



Death by Natural Causes

The following activities are designed to supplement a visit to the exhibit. Death by Natural Causes will introduce students to the range of “animal, vegetable and mineral” dangers that lurk in their everyday lives. Through a collection of specimens, text and interactives, they will see what can cause a death, either directly or indirectly, from the natural world.

Entrance

Look in the mirror, what do you see? Listen to the introductory video before you begin your journey.

Room One

Text Panel: Death by Natural Causes

Read the text panel. Note the difference between cause of death and manner of death. In the space below, give an example of a cause of death and an example of a manner of death.

Cause of Death	Manner of Death

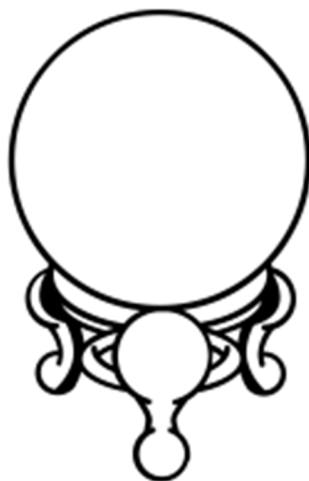
In this same area, locate the death certificates. Can you locate the cause of death on each? Find the death certificate for Sammy Davis Jr. What is listed as his cause of death? Determine his manner of death given that information. Fill in your answers below.

Cause of Death:	Manner of Death:



Room Two

Locate the Fortune Teller interactive. Use the touch screen to answer the questions. Peer into the crystal ball. How many years do you have to live? Write this number in the crystal ball below. List ways you can improve your longevity.



How I can improve my longevity:

Text panel: What is a Poison?

Fill in the missing words: A poison causes a negative biological reaction when _____, _____, or _____.

Text Panel: What is a Venom?

Fill in the missing words: A venom is actively _____ into a wound through a _____ or a _____.

Knowing the difference between a venom and a poison, complete the following sentence:

If you bite it and die, it is _____; if it bites you and you die, it is _____.



Locate the diamondback rattlesnake, Gila monster, centipede, and the Arizona bark scorpion. Read each of the text panels and then fill out the chart below.

Animal	Venom type	Venom Delivery Method

Locate the This or That Interactives – at each of the stations, choose what you believe to be the least likely way to die. Fill in the chart below.

	Were you correct?	Odds of Each	Interesting Fact
Choking vs. Heart Disease			
Lightning vs Dogs with Guns			
Bicycle vs. Car			
Botulism vs. Lawnmower			
Selfie vs. Meteorite			
Sitting vs. Furniture			

Text Panel: A Fashionable Folly

Read the text panel and look at the artifact. Can you think of any modern examples of this type of accidental environmental poisoning? If so, list them below.

- Example: Some paints used prior to 1978 contained lead. Many children suffered lead poisoning from eating paint chips.



Room Three

Locate the Elements of Life and Death Interactive Periodic Table. Six elements make up 99% of the human body. Do you know what they are? List as many as you can in the chart below. Press the first button. The correct elements will light up. How many did you get correct? List the correct elements in the second column of the chart.

Elements I think make up the human body	Elements that make up the human body

Look at all of the elemental specimens in this room. Locate and circle each of the elements on the periodic table below. Is there a patterns to where they are located? What, if anything, does this suggest? Write your answer below.

