

EFFECTS OF TOBACCO

Teacher Script Day #2

→ Purpose of Day 2 Lesson

People frequently believe that the smoke and carbon monoxide are the only dangerous by-products of cigarette smoking. It is easy to forget about the tar in cigarette smoke and how that tar can build up in the lungs in a relatively short period of time. The purpose of this activity is to involve students in an interactive activity that demonstrates the dangers of tar in our body as a result of tobacco use.

Prep before class:

→ Prepare at least one Tar Jar:

1. Two 12-oz. jars of molasses
2. At least one clear glass jar with lid (needs to be at least 9-oz. in size or larger). It is recommended that you leave empty space in the jar so that students can tilt the jar and see the molasses move and shift positions. This helps demonstrate the thickness of the “tar”.
3. Pour approximately one cup of molasses into jar, seal tightly.

→ Make enough copies of the following items to pass out to all the students:

1. *Tar Jar Demonstration Science Report handout* (Page 31) or *Tar Jar Demonstration Writing Response* (Page 32)
2. *Facts About Tobacco handout* (Pages 18, 19)
3. *As Soon as You Quit Smoking handout* (Page 20)
4. *Expense of Tobacco worksheets* (Page 33, 34)

→ For Lab Experiment

1. Several clear glass jars with lids (one jar/lid for each group of students)
2. Measuring cup (0-oz. to at least 8-oz.)
3. Several 12-oz. jars of molasses (one jar for each group of students)
4. Small package of paper plates (need one plate per group)
5. Small package of plastic spoons (one spoon per student)
6. Feather
7. Wet towels or moist wipes

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Variations

- Prepare at least 1 standard “Tar Jar” (one cup of molasses) to illustrate the amount of tar that accumulates in the lungs after smoking one pack of cigarettes per day, over a year (average smoker inhales approximately one cup of tar in a year).
- You can also prepare additional “Tar Jars” to demonstrate *longer term use* (2 years and 10 years, for example) or jars to illustrate the *effects of heavy smoking* (2 or 3 packs of cigarettes per day). These demonstrators will provide students with an idea of what the effects of long term use or heavy smoking can be.

Teacher Tips

- Make sure there are plenty of wet towels and other cleaning supplies since this activity is very messy and sticky!
- Encourage student participation as much as possible.

Lesson Day #2

Introduction to the Lesson

1. Discuss the following facts and ask for questions.
2. Tar is one of the 69 known carcinogens (substances that cause cancer) in tobacco products.
3. The average smoker will inhale about one cup of tar each year! An average smoker is defined as a person that smokes one pack of cigarettes per day.
4. This tar is the same thing that blacktop is made of, and because of its sticky consistency, it can remain in the lungs for a long time. For longer term smokers who have a reduced ability to expel impurities from the lungs, the tar may remain in the lungs even longer.
5. The tar paralyzes the cilia, the hair-like structures inside the bronchial tubes. Cilia protect the lungs by sweeping out mucus, impurities, and germs.
6. The tar is distributed throughout the body through the bloodstream. Certain enzymes found in the liver, lungs esophagus and digestive tract convert some of the ingredients of tar into chemicals that can cause cancer.¹⁰

REFERENCE:

¹⁰ <http://pubs.niaaa.nih.gov/publications/aa39.htm>

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Facts About Tobacco

1. Review the *Facts About Tobacco* handout as a class (Pages 18, 19).
2. Have students take turns reading sections.

Tar Jar Activity

1. Show students Sample Tar Jar

- A. Allow students to look at the tar jar one at a time.
- B. Encourage the students to turn the jar over so they can see how the tar sticks to the sides of the jar; this will give them a visual representation of the consistency.
- C. When finished viewing the jar, have students pass the jar to their neighbor.

2. Making the Tar Jar

- A. Have students divide into groups of 3 or 4.
- B. Have one student open the molasses; measure out one cup of the molasses and pour into the jar.
- C. Have all of the students use plastic spoon or knife to smear some of the "tar" onto the paper plate so that the students can feel the texture.
- D. Some students may want to touch the molasses with their finger(s). Allow students to dip one or two of their fingers into the molasses; have students touch their fingers together to demonstrate the stickiness of the tar.
- E. Make sure that you have wet towels or moist wipes available for clean up. Instruct students not to smear the molasses on the desks, chairs or each other.
- F. Be certain to explain that the molasses is very, very close to the texture and thickness of tar that smokers will inhale.

