HEALTH ROCKS!® Toolkit – 2017
A supplemental guide to the HEALTH ROCKS!® curricula.

The HEALTH ROCKS!® toolkit was developed to provide those teaching and facilitating the HEALTH ROCKS!® curricula with additional lesson options and background information on drug trends and specific drug facts.

The toolkit contains four Drug Fact Sheets. The information in these sheets was compiled from various resources and provides instructors with the knowledge needed to deepen their personal understanding of current drug facts and trends. The information shared in these Drug Fact Sheets also provides enough basic information to answer student questions. Each fact sheet contains a list of resources that may be accessed for additional information.

The toolkit contains three supplemental student lessons. These lessons link to current HEALTH ROCKS!® topics and are written for specific age levels. The lessons are based on the experiential learning model, focusing on hands-on activities to build and expand on the learning contained in the HEALTH ROCKS!® curricula.

Similar to the HEALTH ROCKS!® curricula, these supplemental lessons and Drug Fact Sheets aim to provide resources for instructors and facilitators to share current information with students to enable them to make healthy decisions regarding drugs, alcohol and tobacco. The goal of these supplemental materials is to bring fresh and exciting lessons and current resources into the hands of HEALTH ROCKS!® facilitators as an update and enhancement to the current HEALTH ROCKS!® program.
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- Healthy Friendships: I Have a Choice!
- E-Cigarettes vs. Traditional Cigarettes: Explore the Facts, Don’t Be Fooled!
- Your Brain and Drug Addiction

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Drug Trends and Facts: Part 1
INTRODUCTION

The news on drug, alcohol and tobacco use from recent reports shows a “good news” and “bad news” scenario.

On the positive side, from recent statistics as recorded in the 2016 Monitoring the Future annual survey, there is a continued long term decline in the number of youth who use drugs, alcohol and tobacco. However, the bad news is that these same statistics confirm what parents, educators and other concerned adults suspect. Youth continue to use these substances in significant numbers. In fact, 25.3 percent of 8th, 10th and 12th graders surveyed combined have used illicit drugs in their lifetime (Johnston 54). Another potential “bad news” scenario found in the survey data is a general decline in the perceived risk of harm and disapproval of using a number of these substances. Continued prevention efforts through education by helping youth to develop ways to make more responsible decisions about healthy life choices remains critical.

The following information is designed to provide the facts needed to successfully conduct activities in the HEALTH ROCKS® curricula. The material in this supplemental fact sheet updates and expands on information found in Section One of both the Beginning and Intermediate levels of the HEALTH ROCKS® manuals. Having a basic understanding of the circumstances currently surrounding youth tobacco, alcohol and other drug use is instrumental in portraying the true importance of the message to youth going through this program.

DRUGS – Reference to other drugs includes those drugs not permitted by law (illegal) and lawful drugs (prescription or over-the-counter) which are obtained or used illegally unless otherwise specified.

DRUGS DECLINING IN USE

The downward trend in tobacco, alcohol and other drug use with our youth is definitely a positive statistic. However, even though the overall number of youth using tobacco, alcohol and other drugs used has decreased, there is still a great deal of work to be done to continue this downward trend. According to the 2016 Monitoring the Future (MTF) survey, just over 17 percent of 8th grade students have reported using some form of illicit drug over the course of their lifetime (Johnston 62) and 12 percent of these 8th graders have used an illicit drug in the past 12 months (Johnston 68). This same survey confirms that this number continues to be down since the peak in the mid-1990’s (Johnston 62). In 2016, the drugs declining in use for all ages since those peak years include marijuana, Ecstasy, cocaine, methamphetamine, inhalants, cigarettes and smokeless tobacco (Johnston 55).

What Should Trusted Adults Do?

Communicate
1. Clearly communicate the risks of alcohol and drug use.
2. Let your child know you disapprove of any drinking or drug use: Kids who believe their parents will be upset if they try drugs are 43 percent less likely to do so.
3. Use teachable moments to talk about drinking and using drugs, such as reading a news story or watching a movie.
4. Frequently talk and listen to your kids about how things are going in their lives.

Monitor
1. Know WHO your child is with.
2. Know WHAT he or she is doing.
3. Know WHERE your child will be.
4. Know WHEN your child is expected home.
5. Know who your child’s friends are – communicate with their parents.
6. Establish and enforce rules – including a clear “no use” policy. (Source: PACT 360 The “Parents: You Matter” Tip Sheet)
The use of alcohol has also shown a downward trend in use by youth. Alcoholic beverages have typically been the substance of choice among youth. However, alcohol use remains the most widely used substance by teenagers. By the end of high school, 61 percent of youth reported that they have used alcohol at least once in their lifetime. By 8th grade, almost 23 percent have used alcohol in their lifetime and almost 9 percent of youth, or about one in ten youth, have reported being drunk in the 8th grade. By the time those youth reach the 12th grade, just over 45 percent of those youth have reported being drunk in their lifetime (Johnston 65, 66). Of those same 12th graders, 8 percent, or almost one in ten youth have reported being drunk in the past 30 days (Johnston 82).

Many youth, teens, parents and community members believe underage drinking is an inevitable “rite of passage” from which adolescents can easily recover because their bodies seem more resilient. However, the opposite is true. The brain goes through dynamic changes during adolescence and alcohol can seriously damage the brain both in the short term and long term as brains grow and develop. Research shows that drinking during the teen years may interfere with normal brain development and change the way the brain works. It may have negative impacts on information processing and learning, and increase the risk of developing an alcohol use disorder later in life. Alcohol also affects inhibitions and memory, decision making skills, coordination and physical control, and can lead to death. The effects on the body and brain continue even after the alcohol is consumed ("The National Institute on Drug Abuse Blog Team: Alcohol").

DRUGS SHOWING NO CHANGE

There were several drugs that showed no change between the 2015 and 2016 data according to the 2016 Monitoring the Future study. These substances include hallucinogens and LSD in particular, hallucinogens other than LSD, salvia, tranquilizers, heroin use with a needle, crystal methamphetamine and the club drugs GHB, Rohypnol and ketamine (Johnston 6). While experiencing no change in these numbers is preferable to an increase, use of these substances still needs to be addressed.

DRUGS CREATING AREAS FOR CONCERN

Marijuana continues to be a drug for concern. Marijuana is the most commonly used illicit drug in the United States by teens as well as adults ("The National Institute on Drug Abuse Blog Team: Marijuana"). Studies show that marijuana use interferes with learning, attention, memory and motivation. Youth who are regular users of marijuana tend to earn lower grades in school, are more likely to drop out of school and may function at a reduced intellectual level most or all of the time. ("The National Institute on Drug Abuse Blog Team: Marijuana Use").

According to the Monitoring the Future survey, marijuana use has declined in 2016 among 8th grade students as well as 10th grade students and has remained steady with 12th grade youth. On a daily basis, based on trends over 30 days, 7 percent, 2.5 percent and 6 percent of 8th, 10th and 12th grader students respectively, have used this drug. This compares to 2011 with 1.3 percent, 3.6 percent and 6.6 percent of 8th, 10th and 12th graders having used marijuana on a daily basis (Johnston 82). Yet, on an annual basis, 35.6 percent of 12th grade youth have used marijuana (68) and over a lifetime, 44.5 percent of 12th grade youth have tried marijuana (Johnston 62). On an annual basis, this statistic translates to over one in three youth using marijuana during their 12th grade year.
Additional concerns for marijuana use relate to the perceived risk of the drug, the disapproval by teens in the use of the drug and the availability or access of marijuana to teenagers. Over the past ten years, according to the Monitoring the Future survey, the perceived risk of using marijuana has decreased (Johnston 95) as has the disapproval of use of the drug among 12th grade youth (Johnston 105). Although the disapproval levels are lower, the levels still show that youth have a relatively high level of disapproval for smoking marijuana on a regular basis (Johnston 6). In addition, our 12th grade youth noted that it was fairly easy or very easy to access marijuana (Johnston 113).

What makes marijuana even more dangerous today is that the average THC content in marijuana has dramatically increased. In the early ‘90s, the average THC content, the chemical found in marijuana that is responsible for many of the drug’s mind altering effects, was 3.74 percent. In 2013, the THC content was almost 10 percent and is found to be much higher in some marijuana laced products (“The National Institute on Drug Abuse Blog Team. Marijuana”).

There are two drugs that have shown an increase in their use in 2016 according to the Monitoring the Future survey. The use of “bath salts” which is a synthetic stimulant cathinones, rose among 8th grade students in 2016 but did not change in the upper grades. Cough and cold medicines that are used to get high also rose among 8th graders but not among the upper grades. The use for 8th graders of cough and cold medicines, which usually contain dextromethorphan, was at 2.6% for the year (Johnston 6).

The term, “generational forgetting” places a further concern on the use of drugs by teenagers. New drugs are continually being created and brought to the marketplace as well as older drugs. These older drugs are often rediscovered by youth and make a comeback. This often occurs because the knowledge about the adverse effects of the drug has faded through the years. Generational forgetting is one factor that keeps the drug epidemic moving forward. A past example is the use of LSD which was popular in the 1960s and made a reappearance in the 1990s. In reviewing the current Monitoring the Future survey, it appears that the perceived risk for inhalants and LSD among 8th grade students in 2016 was somewhat lower than ten years prior in 2006. This may put these drugs on the watch list for future increased use showing the effects of generational forgetting.

TOBACCO USE

Each day, thousands of youth start smoking cigarettes. More than 3,200 youth who are younger than 18 years old will start smoking their first cigarette every day. In addition to this initial use, it is also estimated that every day about 2,100 youth and young adults will migrate from being occasional smokers to daily cigarette smokers. Cigarette smoking is the leading cause of preventable death (“Smoking and Tobacco Use: Fact Sheet”).

According to the 2016 Monitoring the Future study, cigarette smoking generally begins during adolescence. The study also shares that the smoking rates within a group or grade generally remain steady as those youth grow into adulthood (Johnston 30). This makes education about tobacco critical during the adolescent years.
Although work needs to continue, the smoking rates among our teens have been on a downward trend. In 2006, 24.6 percent of 8th grade students had used cigarettes compared with 9.8 percent of the 8th grade youth in 2016. This trend continued with 10th and 12th grade youth with 36.1 percent and 47.1 percent of youth over their lifetimes smoked cigarettes in 2006 and 17.5 percent and 28.3 respectively smoked cigarettes in 2016. While these trends are positive, these statistics highlight that there are still one in ten 8th grade youth smoking cigarettes and nearly 3 out of 10 students in the 12th grade have smoked a cigarette in their lifetime (Johnston, 66).

Like cigarette smoking, the use of smokeless tobacco by teens has also been decreasing gradually. Smokeless tobacco products are most widely known to come in a “snuff” and “chew” form. Snuff refers to a finely ground tobacco that is sold in tins and placed in the mouth either in a pouch or loose. Chew is a leafy form of tobacco and generally sold in pouches. A dissolvable smokeless tobacco product is currently available with the name, “snus”.

Smokeless tobacco use peaked in the mid 1990s with teenagers. Over the past ten years, the lifetime rate of smokeless tobacco has declined from 10.2 percent of 8th graders using smokeless tobacco in 2006 to 6.9 percent of 8th graders using smokeless tobacco in 2016.

Vaping is a relatively new way of ingesting tobacco and is done through the use of a battery powered device. In 2016, vaping use among teens declined for the first time. In 2015, vaping was one of the most common forms of adolescent substance use. The use of e-cigarettes, a common form of vaping, also decreased in all three grades with a usage in 2015 of 10 percent, 14 percent and 16 percent to 6 percent, 10 percent and 12 percent among our 8th, 10th and 12th grade students in 2016. Even with these declines, vaping has a higher use with adolescents than traditional tobacco products (Johnston 43).

