Name _____ Essay DUE

April 28th

Physical Science Standards	**NOTES** making science connections using Ratatouille. List an example that illustrates each substandard from the movie on the line provided.
S8P1. The nature of matter. a. Distinguish between atoms and molecules. b. Describe the difference between pure substances (elements and compounds) and mixtures. c. Describe the movement of particles in solids, liquids, gases, and plasmas states. d. Distinguish between physical and chemical properties of matter as physical (i.e., density, melting point, boiling point) or chemical (i.e., reactivity, combustibility). e. Distinguish between changes in matter as physical (i.e., physical change) or chemical (development of a gas, formation of precipitate, and change in color). f. Recognize that there are more than 100 elements and some have similar properties as shown on the Periodic Table of Elements. g. Identify and demonstrate the Law of Conservation of Matter.	a. _____ _____ b. _____ _____ c. _____ _____ d. _____ _____ e. _____ _____ f. _____ _____ g. _____ _____
S8P2. The forms and transformations of energy. a. Explain energy transformation in terms of the Law of Conservation of Energy. b. Explain the relationship between potential and kinetic energy. c. Compare and contrast the different forms of energy (heat, light, electricity, mechanical motion, and sound) and their characteristics. d. Describe how heat can be transferred through matter by the collisions of atoms (conduction) or through space (radiation). In a liquid or gas, currents will facilitate the transfer of heat (convection).	a. _____ _____ b. _____ _____ c. _____ _____ d. _____
S8P3. The relationship between force, mass, and the motion of objects. a. Determine the relationship between velocity and acceleration. b. Demonstrate the effect of balanced and unbalanced forces on an object in terms of gravity, inertia, and friction. c. Demonstrate the effect of simple machines (lever, inclined plane, pulley, wedge, screw, and wheel and axle) on work.	a. _____ _____ b. _____ _____ c. _____

S8P4. The nature of sound & electromagnetic radiation. a. Identify the characteristics of electromagnetic and mechanical waves. b. Describe how the behavior of light waves is manipulated causing reflection, refraction diffraction, and absorption. c. Explain how the human eye sees objects and colors in terms of wavelengths. d. Describe how the behavior of waves is affected by medium (such as air, water, solids).	a. _____ _____ b. _____ _____ c. _____ _____ d. _____
S8P5. Gravity, electricity, and magnetism as major kinds of forces acting in nature. a. Recognize that every object exerts gravitational force on every other object and that the force exerted depends on how much mass the objects have and how far apart they are. b. Demonstrate the advantages and disadvantages of series and parallel circuits and how they transfer energy.	a. _____ _____ b. _____ _____

Standards	Ratatouille Essay Based on Standards DUE APRIL 28th 2017 The Essay should express what you have learned in physical science this year as it relates to Ratatouille. Student understanding of the Standards is clear. Sub-standards are all explained in the student's words.	Scoring
Standard 1 The Nature of Matter	a. Explain the difference between atoms and molecules. b. Describe the difference between pure substances (elements and compounds) and mixtures. c. Describe the movement of particles in solids, liquids, gases, and plasmas states. d. Distinguish between physical and chemical properties of matter as physical (i.e., density, melting point, boiling point) or chemical (i.e., reactivity, combustibility). e. Distinguish between changes in matter as physical (i.e., physical change) or chemical (development of a gas, formation of precipitate, and change in color). f. Describe the organization of the Periodic Table. g. Identify and demonstrate the Law of Conservation of Matter.	Spelling and grammar are correct ___/5 The standards are connected and explained. a. ___ /2 b. ___ /4 c. ___ /4 d and e. ___ /3 f. ___ /2
Standard 2 Energy Transformations	a. Law of Conservation of energy. b. Relationship of potential and kinetic energy. c. Compare and contrast different forms of energy. d. Explain different types of heat transfer.	Spelling and grammar are correct ___/5 The standards are connected and explained. a. ___ /4 b. ___ /4 c. ___ /4 d. ___ /3
Standard 3 Force, mass, & motion	a. Explain the relationship between velocity and acceleration. b. Demonstrate the effect of balanced and unbalanced forces on an object in terms of gravity, inertia, and friction. c. Demonstrate the effect of simple machines on work.	Spelling and grammar are correct ___/5 The standards are connected and explained. a. ___ /5 b. ___ /5 c. ___ /5
Standard 4 The behavior of Sound and Light	a. Identify the characteristics of electromagnetic waves and mechanical waves. b. Explain the behavior of waves (reflection, refraction, diffraction, and absorption). c. Explain how the human eye sees objects and colors in terms of wavelengths. d. Describe how the behavior of waves is affected by medium. e. Relate the properties of sound to everyday experiences.	Spelling and grammar are correct ___/5 The standards are connected and explained. a. ___ /3 b. ___ /3 c. ___ /3 d. ___ /3 e. ___ /3
Standard 5 Major forces of nature: Gravity, Electricity, and Magnetism	a. Gravity's characteristics. Gravity is impacted by mass and distance. b. Explain the advantages and disadvantages of series and parallel circuits and how they transfer energy.	Spelling and grammar are correct ___/5 The standards are connected and explained. a. ___ /7 b. ___ /8