

Name  
TA

Science 10  
2022-2023



## Learning Guide # 3: Energy in Chemical Processes

**BIG IDEA:** How is Energy Involved in Chemical Processes?

### Fundamental Knowledge (I know)

- How to identify the different types of chemical reactions
- How to define system and surrounding in order to define reactions as exothermic or endothermic
- The various laboratory equipment AND can measure needed quantities correctly

### Curricular Competencies (I can)

	Proficiency Scale Teacher and Student self assessment (Circle one)	Evidence (How do you know?)
<b>I can:</b>  Formulate multiple hypotheses and predict multiple outcomes.	<b>Emerging (EMG)</b> Initial Understanding  <b>Developing (DEV)</b> Partial/Near Complete Understanding  <b>Proficient (PRF)</b> Complete Understanding  <b>Extending (EXT)</b> Sophisticated Understanding	
Use appropriate SI units and appropriate equipment, including digital technologies, to systematically and accurately collect and record data.	<b>Emerging (EMG)</b> Initial Understanding  <b>Developing (DEV)</b> Partial/Near Complete Understanding  <b>Proficient (PRF)</b> Complete Understanding  <b>Extending (EXT)</b> Sophisticated Understanding	

Student Signature:

Teacher Signature:

Date:

**Instructions** To help guide your learning, make your way through the activities in Option 1, Option 2, or Option 3. You may “mix and match” between the different Option columns.

TOPIC	OPTION 1	OPTION 2	OPTION 3
<b>Types of Chemical Reactions</b>	Find a reliable website to <b>read or watch</b> a video on Types of Chemical Reactions including synthesis, decomposition, single replacement, double replacement, neutralization and decomposition.	<b>Read</b> BC Science 10 pgs. 256 -267 to learn about Types of Chemical Reactions and do questions on p. 271.	<b>Choose your own adventure!</b>  Pick up a planning sheet from the Science Kiosk.
<b>Energy in Reactions</b>	Go to the following website: <a href="https://www.youtube.com/watch?v=L-G7pLufXAo">https://www.youtube.com/watch?v=L-G7pLufXAo</a> and <b>complete</b> the attached worksheet “BozemanScience.com”.	Go to the following website: <a href="https://www.youtube.com/watch?v=L-G7pLufXAo">https://www.youtube.com/watch?v=L-G7pLufXAo</a> and <b>complete</b> the attached worksheet “BozemanScience.com”.	Create a plan! Make sure you read through the first page of this LG, as you will need to design ways to learn/practice and show your understanding of the topic(s) and skill(s) (competencies.)
<b>Exothermic and Endothermic Reactions</b>	Go to the following website: <a href="https://www.khanacademy.org/test-prep/mcat/chemical-processes/thermochemistry/a/endothemic-vs-exothermic-reactions">https://www.khanacademy.org/test-prep/mcat/chemical-processes/thermochemistry/a/endothemic-vs-exothermic-reactions</a> and <b>take notes</b> on Exothermic and endothermic reactions.	Go to the following website: <a href="https://www.khanacademy.org/test-prep/mcat/chemical-processes/thermochemistry/a/endothemic-vs-exothermic-reactions">https://www.khanacademy.org/test-prep/mcat/chemical-processes/thermochemistry/a/endothemic-vs-exothermic-reactions</a> and <b>take notes</b> on Exothermic and endothermic reactions.	You will need to have a teacher approve your plan before beginning the LG.
<b>Balancing Chemical Reactions Practical Exam</b>	<b>Complete</b> the “Extension/Discussion” section for the “Chemical Reaction Types” lab.  <b>**Teacher randomly select a chemical reaction to balance and classify**</b>	<b>Complete</b> the “Extension/Discussion” section for the “Chemical Reaction Types” lab.  <b>**Teacher randomly select a chemical reaction to balance and classify**</b>	
Lab	“Chemical Reaction Types” lab by completing the attached worksheet....”Extension/Discussion” section is EXTRA <b>DO A FULL LAB WRITE UP.</b>		
Self Assessment	Reflect on the Fundamental Knowledge and Curricular Competencies. Use the rubric and make goals to improve for your next learning guide.		
Interview or Quiz	See you teacher for an interview or to have a quiz slip signed for the test center. Bring your work and staple it to your quiz when complete.		

Resources can be found at [www.THSSscience.com](http://www.THSSscience.com) or the Science Kiosk

User: **THSS**

Password: **science**