The 2016 Monitoring the Future measures the perceived risk of different drugs. The perceived risk of smoking cigarettes increased in 2015, but fell slightly in 2016 in some grades. With cigarette smoking, students in the lower grades noted a lower perceived risk than did students in the 12th grade. This is believed to be an “age effect” where by the time youth fully understand the dangers of smoking, many have already started the behavior (Johnston 39). Trends in the perceived risk of using smokeless tobacco has decreased and may be due to generational forgetfulness (Johnston 41). When considering vaping, the risk that youth perceive has increased in 2016. However, the perceived risk of e-cigarettes is still one of the lowest levels for the regular use of all drugs, including alcohol (Johnston 43). Perceived risk may be a factor in future usage of these products. This further highlights the importance of early education of drug, tobacco and alcohol prevention.

Despite the strong trend of disapproval for cigarette and smokeless tobacco, we are still raising youth who continue to use cigarettes, cigars and other tobacco products. According to the Centers for Disease Control, cigarette smoking is responsible for more than 480,000 deaths per year in the United States. If smoking continues at the current rate among our United States youth, 5.6 million of our youth who are younger than 18 years of age are expected to die prematurely from smoking related illnesses (“Smoking and Tobacco Use”).
REFERENCES


Drug Trends and Facts: Part 2
The table below shares several current drug trends and facts about each drug or method for abusing the drug. This is not an all-encompassing list and is constantly changing. The list originated in the HEALTH ROCKS!® Guidebook and has since been expanded and updated. Add any additional local drug trends into the blank boxes below.

<table>
<thead>
<tr>
<th>SUBSTANCE</th>
<th>LOOKS LIKE</th>
<th>HOW IT IS USED/ABUSED</th>
<th>EFFECTS ON THE BODY AND BRAIN</th>
<th>IMPORTANT TO KNOW</th>
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<tbody>
<tr>
<td>Bath Salts</td>
<td>White or brown crystal-like powder and sold in small plastic or foil packages. Sometimes labeled as plant food, jewelry cleaner or phone screen cleaner.</td>
<td>Swallowed, snorted through the nose, inhaled or injected with a needle. Snorting or injecting is the most harmful.</td>
<td>Bath Salts cause dangerous health effects with people becoming psychotic and violent. Nosebleeds, sweating, heart problems, paranoia, hallucinations, panic attack. Bath salts raise the level of dopamine in the brain circuits that control reward and movement. Feelings of agitation and energy at the same time.</td>
<td>May be ordered on the internet. Bath Salts are made with synthetic cathinones. Two cathinones that were deemed illegal in 2012 and are used in Bath Salts are mephedrone and MDPV. Bath salts are man-made cathinone products and are not to be confused with products such as Epsom salts which are made from magnesium and sulfate that people add to bathwater to ease stress and relax muscles.</td>
</tr>
<tr>
<td>Molly</td>
<td>&quot;Molly&quot; is slang for molecular and refers to the pure crystalline powder form of MDMA.</td>
<td>Pill, tablet or capsule. Pills may be colored and have cartoon images on them.</td>
<td>Increases heart rate and blood pressure, muscle tension, teeth clenching, nausea, blurred vision, faintness, chills or sweating, higher body temperature, increased risk for unsafe sex. High levels of the drug in the bloodstream can increase the risk for seizures and affect the heart’s ability to beat normally. MDMA increases the activity of serotonin, dopamine and norepinephrine.</td>
<td>Known as a &quot;club drug&quot;. Is frequently mixed with synthetic cathinone, the chemicals in bath salts, caffeine, dextromethorphan, amphetamines, PCP or cocaine.</td>
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<tr>
<td>Robotripping</td>
<td>Cough Syrup</td>
<td>Ingesting large doses of cough medicine.</td>
<td>Hallucinations, confusion, loss of coordination, numbness, feeling sick to the stomach, increased blood pressure, faster heartbeat, lack of oxygen to the brain leading to brain damage. Increases dopamine in the brain increasing feelings of pleasure and causing important messages to get lost causing effects ranging from lack of motivation to other health problems.</td>
<td>High doses may lead to addiction and death. Often used with other drugs and alcohol.</td>
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<tr>
<td>&quot;Dirty Sprite&quot;</td>
<td>Brightly colored drink. Mix of cough syrup with codeine, soft drink and in some case, candy. May also be made with cough syrup containing dextromethorphan</td>
<td>Ingesting cough medicine, usually containing codeine, mixed with soda.</td>
<td>Taken in large quantities, can lead to hallucinations, sedation and altered levels of consciousness. Promethazine-codeine cough syrup can cause slowed heart rate and breathing. High doses can lead to overdose and death. Increased levels of dopamine in the brain.</td>
<td>Mentioned in numerous hip hop and rap songs. Even more dangerous when taken with alcohol or other drugs.</td>
</tr>
<tr>
<td>Spice</td>
<td>Mixture of herbs and manmade chemicals. Often disguised as incense.</td>
<td>Often smoked by rolling it in papers like marijuana or handmade tobacco cigarettes. Sometimes mixed with marijuana. May be made into an herbal tea for drinking. Some may purchase a liquid to vaporize in e-cigarettes.</td>
<td>Feelings of relaxation or mild changes in perception, extreme anxiety, paranoia, hallucinations, fast heart rate, vomiting, anxiousness, confusion, violent behavior, suicidal thoughts. As a new drug, research is beginning. Currently, it is found that the chemicals attach to the same nerve cell receptors as THC. THC is the mind-altering chemical found in marijuana. Other chemicals in Spice remain unidentified and it is not clear their effects.</td>
<td>Spice remains a popular illegal drug used by students.</td>
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<tr>
<td>Inhaling Alcohol</td>
<td>A bottle or straw with vapor (looks like a nebulizer vapor) coming out of it. “Smoking” the vapors.</td>
<td>Alcohol is turned into “smoke” or vapor. Can be done by dropping a carbon dioxide pill into container with alcohol, pouring alcohol over dry ice or pumping pressurize air into a bottle of liquor. Vapor is then inhaled.</td>
<td>When inhaled, alcohol goes directly into the lungs and circumvents the liver which would have metabolized the alcohol. The alcohol goes directly to the brain. Alcohol vapors can damage the lungs. Inhaling alcohol vapors can dry out the nasal passages and mouth leading to infection.</td>
<td>Youth are inhaling alcohol to get high without ingesting calories. Youth often don’t know how much alcohol they have consumed. Youth may not believe it is illegal to inhale the alcohol because they are not drinking it. No vomiting when too much is consumed.</td>
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<tr>
<td>Alcohol Gummy Bears</td>
<td>Gummy candy soaked in liquor, often vodka, but also tequila or rum.</td>
<td>Candy is soaked in alcohol and eaten.</td>
<td>Youth do not know how much alcohol they have ingested.</td>
<td>Recipes are readily available online. Easily mistaken for only candy without any signs of alcohol.</td>
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<tr>
<td>Eyeball Shots</td>
<td>Ingesting alcohol through the eye socket.</td>
<td>The user holds the bottle to their eye and pours the liquid directly into the eye.</td>
<td>Eyeballing produces a quick buzz without the smell of alcohol. Alcohol can scar and burn the cornea and even cause blindness.</td>
<td>Alcohol is quickly absorbed through the eye and produces a quick high. Amount of alcohol absorbed thought to be too small to cause a “buzz”.</td>
</tr>
<tr>
<td>Tampon/Rectal Shots</td>
<td>Tampons soaked in alcohol, or consuming alcohol rectally.</td>
<td>Tampons inserted rectally or vaginally; alcohol consumed rectally through “beer bongs” or “beer funnels.”</td>
<td>Alcohol is absorbed directly into the bloodstream, causing a quicker high; alcohol poisoning.</td>
<td>Alcohol absorbed directly into the bloodstream, no vomiting when too much is consumed.</td>
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<tr>
<td>Pharm Party</td>
<td>Event where teens swap prescription drugs.</td>
<td>Assortment of drugs thrown in a container or on a table. Teens grab handfuls to take with them.</td>
<td>Teens don’t know what drugs they are taking and/or mixing, potentially taking lethal combinations and doses.</td>
<td>Using the phrase “Skittles Party” makes it less obvious to adults.</td>
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### Drug Trends and Facts: Part 2

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<tr>
<td>Household Spices</td>
<td>Ground cinnamon</td>
<td>Swallowing one tablespoon of cinnamon without water. Nutmeg – drinking, ingesting and smoking large quantities.</td>
<td>Cinnamon coats and dries the mouth and throat, causing gagging, vomiting, coughing, choking and throat irritation. Nutmeg contains myristicin which is a natural compound known to cause hallucinations and euphoria in large doses.</td>
<td>Cinnamon Challenge - People with asthma or other respiratory conditions are at greater risk of having this result in shortness of breath and trouble breathing.</td>
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<td>Caffeine Powder</td>
<td>Powder, Bulk bags are available online.</td>
<td>Caffeine powder is legal and available for sale online.</td>
<td>Teens may see this as a way to lose weight or stay awake for finals. Besides death, caffeine overdose can cause fast, erratic heartbeat, seizures, vomiting, diarrhea and disorientation.</td>
<td>One teaspoon of caffeine powder is equivalent to 25 cups of coffee which is a lethal amount. Caffeine is generally safe at the dosages contained in popular beverages. Caffeine powder is extremely potent making it easy to overdose.</td>
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<tr>
<td>E-Cigarettes:</td>
<td>Wax, butter, oil or amber colored glass shards, called “shatter”.</td>
<td>The marijuana concentrate is smoked in a specific bong or pipe. A special e-cigarette can also be used.</td>
<td>The marijuana concentrate has some non-traditional symptoms. Some users report hallucinations, passing out, extreme highs (even from small portions) and high levels of impairment.</td>
<td>Marijuana concentrates are extracted from traditional the green plant. The end product has a much higher amount of THC, or tetrahydrocannabinol, the chemical compound in marijuana. Once packaged it can look very innocent. The concentrate is often laced with other drugs or put into food. The food looks like traditional candy. Butane is used in the concentration process. Butane is highly flammable.</td>
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<td>• Marijuana concentrates</td>
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<td>• Dabs</td>
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<td>• BHO</td>
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<tr>
<td>• 710 (the word “OIL” turned upside down)</td>
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E-Cigarettes and Vaping
INTRODUCTION

The use of e-cigarettes is a threat to the progress made toward the prevention of smoking in youth. The youth appeal and the wide availability of e-cig products make it readily available.

Hannah was in middle school the first time she vaped from a friend’s e-cig. The flavor of the e-juice was called Zebra Milk. It tasted something like strawberry ice cream, Hannah’s favorite ice cream. It was easy for her to find a zebra print vape pen online. One click was all it took for her to lie about her age and order it. The cost of the e-cig and a juice called pink starburst cost less than she had saved from her birthday money.

Hannah easily hid her e-cig habit from her family. It wasn’t until 2 years later her mother confronted her. Hannah had already started to smoke regular cigarettes.

DESCRIPTION & DEFINITIONS

Electronic Cigarettes are battery-operated devices that heat a flavored liquid containing nicotine and other chemicals to form a vapor that is inhaled. E-cigarettes are designed to simulate traditional cigarettes (“Electronic Cigarettes”).

E-Cig - Another name for an e-cigarette

Vaping - The act of inhaling from the vapor of an e-cigarette.

Other names for e-cigarettes include but are not limited to: e-cigs, vape pens, hookah pens, vape pipes, 510, eGo, Smoke Juice, Mod, and PV (Personal Vaporizer).

Other names for the flavored liquid used in the electronic cigarettes include but are not limited to: e-juice, juice, e-liquid, vape juice, smoke juice.

Data supports the idea that youth who use e-cigs are more likely to try conventional cigarettes (“Know the Risks”). The use of e-cigs and vaping among middle and high school youth is increasing. Nicotine is a product found in the flavored juice used in e-cigs. The amount of nicotine and other chemicals in e-cigs is difficult to regulate due to the high number of juices available. More troubling is the fact that the e-cigs are used to smoke marijuana and other drugs.

What Should Trusted Adults Do?

Communicate
1. Clearly communicate the risks of alcohol and drug use.
2. Let your child know you disapprove of any drinking or drug use: Kids who believe their parents will be upset if they try drugs are 43 percent less likely to do so.
3. Use teachable moments to talk about drinking and using drugs, such as reading a news story or watching a movie.
4. Frequently talk and listen to your kids about how things are going in their lives.

