

## DIY AIR CLEANING: MAKING A 'CORSI AIR BOX' / 'COMPARETTO CUBE'

**COST:** < \$175 USD

**IMPACT:** CAN ADD THE EQUIVALENT OF ~ + 3 AIR CHANGES PER HOUR TO A TYPICAL CLASSROOM

### GATHER MATERIALS

1

MERV 13  
AIR FILTERS  
(20"x20")

+

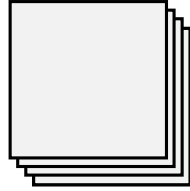
BOX FAN  
(20"x20")

+

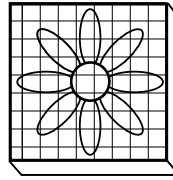
CARDBOARD  
SHEETS  
(20"x20")

+

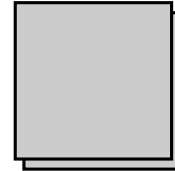
DUCT  
TAPE



X 4



( NOTE: MAKE SURE  
FAN HAS A FUSE\* )

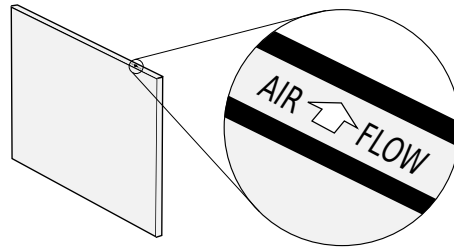


X 2



### NOTE FILTER FLOW DIRECTION

2



MERV 13 FILTERS HAVE A  
**PREFERRED AIRFLOW  
DIRECTION,**  
INDICATED ON  
FILTER FRAME

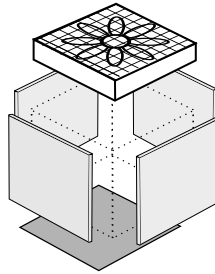
### ARRANGE 'BOX' PARTS

3

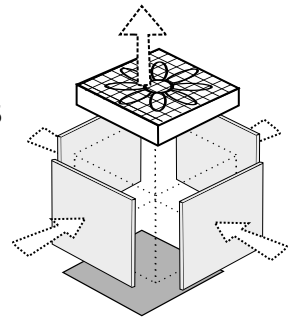
**TOP:** FAN

**SIDES:**  
FILTERS

**BOTTOM:**  
CARDBOARD

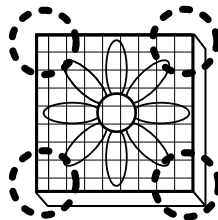


**ORIENT FILTERS  
& FAN SO THAT  
AIR FLOWS  
INTO SIDES  
& OUT TOP**

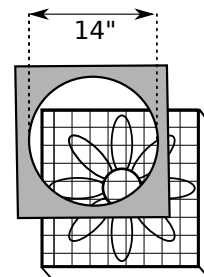


### PREPARE FAN SHROUD

4



CORNERS OF  
BOX FAN CREATE  
'BACK FLOW'  
CAN REDUCE  
PERFORMANCE...

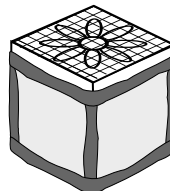


... WHICH CAN BE  
PREVENTED BY  
MAKING A  
**CIRCULAR SHROUD**  
OUT OF CARDBOARD  
(HOLE DIAMETER: 14")

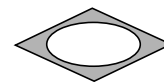
### ASSEMBLE AND SEAL

5

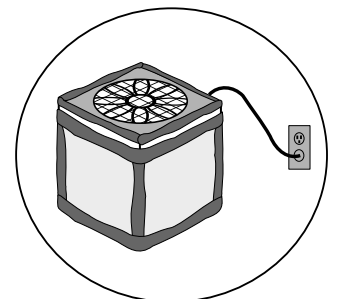
USE **DUCT TAPE**  
TO CONNECT  
PARTS AND  
MAKE AN  
**AIR-TIGHT  
SEAL...**



+



... AND ADD  
**SHROUD TO  
TOP OF FAN**



TYPICAL ESTIMATED **CADR** (CLEAN-AIR DELIVERY RATE): ~ 600 CFM

**EQUIVALENT ACH** (AIR CHANGES PER HOUR) = **CADR \* 60 / ROOM\_VOLUME**

E.G.: FOR 30 FT x 30 FT x 10 FT ROOM, TYPICAL ESTIMATED **EQUIVALENT ACH** ~ + 3 ACH

(FOR COMPARISON: TYPICAL CLASSROOM ACH < 3 ACH; IDEAL ACH: 6+ )

FOR MORE BACKGROUND & REFERENCES, VISIT [edgecollective.io/airbox](https://edgecollective.io/airbox)

\* Most 20" box fans -- including all those sold in CA after 2012 -- are sold with a (built-in) fuse.