CLIL Module: Chemical Reactions

Unit 1: Physical & Chemical Changes

Lesson Objectives:

- to get familiar with the most common physical and chemical changes occurring in matter
- to be able to tell apart a chemical from a physical change
- to know the clues to identify a chemical reaction

Key Vocabulary:

pure substances - reversible / irreversible - phase change (or phase transition) - states of aggregation - freezing / melting - condensation / vaporization - molecules - deposition / sublimation - mass - forces - mixtures - distillation - heat - physical changes / chemical changes

Task 1: ***Before we start the lesson, assess your knowledge of the key vocabulary you should already know, by filling the blanks with the correct word from the above list.***
(Note: there are words which you do not need to use)

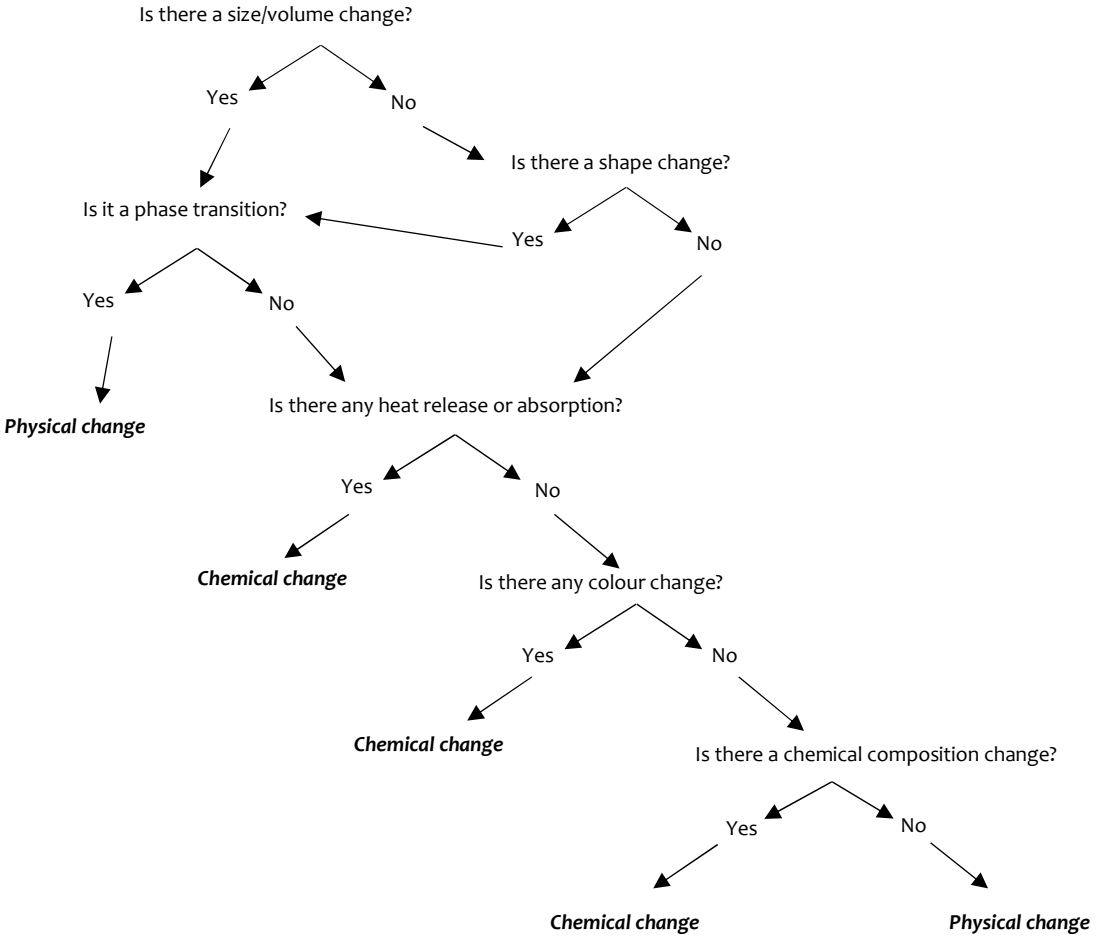
Matter is anything that has _____ and therefore occupies space. Matter is classified as _____ _____ and _____ . Matter can exist in three _____ _____: solid, liquid and gas. The existence of different states of matter depends on the _____ acting on its composing particles (atoms or _____) and the average distance between them.
By varying the temperature (i.e., by providing or subtracting _____), a substance can undergo a _____ and thus change from one state of aggregation to another. The process to get a liquid from a solid is called _____ , while the process to obtain a liquid from a vapour is named _____ . All of the phase transitions are _____ changes, which means that we can reverse the change and replace the initial conditions, by acting on the process parameters (temperature, heat).
Mixtures can be separated into their components through _____ , i.e. without the formation of new substances. A common industrial separation method, also used on a smaller scale to obtained beverages with a high alcohol content, is _____ .

Task 2: ***Based on the definition of physical and chemical change, discuss and classify the following actions (changes), by using the below T-chart.***

A. Breaking a glass
B. Producing wine from grapes
C. Mixing sugar and coffee
D. Cutting ham into slices
E. Cooking an egg
F. Baking a cake

Physical Changes	Chemical Changes

Task 3: ***Light a match and observe while it is burning. Use the below binary key pattern to determine the nature of the change. When finished, write down one or few sentences in the below section (Conclusion), where you explain how you reached your conclusion.***



Conclusion:

I think the burning of the match is a _____ change, because _____

_____

_____

_____

_____

Task 4: ***Record 3-6 new English words you have learned today. Ask your peer to translate or make a sentence out of them.***

_____ _____

_____ _____

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Space for Notes and New Vocabulary:

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