

Safety Smart® Science with Bill Nye the Science Guy®: Germs & Your Health

Dear Parents:

Do you know an uncovered sneeze can send disease-causing germs up to 12 feet? Do you know the best ways to strengthen your immune system? Do you know the difference between viruses and bacteria? The answers may surprise you.

As a parent, you do your best to give your children as many advantages as possible. Right now, you can do one simple thing to give your child an advantage for life: share a message about the importance of staying healthy!

The **Safety Smart® Science with Bill Nye the Science Guy®: Germs & Your Health** DVD delivers vital tips, advice and fun interactive activities that go beyond the basics. Spend some time working on the fun, take-home sheets with your children. Together, you can help them learn about staying healthy and fit for life.

Look what you can learn together:

- How foods help you fight disease
- Germ-spreading 101
- Decoding food nutrition labels
- The difference between communicable and non-communicable diseases
- Hand-washing's "magic number"
- And much more!

You may have the opportunity to share safety messages from the "Germs & Your Health" DVD with a group of children. For guidance see the Safety Ambassador's Guide located on the DVD. To access it,

1. Insert the DVD into your computer's DVD-ROM drive
2. Macintosh users, double-click the DVD icon on your desktop
3. PC users, right-click on the DVD icon and select open
4. Open the ROM folder
5. Click on the Index.HTML file
6. Click on the Safety Ambassador's Guide



Safety Smart is an initiative aimed at improving the awareness and understanding of children ages 4-14 in safety and in managing themselves and their surroundings as safely as possible—by conscious action, not chance. Toward that end, Underwriters Laboratories, UL, produces multimedia public service announcements; arranges for Safety Ambassadors' visits for children to learn from professional safety experts; hosts field trips to its laboratories, where students see safety engineers at work and participate in their own hands-on safety experiments; regularly takes a public stance on emerging safety issues, especially regarding products that may pose a risk to consumers; and supports the development of its youth safety education programs. Through its efforts, Safety Smart cultivates safety awareness, provides opportunities for children to learn and practice safe behaviors, and helps children learn to make more informed safety choices today and in the future.

Do your part!
Be **Safety Smart!**



DO YOUR PART! BE SAFETY SMART®! • VISIT WWW.ULSAFETYSMART.COM

Try This At Home!

The *Safety Smart® Science with Bill Nye the Science Guy®: Germs & Your Health* DVD puts educational family fun right at your fingertips. Use these worksheets and suggested activities to get your whole family thinking healthy!

- Use our clues—and your science smarts—to see if you can solve our **Crossword Puzzle**.
- Unscramble letters and discover all the “germ terms” in our **Word Jumble**.
- Get out the pencils and markers and **Count the Ways** germs can spread through air, water, and by touching contaminated surfaces.
- Have your child make a healthy food choice and investigate the reasons why when they **Read the Label**.
- Look for words of health and fitness in our **Word Search**.
- Then, it’s time to put all your knowledge to the test. Take the **Quiz** and show what you know!



Insects and Germs

Work with the children to analyze Lyme disease, which is spread to humans by ticks. Have the children research the disease at the following websites.

- CDC: <http://www.cdc.gov/lyme/>
- Johns Hopkins Arthritis Center: <http://www.hopkins-arthritis.org/arthritis-info/lyme-disease/>

Ask the children to use their research findings to fill in the missing information in these sentences:

1. Lyme disease is caused by the pathogen _____. This pathogen is a type of germ called a _____ (virus or bacterium?).
2. Humans can get Lyme disease if they are bitten by a _____ that is infected by the pathogen.
3. Symptoms of Lyme disease include: _____.
4. In the United States, high-risk areas for getting Lyme disease are: _____.
5. Lyme disease is treated by: _____.
6. Humans can avoid Lyme disease by: _____.

