GETIT Activity Matrix

The following matrix briefly describes the activities in GETIT. The matrix is organized by primary content area as follows:

- Geology
- Hurricanes
- Nature of science
- Physical Science
- Seismicity (earthquakes)
- Plate tectonics
- Volcanoes

Column one lists the title of each activity while column two provides a brief activity description. Although activities are grouped under these headings, each activity evokes more than one content area and skill. This is presented in column three "Content Area and Curriculum Connections".

Column four gives you an indication of the level of effort required for students to complete each activity. Activities are rated from one to five stars, one star requiring the least time and effort and five stars the greatest time and effort. This scheme is not really a difficulty rating (although students may think the four and five star activities are more difficult), it is, rather, a scale of how long (how much effort) it takes to **properly** complete the activity. Activities that are designed to serve as research and reference tools are defined in the matrix with the abbreviation "ref".

The final column, column five, provides information regarding the instructional approaches and process skills used in each activity.

An important component of GETIT™ is not listed in the activity matrix. A video wall in the Seismology Exhibit portion of the Museum is used to display Science Showtime. When students enter the Museum they only have access to a video introducing Professor Exactamundo and Throbby the Brain, the host and hostess of Science Showtime. The videos are educational, entertaining, and inspirational. They are designed to act as a reward for completing activities and as a summary of complex concepts. Students must earn rights to view the videos and are informed that they may "Go to the Show" after various activities. Sometimes they receive viewing privileges after completing one exercise, and sometimes they have to complete several activities before receiving permission.

Activities in GETIT

Activity Title	Activity Description	Content Area and Curriculum Connections	Level of Effort (star rating)	Instructional Approaches and Process Skills
Geology				
Classification of igneous rocks	Find out more about what makes up the common igneous rocks. Take a close look at each rock with full color pictures and information.	Volcanoes, Plate Tectonics	1	browser, research resource
Do all rocks melt at the same temperature?	Melt some rocks to find out if different types of rock melt at different temperatures.	Experiment/ data collection, Writing, Nature of science, Math, graphing, Interpreting trends, Volcanoes, Earthquakes	5	laboratory simulation, manipulation of variables, data collection, graph plotting and interpretation, animation, visualization
Does water affect melting temperature?	Can water melt rock? Collect and plot melting temperature data for wet rocks and apply this knowledge near Japan.	Experiment/ data collection, Writing, Math, graphing, Interpreting trends, Nature of science, Volcanoes, Plate Tectonics	5	laboratory simulation, manipulation of variables, data collection, graph plotting and interpretation, animation, visualization
GETIT topics	Earth's internal energy (heat) drives rock melting, volcanism, and plate tectonics. The moving plates result in earthquakes. Earth's external energy (heat from the sun) drives the weather system.	Big idea (energy transfer)	Ref.	browser, navigation tool
Microscope - identify	Take a close look at igneous, sedimentary, and metamorphic rocks. You won't believe what's in them.	Volcanoes, Plate Tectonics	Ref.	browser, research resource, photographs
Microscope - rotate	The colors of minerals are often spectacular and fun to observe. This exercise shows that the colors of the minerals change as the slide rotates.	Volcanoes, Plate Tectonics	Ref.	browser, research resource, photographs
The pressure is off	Why does rising hot rock melt? Collect and plot melting temperature data, propose a hypothesis that relates pressure to melting temperature, and apply this knowledge along the Mid-Atlantic ridge.	Experiment/ data collection, Writing, Math, graphing, Interpreting trends, Nature of science, Volcanoes, Plate Tectonics	4	laboratory simulation, manipulation of variables, data collection, graph plotting and interpretation, animation, visualization