Monitor
1. Know WHO your child is with.
2. Know WHAT he or she is doing.
3. Know WHERE your child will be.
4. Know WHEN your child is expected home.
5. Know who your child’s friends are – communicate with their parents.
6. Establish and enforce rules – including a clear “no use” policy.
(Source: PACT 360 The “Parents: You Matter” Tip Sheet)
HEALTH ROCKS!®
E-Cigarettes and Vaping

SCOPE OF ISSUE/PROBLEM (STATISTICS)

The use of e-cigarettes in high school and middle school youth is increasing. The Center for Disease Control (CDC) found the use of electronic cigarettes increased among middle and high school students from 2011 to 2015. About 5 of every 100 middle school students (5.3 percent) reported in 2015 that they used electronic cigarettes in the past 30 days, an increase from 0.6 percent in 2011. Sixteen of every 100 high school students (16.0 percent) reported in 2015 that they used electronic cigarettes in the past 30 days, an increase from 1.5 percent in 2011 (“Youth and Tobacco Use”).

The use of e-cigarettes is a threat to the progress made toward the prevention of smoking in youth. The increases in e-cigarette and hookah use offset declines in use of more traditional products such as cigarettes and cigars. There was no decline in overall tobacco use between 2011 and 2014. Overall rates of any tobacco product use were 24.6 percent for high school students and 7.7 percent for middle school students in 2014. In 2015, one in four high school students and one in 13 middle school students reported current use of any tobacco product (“E-cigarette use triples”).

Youth who use e-cigarettes are more likely to try conventional cigarettes in the future. The number of middle and high school students who have used e-cigs and not conventional cigarettes increased by nearly 3 times between 2011 to 2013. Only 21.5 percent of youth who have never used e-cigs report they are likely to try a conventional cigarette in the next year. This number jumps to 43.9 percent if the youth has used an e-cig (“E-cigarette use triples”).

EFFECTS ON THE BODY AND BRAIN

Based on current information, we know there are health risks when people use e-cigarettes. Most e-cig products contain nicotine. Harm to the body and brain by the use of nicotine is well documented. Nicotine is known to have effects on the cardiovascular system. The use of nicotine on the adolescent brain can lead to long-term consequences that include nicotine addiction, permanent impulse control problems, and learning difficulty and mood disorders. Studies have also shown that youth who use e-cigarettes have more respiratory problems and take more days off from school (Nierenberg).

“Compared with older adults, the brain of youth and young adults is more vulnerable to the negative consequences of nicotine exposure,” noted Surgeon General, Dr. Vivek H Murthy (“Surgeon General Sounds the Alarm on E-cigarettes”).

The other chemicals present in vaping and second-hand vapor are also a concern. The aerosols produced by the chemicals in e-juice, enter into the user’s lungs and leave chemical residue behind. Flavorings contain diacetyl, a chemical linked to a serious lung disease; volatile organic compounds such as benzene, is found in car exhaust; and heavy metals, such as nickel, tin, and lead are included in e-cig juice (Nierenberg).

The liquid in e-cigarettes can cause nicotine poisoning if someone drinks, sniffs, or touches it. Recently there has been a surge of poisoning cases in children under age five. The concentrated nicotine in an e-cigarette is also a concern for users changing cartridges and for pets that may come into contact with it (Nierenberg).

These health concerns, in part, prompted the FDA to create new regulations. It is now illegal to sell e-cigarettes, hookah tobacco, or cigars in person or online to anyone under age 18 (“Electronic Cigarettes”).
SOURCE: WHERE DO TEENS GET THESE?

Although federal law prohibits the use of e-cigarettes by anyone under 18 years of age, they are easily obtained by youth. E-cigs are available online at numerous sources with limitless products and information. E-cigs are also readily available at convenience stores and specialty shops. Youth are attracted to e-cigs because of the youthful flavors of the e juice: cola, cheesecake, kettle corn or even berry crunch (“Electronic Cigarettes”).

HOW ARE TEENS ABUSING THESE DRUGS?

A study of high school students found that one in four teens reported using e-cigarettes for “dripping,” a practice in which users produce and inhale vapors by placing drops of e-liquids directly onto the heated internal coils of the e-cigarette. More research will need to be done to study the potential risks of this practice (Bach 2).

Unfortunately, e-cigs can be used for more than just over the counter e-Juice. The traditional green leafy marijuana can be heated to extract an oil or wax that is a concentrated substance with a much higher level of THC or tetrahydrocannabinol, the chemical compound in marijuana. This concentrated product looks like wax, butter, oil or amber colored glass, called “shatter”. This highly concentrated marijuana has caused severe reactions in some users including passing out, hallucinations and high levels of impairment. It is popular to use this drug in an e-cig because it is discreet and puts out very little odor. It is difficult to determine what is in the vape pen. If the pen is opened, the waxing substance may have a slight smell of burnt marijuana. Just by looking at the outside of the e-cig, you cannot identify what is on the inside. If you are going to open an e-cig, it is recommended you use gloves to prevent coming into contact with something harmful (Galloway).

Synthetic drugs and methamphetamine can also be used in e-cigarettes. The amount of drugs that are inhaled by a user through an e-cig is not easily regulated. The user has no idea how much of a drug they are inhaling. In addition, the methods used to create “designer drugs” can vary since there is no control over the quality. The resulting chemical components vary greatly and the health impact of the substance can have severe consequences on a person’s health (Galloway).

There is no way of knowing what a person is using in their vaping device without doing a forensic test. E-cigarettes are very easily concealed from parents, school authorities and even police. Because of the small size of an e-cigarette and the lack of a smoke smell, it is relatively easy to hide. Many e-cigs look like a pen or pencil and can be hidden in plain sight.
**SIGNS OF ABUSE**

**SMELL:** E-cigs do not give off smoke only a vapor. A parent will not smell cigarette smoke but may get a slight sweet or fruity smell.

**SIZE:** E-cigarettes are small enough to look like a regular pen or even a thumb drive. Look closely at such items. If there are holes in each end, it may be an e-Cig.

**MAIL:** Vaping material can be purchased online. Your child may receive unexplained shipments to your home.

**DRYNESS:** The e-cig may dry out your child’s mouth and skin or even cause nosebleeds.

**CAFFEINE:** Some e-cig users develop a sensitivity to caffeine. You may see a change in what your child drinks.

**MISCONCEPTIONS**

E-cigs are touted as a tool to reduce the use of traditional tobacco products. Nicotine is a key component of the e-cig juice therefore the use of e-cigs can be addictive.

Youth who use e-cigarettes are more likely to try conventional cigarettes in the future ("E-cigarette use triples").

The marketing of e-cigs and e-cig juice is to reach a youth audience. Marketing is tied to youth oriented video games, social media, sports and music. Through this advertising, e-cigarettes are portrayed as safe. Actually the e-juices are highly unregulated and may cause harm.

**WHAT CAN YOU (A TRUSTED ADULT) DO?**

When speaking with your child, make it clear that you view smoking and vaping as the same thing. Rules that you have about smoking in your home will also be the rules you enforce for vaping.

The high availability and popularity of e-cigs puts this product in the hands of both middle and high school youth. Part of the excitement of e-cigs is the satisfaction of being part of a group. The showmanship of vaping gives youth a way to connect with others. Users do “tricks” to impress; vape rings, vaping clouds and vape balls are some of the most common. Social media is another way to fit into the vaping community. Get to know with whom your child is spending time. Encourage your child to be part of positive youth development groups. Be aware of the social media content your child is viewing.

If your child argues that vaping is safer than regular cigarettes, use this fact sheet to help dispel the misconceptions of e-cigarettes and vaping.
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Prescription and Over the Counter (OTC) Drugs
INTRODUCTION

When thinking about teens and drug use, prescription and over the counter (OTC) drugs may not be considered an issue. The misuse of prescription and OTC drugs is more common than most think.

Justin was just 17 years old when he took his own life. It took a while for his parents to connect Justin’s recent weight and muscle increases with his uncharacteristic mood swings and violent, angry behavior. Without his parents knowing, Justin had been using a cocktail of steroids and other hormones to bulk up, and the drugs were wreaking havoc on his body and emotions. Justin went to his room and hanged himself. It was only after his death that the whole picture came into focus.

DESCRIPTION & DEFINITIONS

A “prescription drug” is a drug that is available only with authorization from a healthcare practitioner to a pharmacist (“How Teens Abuse Medicine”). The prescription drugs that are most abused fall under three categories:

Opioids - Medications that relieve pain such as Vicodin®, OxyContin®, or codeine (“National Institute on Drug Abuse for Teens”). Abusing opioids can cause severe respiratory depression or death and can be addictive.

Depressants - Substances that can slow brain activity such as benzodiazepines, are used to relieve anxiety or help someone sleep, like Valium® or Xanax® (“The National Institute on Drug Abuse for Teens”). Abusing depressants can cause sleepiness, impaired mental functioning, blurred vision, nausea and can be addictive.

Stimulants - Increase attention and alertness and are used for treating attention deficit hyperactivity disorder (ADHD) include drugs such as Adderal® or Ritalin® (“The National Institute on Drug Abuse for Teens”). Abusing stimulants can cause irregular heartbeat, paranoia, high body temperatures and can be addictive.

An “over-the-counter” medication is a drug that is sold without a prescription (“How Teens Abuse Medicine”).

SCOPE OF ISSUE/PROBLEM (STATISTICS)

Although most people take prescription medications responsibly, 6.5 million persons or 2.5 percent of the population (12 years and older) were current users of prescription drugs for non-medical reasons in 2013 (“The National Institute on Drug Abuse”).

According to a national survey, 12 percent of high school students took a prescription drug without a doctor’s prescription once or more in the past year (The National Institute on Drug Abuse, 2017). When looking at high school students’ use by state, Arkansas had the highest use with 22 percent of students reporting they took a prescription drug without a doctor’s prescription, while Utah had the lowest use with 8.7 percent of students reporting that they took a prescription drug without a doctor’s prescription (“High School Student Substance Abuse”).

What Should Trusted Adults Do?

Communicate

1. Clearly communicate the risks of alcohol and drug use.
2. Let your child know you disapprove of any drinking or drug use: Kids who believe their parents will be upset if they try drugs are 43 percent less likely to do so.
3. Use teachable moments to talk about drinking and using drugs, such as reading a news story or watching a movie.
4. Frequently talk and listen to your kids about how things are going in their lives.

Monitor

1. Know WHO your child is with.
2. Know WHAT he or she is doing.
3. Know WHERE your child will be.
4. Know WHEN your child is expected home.
5. Know who your child’s friends are – communicate with their parents.
6. Establish and enforce rules – including a clear “no use” policy. (Source: PACT 360 The “Parents: You Matter” Tip Sheet)
EFFECTS ON THE BODY AND BRAIN

Teenage years can be a risky time as the brain functions of decision making, impulse control, emotional control, future thinking, and risk-benefits analysis are still developing (Volkow). Teens often place more emphasis on potential benefit versus cost of risky activities (Volkow). This is a direct link to drug usage, particularly prescription and OTC usages because teens may not perceive them as “bad drugs” (“How Teens Abuse Medicine”).

Drug abuse in teens leads to poor behavior and academic performance, as well as dropping out of school. Additionally, this also leads to unplanned pregnancies, violence and infectious diseases (Volkow). The early use of drugs changes how the brain develops, which can lead to addiction and other serious problems. (Volkow). When adolescents experience a transition or change in their life, such as transitioning from middle school to high school, the risk of drug abuse increases greatly for reasons such as being exposed to abusable substances for the first time or being influenced by drug use by older teens in their new environment (Volkow).

“The brain continues to develop into adulthood and undergoes dramatic changes during adolescence,” noted Nora D. Volkow, M.D., Director of National Institute on Drug Abuse

At the same time, many behaviors that are a normal aspect of their development, such as the desire to try new things or take greater risks, may increase teen tendencies to experiment with drugs. Some teens may give in to the urging of drug-using friends to share the experience with them (Volkow).