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Quiz

True or False? Circle T or F

1. All germs are harmful.	T	F
2. Disease-causing microorganisms are called pathogens.	T	F
3. Germs can only be spread through direct contact.	T	F
4. The human body is exposed to billions of germs every day.	T	F
5. Bacteria and viruses are types of germs.	T	F
6. Bacteria grow best at 98.6 degrees Fahrenheit.	T	F
7. The human circulatory system identifies and fights off germs every day.	T	F
8. A communicable disease can spread from person to person.	T	F

Multiple Choice: Circle the letter of the best answer

9. A non-communicable disease:
- is the same as an infectious disease
 - spreads from person to person
 - doesn't spread from person to person
 - is spread by pathogens
10. Germs can be spread through:
- air
 - water
 - touching a contaminated surface
 - all of the above
11. To maintain a strong immune system, it's important to:
- Eat nutritious foods
 - Get enough sleep
 - Exercise
 - All of the above
12. To avoid spreading germs, wash hands with soap and warm water for how many seconds?
- 5
 - 10
 - 15
 - 20

Quiz Answer Key

True or False?

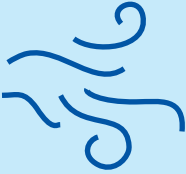


- | | |
|--|----------|
| 1. All germs are harmful. | F |
| 2. Disease-causing microorganisms are called pathogens. | T |
| 3. Germs can only be spread through direct contact. | F |
| 4. The human body is exposed to billions of germs every day. | T |
| 5. Bacteria and viruses are types of germs. | T |
| 6. Bacteria grow best at 98.6 degrees Fahrenheit. | T |
| 7. The human circulatory system identifies and fights off germs every day. | F |
| 8. A communicable disease can spread from person to person. | T |

Multiple Choice

9. A non-communicable disease:
- c. doesn't spread from person to person**
10. Germs can be spread through:
- d. all of the above**
11. To maintain a strong immune system, it's important to:
- d. All of the above**
12. To avoid spreading germs, wash hands with soap and warm water for how many seconds?
- d. 20**

Count the Ways

Germs can spread through air, through water, and by touching a contaminated surface. In the boxes, draw pictures to show these ways that germs spread.

<p>Through air</p> 	
<p>Through water</p> 	
<p>By touching a contaminated surface</p> 	

Read the Label

Healthy food choices can help prevent or reduce the risk of disease. But what exactly is a healthy food choice? According to the United States Department of Agriculture, a healthy diet is one that:

- Emphasizes fruits, vegetables, and whole grains
- Emphasizes fat-free or low-fat milk and milk products
- Includes lean meats, poultry, fish, beans, eggs, and nuts
- Is low in saturated fats, trans fats, cholesterol, salt (sodium), and added sugars

Choose an item that you think is a healthy food choice. Fill in the table, then explain why your food item is a healthy choice.

Amount Per Serving		Calories from Fat 110
		% Daily Value*
Calories 250		
Total Fat 12g		18%
Saturated Fat 3g		15%
Trans Fat 3g		
Cholesterol 30mg		10%
Sodium 470mg		20%
Total Carbohydrate 31g		10%
Dietary Fiber 0g		0%
Sugars 5g		
Protein 5g		
Vitamin A		4%
Vitamin C		2%
Calcium		20%
Iron		4%

* Percent Daily Values are based on a 2,000 calorie diet. Your Daily Values may be higher or lower depending on your calorie needs.

	Calories: 2,000	2,500
Total Fat	Less than 65g	80g
Sat Fat	Less than 20g	25g
Cholesterol	Less than 300mg	300mg
Sodium	Less than 2,400mg	2,400mg
Total Carbohydrate	300g	375g
Dietary Fiber	25g	30g

Name of Food:	
Main ingredients:	
Total fat per serving:	
Saturated fat per serving:	
Trans fat per serving:	
Cholesterol per serving:	
Sodium per serving:	
Sugar per serving:	

This is a healthy food choice because: _____

Word Jumble

Unscramble the letters to make words that are related to germs and your health. Use the circled letters to make a word that also relates to germs and your health.

M E N U M I

R G M E

S I E X R E E C

H G T E P N A O

U S I V R

T A C R B I A E

B E L A I C U N M O M C

Word Made From Circled Letters: _____

Hint: These are so small you often don't know they're there.

Add a Little Drama

After you unscramble the words, choose one to dramatize by acting out its meaning. See if your family can guess the word.

Word Jumble Answer Key

M E N U M I

IMMUNE

R G M E

GERM

S I E X R E E C

EXERCISE

H G T E P N A O

PATHOGEN

U S I V R

VIRUS

T A C R B I A E

BACTERIA

B E L A I C U N M O M C

COMMUNICABLE

Word Made From Circled Letters: MICROORGANISM

Hint: These are so small you often don't know they're there.