What affects rock melting?	Why do rocks melt? This chart shows you all of the factors that affect rock melting.	Physical science, Volcanoes	Ref.	browser
Where do igneous rocks form?	Igneous rocks form in many places. See pictures of igneous rocks and where they form on Earth.	Volcanoes, Plate Tectonics, Interpreting trends	Ref.	browser, research resource
Hurricanes				
Browseable hurricane	Observe the structure of a hurricane.	Hurricanes, Physical science	1	animation, browser
Hurricane alley	A storm is brewing in the North Atlantic. Should you evacuate coastal communities?	Social impact, Interpreting trends, Nature of science, Hurricanes	Ref.	simulation, role playing, decision analysis
Hurricane locator	What is your favorite hurricane? Use the hurricane database to investigate North Atlantic storms during the past 100 years.	Hurricanes, Interpreting trends, History	Ref.	database research
Future hurricane names	Will a future hurricane have your name? Here you can learn the names of future hurricanes from around the world.	Hurricanes, History	1	database research, maps
The Coriolis effect	Observe the path taken by moving material on a rotating Earth.	Hurricanes, Interpreting trends, History	1	browser, research resource, animations, photographs
Tropical storm trends in the North Atlantic	Explore the change in hurricane strength and hurricane numbers for the past 100 years. Be prepared for an interview.	Hurricanes, Writing, Interpreting trends, Social impact, History	5	graph interpretation, data analysis and interpretation, pattern recognition
What affects hurricane wind speed?	The low makes it blow! Find out what drives the wind in a hurricane.	Writing, Hurricanes, Math, graphing, Interpreting trends	1	data analysis, graph plotting and interpretation, pattern recognition
Where do hurricanes get their energy?	Investigate hurricanes to find out about their energy source. Is it the land? Is it warm ocean water? Is it cool ocean water?	Hurricanes, Writing, Interpreting trends, Social impact, History	2	data analysis, graph interpretation, pattern recognition, map interpretation
When do tropical storms and hurricanes occur?	Find out when most hurricanes occur. Are some months more active than others? Look for clues here. Record and graph the number of hurricanes that start in a month in order to determine when most hurricanes occur.	Math, graphing, Interpreting trends, Hurricanes	1	data analysis, graph plotting and interpretation, pattern recognition, map interpretation
Where do hurricanes start?	Do hurricanes always start in the same place? How many hurricanes have started in the Gulf of Mexico? Find out here.	Hurricanes, Interpreting trends, History	Ref.	pattern recognition, map interpretation
Wind shear	Wind shear prevents hurricanes from forming. What	Math, graphing,	2	data analysis and collection, graph plotting and interpretation, pattern

	is wind shear? Do this activity and find out.	Hurricanes, Experiment/ data collection, Social impact, Writing		recognition
Nature of Science				
Is a fact a fact?	Why repeat an experiment? Are your results always going to be the same? Find out here.	Experiment/ data collection, Nature of science, Writing, Math, graphing, Interpreting trends, Volcanoes	3	laboratory simulation, data collection, measurement, calculation
Scientific notation	The power of multiplication; crack the scientific code.	Math, graphing, Nature of science	3	numerical analysis, equation building
World geographic map	Find the location and population of countries around the world. Who lives longest? Which country has the highest population growth rate?	History, Social impact, Interpreting trends	Ref.	browser, research resource
Physical Science				
Conservation of energy	What happens when molecules collide? Learn by playing billiards (pool).	Math, graphing, Physical science, Experiment/ data collection	2	data collection and analysis, simulation, equation building
Density - the basics	What is meant by density? Measure mass and volume of rocks to calculate density.	Physical science, Experiment/ data collection, Math, graphing, Writing	2	laboratory simulation, data collection, measurement, calculation
Distillation unit	See how heating or cooling change the physical state of water.	Physical science, Big idea (energy transfer)	Ref.	animations
Does shape affect density?	Calculate the density of three different shapes of the same type of rock. Find out if shape affects density.	Physical science, Writing, Experiment/ data collection, Math, graphing	2	laboratory simulation, data collection, measurement, calculation
Does size affect density?	Use three different sizes of the same type of rock to find out if the amount of material present affects density.	Physical science, Writing, Experiment/ data collection, Math, graphing	2	laboratory simulation, data collection, measurement, calculation
Does the type of rock affect density?	Find out if the type of rock affects density by comparing three different types of rocks.	Physical science, Writing, Experiment/	3	laboratory simulation, data collection, measurement, calculation