WHY TEENS ABUSE PRESCRIPTION DRUGS

Teens use prescription or OTC drugs for a variety of reasons (Volkow). The simplest of reasons include to get high or feel better (How Teens Abuse Medicine). Teens who suffer from stress-related disorders and depression may try prescription drugs. Others take prescription drugs because they think it will help them concentrate better and in turn, get better grades. A common misuse of prescription or OTC substances is to perform better in sports. Others have a curiosity to try a daring behavior which is a normal stage of development for teens (Volkow).

In some cases, boys and girls will abuse some type of prescription drugs for a specific purpose. For example, boys are more likely to abuse prescription stimulants to get high, while girls tend to abuse them to stay alert or lose weight (“How Teens Abuse Medicine”).
WHERE DO TEENS GET THESE?

Where do teens get their prescription drugs? Many teens obtain prescription drugs from their family or friends. Teens find prescription drugs and OTC drugs in their home medicine cabinet or on the kitchen shelf. For persons aged 12 or older who used pain relievers, non-medically in the past year:

- 53.0% got the drug they used most recently from a friend or relative for free.
- 21.2% received them through a prescription from a doctor.
- 10.6% bought the drug from a friend or relative.
- 4.3% got pain relievers from a drug dealer or other stranger.
- 0.1% bought them on the Internet.

(“The National Institute on Drug Abuse”)

HOW ARE TEENS ABUSING THESE DRUGS?

After marijuana and alcohol, prescription drugs are the most commonly abused substances by teens. Similar to illicit drugs, prescription drugs affect the brain and body when used for other reasons than they are prescribed. When prescription drugs are abused, they can be addictive and have harmful health effects such as overdose (especially when taken along with other drugs or alcohol). An overdose is defined by when a drug is swallowed, inhaled, injected, or absorbed through the skin in excessive amounts and injures the body (“How Teens Abuse Medicine”). Overdoses are either intentional or unintentional. If the person taking or giving a substance did not mean to hurt themselves or others, then it is unintentional. Some teens use prescription and/or OTC drugs for a variety of reasons such as trying to boost their test performance, improve their grades and physical appearance, boredom and more (“How Teens Abuse Medicine”).

MISCONCEPTIONS

“Street drugs” is a term that refers to drugs that are commonly known as illegal drugs such as cocaine, heroin, methamphetamine, marijuana, and others (“How Teens Abuse Drugs”). Many teens consider prescription drugs to be safer than “street drugs” for a variety of reasons:

- These are medicines and can be obtained from doctors, dentists, pharmacies, friends or family members.
- It is not necessary to buy them from traditional “drug dealers.”
- Information on the effects of these drugs is widely available in package inserts, advertisements, and on social media sites.

(“How Teens Abuse Medicine”)
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INTRODUCTION

Opioids are a class of drug that are routinely used to fight pain. Legally prescribed opioids are oxycodone (OxyContin®), hydrocodone (Vicodin®), codeine, morphine, fentanyl, and many others. Heroin is a highly addictive, illegal opioid. The use of heroin across the United States has increased among men and women, most ages, and all income levels. As heroin use has increased so have the numbers of deaths caused by heroin overdose (“Today’s Heroin Epidemic”).

“From the day I started using, I never stopped. Within one week I had gone from snorting heroin to shooting it. Within one month I was addicted and going through all my money. I sold everything of value that I owned and eventually everything that my mother owned. Within one year, I had lost everything. I lied, I stole, I cheated.”—Alison (“The Truth about Heroin”)

“Your whole day is spent finding or taking drugs. You get high all afternoon. At night, you put yourself to sleep with heroin. And you live only for that. You are in a prison. You beat your head against a wall, nonstop, but you don’t get anywhere. In the end, your prison becomes your tomb.”—Sabrina (“The Truth about Heroin”)

DESCRIPTION & DEFINITIONS

Opioid drugs are a class of drugs used to reduce pain. Opioids react powerfully on nerve cells in the body and brain causing a euphoric response. Prescribed opioid medication, such as Vicodin®, OxyContin®, or codeine, is safe to treat pain when taken for a short time, as directed by a doctor. Regular use of prescribed opioid medication can produce dependence/addiction. Misuse or abuse of opioid pain relievers can lead to fatal overdose. The epidemic of prescription opioid abuse has led to increased use of heroin (“Today’s Heroin Epidemic”).

Heroin is an illegal, highly addictive drug. It is in a class of drugs called opioids. Other opioids include codeine, OxyContin, and Vicodin.

Heroin is made from the resin of poppy plants. This resin is refined to make opium and morphine and then further refined to make heroin (“Heroin Drug Facts”).

The color of heroin will differ depending on what else is mixed with it. It can be a white, rose gray or brown powder. Black Tar Heroin is a black, sticky substance. Some substances used to dilute or “cut” heroin are sugar or caffeine. Heroin is sometimes “cut” or mixed with strychnine, a stimulant found in rat poison (“Heroin Drug Facts”).

Most heroin is injected, creating additional risks for the user, who faces the danger of HIV or other infection on top of the pain of addiction. Heroin can also be smoked or snorted (“Today’s Heroin Epidemic”).

What Should Trusted Adults Do?

Communicate
1. Clearly communicate the risks of alcohol and drug use.
2. Let your child know you disapprove of any drinking or drug use: Kids who believe their parents will be upset if they try drugs are 43 percent less likely to do so.
3. Use teachable moments to talk about drinking and using drugs, such as reading a news story or watching a movie.
4. Frequently talk and listen to your kids about how things are going in their lives.

Monitor
1. Know WHO your child is with.
2. Know WHAT he or she is doing.
3. Know WHERE your child will be.
4. Know WHEN your child is expected home.
5. Know who your child’s friends are – communicate with their parents.
6. Establish and enforce rules – including a clear “no use” policy. (Source: PACT 360 The “Parents: You Matter” Tip Sheet)
A highly addictive drug known as “cheese heroin” is a blend of black tar heroin and over-the-counter cold medication (“The Truth about Heroin”).

**Street Names of Heroin:** Big H, Brown Sugar, H, Hell Dust, Horse, Junk, Nose Drops, Skag, Smack, Thunder, China White, Dope, Black Tar, and Ska (“Heroin Drug Facts”).

**Naloxone** is a medication by medical professionals use to rapidly reverse opioid overdose (“Heroin Drug Facts”).

**WARNING:** Even a single dose of heroin can start a person on the road to addiction.

**SCOPE OF ISSUE/PROBLEM (STATISTICS)**

- 45 percent of people who used heroin were also addicted to prescription opioid painkillers.
- Heroin use more than doubled among young adults ages 18–25 in the past decade.
- More than 9 in 10 people who used heroin also used at least one other drug (“Today’s Heroin Epidemic”).
- Eighty percent of people using heroin first misused prescription opioids. Only a small fraction of people who misuse prescription drugs switch to heroin (“The National Institute on Drug Abuse Blog Team”).
- The number of people reporting current heroin use nearly tripled between 2007 and 2014.
- Deaths involving heroin more than tripled between 2010 (3,036) and 2014 (10,574) – a rate faster than other illicit drugs.
- In addition, heroin was the greatest drug threat reported by 45 percent of state, local, and tribal law enforcement agencies responding to the 2016 National Drug Threat Survey (“DEA Releases 2016 National Heroin Threat ”).
- The high school students who reported heroin use, 77.3 percent said they also had taken prescription opioids at some point. (“Nonmedical Opioid Use and Heroin Use”)
- Most sources predict the use of heroin to continue to increase if nothing is done to stop it.
EFFECTS ON THE BODY AND BRAIN.

Heroin enters the brain rapidly and changes back into morphine. It attaches to receptors on neurons located in the brain, especially those involved in feelings of pain and pleasure. These receptors are also located in the brain stem, which controls important processes, such as blood pressure, arousal, and breathing (“Heroin Drug Facts”).

Short-term effects of heroin
- A rush of good feelings
- Clouded thinking
- Vomiting
- Drowsiness
- Decrease in body temperature

These effects can last for a few hours, and during this time people feel drowsy, and their heart rate and breathing slow down. When the drug wears off, people experience a depressed mood and often crave the drug to regain the good feelings (“Heroin Drug Facts”).

Long-term effects of heroin
- Bad teeth and gums
- Constipation
- Sweating and itching
- Collapsed veins
- Insomnia
- Arthritis
- Poor body condition
- Weak immune system
- Memory loss
- Lower intellectual performance
- Lower sexual capacity
- Risk of HIV, hepatitis, and other infectious disease from shared needles (“Heroin Drug Facts”)

Regular heroin use changes the way the brain works. Using heroin repeatedly can result in:
- *tolerance*: adaption to a drug to achieve the same feeling or “high”
- *dependence*: the need to continue use of the drug to avoid withdrawal symptoms
- *addiction*: people have trouble stopping using drugs because of changes to how the brain functions after repeated drug use. People that are addicted crave the drug just to feel “normal.” Addiction is a brain disease.

(“The National Institute on Drug Abuse Blog”).

In an overdose, a person can stop breathing, which is often fatal if immediate action is not taken by a health care professional.

Withdrawal from heroin is a brutal experience on both the body and the brain. It may include nausea, vomiting, diarrhea, tremors, agitation, severe depression, anxiety, and drug cravings. The feelings of withdrawal can last for weeks, months or years. Professional help is most always required (“The Truth about Heroin”).
SOURCE: WHERE DO TEENS GET THESE?

A friend, or friend of a friend, that is using heroin usually introduces a person to heroin use. Heroin may be at a party and a youth uses it for any number of reasons. The drug may even be free the first time it is used. Through friends to family, boyfriend to girlfriend, good friend to good friend, teammate to teammate, the connection to the source of heroin is made. Heroin, like most illegal drugs, can be purchased nearly anywhere.

The user buying heroin on the street never knows the actual strength of the drug in that particular packet. Thus, users are constantly at risk of an overdose. The people selling these drugs will say anything to sell it. The sellers will never admit to the dangers of taking heroin (“The Truth About Heroin”).

HOW ARE TEENS ABUSING THESE DRUGS?

Today’s heroin is available in various forms that are easier to consume and more affordable than in past decades. It is more tempting than ever. A young person who might think twice about putting a needle in their arm may more readily smoke or sniff the same drug. However, this is falsely reassuring and may give one the idea that there is less risk. The truth is that heroin in all its forms is dangerous and addictive. The highly addictive “cheese heroin” is only a couple of dollars a hit (a dose) and children as young as nine have been rushed to hospital emergency rooms for heroin withdrawal (“The Truth about Heroin”).

SIGNS OF ABUSE

The table below contains just some of the signs of heroin abuse.

<table>
<thead>
<tr>
<th>PARAPHERNALIA</th>
<th>APPEARANCE</th>
<th>ACTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Burnt spoons</td>
<td>• Tiny pupils</td>
<td>• Vomiting</td>
</tr>
<tr>
<td>• Tiny baggies</td>
<td>• Sleepy eyes</td>
<td>• Scratching</td>
</tr>
<tr>
<td>• Tan or whitish powdery residue</td>
<td>• Tendency to nod off</td>
<td>• Slurred speech</td>
</tr>
<tr>
<td>• Dark, sticky residue</td>
<td>• Slow breathing</td>
<td>• Complaints of constipation</td>
</tr>
<tr>
<td>• Small glass pipes</td>
<td>• Flushed skin</td>
<td>• Complaints of nausea</td>
</tr>
<tr>
<td>• Syringes</td>
<td>• Runny nose</td>
<td>• Neglect of grooming</td>
</tr>
<tr>
<td>• Rubber tubing</td>
<td></td>
<td>• Failure to eat</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Covering arms with long sleeves</td>
</tr>
</tbody>
</table>
**MISCONCEPTION**

Many people do not believe the addiction to heroin is a threat to them. Sam, a 15-year-old heroin addict describes heroin addiction like this “When you first shoot up, you will most likely puke and feel repelled, but soon you’ll try it again. It will cling to you like an obsessed lover. The rush of the hit and the way you’ll want more, as if you were being deprived of air—that’s how it will trap you.” (“The Truth About Heroin”).

