MONSTER BAG

Activity Objective:

It is aimed for students to make observations about science-related events in their daily lives. By observing the chemical reaction that occurs during the Monster Bag activity, they realize that the properties of objects can change and learn to express this change using scientific observation language.

Learning Area/Theme:

Scientific Modeling / Using Evidence

CURIOUS BOX

MONSTER BAG

Let's Spark Curiosity

The following questions are asked to the students:

- What do you think is inside this bag right now?
- Can a bag inflate by itself?
- Why do you think a bag grows or inflates?
- Have you ever seen a bag or a balloon inflate before?

"Today, we will bring some materials together and carefully observe what happens. We are going to make a monster bag! While doing this, we will work like scientists." Have you ever seen a bag or a balloon inflate before?

The materials are shown to the students and the following questions are asked:

"What do you think might happen when these materials come together?"

"Can we smell these materials or put them in our mouths?"

After students share their answers, safety reminder is given: :

"Scientists never smell, taste or rub unknown substances to their faces. We will also work by following these rules."

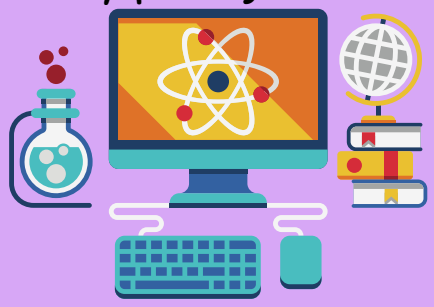
Let's start exploring!

The activity video is watched by pausing necessary. The contents of the set are checked before starting the activity. All lids and packages are opened together with the students.

Set Content

- [ ] Resealable plastic bag,
- [ ] Label sticker,
- [ ] Red Food Coloring,
- [ ] Acid,
- [ ] Base,
- [ ] Water (not included to the set content.)

Watch the video by pausing it!



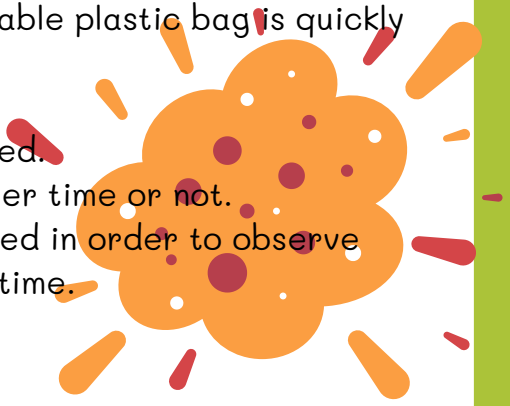
CURIOUS BOX

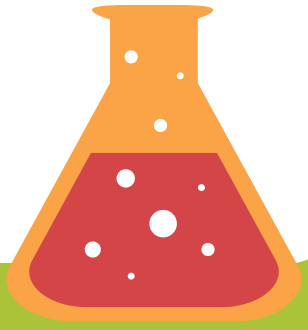
How do we do it?

1. Label sticker is attached to the resealable plastic bag.
2. Resealable plastic bag is opened.
3. Red food coloring is added to the bag.
4. Water is transferred into the bag four times using the red food coloring bottle.
5. Then, the materials to be used in the experiment are added to the bag.

- For the beginning, the first substance,
- Then, the second substance is added.

After the materials are added, the resealable plastic bag is quickly closed.
The bag is carefully shaken.
The change occurring in the bag is observed.
It is examined whether the bag inflates over time or not.
Wait for a while if more inflation is expected in order to observe and the shake the bag again from time to time.





For The Inquisitive Minds, Scientific Explanation!

The following questions are asked to the students:

- What was the bag like at the beginning?
- What changed in the bag later??
- Did the bag get bigger or inflate?
- Could there be something in the bag that we cannot see?

In our daily lives, we eat food to meet our energy needs. We taste different flavors from these foods. One of the reasons for this is the contents of the food. Foods being acidic or basic allows us to taste them as sour or bitter. For example, when we consume substances such as chili pepper, soap and toothpaste, we feel a bitter taste on our. tongue. Whe we consume foods such as green apples, sour cherries, and lemons, we feel a sour taste. These differences felt while consuming foods are because of the acids and bases they contain.

Acids and bases are classified according to their degree. A strong acid is a substance that can cause serious harm to skin of the livings. Foods that contain acids are not very strong acids. However, they have different degrees among themselves. While the degree of acid in lemon is very low, the degree is higher in an acidic drink. For example, baking soda is a base and vinegar is an acid. When we use these foods, they do not harm our bodies.

When acids and bases come together, an acid-base reaction occurs. When vinegar and baking soda are combined, carbon dioxide gas is produced as a result of a chemical reaction, and we can clearly observe this gas through the air bubbles that form.

Why Did The Bag Inflate?

When the substances come together, an invisible gas is formed. This gas takes up space inside the bag. As the gas increases, the bag inflates and gets bigger. We cannot see this gas, but we can notice its existence because the bag inflates.

Gases are invisible, but they take up space inside the environment they are in. In this activity, the inflation of the bag is evidence that gas has formed. The bag is a simple scientific model that shows the existence of the gas.

What Have We Discovered?

The sentences; “We had a lot of fun in this experiment, didn’t we? Thanks to science, we can make great discoveries that make our lives easier, and sometimes we can also do fun experiments like this” is said to the students. The “Monster Bag” activity page from the activity booklet is completed by the students. A the end of the activity, the following questions are asked to the students:

1. How did you feel during the experiment?
2. What are two things that tou have learned today?

What Else Can We Do?

Dear Teacher,
You have taken a journey into the fun world od science with our little scientists. You can perform the "Unpoppable Ballon" experiment as a demonstration to surprise them.

Unpoppable Balloon

Materials;

- Two balloons,
- water,
- lighter

- A balloon is inflated by filling it with water.

- The other balloon is inflated by blowing air into it.

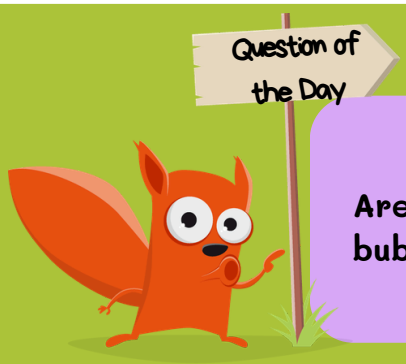
- Lighter flame is held under the balloon filled with water.

- Students are asked, "Why didn't it pop?".

- Lighter flame is held under the balloon that has no water.

- Students are asked, "Why did it pop?".

What Happened?
The balloon with the water did not pop because it absorbed and spread the heat.



Are there other substances that create bubbles when they come together?

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