Word Search

Find and circle all the health and fitness words. Then use each word in a sentence.

T	E	F	F	A	G	E	R	B	C	A
V	A	W	I	R	S	O	A	T	O	U
A	M	E	O	S	L	E	E	P	M	R
Y	T	S	S	B	I	S	O	E	M	G
G	I	S	O	A	P	A	A	T	U	E
E	X	E	R	C	I	S	E	I	N	R
B	I	W	F	T	A	P	H	M	I	M
A	T	P	O	E	B	O	G	M	C	S
B	Y	O	N	R	T	R	I	U	A	T
N	U	T	R	I	T	I	O	N	B	B
V	A	R	I	A	T	Y	H	E	L	T
A	C	L	O	R	E	S	A	I	E	G

Health and Fitness Words

germs nutrition soap communicable sleep immune bacteria exercise

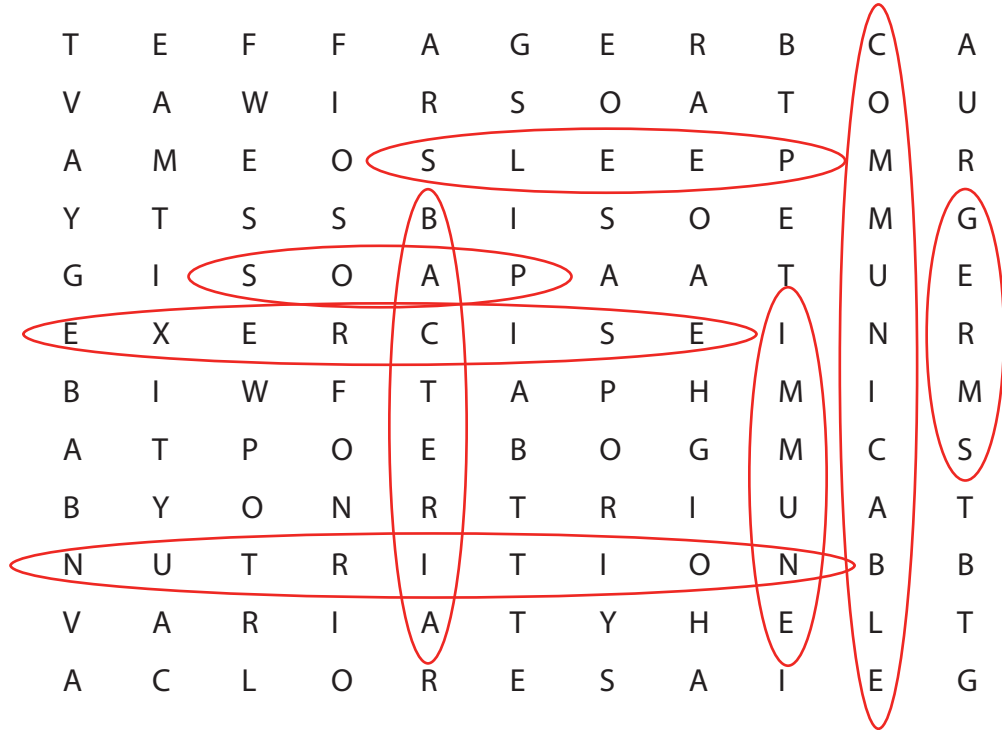
Use each word in a sentence...

1. _____.
2. _____.
3. _____.
4. _____.
5. _____.
6. _____.
7. _____.
8. _____.

WORKSHEET

Safety Smart® Science with Bill Nye the Science Guy®:
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Word Search Answer Key



