The School Flag Program: Protecting Students’ Health Through Air Quality Awareness

US Environmental Protection Agency
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Today we’ll talk about...

- The purpose of the flag program
- Air Quality Index - what it means
- Health and air pollution
- Starting a program
- Air quality resources
What is the School Flag Program?

- Schools raise a flag each day
- Flag colors are based on the colors of the AQI (Air Quality Index)
- The flag color indicates the local air quality forecast
- Provides guidance on how to modify outdoor activities when the air quality is unhealthy
History

• 2004: San Joaquin Valley starts school flag program.

• 2009: Over 750 schools in Valley raising flags, and program expanding to other states.

• 2010: EPA takes the program national to promote and maintain consistency across the country.

• Today: Over 700 schools in 12 states participate.
What is the Air Quality Index?

- Guide for reporting daily air quality
- Indicates how clean or dirty the air is
- Explains health effects
- EPA calculates the AQI for five major air pollutants:
  - Ozone (O3)
  - Particulate Matter (PM10 and PM 2.5)
  - Nitrogen Dioxide (NO2)
  - Sulfur Dioxide (SO2)
  - Carbon Monoxide (CO)

<table>
<thead>
<tr>
<th>Good</th>
<th>Moderate</th>
<th>Unhealthy for Sensitive Groups</th>
<th>Unhealthy</th>
<th>Very Unhealthy</th>
</tr>
</thead>
</table>
**Air Quality Index (AQI) Colors**

<table>
<thead>
<tr>
<th>Air Quality Index (AQI) Values</th>
<th>Levels of Health Concern</th>
<th>Colors</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>When the AQI is in this range:</em></td>
<td><em>...air quality conditions are:</em></td>
<td><em>...as symbolized by this color:</em></td>
</tr>
<tr>
<td>0 to 50</td>
<td>Good</td>
<td>Green</td>
</tr>
<tr>
<td>51 to 100</td>
<td>Moderate</td>
<td>Yellow</td>
</tr>
<tr>
<td>101 to 150</td>
<td>Unhealthy for Sensitive Groups</td>
<td>Orange</td>
</tr>
<tr>
<td>151 to 200</td>
<td>Unhealthy</td>
<td>Red</td>
</tr>
<tr>
<td>201 to 300</td>
<td>Very Unhealthy</td>
<td>Purple</td>
</tr>
<tr>
<td>301 to 500</td>
<td>Hazardous</td>
<td>Maroon</td>
</tr>
</tbody>
</table>
How Air Pollutants Can Effect You

- Coughing
- Difficulty breathing
- Decreased lung function
- Stronger and more frequent asthma attacks
- Development of chronic bronchitis
- Chest tightness; chest pain
- Irregular heartbeat
- Premature death in people with heart or lung disease
- Stunted lung growth in children
Some Groups Are More Sensitive to Air Pollution

- Children (birth to age 18)
  - More active
  - Breathe more air per pound of body weight
  - Developing bodies

- People with asthma
  - Around 7 million children

- People with heart or lung disease

- Older adults (age 55 and older)
Air Pollution Comes from Many Different Sources
What the School Flag Program Does for You

- Easy 4 step process
- Better health of your students, staff, and community
- Increase public awareness of air quality issues
- Provide activity guidelines to reduce exposure to harmful air pollutants
- Recognition on EPA web site
Start Your Flag Program: 4 Easy Steps

- Purchase flags
- Educate and inform the school and community
- Check the daily air quality forecast and fly the corresponding flag
- Follow the recommendations for outdoor activities
Purchase Flags

- Flags cost about $100
- Funding from PTA, a local health organization or business
- Order from local flag vendor or online
- Set of five flags: green, yellow, orange, red, purple
  - Use pennant style flags, 5 x 3 ft.
  - Plain flags are best
Educate and Inform

- Educate and inform teachers and parents
- Recruit 1-2 teachers to be the Flag Program Coordinator(s)
- Inform the school and surrounding community through:
  - Newsletters
  - Emails
  - Flyers
  - Local newspaper
  - Radio station
  - Word-of-mouth
Check the Air Quality Forecast

- Sign up for an email: www.airnow.gov/enviroflash

- Check your local paper

- Local weather report on tv

- Check www.airnow.gov
  - Free air quality app
  - Free widget: post the air quality forecast on your school website
# Recommendations for Schools and Others on Poor Air Quality Days

**Air Quality Index (AQI) Chart for Ozone (8-hr standard)**

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>0 to 50 GOOD</th>
<th>51 to 100 MODERATE</th>
<th>101 to 150 UNHEALTHY FOR SENSITIVE GROUPS</th>
<th>151 to 200 UNHEALTHY</th>
<th>201 to 300 VERY UNHEALTHY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recess (15 min)</td>
<td>No Restrictions</td>
<td>No Restrictions</td>
<td>Make indoor space available for children with asthma or other respiratory problems.</td>
<td>Any child who complains of difficulty breathing, or who has asthma or other respiratory problems, should be allowed to play indoors.</td>
<td>Restrict outdoor activities to light to moderate exercise.</td>
</tr>
<tr>
<td>P.E. (1 hr)</td>
<td>No Restrictions</td>
<td>No Restrictions</td>
<td>Make indoor space available for children with asthma or other respiratory problems.</td>
<td>Any child who complains of difficulty breathing, or who has asthma or other respiratory problems, should be allowed to play indoors.</td>
<td>Restrict outdoor activities to light to moderate exercise not to exceed one hour.</td>
</tr>
<tr>
<td>Scheduled Sporting Events</td>
<td>No Restrictions</td>
<td>Individuals who are unusually sensitive to ground-level ozone should limit intense activities.</td>
<td>Individuals with asthma or other respiratory or cardiovascular illness should increase rest periods and reduce activities to lower breathing rates.</td>
<td>Consideration should be given to rescheduling or relocating event.</td>
<td>Event should be rescheduled or relocated indoors.</td>
</tr>
<tr>
<td>Athletic Practice and Training (2 to 4 hrs)</td>
<td>No Restrictions</td>
<td>Individuals who are unusually sensitive to ground-level ozone should limit intense activities.</td>
<td>Individuals with asthma or other respiratory or cardiovascular illness should increase rest periods and reduce activities to lower breathing rates.</td>
<td>Activities over 2 hours should decrease intensity and duration. Add rest breaks or substitutions to lower breathing rates.</td>
<td>Sustained rigorous exercise for more than one hour must be rescheduled, moved indoors or discontinued.</td>
</tr>
</tbody>
</table>
Principles Behind Recommendations

- Dose = Concentration x Breathing rate x Time
  - Concentration – amount of pollutant in air
  - Breathing rate – how fast you breathe
  - Time - time spent outdoors

- Reduce any or all of these factors to reduce dose
- Pay attention to symptoms
School Flag Program Website

www.airnow.gov/schoolflag

- Registration form
- Fact sheet
- Coordinator’s handbook
- Recommendations chart/activity guidelines
- Press release template
- Student activities
- Teacher and student resources
- List of participating schools
Air Quality Resources

- Resources for teachers are available on the AirNow.gov website: www.airnow.gov
  - Online curricula
  - Interactive games
  - Air quality simulator
  - AirNow Learning Center
  - Children’s picture book (free at www.epa.gov/nscep)
Start a Flag Program at Your School

- Go to [www.airnow.gov/schoolflag](http://www.airnow.gov/schoolflag) to learn more

- For questions, contact Ellen Wildermann
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