Heroin is often referred to as an inner city drug or an urban problem. It surprises many to know the Department of Agriculture (USDA) is the lead agency of interagency efforts to address the serious heroin and opioid epidemic spreading through our country. The USDA is well equipped to reach the rural areas of America where the rates of heroin use and overdoses are particularly high and growing (USDA).

The use of heroin has found a new more diverse population. It has spread to the suburban and rural areas, higher income users, younger users, and more racially diverse users. It has been said, there is no longer a typical heroin user (USDA).

**WHAT CAN YOU (A TRUSTED ADULT) DO?**

Certain factors in a young person’s life can help protect them from the risk of drug misuse and abuse. Youth attending a prevention class, youth committed to doing well in school, and youth with a strong positive youth-adult relationship all have less of a chance to misuse or abuse drugs. It has been shown that if youth must use a prescribed opioid, they may be less likely to experiment with heroin, if they are allowed to use a lower dose of prescription opioid or a long-acting opioid prescription. Professional medical staff should be consulted with concerns (“Preventing Heroin Use” 5).
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HEALTH ROCKS!

Healthy Friendships: I Have a Choice!
Title: Healthy Friendships: I Have a Choice!

Grade Level: Beginner Level

Lesson Length: 30-45 minutes

Timeline:
- Opening Activity #1 – Friendship Discussion - 5 minutes
- Activity #2: Uniquely Me - 5-10 minutes
- Activity #3: Healthy Friendship Scenarios -15 minutes
- Activity #4: Sharing with Others: Reflection Activity - 5-10 minutes

Life Skills: Nurturing Relationships, Healthy Lifestyle Choices, Critical Thinking

Connection to HEALTH ROCKS!* Curricula: Beginning Level – Section 2: What Influences Me; Chapter 4: Oh, The Pressure

Learning Objectives:
By the end of the lesson, students will:
- Define a healthy friendship with peers.
- Discover proactive choices in conflict resolution with friends.
- Identify ways to handle situations where peers are making unhealthy choices.
- Share with others how to have healthy friendships

National Health Educational Standard:
- Standard 4 – Students will demonstrate the ability to use interpersonal communication skills to enhance health and avoid or reduce health risks

Materials List:
- Healthy Relationship Scenarios - Teacher Resource 1
- Flip chart, poster or white board
- “Twitter” logo – or similar social media design
- Sticky notes
- Pencils

Preparation:
- Make copy of Healthy Friendships Scenarios – Teacher Resource 1 – One scenario per group.
- Prepare the Reflection Activity
  - Glue the “Twitter” logo on the flip chart paper or white board.
  - Write the words, “Twitter Feed” at the top of the paper/board
Introduction:
Everyone here knows what it means to be a friend to someone. However, do you know what it means to have a healthy friendship?

OPENING ACTIVITY 1: FRIENDSHIP DISCUSSION

State to the Students:
A friendship can be defined as the way two people are connected. Today our lesson will be about having a healthy friendship with your peer(s). A peer could be considered as a classmate, teammate, friend or someone your own age. A healthy friendship is when both people, or many people, treat each with respect. Treating each other with respect means they don't call each other names or put each other down. They treat people the way they want to be treated. A healthy friendship also means when conflict arises, it is worked through and not avoided. Peers in a healthy friendship help each other make healthy choices about drugs, alcohol and tobacco and help each other if they need it.

Instructions:
As a large group, students will generate a list of words that would be used to define a healthy friendship. Students will think of the word, “friendship” as a relationship you would have with your peers, regardless of gender and how much time you spend with them. Record student responses on the board or on a flip chart.

Process and Apply:
• What are some of the common/most prominent words you generated?
• How would you describe a healthy friendship?
• How do you know if a friendship is healthy or unhealthy?
• How do you think people feel with they are in a healthy friendship?
• What makes a healthy friendship work?
• Why do you think friendships are sometimes difficult?

Transition:
State to the Students - Now that you are starting to get an idea about the components of a healthy friendship, there are a few other things about healthy friendships that are important to keep in mind throughout our lesson today and of course in the future. It is important to learn how to have healthy friendships with your peers and to encourage those healthy relationships with peers. Having healthy friendships with your peers will make school and activities more fun.

As you continue to discover more about healthy friendships during this session, you need to remember that having a healthy friendship is a choice everyone has. It is important to understand that having a healthy friendship requires an understanding of your peers. If you have a good understanding of your peers, a healthy friendship is easier to achieve. Having healthy friendships can help support you when you need to make other important choices in your life such as those around drugs, tobacco and alcohol.
ACTIVITY 2: UNIQUELY ME

State to the Students - Let’s discover what makes us all unique!

Instructions:
• Students will sit in a circle on the floor.
• Students will create a friendship chain.
• The friendship will start with one student standing up and stating, “I like this” or “This is something unique about me”.
• Someone else in the group with the same trait or like jumps up and they link arms.
• The second youth then states something she or he likes or that is unique about him/her.
• This continues until a chain has been formed.

Process and Apply:
• What was the best part about discovering what makes us all unique?
• Why is it important to know and understand what makes our friends unique?
• What do you think might happen if we were all the same? i.e. We liked all the same sports, foods, colors, subjects in school
• Describe how you can use what you learned about your friends today to make sure you have a healthy friendship with them?

Transition:
State to Students - Isn’t it great to learn about what makes our peers unique and what they like? Understanding each other is an important key to having a healthy friendship.
ACTIVITY 3:
HEALTHY RELATIONSHIP SCENARIOS

State to the Students - A great way to learn about healthy friendships is to read about and discuss some scenarios that describe some real life examples of relationships between youth who are your age or a little older.

Instructions:
• Students will form groups of 3-5, depending on the size of the group.
• Provide students with the healthy friendship scenarios and processing questions found in Teacher Resource 1.
• Allow the students 10-15 minutes to read through the scenarios and answer the questions as a small group.
• Following allotted time, ask each group to read their scenario and share their responses to the questions to the entire group.

Process and Apply:
• What made answering the questions at the end of the scenarios difficult?
• Why is it important to know and understand how to handle situations like these?
• What do you think might happen if situations like these happened in real life and you never said anything?
• How can having a healthy friendships with your peers help you make healthy choices about drugs, tobacco and alcohol use?
• Describe how you can use what you learned through these scenarios today to make sure you have a healthy friendships in the future.

Transition:
State to Students - You just learned how to handle disagreements with your friends, what to do when friends get jealous, and how to solve conflict in a school setting. All of these scenarios required you to make a choice in the way you responded to your friends. Today you have learned that understanding each other’s likes and unique traits help you to have healthy friendships. You have also reviewed some examples of friendship situations and discussed how to solve the conflict in the situation. You have seen that healthy friendships can help you resist the temptation to experiment with drugs, alcohol and tobacco. Next, you will be developing a tweet to share on our group’s social media feed. This tweet will let you share what you learned about healthy friendships today.
Healthy Friendships: I Have a Choice

Reflection Activity - Tweet Development

Instructions:
- Working in small groups or as individuals, students will create one tweet and write that tweet on the provided sticky note in 5-7 minutes. (One tweet per note.)
- The tweet should focus on one thing the students learned in this lesson and would like to share with other students their age.
- Explain to students that tweets are 140 characters (letters or symbols) and must include one or more creative hashtag. For example, #knowthefacts or #healthrocks.
- Provide the students with examples of tweets, if needed.
- Ask the student or small group to “post” their tweet at the front of the room on the Twitter poster you created.
- Students will discuss the findings with the class.

Conclusion:
State to Students - In this lesson, you have discovered how to have a healthy friendship with a peer. You learned that this includes knowing and understanding their likes and unique qualities, as well as learning how to resolve conflict when it arises, because it will from time to time! Remember that a key to healthy friendships is to understand that you have a choice in your decisions about your friendships and a choice in how you are going to respond to your friends and to different situations. In this lesson, you have also learned several strategies that are key in developing healthy friendships. Remember to find the right time to talk to your friends and to talk to your friends face to face. Also remember to be honest, check your body language, set boundaries, do not attack the other person, agree to disagree and compromise when possible. Developing and maintaining healthy friendships will help you resist experimenting with drugs, alcohol and tobacco.

Do
- What did you do in this lesson?
- How would you describe how to handle conflict with your peers?
- How would you handle situations in which you find out your peers are using drugs or alcohol?

Process
- How did learning about friendships help you discover if your own friendships are healthy?
- How do you think discovering unique qualities of your peers will help you have a healthy friendships in the future?

Apply
- What generalizations can you make about healthy friendships?
- How can you improve your friendships in the future?
- Describe how the scenarios could help you in the future if you discover your peers are using drugs, tobacco and alcohol.
- How are you going to share this information with a trusted adult?
REFERENCES

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“Youth to Youth Positive Interactions”
Nebraska Extension Expanded Learning Opportunities. 2015

“Healthy Relationship Middle School Educators Toolkit”
National Domestic Violence Hotline
www.loveisrespect.org

“National Health Education Standards”
Centers for Disease Control and Prevention
cdc.gov/healthyschools/sher/standards/index.htm
HEALTHY FRIENDSHIP SCENARIOS

Activity 3 - Teacher Resource 1

Healthy Friendship Scenario 1

You have recently found out that your friend Sam is drinking alcohol to make him feel better through his parents' divorce. He said his dad drinks beer each night to make him feel better so he told you that since he is sad, he has been drinking beer a couple of nights a week, too. You told Sam that there are other ways to deal with his sadness other than drinking beer. Now he is giving you the silent treatment and won’t talk to you for days. During that time, you have a sporting event that’s important to you. Usually, Sam is there to cheer you on, but this time decides not to. You become extremely frustrated and that night you send Sam a text with insulting words demanding a call immediately, even though you have both already gone to bed. Sam responds by saying that it would be best to talk at school in the morning.

Questions:
1. As a friend, what can you do if you know someone is using drugs, tobacco or alcohol to deal with a difficult situation?
2. Is the silent treatment an effective way to resolve a conflict? If yes, for how long? If no, why not?
3. Is it okay to communicate by text to try to resolve a conflict? Why or why not?
4. When you have a disagreement and are angry, does that excuse you from using insulting words or behavior? Why or why not?
5. Do you think it is appropriate to demand an immediate response during a fight? Why or why not?
6. What are healthy and unhealthy ways to communicate during a disagreement?

Healthy Friendship Scenario 2

Ashley and Amanda are good friends and spend almost all of their spare time together. They are often found at each other’s houses watching movies, doing crafts and just hanging out. Ashley was asked to go to the mall with another group of friends from her study hall. Amanda is not in this study hall and was not invited to go along. While at the mall, Ashley and her friends met up with some other kids from school who are known for making bad decisions regarding abusing drugs. Ashley sends Amanda a snap chat of her smoking cigarettes. After seeing the post, Amanda becomes very upset because she feels Ashley makes bad decisions when she’s with other people and should not hang out with anyone else. The next time they are together, Amanda accuses Ashley of betraying their friendship and asks her why she was smoking cigarettes. Ashley says she was just pretending to smoke and sent the snap chat just for fun.

Questions
1. What should Amanda do after she receives the snap chat of Ashley smoking?
2. Is it appropriate for Amanda to make these demands of Ashley regarding their friendship? Why or why not?
3. What are some healthy boundaries to have in a friendship?
4. How might these boundaries change or look different when you find out a friend is using drugs, tobacco or alcohol?
5. How is the behavior between Ashley and Amanda healthy or unhealthy?
6. What are suggestions you would give to Ashley and Amanda to resolve this conflict?
Healthy Friendship Scenario 3

Your teacher is requiring you to work with a partner on a review sheet for an upcoming science test and Taylor is your partner. You run out of time to work on the review sheet during class so you agree to go to Taylor’s house that evening to work. When you get to Taylor’s house, you can tell that Taylor is not acting the same way as she did in class earlier. After a few minutes, you are offered to take a few prescription pain pills from Taylor’s mom’s recent surgery. Taylor says they help her study and get better grades. You say, “No thanks for now, but maybe later” because you didn’t want to be rude.