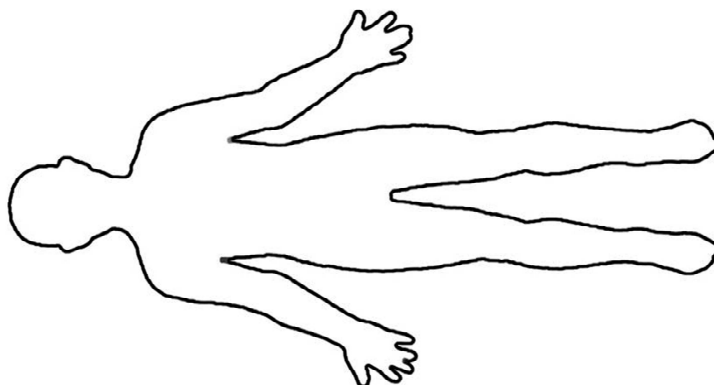
Periodic Table of the Elements																		18			
1 H Hydrogen 1.008																	2 He Helium 4.003				
3 Li Lithium 6.941	4 Be Beryllium 9.012															5 B Boron 10.811	6 C Carbon 12.011	7 N Nitrogen 14.007	8 O Oxygen 15.999	9 F Fluorine 18.998	10 Ne Neon 20.180
11 Na Sodium 22.990	12 Mg Magnesium 24.305															13 Al Aluminum 26.982	14 Si Silicon 28.086	15 P Phosphorus 30.974	16 S Sulfur 32.066	17 Cl Chlorine 35.453	18 Ar Argon 39.948
19 K Potassium 39.098	20 Ca Calcium 40.078	21 Sc Scandium 44.956	22 Ti Titanium 47.867	23 V Vanadium 50.942	24 Cr Chromium 51.996	25 Mn Manganese 54.938	26 Fe Iron 55.845	27 Co Cobalt 58.933	28 Ni Nickel 58.693	29 Cu Copper 63.546	30 Zn Zinc 65.38	31 Ga Gallium 69.723	32 Ge Germanium 72.631	33 As Arsenic 74.921	34 Se Selenium 78.971	35 Br Bromine 79.904	36 Kr Krypton 84.798				
37 Rb Rubidium 84.468	38 Sr Strontium 87.62	39 Y Yttrium 88.906	40 Zr Zirconium 91.224	41 Nb Niobium 92.906	42 Mo Molybdenum 95.95	43 Tc Technetium 98.907	44 Ru Ruthenium 101.07	45 Rh Rhodium 102.96	46 Pd Palladium 106.42	47 Ag Silver 107.868	48 Cd Cadmium 112.414	49 In Indium 114.818	50 Sn Tin 118.711	51 Sb Antimony 121.760	52 Te Tellurium 127.6	53 I Iodine 126.904	54 Xe Xenon 131.29				
55 Cs Cesium 132.905	56 Ba Barium 137.328	57-71 Lanthanides	72 Hf Hafnium 178.49	73 Ta Tantalum 180.948	74 W Tungsten 183.84	75 Re Rhenium 186.207	76 Os Osmium 190.23	77 Ir Iridium 192.22	78 Pt Platinum 195.085	79 Au Gold 196.967	80 Hg Mercury 200.592	81 Tl Thallium 204.383	82 Pb Lead 207.2	83 Bi Bismuth 208.980	84 Po Polonium [209]	85 At Astatine 209.967	86 Rn Radon 222.018				
87 Fr Francium 223.020	88 Ra Radium 226.025	89-103 Actinides	104 Rf Rutherfordium [261]	105 Db Dubnium [262]	106 Sg Seaborgium [266]	107 Bh Bohrium [264]	108 Hs Hassium [265]	109 Mt Meitnerium [268]	110 Ds Darmstadtium [269]	111 Rg Roentgenium [272]	112 Cn Copernicium [277]	113 Nh Nihonium [278]	114 Fl Flerovium [289]	115 Mc Moscovium [288]	116 Lv Livermorium [293]	117 Ts Tennessine [294]	118 Og Oganesson [294]				
57 La Lanthanum 138.905	58 Ce Cerium 140.116	59 Pr Praseodymium 140.908	60 Nd Neodymium 144.242	61 Pm Promethium 144.913	62 Sm Samarium 150.36	63 Eu Europium 151.964	64 Gd Gadolinium 157.25	65 Tb Terbium 158.925	66 Dy Dysprosium 162.500	67 Ho Holmium 164.930	68 Er Erbium 167.259	69 Tm Thulium 168.934	70 Yb Ytterbium 173.055	71 Lu Lutetium 174.967							
89 Ac Actinium 227.028	90 Th Thorium 232.038	91 Pa Protactinium 231.036	92 U Uranium 238.029	93 Np Neptunium 237.048	94 Pu Plutonium 244.064	95 Am Americium 243.061	96 Cm Curium 247.070	97 Bk Berkelium 247.070	98 Cf Californium 251.080	99 Es Einsteinium [254]	100 Fm Fermium 257.095	101 Md Mendelevium 258.1	102 No Nobelium 259.101	103 Lr Lawrencium [262]							



Locate the Art of Death interactive. "Paint" one of the pictures using the touch screen. Allow the computer to analyze the colors you used. Which color was the most toxic? What symptoms suggest a poisoning by this particular paint? Write your answers below.

Most dangerous color:	Presenting symptoms of poisoning:

Locate the first autopsy table. Look at the symptoms presented by the body. Illustrate what you see on the body outline below. Using what you have learned, hypothesize the cause of death. Write your answer below. Place your hand in the box to reveal the cause of death. Were you correct? Is it possible to determine manner of death with the information you have available?



Hypothesis for Cause of Death:	Actual Cause of Death:

Can you determine manner of death? Circle one: YES/NO

Room Four

Find the No Bold or Old Mushroom Hunters interactive. Read the text panel and play the game. How many times did you make an incorrect choice? Calculate the percentage of the times you chose the correct mushroom. Show your calculations and answer in the space below. Would these odds make you feel safe collecting and eating wild mushrooms?



Text Panel: Death Around the House

Read the text panel. Out of 2,591,955 deaths that occurred at home, 47,000 were caused by plants. What mathematical formula would you use to determine the percentage of deaths caused by plants? Write the equation below.

