

## HMNS at Sugar Land Field Trip Classes

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

Topics and Descriptions		
Swirling Planets	Grade: K-2 <sup>nd</sup> 30 min.	Students will have class around the Science on a Sphere. They will learn about the Milky Way, the Sun and the planets in this introductory class of our solar system. Students will follow along in their own booklet as they study and gain information on each of the 8 planets, Pluto, the sun and the moon.
Frogs	Grade: K-2 <sup>nd</sup> 30 min.	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. Student activities include an activity on the life cycle and experimenting with types of adaptations.
Frogs and Toads	Grade: 3 <sup>rd</sup> -5 <sup>th</sup> 45 min.	Students will study and understand the basic characteristics of the 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 found in the museum will be discussed and a trip into the frog hall will then introduce them to these frogs and their specific habitats. Activities include: group activity on the differences and similarities of frogs and toads; life cycle activity; and experimenting with types of adaptations
Fossils	Grade: K-2 <sup>nd</sup> 30 min.	Students observe what fossils are and where they are found. Students understand the job of a paleontologist. Student activity: Students dig for a dinosaur and make footprints in play-dough which go home with the teacher.
Fossils and the Paleo Hall	Grade: 3 <sup>rd</sup> -6 <sup>th</sup> 45 min.	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 Classroom lecture (15 min.) and guided tour of HMNS Sugar Land Paleo Hall (30 min.)
Fossils and the Fossil Record	Grade: 6 <sup>th</sup> -8 <sup>th</sup> 45 min	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. The goal is to understand the process of fossil formation, the use of fossils in the study of life on earth and earth history, and the role of radiometric dating in finding the age of fossils.
Fossils and the Fossil Record	Grade: 9 <sup>th</sup> -12 <sup>th</sup> 45 mins	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.
Fossil Fuels	Grade: 4 <sup>th</sup> - Up 45 min.	Students learn what fossil fuels are, how fossil fuels are made, why they are so named, their uses and their importance. Students understand where the fossils fuels are found in the earth and in the world; they also identify the means needed to gain access to these fuels. Students observe the properties of each of these fuels. Student activity: interaction with different kinds of fossil fuel sources and simulations.

Fueling Our Future	Grade: 1 <sup>st</sup> -2 <sup>nd</sup> GT 45 mins	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, and what biofuels are. They learn some challenges to using different kinds of fuels. Examples of fuel types are shown and demonstrated <b>GT ONLY</b>
Fueling Our Future	Grade: 3 <sup>rd</sup> -5 <sup>th</sup> 45 mins	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. Examples of fuel types are shown and demonstrated
Fueling Our Future	Grade: 6 <sup>th</sup> -8 <sup>th</sup> 45 mins	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 included
Land Forms: The Shape of the Land	Grade: 4 <sup>th</sup> -6 <sup>th</sup> 45 min.	Students identify different landforms on a map. Students understand the composition of the earth, and the basic effect plate tectonics has on the movement of the land. 6 landforms are mastered. Student activity: Student interaction in the shaping of mountains, making of volcanoes and shaping of valleys
Natural Extravaganzas	Grade: 3 <sup>rd</sup> -5 <sup>th</sup> 45 min.	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.
Rock Cycles	Grade: 3 <sup>rd</sup> -5 <sup>th</sup> 45 min.	Students recognize the <i>full cycle of rocks</i> . The students begin by understanding the basic make-up of the earth. Students understand the basics of Plate Tectonics with reference to the impact it has on plate movement and the creating of rocks. Students observe the <i>igneous</i> : "base" rock of ocean rock and continental rock. Students interact in the movement from <i>igneous</i> to <i>sedimentary</i> . Students understand the process which creates <i>sedimentary</i> rock, and especially what we do with <i>sedimentary</i> rock in our daily lives. Discussion leads to <i>metamorphic</i> rock returning to the earth to become <i>igneous</i> rock. Student activity: Continuous interaction with different types of rock specimens.
Crazy Polymers	Grade: 3 <sup>rd</sup> -6 <sup>th</sup> 45 min.	Class will introduce students to basic chemistry. Students will learn chemical structures and physical properties of plastics. From natural polymers found in milk and gum to synthetic ones found in plastics. Students will prepare three hands on science experiments that use polymers. You will be surprised where polymers turn up!