

A. Big Ideas:

1. Energy is The capacity to do work
2. Pressure is the force (or thrust) acting on unit area
3. Work is force causing the movement or displacement of an object

B. Big Idea's content Representatives

Table 1. 1st Big Ideas Content Representative

No.	Aspect	Big Idea: The degree of hotness or coldness of the body can be measured by thermometer.
1.	What do you intend the students to learn about this idea?	<p>a. Form of Energy Energy exists in many different forms. Examples of these are: and so on. Each form can be converted or changed into the other forms. Potential Energy, Kinetic Energy, Mechanic Energy, chemical energy, electrical energy, heat energy, light energy, electromagnetic energy, sound, and nuclear energy</p> <p>b. Sources of Energy Energy sources are classified as renewable or nonrenewable. The Examples of non-renewable energy are Fossil fuels, nuclear fuels. And The examples of Renewable energy are solar energy, wind energy, wave energy, Tidal and hydroelectric energy, geothermal energy, and Biomass.</p> <p>c. Energy Conservation Energy cannot be created or destroyed; it is always conserved.</p> <p>d. The Concept and the Formula of Kinetic Energy</p>

		<p>Kinetic energy is the energy a body has because of its motion. the Formula of Kinetic Energy</p> $Ek = \frac{1}{2}mv^2$ <p>m is in kg and v in m/s, then kinetic energy is in J.</p> <p>e. The Concept and Formula of Mechanical Energy</p> <p>Potential energy is the energy a body has because of its position or condition.</p> $Ep = mgh$ <p>When m is in kg, g in N/kg (or m/s²) and h in m, the potential energy is in J.</p>
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2.	Why is it important for students to know this?	<ul style="list-style-type: none"> - By learning this concept, the student will know energy is related with human activity in the daily life
3.	What else do you know about this idea that you do not intend the students to know yet?	<p><i>Equilibrium Thermodynamics</i></p> <p>Equilibrium thermodynamics is the systematic study of transfers of matter and energy in systems as they pass from one state of thermodynamic equilibrium to another.</p>
4.	Difficulties/limitations connected with teaching this idea	It is hard to show the real Process of transformed of Energy.
5.	Knowledge about the students' thinking which influences this idea	<ul style="list-style-type: none"> • Commonly, student knowing the energy just related with the activity of human. Beside that the Energy not just human activity but also about physics phenomena like nuclear energy, and etc.
6.	Other factors that influences your teaching of this idea	Energy Drink is something common for students because that is exist in the television or game. An energy drink is a type of drink containing sugar and stimulant compounds, usually caffeine, which is marketed as providing Energy and physical stimulation. It is the example of energy in daily life.
7.	Teaching procedures (and particular reason for using these to engage with this idea)	<ol style="list-style-type: none"> a. Student watching the video about the Form of energy, energy conservation, and that phenomena in daily life. b. Teacher explain the material about the Form of energy, energy conservation, and that phenomena in daily life. c. Teacher let the students to ask some question.

		<ul style="list-style-type: none"> d. Students are being asked to conclude the material that has been delivered by the teacher. e. Student makes Resume individually that entailed the Form of energy, energy conservation, and that phenomena in daily life.
8.	Specific way of ascertaining students' understanding or confusion around this idea	Teacher can ascertain student's understanding through the Resume made by the student at the end of learning session that entailed the Form of energy, energy conservation, and that phenomena in daily life.
9.	The use technology in teaching the media	The video of energy form, energy conservation, and that phenomena in daily life.
10.	How to compensate the absence of technology	The printed picture of The video of energy form, energy conservation, and that phenomena in daily life.