		data collection, Math, graphing, Interpreting trends		
Now you see it - now you don't	Learn about evaporation and condensation by controlling variables and running experiments in the chamber.	Experiment/ data collection, Physical science, Writing, Interpreting trends, Big idea (energy transfer), Math, graphing	3	laboratory simulation, manipulation of variables, data collection and analysis, animation, visualization
Periodic table	Each element has its own story. Learn each one in the museum's periodic table.	Physical science, History, Nature of science	Ref.	browser, research resource
Relative humidity	Does relative humidity affect the way you feel? Use the graph to find out.	Interpreting trends, Physical science, Math, graphing	Ref.	browser, graph interpretation
See the light	Learn about the electromagnetic spectrum.	Math, graphing, Physical science, Big idea (energy transfer), Social impact	Ref.	browser, research resource, animations, photographs
Temperature and heat	If something has a high temperature do you think that it contains a lot of heat? Learn the distinction between temperature and heat by running experiments.	Physical science, Experiment/ data collection, Interpreting trends, History, Writing, Math, graphing	5	laboratory simulation, manipulation of variables, data collection, graph plotting and interpretation, animation, visualization
Seismicity				
Earthquake hazards in the United States	Do you live on stable ground? What is the risk of an earthquake in your home town?	Earthquakes, Writing, Social impact	1	browser, research resource
Global earthquake locator	Where do earthquakes occur? Explore Earth's seismicity using the seismic locator.	Earthquakes, Interpreting trends, Plate Tectonics	Ref.	database research
Quick earthquake locator	Where do earthquakes occur? Is there a pattern? Investigate over 40;000 recent earthquakes and discover the patterns.	Earthquakes, Interpreting trends, Plate Tectonics	2	research resource, browser, pattern recognition, maps
Significant earthquakes	A database of over 5;000 earthquakes recorded over the last 5;000 years. Explore the most important and damaging earthquakes in human history.	Earthquakes, Interpreting trends, Social impact	Ref.	database research

How much damage is done?	Ground zero... what a place to live. Learn how the intensity of an earthquake varies with distance from the epicenter.	History, Earthquakes, Social impact, Interpreting trends	3	pictures, maps
Journey through the center of the earth	How fast do P-waves travel through Earth's core? How big is Earth's core?	Earthquakes, Experiment/ data collection, History, Nature of science, Interpreting trends, Writing	2	visualization, hypothesis testing, model construction
Location by triangulation	Where did that earthquake occur? Locate an earthquake's epicenter by learning about seismic waves.	Writing, Math, graphing, Interpreting trends, Earthquakes, Experiment/ data collection	5	data collection and analysis, calculation, graph plotting and interpretation, map interpretation, visualization
How much energy is released by an earthquake?	How much energy is released in an earthquake? Do you think you could drive a car around the country if you could harness all of the energy released in a magnitude 5 earthquake?	Earthquakes, Interpreting trends, Physical science, Big idea (energy transfer)	1	browser, research resource, visualization
Seismic wave properties	What's in a wave? How do P-waves differ from S-waves?	Earthquakes, Experiment/ data collection, Interpreting trends	3	visualization, hypothesis testing, model construction
Earth's core casts a big shadow	Use S-waves to model the size of Earth's liquid outer core.	Earthquakes, Experiment/ data collection, History, Interpreting trends, Writing	3	visualization, hypothesis testing, model construction
Plate Tectonics				
A tale of three margins	How do we know where a plate margin is? An in depth look at convergent, divergent and transform margins around the Pacific Plate.	Interpreting trends, Writing, Plate Tectonics, Volcanoes, Earthquakes, History, Big idea (energy transfer)	2	pattern recognition, 3-D visualization, compare and contrast, data analysis
Earthquakes, volcanoes, and plate margins	Where do earthquakes and volcanoes occur? How are they related to plate boundaries? Are all plate boundaries the same?	Earthquakes, Plate Tectonics, Volcanoes, Interpreting trends, History, Writing, Big idea (energy transfer)	5	animations, data collection, map interpretation
Hawaii	Hawaii is part of a long chain of seamounts and volcanoes. Why are there volcanoes and earthquakes in Hawaii but not	Writing, Interpreting trends, Volcanoes,	3	data analysis, define a conceptual model, formulate a hypothesis, determine plate motion