Questions
1. What are the facts in this situation?
2. Describe what you would do when leaving Taylor’s house?
3. Do you tell the teacher that you don’t want to work with Taylor anymore? Why or why not?
4. Do you think you handled the situation properly? Why or Why not?
5. What would you do differently or the same in a similar situation?
6. Taylor isn’t a close friend of yours, just a classmate. Does this change how you might handle the situation? Describe your answer.
E-Cigarettes vs. Traditional Cigarettes; Explore the Facts, Don’t be Fooled!
E-Cigarettes vs. Traditional Cigarettes; Explore the Facts, Don’t be Fooled!

Title: E-Cigarettes vs. Traditional Cigarettes; Explore the Facts, Don’t be Fooled!

Grade Level: Beginner Level

Lesson Length: 30-45 minutes

Timeline:
• Opening Activity #1 – What's the Buzz with E-Cigs? Comparing Electronic and Traditional Cigarettes. – 10-15 minutes
• Activity #2: Just the Facts: Observing the Contents of Soft Drinks – 10-15 minutes
• Activity #3: Stating the Facts: E-Cig Fact Exploration – 5-10 minutes
• Activity #4: Sharing with Others: Reflection Activity – 5-10 minutes

Life Skills: Healthy Lifestyle Choices, Critical Thinking

Connection to HEALTH ROCKS!* Curricula: Section 1: All About Me, Chapter 2: You Choose!

Learning Objectives:
By the end of the lesson, students will:
• Understand the basic facts of electronic cigarettes.
• Compare and contrast electronic and traditional cigarettes.
• Determine the importance of utilizing facts in decision making.
• Share knowledge of e-cigarettes and decision making with other students.

National Health Educational Standard:
• Standard 2 - Students will analyze the influence of family, peers, culture, media, technology, and other factors on health behaviors.
• Standard 5 – Students will demonstrate the ability to use decision-making skills to enhance health.

Materials List:
• Worksheet 1 – One per student. (optional)
• 4 clear drinking glasses or cups
• 4 different flavors of soft drinks
• Soft drink logos-4 to match soft drinks you have and one that does not match
• Sticky notes
• Pens or pencils
• Flip chart, poster or white board
• “Twitter” logo – or similar social media design
**E-Cigarettes vs. Traditional Cigarettes; Explore the Facts, Don’t be Fooled!**

**Preparation:**
- Make one copy per student of Student Worksheet 1 (optional)
- Prepare Activity 2 – Instructions are listed below.
- Prepare the Reflection Activity
  - Glue the “Twitter” logo on the flip chart paper or white board.
  - Write the words, “Twitter Feed” at the top of the paper/board.
- Review the *HEALTH ROCKS!*® fact sheet, “E-Cigarettes and Vaping”
  - Located in *HEALTH ROCKS!*® toolkit.

**Descriptions and Definitions:**

**Electronic Cigarettes** are battery-operated devices that heat a flavored liquid containing nicotine and other chemicals to form a vapor that is inhaled. E-cigarettes are designed to simulate traditional cigarettes.

**E-cig** - Another name for an electronic-cigarette

**Vaping** - The act of inhaling from the vapor of an e-cigarette.

**Other names for e-cigarettes** include but are not limited to; e-cigs, vape pens, hookah pens, vape pipes, 510, eGo, Smoke Juice, Mod, and PV (Personal Vaporizer).

**Other names for the flavored liquid used in the electronic cigarettes**
include but are not limited to; e-juice, juice, e-liquid, vape juice, smoke juice (“Electronic Cigarettes, e-Cigarettes”)
E-Cigarettes vs. Traditional Cigarettes; Explore the Facts, Don’t be Fooled!

Introduction:

State to Students - Everyone knows what a cigarette is, right? Tell me, what is a cigarette? Now, what is an electronic cigarette? An electronic cigarette is also known as an e-cig, a vape pen, or a mod. Do you know other names for an e-cigarette? In the lesson today, you are going to explore the similarities and differences of electronic cigarettes and traditional cigarettes. You will explore the facts and fiction surrounding electronic cigarettes. Finally, you will explore how marketing influences your reaction to a product.

OPENING ACTIVITY 1:
WHAT’S THE BUZZ WITH E-CIGS? COMPARING ELECTRONIC AND TRADITIONAL CIGARETTES.

Instructions:

• Working in small groups, youth will complete Student Worksheet 1.
• After the worksheets are completed, each small group will share their responses with the large group.
• On a marker board, flip chart paper or other space, the facilitator or another volunteer can keep track of the similarities and differences at the front of the room.
• Discuss the findings with the class.
• Share the significant similarities between e-cigs and traditional cigarettes.
  - Both are tobacco products.
  - Both contain nicotine.
  - Nicotine is addictive.
  - Both can be addictive.
  - Both contain many chemicals.
  - Both contain components that cause cancer.
  - Federal and state governments regulate both and the sale to minors is illegal because of the health risks.

Note: E-cigarettes are designed to simulate the act of tobacco smoking by producing an appealingly flavored aerosol that looks and feels like tobacco smoke and delivers nicotine but with less of the toxic chemicals produced by burning tobacco leaves.
E-Cigarettes vs. Traditional Cigarettes; Explore the Facts, Don’t be Fooled!

Process & Apply:
• What did you notice about this activity?
• What did you notice about the similarities and differences? What can you determine from these comparisons?
• In what ways has this comparison changed your view of e-cigarettes?
• What would you tell a fellow student who didn’t do this activity about the comparison of e-cigarettes and traditional cigarettes?

Transition:
State to Students - E-cigs and traditional cigarettes are similar. Knowing that these two products are closely related can help you make better decisions about keeping your body and brain healthy and by giving you control over your choices. In this next activity, you will explore the power of marketing on how you view products and even how you might choose a product.

ACTIVITY 2: JUST THE FACTS – OBSERVING THE CONTENTS OF SOFT DRINKS

Introduction:
State to Students - Companies pour billions of dollars into the research and development for their marketing campaigns for all kinds of products. Marketing is the way a company tries to get you, the consumer, to purchase or use their item. This marketing may include commercials, social media ads, and ads on video games you play, product package shapes and colors and more! The marketing is focused on influencing how you view a product and ultimately on how you spend your money. If a company can influence you to have a strongly positive view of their product, you may even become loyal to that brand and buy it throughout your lifetime. That gives the company power and influence over you and your choices. (Bach)

Instructions:
• Youth will compare what is in soft drinks by only observing the color.
• Youth will identify which soft drink is linked to a specific marketing logo by only observing the color of the drink.
• Youth will be able to identify the power of marketing on their reactions.
E-Cigarettes vs. Traditional Cigarettes; Explore the Facts, Don’t be Fooled!

Instructions for Just the Facts

Part A

Let the class know that you need them to make a decision on what the healthiest drink would be based on the number of calories in the beverage.

Do:
• Pour four (4) brown colored soft drinks in clear glasses.
• Keep the glasses covered with a cloth, out of sight of the students
• Uncover one glass.

Ask:
• What is in this glass?
• How do you know?

Do:
• Uncover the rest of the glasses.
• Place where the entire group easily sees the glasses.

Ask:
• What is in each glass?
• How do you know?
• How are these the same?
• How are they different?
• How could we find out the difference?
• Which one is healthiest?
• What are some of the ingredients in each soft drink?
• How much sugar is in each soft drink?
• How can we find out what is in each one?

State to Students - You know by observing the color and the bubbles in the glasses that each glass contains a soft drink. Just looking at these products you can only describe them a little bit. Are you telling facts about each one or are you providing your opinion?
E-Cigarettes vs. Traditional Cigarettes; Explore the Facts, Don’t be Fooled!

Part B

- Ask for four volunteers.
- Give them the partial logos for the soft drinks you chose plus one logo that obviously does not represent the soft drinks, ex. Orange soft drink label and you only have brown drinks.
- The volunteers must place the logo next to what they think is the correct drink. The large group can give their input.

Ask
- How did you make the decision to put this logo with this drink?
- Why did you decide against this logo?
- How are these the same?
- How are they different?
- Based on calories, which one is the healthiest?

Reveal the soft drinks that you used. Read the labels to reveal the number of calories and amount of sugar in each. Read the ingredients of the two most diverse soft drinks.

Ask
- Now how are these the same?
- How are these different?
- What information did we gain from the label?

State to Students - Just looking at the color, you did not have much information. You didn’t have an understanding of what exactly was in each drink. You were guessing. You only had some information to start. As you got more information, you began to have a clearer picture and you would be able to decide what the healthiest option might be not based on our favorite flavor but on the amount of calories.

Process and Apply:
- What did you do in this activity?
- What was the best part of this observation?
- Describe how you can make an informed decision?
- Why would it be important to have all the information possible to make a decision?
- What do you think might happen if you make a decision based on partial information?
- How is knowing where to look for factual information important to you?

Transition:
State to Students - You used observations to make the best choice. By just looking at the color you did not have all of the information. Even when you made the connection between a brand name and the drink, you still did not have all the information you needed to make a choice. You needed the ingredient and nutritional label to answer the question. You needed all the information to make the best choice. You needed to look past what you thought you knew and get the facts.
E-Cigarettes vs. Traditional Cigarettes; Explore the Facts, Don’t be Fooled!

ACTIVITY 3:
STATING THE FACTS: E-CIG FACT EXPLORATION

Introduction:

State to Students - *Electronic Cigarettes* are battery-operated devices that heat a flavored liquid containing nicotine and other chemicals to form a vapor that is inhaled. E-cigarettes are designed to simulate traditional cigarettes.

The amount of nicotine and other chemicals in e-cigs is difficult to regulate due to the high number of juices available.

Just like when you compared the four soft drinks you could not make a conclusion just by looking. You needed to know more facts. If you decide to try using an e-cig or vaping, you don’t have all the facts. You can’t be 100 percent sure of what is in the e-juice that you might put into your body. You guessed what brand the soft drink was and what was in it. You will be guessing what is in an e-juice.

*The use of e-cigarettes in high school and middle school youth is increasing.* The Center for Disease Control (CDC) found the use of electronic cigarettes increased among middle and high school students from 2011 to 2015. Part of this is the aggressive marketing of e-cigs is aimed at youth. The majority of the marketing is not aimed to adults to stop smoking.

*If you use an e-cig, studies show your chance of using a traditional cigarette increases.* As you become addicted to the nicotine in an e-cig, you will be more likely to try and become addicted to a traditional tobacco product like a cigarette.

(“E-cigarette use triples”)

**Process and Apply:**

- What is a fact you can tell others about e-cigs and traditional cigarettes?
- Describe how to find out facts about a juice in an e-cigarette?
- How confident are you in finding the facts about a juice in an e-cig?
- What could you do to be more confident in finding accurate facts on e-cigarettes?
- What makes cigarettes unsafe for your body? For your brain?
- What makes an e-cigarette unsafe for your body and brain?
ACTIVITY 4: 
SHARING THE FACTS: REFLECTION ACTIVITY

Instructions:

• Working in small groups or as individuals, students will create one tweet and write that tweet on the provided sticky note in 5-7 minutes. (One tweet per note.)
• The tweet should focus on one thing the students learned in this lesson and would like to share with other students their age.
• Explain to students that tweets are 140 characters (letters or symbols) and must include one of more creative hashtag. For example, #knowthefacts or #healthrocks.
• Provide the students with examples of tweets, if needed.
• Ask the student or small group to “post” their tweet at the front of the room on the Twitter poster you created.
• Students will discuss the findings with the class.

Teaching Tip: Depending on the age of the students, the instructor may need to explain that Twitter is a form of social media.

Teaching Tip: Depending on the age of students and size of group, instructor may put students into groups for this activity.

Teaching Tip: Print a Twitter logo to post at the front of the room on a white board or on a self-stick easel pad.

Teaching Tip: Review the “tweets” after the lesson. You may want to share some of them on your organization’s Twitter account or keep them as a display in your teaching area.

Conclusion:
State to Students - You have compared e-cigarettes and traditional cigarettes. You have found similarities and differences. You have also determined how difficult it is to make a decision without knowing all the facts. You have shared your knowledge with others through social media. Ultimately, the things you do are your decision. Remember that by using the facts, you can make better decisions that will directly affect your health.

