uses, importance, and environmental impacts. Students understand where the fossils fuels are found around the world; they also identify the means needed to gain access to these fuels. Students observe the properties of each of these fuels. Student activities include interaction with different kinds of fossil fuel sources and simulations.
Grades 6th-8th 45 mins.	Fueling Our Future	Students learn what energy is, what fuels are, renewable and nonrenewable fuels, what fossil fuels are, where they come from and how they are used, historic and present use of biofuels including biodiesel. They learn some challenges to using different kinds of fuels, and trade-offs between costs and consequences in energy choices. Some chemistry concepts are included.
Grades 9th-12th 45 mins.	Fossils and the Fossil Record	Students review what fossils are, process of fossil formation, and the use of fossils to date the age of the earth, and changes in life on Earth through time. Relative dating, radiometric dating and evolution and extinction are discussed. The goal is to understand the process of fossil formation, and the use of fossils in the study of life on earth and earth history. By Appointment only.