	elsewhere on this chain? What does Hawaii tell us about the Pacific Plate?	Earthquakes, Plate Tectonics		
Plate reconstruction	Wow. How did those mountains form? Where did that ocean go? Why do the continents appear to fit together like pieces in a jigsaw puzzle?	Plate Tectonics, Big idea (energy transfer), History	Ref.	animation
Plate tectonics	Show me the relationship between plate boundaries, earthquake epicenters and volcanic activity.	Plate Tectonics, Volcanoes, Earthquakes, Interpreting trends	Ref.	browser, research resource
Volcanoes				
Are all volcanic eruptions equal?	Sicilian volcano sheds light on explosivity.	Volcanoes, History, Interpreting trends, Social impact, Math, graphing, Writing, Nature of science	3	data analysis, calculation
Are there more volcanoes today?	In 1500 there was one known active volcano. Today we know of ninety active volcanoes. What has happened?	Nature of science, Volcanoes, Writing, Interpreting trends, Social impact, History	1	browser, graph interpretation
Does pressure influence volume?	Change the pressure applied to an object and watch to see if the volume changes as a result.	Physical science, Experiment/ data collection, Interpreting trends	1	animation, visualization, manipulation of variables
Does temperature influence volume?	Change the temperature applied to an object. What happens to the volume?	Physical science, Experiment/ data collection, Interpreting trends	1	animation, visualization, manipulation of variables
Does volume influence density?	Change the volume of an object and watch what happens to it's density? Will the density change?	Physical science, Experiment/ data collection, Interpreting trends	1	animation, visualization, manipulation of variables
Eruptive styles	Different volcanoes erupt in different ways. View animations and descriptions of various eruptive styles.	Volcanoes	1	browser, research resource, animations, photographs
Global volcano locator	Use the global volcano locator to search for volcanoes that answer your questions.	Volcanoes, Social impact, Interpreting trends	Ref.	database research
Can we use a volcano's past to predict its future?	Can you predict the date of the next eruption based on a volcano's eruptive history?	Volcanoes, Nature of science,	4	data analysis, calculation

		History, Social impact, Writing, Math, graphing, Interpreting trends		
Types of volcanoes	How many types do you know? Find out more with this smart wall chart.	Volcanoes, Plate Tectonics, Social impact, History	Ref.	browser, research resource, animations, photographs
What is volcanic activity?	Discover the many ways volcanism is seen at the surface of the Earth. Enjoy the pictures. Can you figure out what is in every picture; but is invisible?	Volcanoes, Big idea (energy transfer), Writing, Interpreting trends	3	browser, research resource, animations, photographs
Where is the heat?	Go to Japan and Iceland to find out if there is a relationship between heat flow and volcanoes.	Volcanoes, Writing, Social impact, Nature of science, Interpreting trends, Big idea (energy transfer), Plate Tectonics	4	map interpretation, manipulation of variables, data analysis, pattern recognition and interpretation, animation, visualization
World volcanoes map	Where are the active volcanoes? Explore Earth's volcanoes by rock type or number of eruptions.	Volcanoes	Ref.	database research