3. The impact of tar on the cilia

- A. Explain how our lungs are lined with thousands of tiny protective hairs (cilia) which help prevent germs, dirt and debris from entering our lungs.
- B. Show the students the bird feather and explain how the tips of the feather can be used to represent the (cilia) protective hairs in our lungs.

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- C. Ask for a volunteer – Have this student fluff up the tips of the feather so they stand up on end; explain how this feather represents our cilia in their normal state (standing upright).
 - D. Ask for a second volunteer – Have the second student smear molasses onto the feather and demonstrate how the tips stick together and are flattened down; explain how this represents the effect of the tar on our cilia.
4. **Discussion** - Ask the following questions and discuss
- A. What is the consistency of the tar (molasses)?
 - B. What effect does it have on your fingertip or on the plate?
 - C. What effect might tar have on your mouth? On your teeth? In lungs?
 - D. What effect might tar have if it got onto the cilia in your lungs?
 - E. How do you think the lungs are affected if the cilia are not working properly?
 - F. Discuss the demonstration
5. **Writing** - Complete the *Tar Jar Demonstration Science Report* (Page 31) or the *Tar Jar Demonstration Writing Response* (Page 32).

Mr. Gross Mouth Video

1. Tell students: “Tobacco products not only harm the lungs, but they also can affect other parts of the body like the throat, esophagus, mouth, tongue, teeth and even our skin. Smokeless tobacco products, such as dip, snuff and chewing tobacco are especially dangerous”
2. Show video tape and discuss.

Marketing strategies and Tobacco

1. Ask students to describe products that are marketed to children that resemble tobacco products (Examples include: Big League Chew and Bubble Tape (both types of chewing gum), candy cigarettes, bubble gum cigars, turkey jerky in the can, Altoids and other mint products in small tins).
2. Explain to students how many of these products are produced and sold by tobacco companies. These products are designed to get children used to consuming or using certain types of products; if young people get into the habit of carrying around small tins of candy or shredded bubble gum in a pouch they get comfortable with it, once they turn 18, they will be much more likely to try the adult products of a similar style (such as dip or chewing tobacco).

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3. Remind students how advertisers market not only tobacco products (think Joe Camel) but also other “adult” products such as different alcoholic beverages to children; these marketing strategies are attempts to prepare children for later use of their products (think Budweiser frogs, Spuds McKenzie, Clydesdale horses, etc.) by making them memorable, funny, and/or entertaining.
4. Tobacco advertising took a new and disturbing turn for the 2000’s. Camel launched its new brand of cigarette (No. 9) in 2007 marketed towards teenage girls. They ran promotional giveaways that offered products such as purses, wristbands, cell phone jewelry and flavored lip balm to attract young girls and it apparently worked.¹¹ According to a research study reported in Pediatrics, 22% of the girls in the study reported the Camel ads as their favorite ad of the year.¹²

As Soon as You Quit Smoking

1. Discuss with the class how amazing the body is and that it can heal itself from damage. When a person stops smoking their body will gradually repair itself and restore itself back to its original condition.
2. Read over the *As Soon as You Quit Smoking handout*.
3. Discuss this handout with class and encourage them to share this information with others, especially those they know who are smokers.

**** Administer the Test Your Knowledge Quiz ****

The Expense of Tobacco

1. Lesson Goal:
 - A. This lesson helps students see how smoking can affect them financially.
 - B. Helps students see how they can make healthier choices when spending their money.
2. Ask students how much they think it costs to smoke cigarettes. Ask them how much an average smoker spends in a day.
3. Let them make some guesses and discuss their answers.
4. Pass out *The Expense of Tobacco worksheets* (Pages 33, 34). Give them time to work on these sheets in class or assign as homework.
5. Go over the answers in class or the next day, showing how you arrived at the correct answers.

REFERENCES:

11 http://www.cbsnews.com/8301-503983_162-20000437-503983.html

12 http://www.usatoday.com/news/health/2010-03-15-teensmoking15_ST_N.htm