Process and Apply:
Do
• What did you do in this lesson?
• How would you describe the similarities between an e-cigarettes and a traditional cigarette?

Process
• How did your comparison of the soft drinks help you understand that facts are important before making a decision?
• How did you feel when you didn’t have all of the facts before making a decision?
• Why might not knowing what is in an e-cigarette make it dangerous?

Apply
• Why does knowing more about the similarities between e-cigarettes and traditional cigarettes help you to make better decisions about not using e-cigarettes?
• Describe a time you would need to know all the facts before making a choice.
• How can making informed decisions help when making future choices?
• How are you going to share this information with a trusted adult?
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E-Cigarettes vs. Traditional Cigarettes; Explore the Facts, Don’t be Fooled!

In this diagram we have two circles, one representing e-cigarettes and one representing traditional cigarettes. Inside the circles, list words that describe those things. If a word describes both e-cigarettes and traditional cigarettes, put it in the middle where the circles overlap.
E-Cigarettes vs. Traditional Cigarettes; Explore the Facts, Don’t be Fooled!

The images below are an example of the soft drink label images you may use in E-Cigarettes vs. Traditional Cigarettes; Explore the Facts, Don’t be Fooled!, Activity 2-Just the Facts, Observing the Contents of Soft Drinks; Part B. The images were chosen at random and should be changed to match the soft drinks you select for your lesson.

Regular Cola
Diet Cola
Lemon Lime Soda
Dr. Spice
Root Beer
Title: Your Brain and Drug Addiction

Grade Level: Intermediate Level

Lesson Length: 60 minutes

Timeline:
- Activity #1 – The Amazing Brain – 10 minutes
- Activity #2 – Knowing the Neuron – 15 minutes
- Activity #3 – Experience the Neuron Network – 15 minutes
- Activity #4 – Addiction and the Neuron – 15 - 20 minutes
- Activity #5 – Sharing with Others: Reflection Activity – 5-10 minutes

Lesson may be taught in two sessions:
- Session 1 - Activity #1 and #2
- Session 2 – Activity #3, #4 and #5

Life Skills: Healthy Lifestyle Choices, Critical Thinking

Connection to HEALTH ROCKS!® Curricula: Intermediate Level – Section 1: All About Me, Chapter 1: Keeping Healthy

Learning Objectives:
By the end of the lesson, students will:
- Describe the parts of the neuron.
- Understand how neurons transmit information in the brain
- Describe how drugs, tobacco and alcohol affect neurotransmission and lead to addiction.
- Share knowledge of the way drugs, tobacco and alcohol affect neurotransmission and the relationship to addiction with other students.

National Health Educational Standard:
- Standard 1 - Students will comprehend concepts related to health promotion and disease prevention to enhance health.

Materials List:
- Pipe Cleaners
- Student Handout 2.1 – One per student. (optional)
- Giant rope neuron instruction sheet – Facilitator Resource Sheet 3.1
- Materials to make Giant Neuron Model
  - Rope - 20 feet
  - Plastic containers - 2 (Ex: ice cream containers)
  - PVC Pipe or Swimming pool float - 8”-10” piece.
  - Small balls - 10 (ex: ping pong balls)
- Addiction and the Neuron Situational Cards – Student Resource 4.1
- Flip chart, poster or white board.
- “Twitter” logo – or similar social media design
Preparation

• Make one copy per student of Student Worksheet 2.1
• Construct the Giant Neuron Model and familiarize yourself with the model.
  - Instructions are found in the Facilitator Resource Sheet 3.1.
• Prepare the Reflection Activity
  - Glue the “Twitter” logo on the flip chart paper or white board.
  - Write the words, “Twitter Feed” at the top of the paper/board.
• Review the advanced content resources as listed in the lesson references.

Introduction

State to Students - What is addiction? As you may remember from a previous HEALTH ROCKS!* or other lessons, drug addiction is a brain disease where people can’t stop using drugs even when they really want to. Drug addiction causes terrible consequences to a person’s health and other parts of their lives.

Your brain is involved in everything you do. It is who you are. It is your command center and your “mission control”. Your brain allows you to think, breathe, feel, and speak. The brain is involved in regulating all human physiological, behavioral and emotional functions. Your brain is about three pounds. Your brain is always working whether you are awake or are asleep. Your brain is involved when you take drugs.

In the lesson today, you are going to take a look inside the brain and see how your brain transmits information and how drugs can damage that transmission and your brain.

This first activity shares how important your brain is to every function that occurs in your body.
OPENING ACTIVITY 1:  
THE AMAZING BRAIN

Instructions:

• Working in small groups, youth will complete one of the tasks listed below.
• After the tasks are completed, have each group share what they did, or ask them to demonstrate their task for the group.
• Discuss with the class which parts of the body were involved in each of the tasks.
• Share that when we breathe, our lungs and airway are involved as well as our brain. While our heart is pumping our blood, the brain regulates the heartbeat.
• Our brain is involved in each of the tasks.

Tasks:

• Tie each other’s shoes.
• Skip around the room while you whistle.
• With a buddy, sing, “Twinkle, Twinkle Little Star” or another favorite song.
• Tell a partner how to get from your home to school.
• Listen to your partner talk for two minutes without stopping.
• Pat your head and rub your tummy at the same time.
• Recite the Pledge of Allegiance.
• Take turns doing jumping jacks with your partner.

(The Brain: Understanding Neurobiology, 30)

Process & Apply:

• What part of the body is involved in each of the tasks?
• How is the brain involved in these tasks?
• How did you feel with doing each of the tasks?
• What role did the brain have in those feelings?

Teaching Tip: This activity helps youth to focus on the importance of the brain.

Teaching Tip: Activity 1 may be shortened or extended depending on the time constraints of your group.

Advanced Content Resource: Reviewing information on nerve cells and neurotransmission may be helpful to guide the discussion. More information may be found in the following resources as cited in the lesson resources:
The Brain’s Response to Drugs Teacher’s Guide, (p. 3-5), National Institute on Drug Abuse Blog Team: Brain and Addiction Neuroscience for Kids – Modeling the Nervous System

Transition:

State to Students - The brain is made up of many different parts that work together. Each of these parts has a specific and important job to do. When a drug enters the brain, it interferes with the ability of the brain to do what it is supposed to do and can eventually change how well it works. Over time, drugs of abuse can lead to drug addiction. Learning more about how the brain works can help you make better decisions about keeping your brain and body healthy. In this next activity, you will have the opportunity to create a model of a nerve cell in the brain called a neuron.
ACTIVITY 2: KNOWING THE NEURON – BUILD A MODEL

Introduction:

State to Students - Your brain directs everything you do. It is the command center of your body. Every second your brain is sending and receiving thousands of messages. The brain is made up of billions of nerve cells called neurons. These neurons send and receive messages in the brain. Understanding these networks can help us to understand how drugs affect the brain.

Instructions:

• Youth will create a neuron model using pipe cleaners to better understand the parts and function of these special cells.
• Youth will complete the accompanying worksheet as a teaching aid.
• When the neuron models are complete, they may be used to guide the discussion on how the neuron transmits information.

Directions for Pipe Cleaner Neuron:
1. Each student will need five pipe cleaners of different colors.
2. Roll one pipe cleaner into a loose ball. This will be the cell body.
3. Take another pipe cleaner and push it into the cell body. Half of the pipe cleaner will be sticking out of each side of the cell body. Twist this pipe cleaner into one strand for the axon.
4. Cut another pipe cleaner into 4-6 smaller pieces. On the side opposite of the axon, push these into the cell body. These are the dendrites. The dendrites are shorter than the axon and may be twisted. Small pieces of pipe cleaner may also be twisted around each other for more dendrites.
5. Wrap small individual pipe cleaners along the length of the axon. These represent the myelin sheath.
6. Wrap another pipe cleaner on the end of the axon. This is the axon terminal/synaptic terminal.

(Chudler, “Neuroscience for Kids”)

Teaching Tip: Instruct students to form a chain of neurons with their models to simulate how the neurons transmit messages with each other.

Teaching Tip: This activity sets the stage for the Giant Neuron model. Students who may already be familiar with the parts of the neuron from a previous HEALTH ROCKS!® or other class lessons may use this as an optional activity.

Process & Apply:

• Describe what your neuron looks like?
• What was the best part about making a neuron model?
• Why would it be important for a neuron to have all of its components?
• What do you think might happen if your neurons get damaged?
• Describe how you think a neuron transmits messages?
• How did making this model help you in your understanding of a neuron?
• Why would this information be important to you?
ACTIVITY 3: EXPERIENCE THE NEURON NETWORK – THE GIANT ROPE NEURON

Step One – Conduct a guided discussion using the pipe cleaner models to set the stage for the next activity. Use the key points below to highlight how the neuron transmits messages.

1. **Neuron** – Your brain contains about 100 billion neurons. Within a neuron, messages travel from the cell body down the axon to the axon terminal in the form of electrical impulses. From there, the message is sent to other neurons with the help of neurotransmitters.

2. **Neurotransmitters** – These are your brain’s chemical messengers. To make the messages jump from one neuron to another, the neuron creates chemical messengers, called neurotransmitters. The axon releases neurotransmitters that travel across the space (called the synapse) to nearby neurons. Then, the transmitter attaches to the receptors on the nearby neuron.

3. **Receptors** – These are the brain’s chemical receivers. To send a message, a nerve cell releases a chemical called a neurotransmitter into the space separating two nerve cells. This space is called the synapse. The neurotransmitter closes the synapse and attaches to proteins (receptors) on the receiving nerve cell. This causes changes in the receiving nerve cell and the message is delivered. As the neurotransmitter approaches the nearby neuron, it attaches to a special site on that neuron called a receptor. A neurotransmitter and its receptor operate like a key and lock, in that a very specific mechanism makes sure that each receptor will forward the right message only after interacting with the right kind of neurotransmitter.

4. **Transporters** – These are the brain’s chemical recycler. Once neurotransmitters do their job, they are pulled back into their original neuron by transporters. This recycling process shuts off the signal between the neurons.

(“The National Institute on Drug Abuse Blog Team: Brain and Addiction”)

Step Two –

- As active participants in the giant rope neuron demonstration, students will learn more about the neuron and neurotransmitters.
- Use the attached instructions for information on building and using the giant rope neuron model.
- Students will demonstrate the action of the neuron several times until they gain an understanding of neurotransmission.
- Through guided discussion during the demonstration, youth will begin to understand how the neuron transmits messages.

**Advanced Content Resource:**
It is very helpful to watch the rope neuron giant model in action through a video demonstration which may be accessed athttp://uwtv.org/series/brainworks/watch/CAKscnzkHg/ and is cited in the resource list.

**Process and Apply:**
1. What are the parts of the neuron?
2. How did the neuron function?
3. How did this simulation help you to understand the transmission of messages in the brain?
4. What was interesting to you about the model?
5. Why might it be important to understand the neuron network?
6. What do you think happens when something messes with this transmission? Why is that important to know?
Transition:

State to Students - You have had the chance to use the giant rope neuron model to see how a neuron functions in the brain. Next, you will have the opportunity to demonstrate the changes that occur in the brain when you put chemicals into your body.

Drugs are chemicals. When someone puts these chemicals into their body they enter the brain’s communication system and affect the way the neurons send, receive and process information. Different drugs affect the brain in different ways. This is because different drugs have different chemical structures. Almost all drugs that change the way the brain works do so by affecting chemical transmission. There are at least two ways drugs work in the brain.
1. Imitating the brain’s natural chemical messengers.
2. Overstimulating the “reward circuit” of the brain.

All drugs that are addicting can activate the pleasure center or that “reward circuit” (“The National Institute on Drug Abuse Blog Team: Brain and Addiction)

ACTIVITY 4:
THE NEURON AND ADDICTION

Part 1 –
• As a large group, students will generate a list of appropriate things they like to do for fun in two minutes.
• Youth will participate in guided discussion about the “reward” system.

