



## The Dirty Sock Challenge

*Courtesy of the Alberta Motor Association and the Air & Waste Management Association*

**Materials**                      New white socks, gloves or oven mitts, rubber bands, black markers, and a selection of participating cars.

### **Overview**

- Once participating cars are lined up, place the white socks over the tailpipes of each car, using rubber bands to help hold them securely if needed. Use oven mitts when securing the socks onto the tailpipes. **DO NOT** turn on vehicle until sock is secure and volunteers are out of range. **USE CAUTION** as the tailpipes may be warm if they have been recently driven.
- Pre-label the socks with the make, model, and year of each car using a black marker. Volunteers may choose to write the names of the participants on each of their socks for the participating vehicle.
- Once all the socks are on the tailpipes and participants have moved a safe distance away from the vehicles, start the cars and run them for **1 minute each**.
- For more dramatic colouring of the socks, leave running for 2-3 minutes.
- Shut the vehicles down, **let them cool for 5 minutes**, then let the volunteers remove the socks from each vehicle using oven mitts or gloves.
- Examine the socks and determine which is the dirtiest, the cleanest, and the most and least wet.
- Organizations may choose to award prizes for the “winning” vehicles (eg. Free oil change or car tune-up for dirtiest sock, car wash for cleanest).

### **Safety Precautions**

- This experiment should never be done in a closed building.
- Emergency brake should be set on each vehicle.
- Safety vests should be worn for those conducting the experiment.
- Always use oven mitts or gloves when putting socks on and taking them off. Tongs may also be used for added safety.
- Volunteers should stand away from automobiles during the test. Exhaust tailpipes emit carbon monoxide gas and can cause burns.
- Do not touch the tailpipe until car has cooled for five minutes.