

1 MINUTE CHALLENGE - CAN YOU FIND THE EXOSOMES FROM THIS PERSON'S BLOOD?

Instructions

This game requires a minimum of 1 person to play.

Suitable for ages 6+.

What are exosomes?

Exosomes are small lipid-bound packages of information that are released and taken-up by the cells in your body. Released exosomes can be found in a person's blood. It is possible to tell from which organ the exosomes originated as they carry unique markers on their surface. There is interest in using exosomes in diagnosis of diseases such as cancer by checking a patient's blood for elevated levels of exosomes with a certain marker.



1 minute challenge, performed at the Oxford Brookes Science Bazaar.

Equipment needed

- Colour A3 printout of “Exosome sorting game” sheet (ideally laminated)
- Water beads mixed colours (these will need to be pre-soaked, ideally overnight, to the manufactures guidelines)
- Water beads in red (it is important to have a larger proportion of red as this represents the blood, we recommend a ratio of 4 parts red to 1 part mixed colours)
- Large waterproof box
- 5 small plastic containers or tubes with flat bottoms
- Blue tack
- Timer
- Tape

Optional equipment

- Leader board (it is nice to create a bit of competition so you may wish to record how many exosomes were correctly sorted in the 1 minute)
- Pens

How to set-up the game

1. Place the box of pre-soaked water beads on the table.
2. Tape the printed out “Exosomes sorting game” sheet to a table next to the box of water beads.
3. Using blue tack stick the small plastic containers to each coloured box (these will be used to collect the sorted exosomes).

How to play the game

The player has 1 minute to correctly sort as many exosomes (mixed colour water beads) as they can from the bucket of blood (red water beads). For example, blue exosomes (water beads) into the brain container, yellow exosomes (water beads) into the lung container etc. At the end of the 1 minute, the containers are emptied and the number of correctly sorted exosomes (water beads) are counted. If using a leader board, the number of correctly sorted exosomes (water beads) are added. Exosomes (water beads) are returned to the bucket of blood (main box) and mixed up, the game is then ready to be played again.

NOTE: We have previously run this game in tandem with 2 players and find that the competition created works well.