Text Panel: Ergot Poisoning

There are two physical presentations of ergot poisoning: Convulsive ergotism and gangrenous ergotism. List the symptoms of each under the correct heading.

Convulsive Ergotism	Gangrenous Ergotism

Text Panel: Outbreak

Read the text panel. Paragraph 2 describes the symptoms of a historical outbreak of ergotism. What type of ergotism is described? Write your answer below.

Text Panel: Death in the Pantry

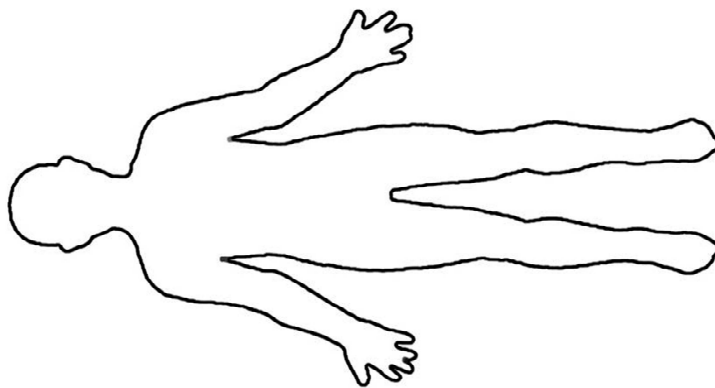
Read the text panel and look at the specimens in the case. Which of the foods displayed are the most likely to trigger a fatal food allergy? Make a four-step plan to keep someone with allergies safe.



Locate the painting the *Triptych of Temptation of St. Anthony* and read the text panel. Focus on the center panel of the painting. What elements in the painting could symbolize ergot poisoning? Circle those elements in the picture below.



Locate the second autopsy table. Look at the symptoms presented by the body. Illustrate what you see on the body outline below. Using what you have learned, hypothesize the cause of death. Write your answer below. Place your hand in the box to reveal the cause of death. Were you correct? Is it possible to determine manner of death with the information you have available?



Hypothesis for Cause of Death:	Actual Cause of Death:

Can you determine manner of death? Circle one: YES/NO



Room Five

Text Panel: Virulent Viruses

List the seven characteristics that must be met for something to be considered living. Circle the one characteristic that viruses do not possess. Scientists disagree if viruses are alive or not. What do you think? Explain why.

Characteristics of Life

Locate the Virus Models. List the three different viruses represented by the models. Pick one of the viruses and make a sketch below.

Room Six

Text Panel: Once Bitten

Read the text panel and look at the specimens. Observe the different types of teeth used to deliver venom. Sketch the solenoglyphos tooth below. Explain how this type of tooth operates like a medical syringe.

Room Seven

Text Panel: Vicious Fishes

Read the text panel. Locate the stingray and lionfish and read about the mechanisms they use to deliver venom. How are these methods similar? How are they different? What do the two animals have in common that may partially account for the similarities?



Locate the Plague Doctor Mannequin. Read the text panel and look at the different parts of the costume. Label the various parts on the picture below and suggest the purpose of each.



Read the plague doctor poem. What does the poem suggest about the nature of a plague doctor and how they were perceived by society?

Text Panel: Beastly Bacteria

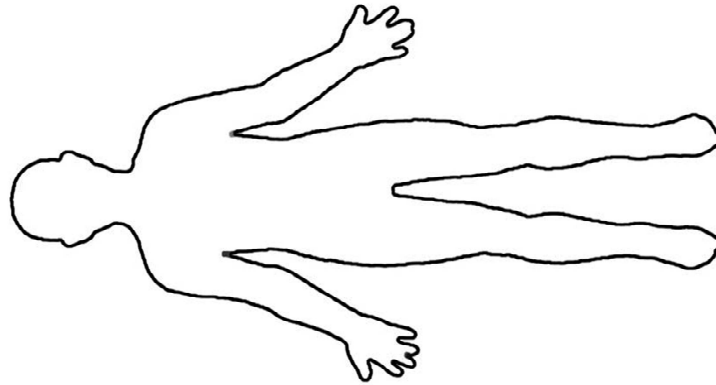
Read the text panel. What did people think caused disease before we understood the role of microorganisms? What do you think promoted this belief?



Room Eight

Locate an animal that has been responsible for more deaths than all the wars combined. List the name below. How did this animal cause so many deaths?

Locate the third autopsy table. Look at the symptoms presented by the body. Illustrate what you see on the body outline below. Using what you have learned, hypothesize the cause of death. Write your answer below. Place your hand in the box to reveal the cause of death. Were you correct? Is it possible to determine manner of death with the information you have available?



Hypothesis for Cause of Death:	Actual Cause of Death:

Can you determine manner of death? Circle one: YES/NO