Instructions

Observing

What do we measure? What do we weigh? What has a volume?

To complete the task, you will need cards in three colors, each of which will mark a different quantity, for example:
yellow – weight,
green – length and width,
pink – volume.

You can use any colors you like.

1. Give each student a set of 3 cards, one in each color.

2. Ask your students to mark items in the classroom that can be measured, using appropriate colors; next, ask them to mark items that can be weighed; and finally, the ones that have a volume. Encourage your students to find as many objects as possible in each category.

If your students do not know how to do the individual parts of the task, you can provide them with some examples (a window, the chalkboard, a bottle, the classroom, the students' backpacks, our own lungs, etc.).

3. Having completed the task, draw a table on the chalkboard, composed of four columns: object, weight, measure and volume. Next, write the names of the items mentioned and mark them in the appropriate columns.

4. Allow your students to draw conclusions by asking the following questions:
Can every object be weighed?
Can all objects be measured?
Does every object have a volume?

Instructions

Counting

The students weigh fruits and vegetables using a hanger scale.

1. Prepare the hanger scale.

2. Distribute the raw materials – each team receives one type of the prepared fruits or vegetables and 1 plastic bag.

3. The students weigh 1 kg of the raw material using the hanger scale.

How to weigh objects using a hanger scale?

1. Put the weight in the plastic bag and hang it on one end of the hanger.

2. Hang an empty bag on the other end.

3. Keep putting the objects you want to weigh in the empty bag until both bags are balanced.

4. When the bags are in balance, it means you have just weighed 1 kg of the raw material.

Note:
A hanger scale does not give you a precise weight measurement – it is only an approximate value.

Instructions

Counting

With the help of the hanger scale, the students compare the weights of 1 kg of individual raw materials.

1. Hang, for example, 1 kg of carrots on one end of the scale and 1 kg of oranges on the other.

2. In the same way, the students compare the weight of all the raw materials.

Instructions

Counting

The students check whether carrots and other raw materials still weigh the same as before cutting.

1. Give your students the cutting boards and knives.

2. Working in teams, the students cut the products weighed into pieces.

3. The students formulate a hypothesis about whether the raw materials they have weighed still weigh 1 kilogram after cutting.

4. The teams put the raw materials cut into pieces in a bag and weigh them, checking whether the weight has changed after cutting.

Counting

The students estimate the volume of containers.

1. Fill the containers with the same amount of water, for example pour 3 measures into each one.

Next, ask your students the following questions:
Which of the containers holds the largest amount of water, and in which one the amount of water is the smallest?

Once the students have estimated the amount of water in particular containers, they check whether their estimates are correct. In order to do so:
1. Each team pours out the water from one container using the very same measure.
2. The teams count the number of measures poured out.
Each team should come up with the same result.

During the experiment, the students should note that the same volume can reach different levels in different containers.
Why?
Ask your students to formulate a hypothesis.