germs

soap

sleep

bacteria

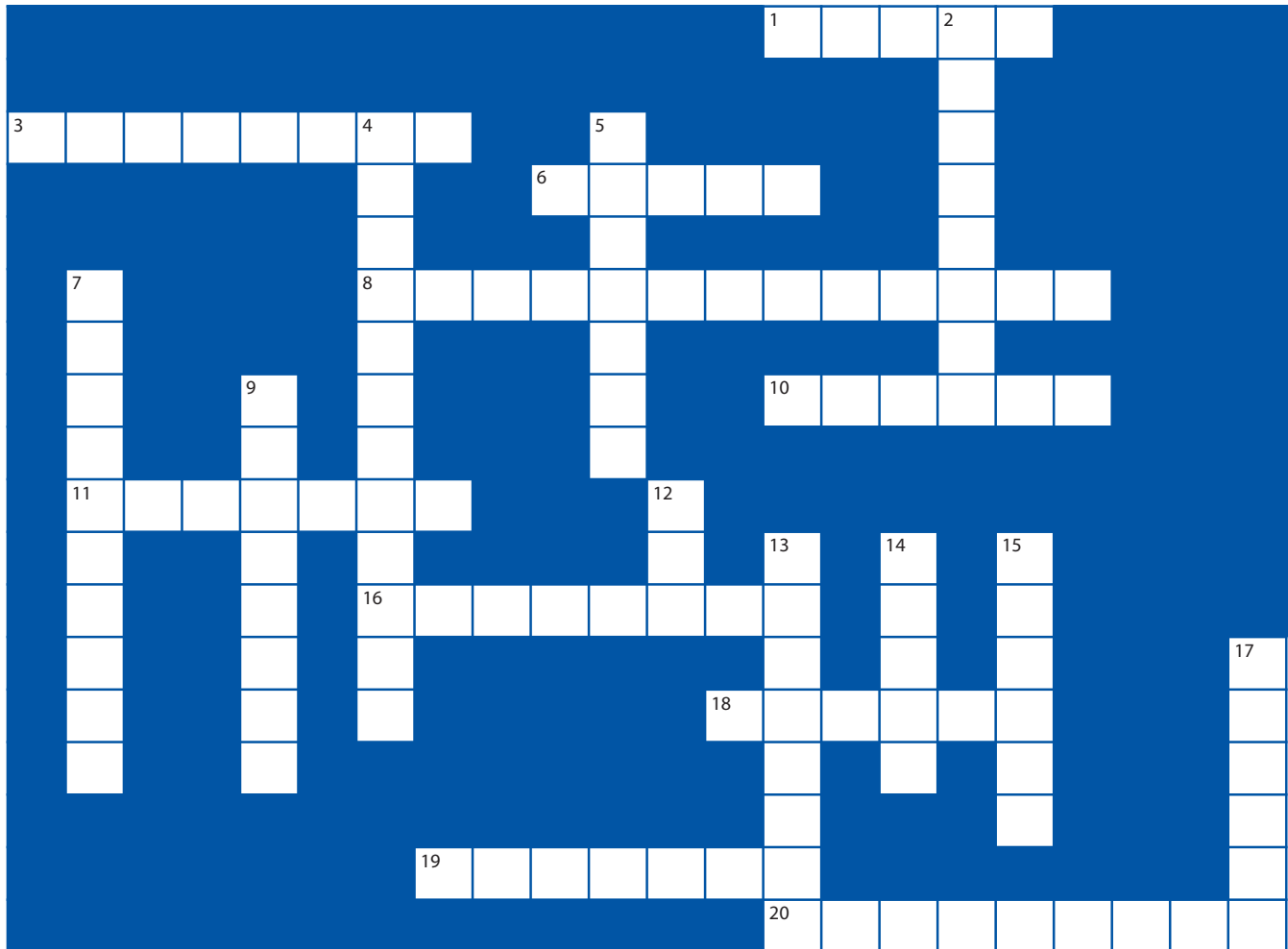
nutrition

communicable

immune

exercise

Crossword Puzzle



ACROSS

- 1 Germs spread through air, through ____, and by touching contaminated surfaces.
- 3 Touching a contaminated door knob is an example of germs spreading through ____ contact.
- 6 Your body is exposed to ____ every day.
- 8 To see this, you need a microscope.
- 10 Shaking hands is an example of how germs can spread through ____ contact.
- 11 Germs spread through direct and indirect ____.
- 16 These germs grow best at 98.6 degrees Fahrenheit.
- 18 This body system identifies and fights off germs.
- 19 Germs can be spread by ____.
- 20 Food and beverage dispensers must be ____ to prevent the spread of germs.

DOWN

- 2 Important for a strong immune system.
- 4 This kind of disease spreads from person to person.
- 5 Wash hands for twenty ____.
- 7 A communicable disease is ____.
- 9 Disease-causing microorganism.
- 12 Sneezing without covering one's nose is an example of how germs can spread through ____.
- 13 Most bacteria are ____.
- 14 A type of germ.
- 15 This can travel up to 12 feet.
- 17 Non-communicable diseases don't ____ from person to person.

