Centrifugal force

INTRODUCTION

This activity is great for introducing a younger audience to the structure of blood and explaining how a biochemistry department analyses blood samples using centrifuges.

THE SCIENCE

The majority of biochemistry tests are carried out on plasma or serum. This means that when blood samples are received in the laboratory they must be spun down in a centrifuge to separate the red and white blood cells from the plasma or serum. In a centrifuge the blood samples can be spun at around 3,500 RPM for 10 minutes, which means they have the centrifugal force acting upon them. Centrifugal force is the force that keeps something on its curved path. It's the same force on the spin cycle of a washing machine and the same force felt by children on a merry-go-round. This centrifugal force causes the blood cells to travel to the bottom of the sample tube leaving the plasma or serum available for analysis

WHAT YOU WILL NEED

- ⬡ Salad spinner
- ⬡ A few test tubes filled with iodine, water and flour
- ⬡ Something to secure the tubes to the salad spinner (e.g. clay, bag ties)

This activity takes

5 mins

plus an introduction

INSTRUCTIONS

1. Secure the test tubes to the salad spinner. Get someone from the audience to spin the salad spinner as fast as they can for a few minutes.

2. After 3-5 minutes you should start to see the flour stain purple from the iodine at the bottom of the test tube and the water at the top.

1. This practical can also be done with a whirligig, using plastic capillary tubes instead of test tubes, or using small tubes in a fidget spinner. If you have enough time to prep the night before you can use some old socks to swing around a clear plastic cup containing clear jelly speckled with beads/lentils.

! **Iodine is a hazardous substance that can stain skin and clothing.**

! **Please wear old clothes or an apron while carrying out this activity and avoid ingesting it.**

! **Wash your hands thoroughly after completing the experiment, and ensure children are supervised at all times.**

Brought to you by

IBMS Institute of Biomedical Science