

Chemical Reactions Tic-Tac-Toe

Standards to be addressed:

- SC2: Students will relate how the Law of Conservation of Matter is used to determine chemical composition in compounds and chemical reactions.
- SCS2.a.1-5: Identify and balance the following types of chemical equations: Synthesis, decomposition, single replacement, double replacement (including neutralization), and combustion.

Background: Most chemical reactions can be broken down into six basic types: Synthesis (combination), decomposition, single replacement, double replacement, neutralization (a special type of double replacement), and combustion.

Instructions: Pick any three of the options below to farther your current understanding of the six common types of chemical reactions and how to identify them. The three **MUST** be in a row either horizontally, diagonally or vertically.

Flash card frenzy. For each type of reaction create one flash card stating the most common format for reactants, a second flash card stating the most common format for products and third flash card describing the reaction. Make sure to include the reaction type on the reverse side of the card (18 cards total)	Describe a technique for recognizing and identifying each of the six types of chemical reactions by only looking at the starting reagents (reactants).	Using your BYOT device find (and record) a real world example of each of the six types of chemical reactions. Record may have written examples, images with explanations, video clips with explanation, ect.
Explain the process of balancing chemical reactions and why it is necessary. Give an example of balancing each type of chemical reaction.	Using the information discussed in the text and online resources identify the type of reaction, predict the products and balance the reactions shown below the tic-tac-toe board. [don't forget diatomic elements]	Using gumdrops of different colors create a BALANCED visual representation of each of the six types of chemical reactions. Create a chart that identifies for each reaction what element is represented by each color gum drop.
Create a song or rap describing each of the six types of chemical reactions. Include an example of each reaction. Rap can be written or recorded using phone/video camera. This may be completed with a partner but each student must submit a copy of product with their work.	Using phone/camera take pictures of places and/or objects in your school/home that illustrate each of the six types of chemical reactions. Download your images onto a computer and create a slide show or movie, using a voice-over or labels to identify the type of reaction (and if possible the compounds/elements present in the reaction).	Create a cartoon depicting each of the six types of chemical reactions. Check out cartoon chemistry for ideas (teacher web page).

Practice reactions:

Reaction type	
1. _____	$\text{Li} + \text{Cl}_2 \rightarrow$
2. _____	$\text{CuCl}_2 + \text{H}_2\text{S} \rightarrow$
3. _____	$\text{Al}(\text{OH})_3 + \text{HBr} \rightarrow$
4. _____	$\text{Na} + \text{MgCl}_2 \rightarrow$
5. _____	$\text{CH}_4 + \text{O}_2 \rightarrow$
6. _____	$\text{Mg}_3\text{N}_2 \rightarrow$

- Grading rubric

	10 points	7 points	5 points	3 points	0 point
Choice one	Student has illustrated complete understating of the skill/concept described.	Student has illustrated understanding of the skill/concept described	Student illustrated incomplete understanding of skill/concept described	Student has many misconceptions about the skill/concept described.	Not enough information to make a judgment or student did not turn assignment
Choice two	Student has illustrated complete understating of the skill/concept described.	Student has illustrated understanding of the skill/concept described	Student illustrated incomplete understanding of skill/concept described	Student has many misconceptions about the skill/concept described.	Not enough information to make a judgment or student did not turn assignment
Choice three	Student has illustrated complete understating of the skill/concept described.	Student has illustrated understanding of the skill/concept described	Student illustrated incomplete understanding of skill/concept described	Student has many misconceptions about the skill/concept described.	Not enough information to make a judgment or student did not turn assignment
Neat and Eye-pleasing	Over all assignment is neat and student took time/effort to make it neat and colorful.	Over all assignment is neat and student took some time/effort to make it neat and colorful.	Over all assignment is legible and it had little color. Student did bar minimum.	Assignment is sloppy and looks as though student put no effort into assignment.	Not enough information to make a judgment or student did not turn assignment
Total					40 points

Due Friday 1/24/2014.