Table 2. 2nd Big Ideas Content Representative

No.	Aspect	Big Idea: Pressure is the force (or thrust) acting on unit area
1.	What do you intend the students to learn about this idea?	<p>a. Three types of Pressure</p> <ol style="list-style-type: none"> 1) Fluid Pressure 2) Vapor Pressure 3) Liquid Pressure <p>b. Hydrostatic Pressure</p> <p>Hydrostatic Pressure is the pressure caused by the force present in a liquid against a compressed area at a certain depth</p> <p>c. Pascal Law</p> <p>Pascal Law is the Pressure given by liquid in a closed space is forwarded in all directions with equal magnitude</p> <p>d. Archimedes Law</p> <p>Archimedes Law is that an object totally or partially immersed in a fluid (liquid or gas) is buoyed (lifted) up by a force equal to the weight of the fluid that displaced</p>
2.	Why is it important for students to know this?	By learning this topic, student will understand the principle Pressure in daily life, therefore students might use this concept for solving other problem or applies.
3.	What else do you know about this idea that you do not intend the students to know yet?	<ul style="list-style-type: none"> ● Pressure of an ideal gas ● Kinematic Pressure ● Blood Pressure

4.	Difficulties/limitations connected with teaching this idea	<ul style="list-style-type: none"> Most of Students think that the famous of Pressure topic just in the liquid form like Archimedes and Pascal Law
5.	Knowledge about the students' thinking which influences this idea	Student might think that the expansion is happen because of the increasing number of particle inside an object. While actually, the expansion by heating happen due to the further distance among the particles.
6.	Other factors that influences your teaching of this idea	In the daily life students may hearing about the condition of under pressure. That's relate with the topic of Pressure.
7.	Teaching procedures (and particular reason for using these to engage with this idea)	<ol style="list-style-type: none"> Asking a question about the concept of pressure that happened in daily life. Showing video about Fluid pressure, vapor Pressure, Liquid Pressure Students Doing Discussion about Fluid pressure, vapor Pressure, and Liquid Pressure. Students are being asked to conclude the material that has been delivered by the teacher
8.	Specific way of ascertaining students' understanding or confusion around this idea	Doing the Performance test about Fluid pressure, Vapor Pressure, Liquid Pressure
9.	The use technology in teaching the media	<ul style="list-style-type: none"> Use video that will describes the Fluid pressure, Vapour Pressure, and Liquid Pressure Use The Power Point to do the Lecturing
10.	How to compensate the absence of technology	Use the Simulation by the teacher and students about the concept of Fluid pressure, Vapor Pressure, and Liquid Pressure

Table 3. 3rd Big Ideas Content Representative

No.	Aspect	Big Idea: Work is force causing the movement or displacement of an object
1.	What do you intend the students to learn about this idea?	<ul style="list-style-type: none"> • The unit of Work is Joule which is defined as the energy needed to give the Force of One Newton along one meter. <p>1 joule = 1 N.m</p>
2.	Why is it important for students to know this?	Student need to know this material because Work is related with human activity in the daily life
3.	What else do you know about this idea that you do not intend the students to know yet?	The Work with the vector
4.	Difficulties/limitations connected with teaching this idea	
5.	Knowledge about the students' thinking which influences this idea	Student might thinking that Work just doing activity and there is no Science on that

6.	Other factors that influences your teaching of this idea	Extra Joss is designed for an active lifestyle. It will recharge your working day, and is a brilliant pre-sport or workout power up.
7.	Teaching procedures (and particular reason for using these to engage with this idea)	<ol style="list-style-type: none"> 1. Asking a question about the concept of Work in daily life 2. Teacher explain the material about the Form of energy, energy conservation, and that phenomena in daily life. 3. Teacher let the students to ask some question. 4. Students are being asked to conclude the material that has been delivered by the teacher
8.	Specific way of ascertaining students' understanding or confusion around this idea	<ul style="list-style-type: none"> • Ask Students to recall the concept about Work • Doing the posttest about Concept of Work
9.	The use technology in teaching the media	Power point about definition Work and its Formula
10.	How to compensate the absence of technology	Use the Simulation by the teacher and students about the concept of Work