*** ENERGY CONVERSIONS AND BEYOND may advance the following**

ENERGY LITERACY PRINCIPLES AND CONCEPTS

1 Energy is a physical quantity that follows precise natural laws.

1.1 Energy is a quantity that is transferred from system to system.

1.5 Energy comes in different forms and can be divided into categories.

1.6 Chemical and nuclear reactions involve transfer and transformation of energy.

1.7 Many different units are used to quantify energy.

1.8 Power is a measure of energy transfer rate.

2 Physical processes on Earth are the result of energy flow through the Earth system.

2.6 Greenhouse gases affect energy flow through the Earth system.

3 Biological processes depend on energy flow through the Earth system.

3.6 Humans are part of Earth's ecosystems and influence energy flow through these systems.

4 Various sources of energy can be used to power human activities, and often this energy must be transferred from source to destination.

4.1 Humans transfer and transform energy from the environment into forms useful for human endeavors.

4.2 Human use of energy is subject to limits and constraints.

4.5 Humans generate electricity in multiple ways.

4.7 Different sources of energy and the different ways energy can be transformed, transported, and stored each have different benefits and drawbacks.

5 Energy decisions are influenced by economic, political, environmental, and social factors.

5.1 Decisions concerning the use of energy resources are made at many levels.

5.4 Energy decisions are influenced by economic factors.

5.6 Energy decisions are influenced by environmental factors.

5.7 Energy decisions are influenced by social factors.

6 The amount of energy used by human society depends on many factors.

6.1 Conservation of energy has two very different meanings.

6.2 One way to manage energy resources is through conservation.

6.4 Earth has limited energy resources.

6.5 Social and technological innovation affects the amount of energy used by human society.

6.7 Products and services carry with them embedded energy.

6.8 Amount of energy used can be calculated and monitored.

7 The quality of life of individuals and societies is affected by energy choices.

7.1 Economic security is impacted by energy choices.

7.3 Environmental quality is impacted by energy choices.

7.4 Increasing demand for and limited supplies of fossil fuels affects quality of life.