**“Be Smart. Don’t Start.” Curriculum Agenda**

Green = Time given for each topic

Red = Scripted word that coincides with the power point presentation

1. **COPD: (5 minutes)**

* Initially describe how the lungs normally work
  + Sometimes we underestimate what we have in life and that is breathing. It is one part of the process of respiration which provides our bodies the continuous supply of oxygen we need to fuel life. It is what keeps us all alive and sitting in this classroom. To recap what you’ve all learned about the respiratory system, oxygen enters our lungs as part of the air that we breathe. It then goes to the blood vessels deep in our lungs and then on to all parts of our body. As our body uses the oxygen, it makes the waste product called carbon dioxide which we get rid of when we breathe out.
  + Looking at this diagram of the lungs… do you recall why is this system essential? Well, when we breathe in, air flows first flows through our nose or mouth and down the throat, through the voice box, and down the windpipe also known as the trachea. The air then travels down the two main large airways and these large airways branch into smaller airways called the bronchioles. Wrapped around the airways are muscles which crisscross each other. We have no control over these muscles, and their exact purpose is not known. Air continues through these small airways until it finally reaches the tiny balloon-like air sacs called the alveoli. It is at these air sacs that the oxygen is taken into the blood, which then is carried to the body’s tissues and cells for it to function.
  + This image of the capillaries in the alveoli is just showing you guys the oxygen passes quickly through this air-blood barrier into the blood in the capillaries. Similarly, carbon dioxide passes from the blood into the alveoli and is then exhaled.
* Describe the disease process for COPD (the difference in airways and alveoli)
  + COPD stands for Chronic Obstructive Pulmonary Disease which is an inflammatory lung disease that causes obstructed airflow from the lungs. People with COPD have difficulty breathing, they cough a lot and product mucus or sputum production as well as wheezing, requiring medical treatment. It is caused by long term exposure to irritating gases or particulate matter but most often from cigarette smoking. People with COPD also are at increased risk of developing heart disease, lung cancer, and variety of conditions that impair life.
  + Emphysema and Chronic Bronchitis are the most common conditions that contribute to COPD. CB is the inflammation of the bronchial tubes, which carry air to and from the alveoli of the lungs. It is characterized by daily cough and mucus (sputum) production. Emphysema however, is the condition which the alveoli at the bronchioles of the lungs are destroyed because of damaging exposure to cigarette smoking and irritating gases.

**- Straw Test & Tubing Activity (10 minutes)**

**Straw Test:** This activity is to represent how it feels to breathe like a COPDer. The students (or one student) will plug their nose and breathe in and out of the straw for 1 minute. During the breathing exercise, they will be able to understand how difficult it is to breathe due to the narrow straw compared to their nicely open airways.

As you can see, breathing is so easy natural to us that difficulty breathing or a sense of change in breathing is so obvious. Breathing via the straws is just an example of COPDers breathing always like this. Just picture yourself sitting and living life like this but imagine when you’re doing more strenuous work like running for the bus or just doing more physical activities, you will have more problems breathing.

**Tubing activity:** This is more of a visual activity. The pink tubing will represent the airways. They will fill it with red and yellow/green foam paper. The red construction paper represents inflammation and the yellow/green foam represents mucus. By the end of the activity they will be able to compare the filled tubing with the normal one. The difference in the diameter of the tubing will be obvious.

Now imagine this pink tubing is your airways in your lungs. As you smoke, inflammation and excess mucus builds up and narrows your airways. This in comparison, to healthy lungs that we all have, is a big difference and you will feel it when you are breathing yet again and have such a hard time breathing. Also, you will cough up more junk from the buildup and even when you thought you cleared it all up, mucus will still produce if you continue to go down the path of a COPD person.

1. **Marijuana: (2.5 minutes)**

Marijuana refers to the dried leaves, flowers, stems, and seeds from the hemp plant called cannabis sativa. The plant contains chemical THC where people use it for medical use but most importantly for recreational use. Marijuana is the most commonly used illicit drug in the U.S. People smoke marijuana in cigarettes also known as joints or in pipes or water pipes called bongs. They also smoke it in a blunt where emptied cigars are partially or completely refilled with marijuana. To avoid inhaling smoke, some people are using vaporizers. These devices pull the active ingredients (including THC) from the marijuana and collect their vapor in a storage unit. A person then inhales the vapor, not the smoke. Some vaporizers use a marijuana liquid extract.

* Describe what “tar” is.

Tar is the sticky and black substance produced when smoking a cigarette. Visuals 🡪 Despite it all, tar still exists in marijuana and causes more damages than cigarette smoking.

* Explain that the tar produced from smoking marijuana is about the same as cigarette smoke but it can deposit 4 times more tar than tobacco.

Marijuana smoke irritates our lungs, and people who smoke marijuana frequently can have the same breathing problems as those who smoke tobacco. These problems include daily cough and phlegm, more frequent lung illness, and a higher risk of lung infections that can spiral to other issues if progressed.

1. **Electronic Cigarettes: (5 minutes)**

* Explain popcorn factory incident that caused popcorn lung.
* In the year 2000, there was an incident in Missouri, which caused an investigation of a Microwave popcorn factory by the Missouri Department of Health and Senior Services. Many of the employees who worked in this popcorn factory were diagnosed with an irreversible lung disease which resulted in mortality (Bronchiolitis obliterans). This was due to the chemical, diacetyl, found in the buttery flavoring of the popcorn. The exposure to this chemical did not need to be for a long period of time. Employees who only worked for 8months were showing signs of this disease. Not only that, but employees who were not even in direct contact with the chemical also were diagnosed with the disease. In this disease, the smallest airways in the lung (the bronchioles) become scarred and constricted, blocking the movement of air. People who does have this cough, wheezing, and worsening shortness of breath on movement. The severity of the lung symptoms can range from only a mild cough to severe cough and shortness of breath on movement.
* Use visuals for popcorn lung
* Explain that E-cigarettes have the same exact chemical in their flavoring.
* Industries are safer than smoking cigarettes and even claim that it is safe for teens under 18 years of age. (Marketing flavors chocolate, strawberry, cookies and cream so that it is appealing to the younger adolescents).

1. **Classroom Budget Activity (20 minutes)**

* Students broken up to groups with designated volunteers
* Each student given notecards of typical income teenagers make a month
* Each notecard has activities teenagers engage their income towards (movies, starbucks, going out to eat, etc.)
* As their habits of drugs increase, their income goes more towards their habits which restricts them from daily life activities and make lifestyle changes
* End activity goals 🡪 realizing the sacrifices they need to make to fulfill their addiction to their habits with smoking

1. **Closing message regards to Highline School District consequence for using drugs underage as well as Respiratory Care Practitioner career field and what we do (Optional for teachers).**

**\*For each activities, please refer to “Activity” column in our website and download the content for more detailed instruction.**