

LESSON

1

caffeine

Objectives

Learners will . . .

- identify the effects of caffeine consumption
- assess the amount of caffeine they consume in a day
- set a goal to reduce or eliminate caffeine from their diets

Materials

- Samples of cola cans, coffee bags, chocolate wrappers, energy drinks indicating caffeine content (optional)
- Paper/pencil

Vocabulary

- **Caffeine**—a bitter tasting drug that is a stimulant; found in tea, coffee, colas, energy drinks, food and over-the-counter medication
- **Stimulants**—a group of drugs that increases heart and breathing rates and raises blood pressure by affecting the central nervous system
- **Dependent**—a condition in which a person would experience withdrawal symptoms if the substance were no longer available (headache, anxiousness)
- **Tolerance**—when the body needs more of a drug to get the same effect it achieved on first use

RECAP

Tell students today they are starting a new unit on substance abuse prevention, which means staying away from tobacco and other drugs that can harm them.

KEY MESSAGE

Write on board and tell students:

Caffeine is a drug found in many foods and beverages and you should limit your intake.

INTRODUCTION

Construct a simple bar graph on the board, on the left side write 10, 20, 30, 40 and 50 to represent the number of servings. On the baseline write cola, chocolate, coffee, chocolate milk, iced tea and energy drinks. Give students a few minutes to calculate how many servings of each of these items they usually consume in a day, if any. Remind students that a serving size is the recommended serving for one sitting. For an energy drink it is only 8 oz. and for a soda it is 12 oz. Explain that often they consume more than one serving because products are packaged in larger containers, for example a supersized drink at a fast food restaurant could contain 3-4 servings. Add all of the students' counts to obtain a class total for each item and graph it. By reading the graph, ask students what item is consumed the most by the class. What item is consumed the least? Discuss the results with the class. Students may be surprised by how much of these items they consume daily. Point out to students that all of these items contain a legal drug. Ask students if they know what it is (caffeine). Tell students that caffeine is a legal drug found in many of the things we drink, eat and in over-the-counter medication. Caffeine is a drug because it stimulates the central nervous system causing increased alertness, and changes in mood and energy level.

ACTIVITIES



ONE—SCIENCE & MATH



Ask students if they had ever thought about the caffeine in the foods they ate as a drug. Ask students how they feel after eating or drinking foods that contain caffeine. Explain that caffeine is a stimulant meaning it speeds up the heart and breathing rates and increases blood pressure. Explain that some people feel alert and energetic immediately, while others may feel nervous and jittery. If you have examples of food and drink labels, show the students where the information concerning caffeine is located on the label. Point out that decaffeinated drinks advertise *No Caffeine* prominently on the label so consumers can see it easily. Tell students that in addition to sodas and chocolate, caffeine can be found in some very unlikely places—pain relievers, cold remedies, yogurts, ice cream, cakes, cookies and muffins.

Now ask students how much caffeine they think they should consume per day. Tell students that it is generally recommended that kids should consume less than 100 mg of caffeine per day. Now ask students to write down all of the caffeinated sodas, coffee, chocolate milk, chocolate candy and cold medicine they consumed yesterday. Remind students about the serving sizes that they consume. While a cup of coffee brewed at home and poured into a typical coffee cup may contain 100 mg of caffeine, a coffee shop coffee, served in a 16 oz. cup, can have as much as 320 mg of caffeine! Write the following caffeine contents on the board.

Common sources of caffeine:

Drip-brewed coffee	100 mg per 8-oz cup
Brewed black tea	50 mg per 8-oz cup
Caffeinated sodas	40-50 mg per 12-oz can
Super-caffeinated colas	70 mg per 12-oz can
Chocolate milk	5 mg per 8-oz glass
Cold relief medicine	30 mg per tablet

Pain relievers	30-65 mg per tablet
Chocolate	20-30 mg per bar
Energy drinks	80 mg per 8 oz serving*

*Average serving, but some energy drinks can be as much as three times the daily recommended amount for teens.