Process:
1. What kinds of appropriate, fun things did you record?
2. How were you feeling when you made this list?
3. When you do something fun, do you ever do it again? Why/Why not?
4. What do you think your neurons were doing when you were making this list?

Guided Discussion:
• When you experience pleasure, certain neurons in your brain release a chemical called dopamine. Dopamine creates feelings of pleasure. While you were thinking about and doing those fun things, your brain was releasing dopamine.
• This is a good and normal reaction in your brain causing you to repeat healthy activities, like eating.
• Drugs of abuse take over this system.
 (“The National Institute on Drug Abuse Blog Team: Brain and Addiction”)

Step 2:

State to Students - Now it is your turn to create your own simulation using the giant neuron model to help you visualize how drugs can change and damage the neuron and neurotransmission in your brain. These changes affect your life.

Instructions:
• Working in small groups, youth will receive a situational card (Student Resource 4.1) that describes a scenario of the effects that drugs of abuse have on the brain or a scenario that describes a term related to addiction.
• Students will demonstrate how that scenario would affect the neuron using the giant rope neuron model.
• Students will explain their situation to the class to show their understanding that drugs affect and damage the neurons and connections in the brain.
Your Brain and Drug Addiction

Advanced Content Resource: Background information for the scenarios may be found in the National Institute on Drug Abuse Blog Team: Brain and Addiction and The Brain: Understanding Neurobiology as cited in the reference with this lesson.

Teaching Tip: It is important for the students to understand that many drugs affect the brain in multiple ways and not all effects were demonstrated here nor are all effects known.

Teaching Tip: Remind students that these simulations are a model for exploration and a teaching tool. They may not be representative of the full and/or actual process.

Teaching Tip: Students may demonstrate selected situations depending on the time constraints of the class.

Process and Apply:

• What did you demonstrate with your giant neuron model?
• How did the drugs of abuse affect your neuron and the transmission of messages?
• What did you notice about the different drugs? Are some drugs affecting neurotransmission in multiple ways?
• What do you think happens in your brain when addiction takes over?
• Why is it important to keep your neurons transmitting messages in a healthy way?
• Describe the relationship about neurons and drugs of abuse, including tobacco, alcohol and other drugs?

Transition:

State to Students - A great way to strengthen your learning is to share it with a friend. In the reflection activity, you will have the opportunity to share your learning with others.

ACTIVITY 5: SHARING THE FACTS: REFLECTION ACTIVITY

Instructions:

• Working in small groups or as individuals, students will create one tweet and write that tweet on the provided sticky note in 5-7 minutes. (One tweet per note.)
• The tweet should focus on one thing the students learned in this lesson and would like to share with other students their age.
• Explain to students that tweets are 140 characters (letters or symbols) and must include one of more creative hashtag. For example, #knowthefacts or #healthrocks.
• Provide the students with examples of tweets, if needed.
• Ask the student or small group to “post” their tweet at the front of the room on the Twitter poster you created.
• Students will discuss the findings with the class.

Teaching Tip: Depending on the age of the students, the instructor may need to explain that Twitter is a form of social media.

Teaching Tip: Depending on the age of students and size of group, instructor may put students into groups for this activity.

Teaching Tip: Print a Twitter logo to post at the front of the room on a white board or on a self-stick easel pad.

Teaching Tip: Review the “tweets” after the lesson. You may want to share some of them on your organization’s Twitter account or keep them as a display in your teaching area.

Example Tweets:

Know the facts about your brain on drugs. #knowthefacts
Informed decisions make better decisions. #healthrocks
CONCLUSION:
YOUR BRAIN AND DRUG ADDICTION

Drug addiction is a brain disease where people can’t stop using drugs even when they really want to. When a person uses drugs over and over again, the drug use causes the brain to change. This change causes the person to use drugs over and over again in a downward spiral, even when there are terrible consequences. ("The National Institute on Drug Abuse Blog Team: Brain and Addiction")

Do
- What did you do in this lesson?
- How would you describe what the neuron looks like and how does it function in the brain?

Process
- How did making the neuron model help in your understanding of the neuron?
- How did the giant neuron simulation help in your understanding of the neuron and in understanding the effects of drugs on your brain?
- What did you notice about the ways drugs affect the neurons in the brain?
- How can you relate what you know about neurons to drug addiction?

Apply
- What generalizations can you make about how drugs affect your brain?
- Why does knowing more about your brain help you to make better choices about drugs?
- How are you going to share this information with a trusted adult?
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https://www.drugabuse.gov/sites/default/files/momteacherguide.pdf

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ACTIVITY 2: KNOWING THE NEURON - CREATE A PIPE CLEANER NEURON

STUDENT WORKSHEET – 2.1

Complete the activity below. Match up the neuron part with the correct definition by recording the letter in the spaces below.

_________ 1. Cell Body
_________ 2. Axon
_________ 3. Dendrites
_________ 4. Myelin Sheath
_________ 5. Axon Terminal

A. Directs all actions of the neuron.
B. Short fibers that receive messages from other neurons and relay them to the cell body.
C. A long single fiber that transmits messages away from the cell body to the dendrites of other neurons or to body tissue such as muscles.
D. The covering over the axon.
E. Neurotransmitters are released.
ACTIVITY 3: EXPERIENCE THE NEURON NETWORK - THE GIANT ROPE NEURON

TEACHER RESOURCE 3.1

Advanced Content Resource: It is very helpful to watch the rope neuron giant model in action through a video demonstration which may be accessed at http://uwtv.org/series/brainworks/watch/CAKscnzkhHg/ and is cited in the resource list.

Materials Needed:
- Rope - 20 feet
- Plastic containers - 2 (Ex: ice cream containers)
- PVC Pipe or Swimming pool float - 8”- 10” section
- Small balls - 10 (ex: ping pong balls or a ball safe for inside)

Preparation prior to lesson - Create a giant rope neuron:
- Cut three pieces of rope to act as the dendrites each about two – three feet in length.
- Cut another piece 10-12 feet in length for the axon.
- Two plastic containers, such as ice cream containers, may be used for the cell body and synaptic terminal. Drill holes in the plastic containers for the axon and dendrites. To secure the dendrites and axon in place, tie a knot in the ropes so they will not slip through the holes of the containers.
- Cut eight to ten inch segment of PVC pipe or swimming pool float and thread onto the axon before securing the end in place.
- Use ping pong balls, or other soft balls, as the neurotransmitters. Place ping pong balls in the synaptic terminal.

Set up the model and gathering student volunteers:
- Dendrites - Three volunteers will hold each of the dendrites.
- Cell body - One volunteer will hold the cell body.
- Axon or Synaptic Terminal - One volunteer will hold the synaptic terminal keeping their hands free from the axon and opening.
- Neurotransmitter Volunteer - One volunteer will hold the neurotransmitter molecules near the dendrite volunteers. (ping pong balls)
- Action Potential - One volunteer will hold the action potential. (PVC pipe/pool float).
- Receptors (Dendrites from our Second Neuron) - Three volunteers will stand several feet away from the synaptic terminal to represent the dendrites on a second neuron.

Using the model:
- The person holding the neurotransmitters toss the ping pong balls to each of the three volunteers holding the dendrites. This step represents the release of neurotransmitters from a neuron and the attachment of these neurotransmitters to the receptors on the dendrites.
- When the three balls are caught by the dendrites, the person holding the action potential can slide the pool float down the axon by firmly “tossing” the float down the axon. This simulates the electrical impulse within the neuron.
- The action potential (pool float) will speed down the axon toward the synaptic terminal where it will slam into the container and cause the release of the neurotransmitters (ping pong balls) that were in the container.
- Be sure to keep the axon tight so the action potential will slide easily.
- Volunteers representing the dendrites on the second neuron will try to “catch” the neurotransmitters released. This space between the neurons is called the synapsis.
- Neurotransmitters (ping pong) balls will be returned to the original neuron to be recycled by the neuron. (Chudler, Eric H. Neuroscience for Kids)
ACTIVITY 4:
ADDICTION AND THE NEURON

The scenarios listed below are for use with Activity 4. Student “hints” are provided for each scenario and may be optional depending on the comfort level of the students with the content.

Fooling the receptors –
• Some drugs have chemical structures that act just like the neurotransmitters in the brain. These drugs trick our receptors, lock onto them and activate the neuron. The problem is, these drugs are tricking the brain but do not act in the same way as our body’s natural transmitter. The neurons send abnormal messages to the brain.
• Marijuana and heroin act on the brain and body in this way.
(“The National Institute on Drug Abuse Blog Team: Brain and Addiction”)
• Demonstrate what this situation might look like inside of the brain using the giant neuron model. (Assume that three (3) balls being released by the neuron is a normal range of dopamine for the neuron.)

Hint: Different colored balls could be used for the drug chemicals that are tricking the receptors. The neuron model could function in a different way sending abnormal messages to the brain. How many ideas can you think of and demonstrate through the large neuron model?
• Be creative!
• Explain your situation to the class.

Action Potential Increases thus increasing the amount of neurotransmitter -
• Some drugs like alcohol, heroine and nicotine indirectly excite the dopamine-containing neurons so that they produce more action potentials. (The pool noodle would go down the axon more times.) When the action potentials increase, more dopamine is released in to the synapse.
(“The Brain: Understanding Neurobiology”, 66)
• Demonstrate what this situation might look like inside of the brain using the giant neuron model. (Assume that three (3) balls being released by the neuron is a normal range of dopamine for the neuron.)

Hint: To release more dopamine, what would your neuron need to do? Your neuron may need to work harder or faster. How might it affect the neuron when it works faster? Show where this extra dopamine might go? How many other ideas can you think of and demonstrate through the large neuron model?
• Explain your situation to the class.
• Be creative!

Increasing the amount of neurotransmitter – Flooding the synapse
• Some drugs affect the brain’s “reward” circuit, responding to pleasure and releasing too much of the neurotransmitter dopamine. Dopamine creates feelings of pleasure and the drugs take control of this system. This flood of dopamine is what causes the “high” of the drug.
• Nicotine, cocaine and marijuana act in this way.
(“The National Institute on Drug Abuse Blog Team: Brain and Addiction”)
• Demonstrate what this situation might look like inside of the brain using the giant neuron model. (Assume that three (3) balls being released by the neuron is a normal range of dopamine for the neuron.)

Hint: For our demonstration, we have said that releasing three (3) balls is considered a normal range of dopamine. Releasing more dopamine could mean releasing more balls. How does this affect the neighboring neurons? Share how the neighboring receptors would not be able to accept all of the neurotransmitters (would not be able to catch all of the balls).
• Be creative!
• Explain your situation to the class.
Tolerance

- The brain adjusts to dopamine surges after repeated drug use. Neurons may begin to reduce the number of dopamine receptors. Neurons may make less dopamine. Some drugs are toxic and cause the neurons to die.
- Because of these factors, the ability to feel pleasure is reduced. The person needs more drugs to bring the dopamine levels up to normal and more of the drug is needed to cause the dopamine “flood”.
- This is called “tolerance”.

(“The National Institute on Drug Abuse Blog Team: Brain and Addiction”)

- Demonstrate what this situation might look like inside of the brain using the giant neuron model. (Assume that three (3) balls being released by the neuron is a normal range of dopamine for the neuron.)

**Hint:** You might share how a neighboring neuron might have less dopamine receptors or how toxic drugs cause the neuron to die.

- Be creative!
- Explain your situation to the class

Prevention of the normal recycling of dopamine into the original neuron

- Some drugs don’t let the normal recycling of dopamine to happen. Dopamine can’t get recycled back into the original neuron.
- This leads to exaggerated messages in the brain and can be compared to the difference is someone whispering in your ear versus someone shouting in a microphone.
- Methamphetamine is a drug that acts in this way.

(“The Brain: Understanding Neurobiology”, 68)

- Demonstrate what this situation might look like inside of the brain using the giant neuron model. (Assume that three (3) balls being released by the neuron is a normal range of dopamine for the neuron.)

**Hint:** When the original neuron tries to take back the neurotransmitters in the normal recycling of dopamine, demonstrate how the original neuron might not be able to handle all of these neurons?

- Be creative!
- Explain your situation to the class.
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