Baggie Science

By Doaa George, based on the workshop investigation written by Dr Jenny Jones.

Figure 1: Periodic table Bus. Thames Travel Route T1, Oxford Carfax

Introduction

Chemistry plays a role in our daily life. To be more accurate, we cannot live and survive without the many chemical reactions taking place every second inside us and around us. Chemical reactions make up essential bodily processes such as breathing, digestion, movement and senses. We use chemistry when we clean our body or clothes by using soap or any other detergent, when we cook, when we apply sunscreen or when we take medications. Chemists, are scientists who study the properties of chemical substances and chemical interactions. Today, you will play the role of the chemist and study the interaction of chemical compounds.

Risk analysis

You will be using some chemicals in this experiment. These chemicals can cause irritations to the skin, eyes and the respiratory tract. You have to wear gloves and safety goggles at all times. Avoid inhaling the chemicals or swallowing them.

Questions

How can you tell that a new product has been formed?

How can you conduct a fair test?

Aim

Learn about chemical reactions and how to confirm that a reaction has happened.

Plan

You will be provided with the materials required to conduct this experiment. Make sure you follow the safety guides of the chemicals supplied. You will be given two different white powders and a green liquid.

Discuss with your group how you can distinguish between the two powders.

Write a hypothesis on what you expect to happen.

Materials

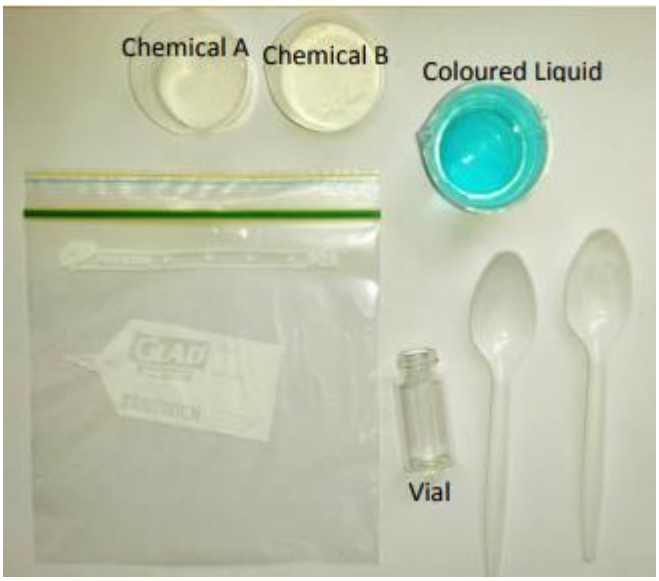
- Plastic Zip-lock bags
- A coloured liquid
- Chemical A
- Chemical B
- A vial
- 2 spoons

Conduct

Form a group of three and decide the role of each member during the experiment. You will be mixing the ingredients and observing what happens.

Procedure

- Place a spoonful of Chemical A and Chemical B into your plastic bag.
- Pour some of the liquid into a vial and place the vial, standing up, in a corner of the plastic bag. Be sure not to spill the liquid.
- Press the air out of the plastic bag and zip it closed. Be careful not to spill the liquid out of the vial as you press the air from the bag.
- Shake the bag carefully so that all the coloured liquid mixes thoroughly with the mixture of solids.
- Make as many observations as you can.
- When you can make no more observations, discuss with your group before discussing with the whole class.
- Each member of the group should record the diagram and the observations.



(A) **(B)**

(C)

Figure 2: (A), (B), (C) showing the setup of the experiment

Analysis

Write down your observations, include photos to this section.

Problem solves

Discussion

Discuss with your team members the reason behind each observation that you have made.

You can tabulate your results showing the observation and the cause of this observation.

Do you believe you have conducted a fair test? Explain.

Conclusion

Write a summary of your findings. State whether the results support your hypothesis or not.

What future experiments can you do to study the effect of changing other variables in this reaction.

References:

Link to figure 1 https://www.flickr.com/photos/wltmauc/15402888989/in/photolist-pt6Qgx-6VCTDN-4JQHjG-67pWs3-k3cTLx-afF8BL-p7W8sL-PpdAo-c1o3pG-7fd9Qt-bAXboT-6VyPwK-23kbbM-5fxkJv-7pcjvk-7fd9Ri-7aL3to-39xNLR-6VyN1n-bm4H1m-bUyCSH-8rctdN-8QZQGr-bUyCCi-9PXtbv-JBM8mu-4JQZjs-6RhnPQ-6VyPJp-xiTeo-6VCSGU-7hm1Bi-8QZQrD-4PvRfL-aw3bMv-SSiKyU-6VyNxa-4BLKvX-6VyMsr-eYFHrP-48o9L-6Hvz6S-7S3R3v-8PBE9r-9RkAay-dLJ7zD-brzmuw-eeF7ty-74Ropd-9YSE3S Author Aubrey Morandarte Licence https://creativecommons.org/licenses/by-sa/2.0/

Figure 2 Author ASELL SCHOOLS