Outreach: Platelets, Clotting and Thrombosis Activities at MOSI Get Curious! 2021

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Manchester Metropolitan University
THROMBOSIS

INTRODUCTION

During October 2021 half-term, members of the Thrombosis Lab at Manchester Metropolitan University took part in the Museum of Science and Industry event – Get Curious!

The Get Curious! event encourages participants to meet people working in STEM and find out more about what they do through fun demonstrations and interactive activities for the whole family to enjoy. Over 640 people passed through our exhibit on the day.

Here we share some of the materials and activities we created for the event, sponsored by the Biochemical Society and Platelet Society.

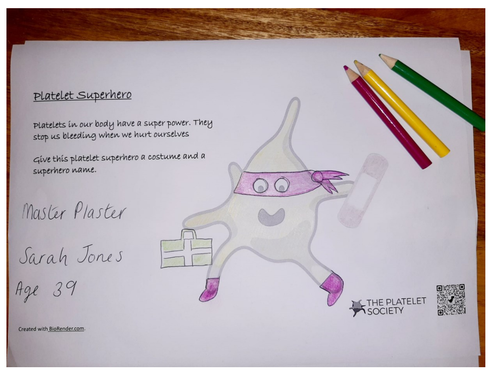
ACTIVITY 1

Superhero Platelets!

An easy activity that is quick and cheap to organise.

What you need:

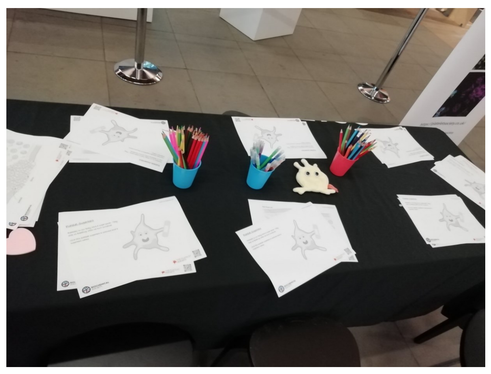
- Packs of colour pencils/crayons/ pens
- A printer
- A4 Paper
- Download the activity sheet from the Platelet Society Website.



Cost: <£20

Suitable for all ages!

Aim: Introduce participants to platelets and their role in biology.



Activity: Encourage participants to design their platelet superhero a costume and superhero name!

For this event, we took photos of the images and uploaded them onto a dedicated Platelet Society Website page, to increase traffic to the website!

ACTIVITY 2

Blood Vessel Tunnel Challenge!

An interactive and energetic activity!

What you need:

- Expandable tunnel (blood vessel)
- 3-4 (yellow) cushions – (plaque)
- 4 red cushions – (blood)
- A box (decorated with a heart)
- A timer/stopwatch

Cost: ~£100

Suitable for Ages 4-11 years and up to teams of 4.

Aim: Introduce why fatty plaques lead to heart attacks. Does plaque build up in blood vessels prevent blood and oxygen delivery to the heart?

Activity: Time how long it takes participants (individually or in relay teams) to carry all of the blood cell cushions through the tunnel (blood vessel) to the heart (box) with and without the 'plaque' cushions present in the vessel.

The 'plaque' cushions should get in the way and slow them down!

ACTIVITY 3

Play(telet) Doh!

An easy activity that is quick and relatively cheap to organise.

What you need:

- Play-Doh (different colours
- Example pictures of platelets and blood clots
- Paper (preferably laminated) to act as placemats.

Costs: <£20

Suitable for Ages 4+ years

Aim: introduce participants to platelets and blood clots.

Activity: Encourage participants to shape their Play-Doh! Into platelet shapes and build blood clots including the fibrin mesh!!

ACTIVITY 4

Build a Blood Clot

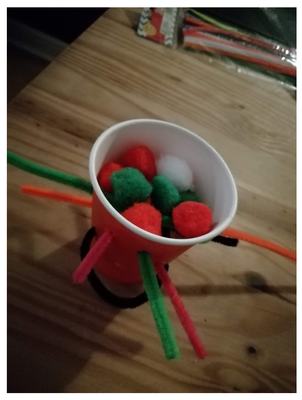
A fun interactive activity

What you need:

- Paper Cups or toilet roll tubes
- Pipe cleaners/straws (fibrin)
- Pom poms (or sweets) different colours to represent blood cells.
- Scissors (for preparation)

Cost: <£20

Suitable for Ages 4+ years.



Pre-prep: Punch holes through the side of the cups or toilet roll tubes (to enable the pipe-cleaners to be pushed through)

Aim: Investigate how important fibrin is for stable blood clot formation.

Activity: Have participants push pipe-cleaners/straws through the holes of the cups/toilet roll tubes to create a (fibrin) mesh. Then add the 'blood cells' on top and see how 'fibrin mesh' prevents blood passing through the tube (or falling out of the cup!). Then remove the pipe cleaners/straws one by one, to show how 'lysing' the fibrin mesh, helps improve blood flow!

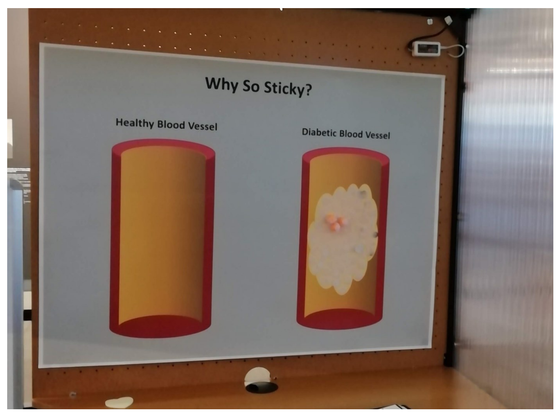
ACTIVITY 5

Sticky Platelets

A fun interactive activity

What you need:

- Poster size print
- Velcro stickers
- Ping pong balls (platelets)



Cost: <£30

Suitable for Ages 4+ years.

Pre-prep: Place Velcro stickers on the ping pong balls and on one of blood vessels to represent plaque/fatty deposits!

Aim: Investigate how fatty plaques cause thrombosis!

Activity: Have participants throw their platelets (Velcro covered ping pong balls) at the 'healthy' (no Velcro) and 'fatty plaque' (with Velcro) blood vessels, and see how easy it for the platelets to stick!

BIOCHEMICAL SOCIETY
THE PLATELET SOCIETY
British Heart Foundation
NC3Rs National Centre for the Replacement Refinement & Reduction of Animals in Research

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