STRAW ASTHMA DEMONSTRATION
TIME: 15-20 minutes
REQUIRED RESOURCES: straws of different sizes (2 suggested; small/regular & stir stix)

BEFORE YOU BEGIN: talk to teacher and let them know there will be an activity that gets the kids physically active and simulates a circumstance where it is difficult to breathe – this serves as a qualifier for any children who may have asthma.

DESIRED OUTCOMES:
1. To understand the connection between air quality and health – air quality affect us
2. To encourage making a hypothesis and then testing it out
3. To encourage the use of the Air Quality Health Index (AQHI)

PRE-STRAW ACTIVITY:
1. Begin a discussion with students about how air quality affect us:
   a. What do our lungs do?
      We use our lungs breathe. When we breathe, we inhale oxygen and exhale carbon dioxide. Breathing supplies our blood with oxygen and takes away the carbon dioxide produced by our bodies.
      Our blood then delivers the oxygen to all parts of the body.
      “We could go days without food and hours without water, but we would last only a few minutes without air”
   b. What are some of the things that can hurt our lungs?
      Air pollution, smoking, inhaling toxic substances, inactive lifestyles, diseases.
   c. What kinds of people would be more sensitive to pollution in the air?
      Those with asthma, lung or heart disease, children (breathe faster/more often, are generally outside more), seniors, those with poor health).
      “What is something kids do faster than adults?” - breathe
STRAW ACTIVITY:

1. Pass out straws to each student, asking them not to touch them just yet.

2. Instruct children to breathe normally and mentally note how it feels. Before going on, ask children first to hypothesize what they think will happen when we breathe through the different straws.

3. Have each student take the small/regular straw and breathe only through this straw. Ask for feedback on how it feels to breathe through this – harder, more difficult, less intake of air, etc.*
   [simulates breathing when air quality is poor – give examples of when that might happen – e.g. forest fire smoke]

4. Have each student take the stir stick and breathe only through this. Ask for feedback on how it feels to breathe through this – harder, not getting enough air, etc.
   [simulates breathing when you have a health condition such as asthma – air flow is restricted due to constricted or narrowing of airways – like the reduction in straw size]

5. Ask the students:
   a. Do any of the students have asthma?
   b. Did breathing through the stir stick feel like an asthma attack?
   c. How might air pollution outside affect someone with asthma?

6. Have students do jumping jacks while you count for ~30 seconds (this is where anyone with asthma would want to sit out). Afterwards have them breathe through the straw again.
   [simulates exercising and breathing under poor air quality conditions]

   *this activity simulates polluted (straw) and asthma/further restricted (stir stix), but could be done with just one straw size.

POST-ACTIVITY DISCUSSION:

1. What did you notice about breathing through different straw sizes? Were your hypotheses correct?

2. How might a lot of air pollution in the air affect our breathing?
   - mention that air quality is normally good, except if maybe there is forest fire smoke

3. What did you notice when we did the air pollution simulation (straw breathing) after you exercised?
   - everyone is different, so not everyone will notice a different when they exercise