



## SCIENCE AT O'BRIEN GROUP ARENA

Grades 3 & 4

### Water Treatment Experiment

To ensure that the water freezes clearly on the ice rink, we need to make sure it is clean! To do so, we put the water through a filter which removes any dirt and residue.

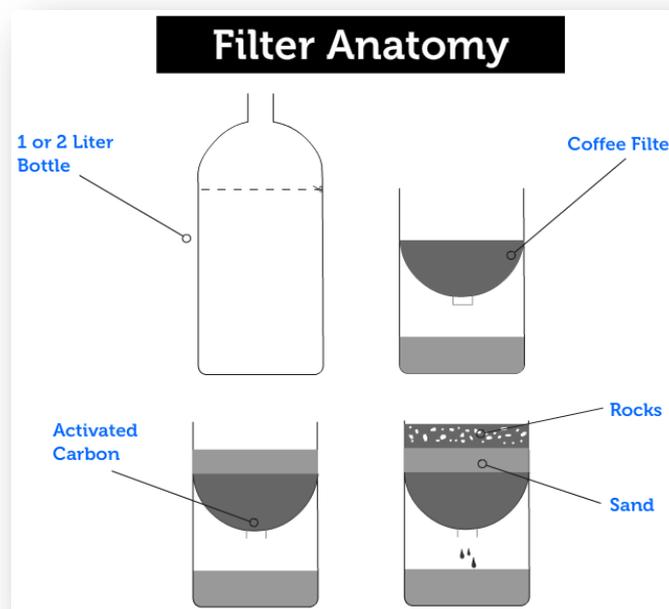
With help from your teacher, create your own water filter!

#### Materials you will need:

- An empty one-litre plastic bottle
- Box cutter or scissors
- Coffee Filter
- Sand
- Rocks
- Activated carbon
- Plastic Cups with water
- Food colouring/glitter/soil

#### What to do:

1. Using Scissors or a box cutter, cut the top off a one-litre soft drink bottle. Make the cut about 3/4 of the way up from the base.
2. Place the top half of the bottle upside-down into the bottom half. The bottom half will catch the filtered water and the top half will serve as a funnel and contain the filtration materials
3. Place a coffee filter into the funnel portion of your filter
4. Start layering your other materials – look at 'Filter Anatomy' to see the order!
5. Now your filter is made it's time to test it! In a plastic cup add water, glitter, food colouring and a little bit of soil
6. Write down your predictions on the worksheet provided
7. Pour the 'dirty water' through your filter and use a stop watch to time how long it takes to finish filtering!





