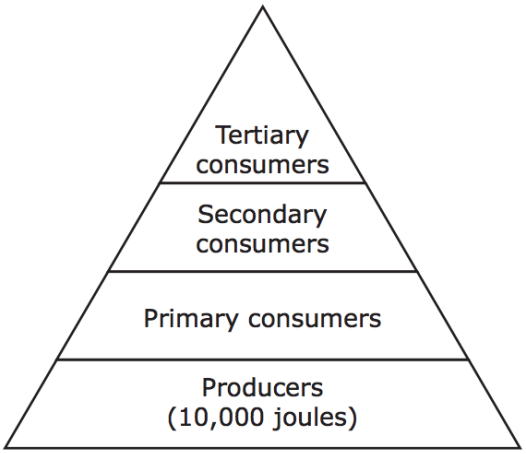
Objective	The students will conduct their own research over the different types of energy and present which type is the best to be utilized for their community.
TEKS	**§112.34. Biology** (c) Knowledge and skills. (3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to: (A) analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, so as to encourage critical thinking by the student; (B) communicate and apply scientific information extracted from various sources such as current events, published journal articles, and marketing materials; (C) draw inferences based on data related to promotional materials for products and services; (D) evaluate the impact of scientific research on society and the environment; (E) evaluate models according to their limitations in representing biological objects or events; and (F) research and describe the history of biology and contributions of scientists. **§112.35. Chemistry** (c) Knowledge and skills. (11) Science concepts. The student understands the energy changes that occur in chemical reactions. The student is expected to: (A) describe energy and its forms, including kinetic, potential, chemical, and thermal energies; (B) describe the law of conservation of energy and the processes of heat transfer in terms of calorimetry; **§112.36. Earth and Space Science** (c) Knowledge and skills. (4) Earth in space and time. The student knows how Earth-based and space-based astronomical observations reveal differing theories about the structure, scale, composition, origin, and history of the universe. The student is expected to: (A) evaluate the evidence concerning the Big Bang model such as red shift and cosmic microwave background radiation and current theories of the evolution of the universe, including estimates for the age of the universe; (B) explain how the Sun and other stars transform matter into energy through nuclear fusion; and (C) investigate the process by which a supernova can lead to the formation of successive generation stars and planets.

	(12) Solid Earth. The student knows that Earth contains energy, water, mineral, and rock resources and that use of these resources impacts Earth's subsystems. The student is expected to: (A) evaluate how the use of energy, water, mineral, and rock resources affects Earth's subsystems; (B) describe the formation of fossil fuels, including petroleum and coal; (C) discriminate between renewable and nonrenewable resources based upon rate of formation and use; (D) analyze the economics of resources from discovery to disposal, including technological advances, resource type, concentration and location, waste disposal and recycling, and environmental costs; and (14) Fluid Earth. The student knows that Earth's global ocean stores solar energy and is a major driving force for weather and climate through complex atmospheric interactions. The student is expected to: (A) analyze the uneven distribution of solar energy on Earth's surface, including differences in atmospheric transparency, surface albedo, Earth's tilt, duration of insolation, and differences in atmospheric and surface absorption of energy; (B) investigate how the atmosphere is heated from Earth's surface due to absorption of solar energy, which is re-radiated as thermal energy and trapped by selective absorbers; and **§112.37. Environmental Systems** (c) Knowledge and skills. (6) Science concepts. The student knows the sources and flow of energy through an environmental system. The student is expected to: (A) define and identify the components of the geosphere, hydrosphere, cryosphere, atmosphere, and biosphere and the interactions among them; (B) describe and compare renewable and non-renewable energy derived from natural and alternative sources such as oil, natural gas, coal, nuclear, solar, geothermal, hydroelectric, and wind; (C) explain the flow of energy in an ecosystem, including conduction, convection, and radiation; (D) investigate and explain the effects of energy transformations in terms of the laws of thermodynamics within an ecosystem; and (E) investigate and identify energy interactions in an ecosystem.

STAAR C F A	**17** Which molecule synthesized by plants is a major source of energy for cellular processes in both plants and animals? **A** Wax **B** Nucleic acid **C** Glucose **D** Chlorophyll **24** The energy pyramid below shows the energy made available by producers.  Based on the energy flow between trophic levels in an energy pyramid, how much energy would be expected to be found at the secondary consumer level in this pyramid? **F** 100 joules **G** 500 joules **H** 1,000 joules **J** 50 joules

	43 Proteins and carbohydrates have many functions in the body of an organism. Specific proteins and carbohydrates perform specific tasks. Information about a protein and a carbohydrate is given below. **Ferritin** Ferritin is a protein containing iron, which is needed by all living things. Iron is found in hemoglobin and in cytochromes, which function in metabolism. Free iron can damage proteins, lipids, and nucleic acids. **Glycogen** Glycogen is a carbohydrate that consists of glucose molecules. It can be hydrolyzed as glucose as needed by an organism. How are ferritin and glycogen similar in their primary functions for an organism? **A** Both store materials needed by the organism. **B** Both store energy used by the organism. **C** Both support the structure of the organism. **D** Both store information for the organism.
Struggling Learners	• The struggling students will need to only research one energy. • The struggling students will only need to describe how this energy could be beneficial.
Advanced Learners	• The advanced learners will research three energies. • The advanced learners will present, individually, one additional energy.
Helpful Links	Ocean Energy Oil History
Engage	The students will be put into groups of three - four. When they are walking in the door they will be given a popsicle stick that is labeled 1, 2, 3, 4, 5, and 6. This will be the quickest way to separate the friends, and put them into groups without bias. When they walk in the room they will have a bell ringer that will have several different types of energy that they will need to research.
Explore	The students will need to research at least two different types of energy that can be used in their own community. They will need to explain why this energy can be used. How the energy can be used. How a device will break down the energy to better the community.
Explain	Students will create a presentation and present their energy to the class. They will also need to each say a sentence or two about their energy. Each person in the group must participate and give accurate details about the energy.
Elaborate	The students will present their energy to the classroom. The will need to describe why this energy is beneficial to the community. The will need to explain how it can be used. They will need to explain what will be used in conjunction, if anything, to use the energy.

Evaluate	This will be the time that students can have a reteaching moment. The evaluate section will be conducted after everyone presents their energy. This is because the students will be the ones answering the audience's questions about their energy.