

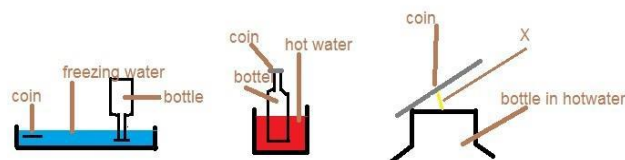
# JUMPING COIN ON A BOTTLE

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## 1-Introduction

At first for this experiment we should put the coin and the opening mouth of a bottle inside the cold water with the freezing temperature after a few minutes we bring them out and put them inside the hot water as we put it inside the hot water we will hear a noise and we will see the coin's jumping. In this experiment we have some effective factors such as: volume and wall diameter of the bottle and its type; coin mass; liquid temperature which should be investigated.



## 2-Experiment

After putting the bottle's opening mouth inside the cold water the temperature of the air inside it, rises down and after putting it inside the hot water, the temperature of both bottle and the air inside it go up which make more molecular movement and it rises the pressure. The parameters which are effective in this experiments are as follow:

1- Different kinds of bottles (metal, plastic or glass) it is effective in thermal conductivity.

2- Coin mass is effective because it can change the pressure inside the bottle, and when we have more mass we need more force and because of the gas exited in each jump it can change the pressure.

3- Liquid temperature is effective because when we have a hotter water around our bottle it can make more inner energy and more force.

## 3-Conclusion

There are two reasons for the sound in this experiment, first one is bubbles and second one is collision with the edge of the bottle.