



THE EPSRC/MRC CENTRE FOR DOCTORAL TRAINING IN
OPTICAL MEDICAL IMAGING (OPTIMA) PRESENTS

STEM ON A SHOESTRING:SMARTY SORT WITH DR KIRSTY ROSS

In collaboration with Glasgow Science Festival & EXPLORATHON



CAN YOU ALWAYS SORT THE SMARTIES?



@DRKIRSTYROSS
OUTREACH OFFICER FOR
OPTIMA CDT

1 YOU NEED THE FOLLOWING:

Smarties or other
colourful sweets



Quality Street
wrappers



5 Next, fold the Quality
Street wrapper in half.

6 Sort the sweets again,
this time looking
through the wrapper
(no cheating!)

7 What happened?
Was it easier to do?
Harder to do?
Get someone else to try!

EXTENDING THE ACTIVITY...

Why not try:

- Using a different coloured wrapper?
- Stacking one wrapper on top of another?
- Investigating the dyes colouring the sweets?
- (your ideas here...)

CAUTION

Smarties and other coloured sweets are small and pose a choking hazard. Grown ups need to monitor this activity if under 3s are involved.

THE SCIENCE

White light contains many different wavelengths of visible light. Each wavelength has a different colour, like red or blue. These wavelengths can be soaked up (aka **absorbed**) by coloured pigments in the sweetie wrappers. Other wavelengths make it through (are **transmitted**) to your eyes. For example, a purple wrapper can absorb blue and red wavelengths, making red, blue, purple & pink sweets look black!

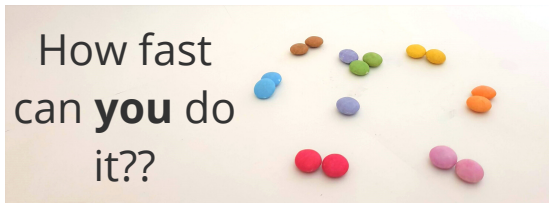
THE APPLICATIONS

Filters are used in optical medical imaging to separate light carrying information about a patient's medical condition away from unwanted background light.

2 Pour the sweets onto a
white plate or a piece of
white paper.



3 Sort the sweets as fast as
possible into different
colours (yellow, green etc).



4 Mix up the sweets into
a pile.

Contact optima.cdt@gmail.com if you could like **FREE** physical copies of these resources.