Sources: U.S. Food and Drug Administration, Center for Science in the Public Interest, MayoClinic.com, March of Dimes

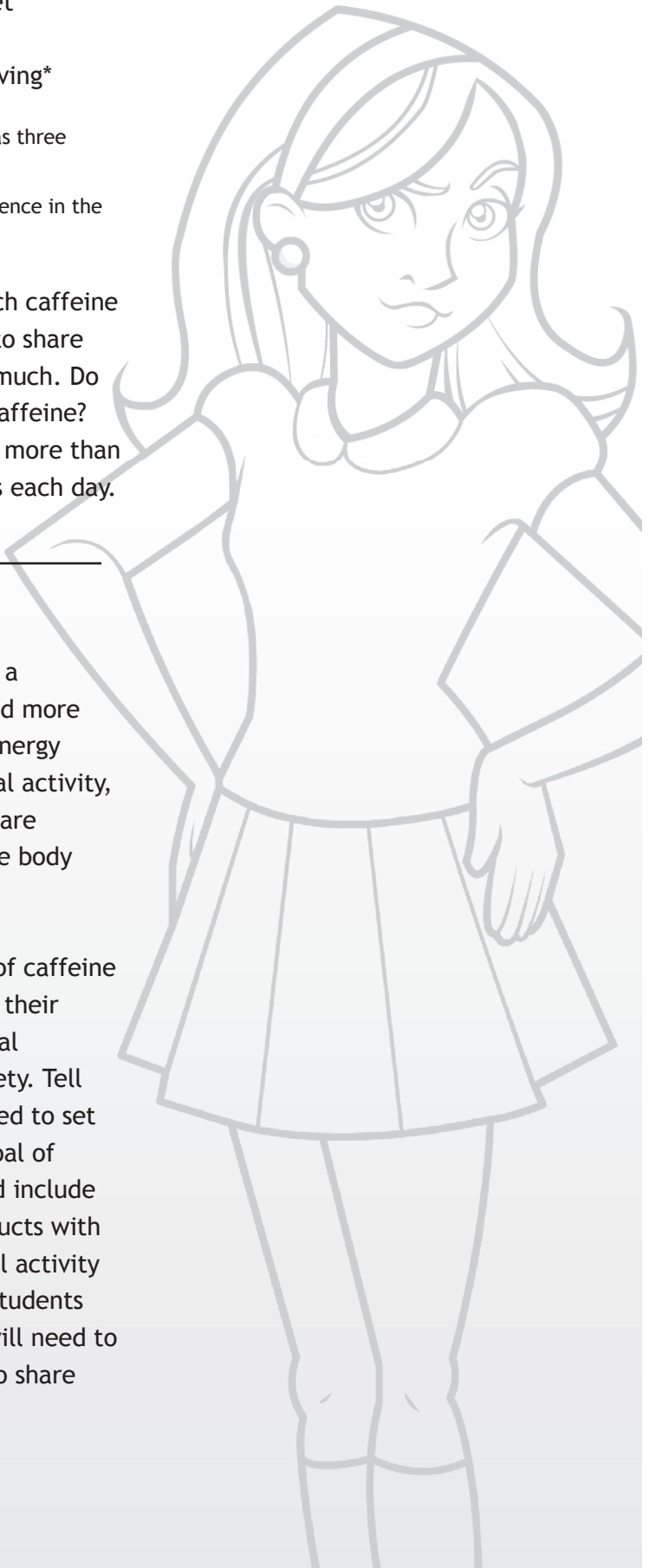
Have students calculate approximately how much caffeine they consumed yesterday. Ask several students to share their totals. Ask students if they consumed too much. Do you think you are dependent on the effects of caffeine? Remind students that teens should not consume more than 100 mg of caffeine and kids should consume less each day.



TWO—LANGUAGE ARTS

Explain to students that our bodies can build up a tolerance to caffeine, which means that we need more and more caffeine to get the same short-term energy boost. Discuss with students that regular physical activity, eating nutritious meals and getting enough rest are healthy alternatives to caffeine for providing the body with energy.

Have students set a goal to reduce the amount of caffeine in their diets. Caution students that eliminating their caffeine intake abruptly could lead to withdrawal symptoms including headache, fatigue and anxiety. Tell students that with all goal-setting, they may need to set several short-term goals to reach a long-term goal of reducing caffeine intake. Short-term steps could include reducing serving sizes, switching to similar products with less or no caffeine and including regular physical activity and adequate rest in their daily routines. Give students time to brainstorm and write down steps they will need to achieve their goals. Afterward, ask volunteers to share their plans to reduce caffeine intake.



WRAP UP

1. Caffeine is a stimulant. What does that mean?
2. What are some possible, immediate effects of caffeine?
3. What is one way to reduce your daily consumption of caffeine?



LESSON BOOSTER

Materials: Paper/pencil, Markers or crayons, Computer access (optional)

Divide students into small groups. Tell the students that they are going to design a vending machine featuring drinks low in caffeine. Have students illustrate their machine and the items it will offer. Tell the groups their vending machines should appeal to students. If possible, allow students to use the Internet to research at least 3 drinks for their vending machines. Make sure options include water.