## Water Treatment Worksheet

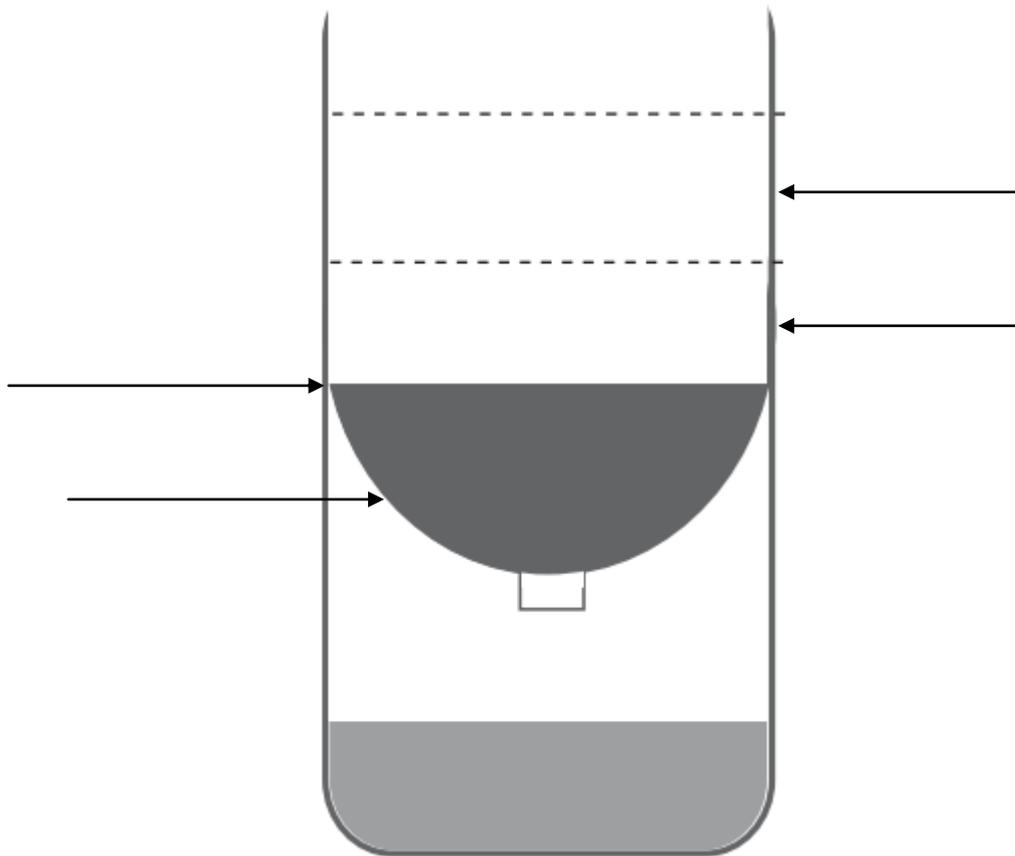
### Materials to Use

### Predictions

*What do you think will happen to the quality of the water? Which material will make the most difference? Will the water filter through fast or slow?*

### Water Filter Drawing

*Label the materials you will use making sure they're in the correct order*



### Results

*What happened? Is it what you expected to happen?*



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## FORCES IN CURLING

The key steps to playing curling are:

1. The Delivery - team members sliding the 20kg granite stone along the ice
2. Sweeping - fast sweeping of the ice in front of the travelling rock to control speed and distance
3. Reaching the 'house' - rocks landing in the target at the end of the ice. The team with rocks closest to the centre of the target win. Opposition's rocks may be hit out by curling rocks at them displacing them out of the target.

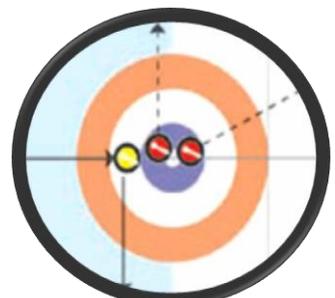
Draw a line matching up the action with the force



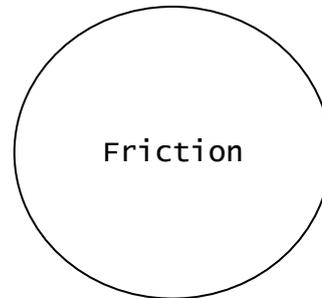
Delivery



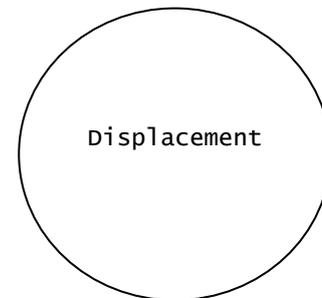
Sweeping



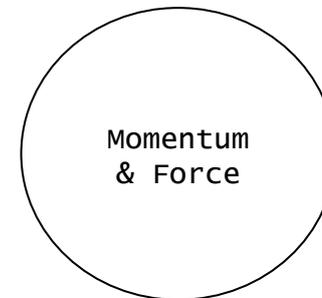
Rock Collision



Friction



Displacement



Momentum  
& Force



Name: \_\_\_\_\_

## FRICTION

Name 3 ways friction plays a part in the sport of curling:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_



**What is a physical reaction to friction?**

*Try rubbing your hands fast together to feel what happens!*

How might this reaction affect the ice when teams are sweeping during a curling game?

*Note: Before each curling game, the surface of the ice is lightly sprayed with droplets of water to create a pebbled feel to the ice. You can see the pebbles in the picture below!*

