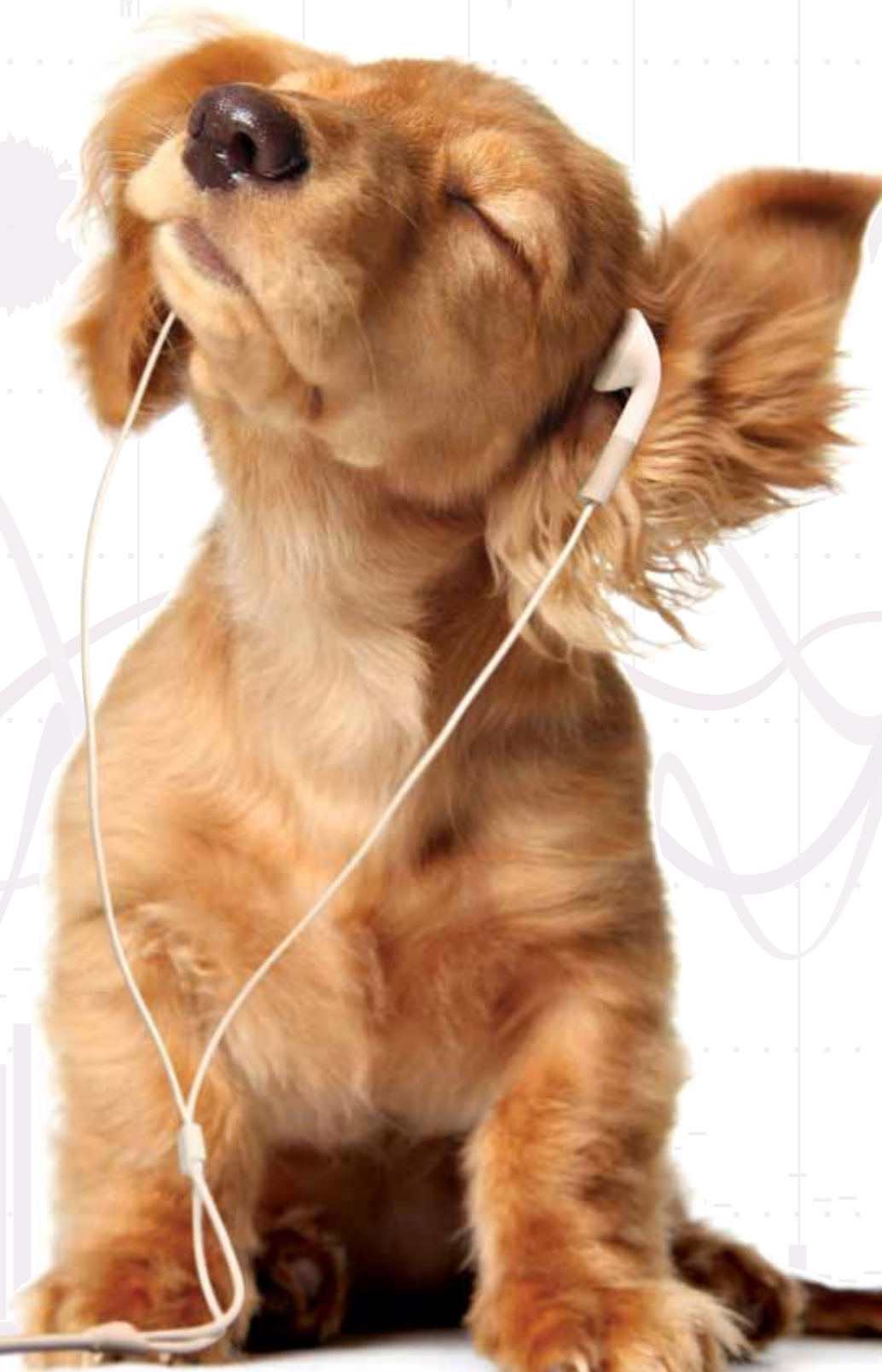


# Listen UP!

Play It Safe With Your Ears. Play It Safe With Your Health.



For Elementary  
School Students



# Keep Your Hearing Healthy

*What's that sound you hear?*

*It's the siren of a fire truck, bark of a dog, and ring of a telephone.*

*Your ears allow you to hear many different sounds. Some sounds can be pleasant to hear and some not so pleasant. But either way, the louder the sound and the longer you listen to it, the more likely it is to cause damage to your hearing.*

*Some sounds not only harm your hearing, but can also make it hard to concentrate while reading or doing homework and prevent you from falling asleep. It is important that you learn about sound and how to identify when it is harmful to you and others.*

*This fun booklet will teach you how to identify which sounds are loud and ways to protect your hearing and health. Hearing is a very important part of your life. You only have one pair of ears, so treat them well by protecting them from harmful sounds.*

*U.S. Environmental Protection Agency  
Office of Air and Radiation*



# What's That Sound?

Test how well you know sounds. Choose a word from the list below and match it to the picture that makes that sound. After you have matched the sounds to the picture, you can color them.

bang

woof

squeak

meow

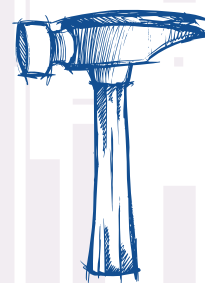
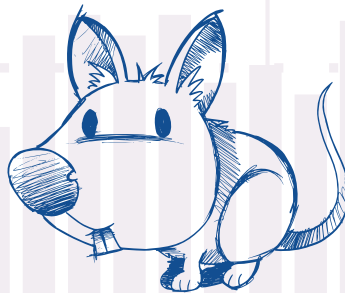
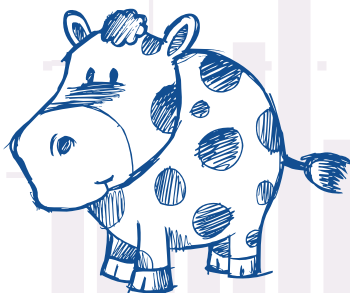
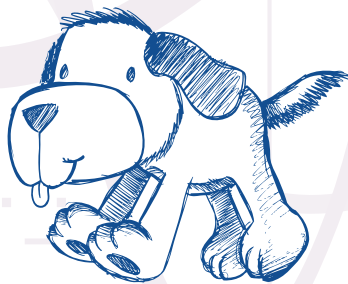
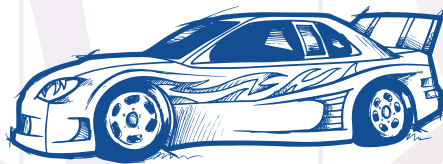
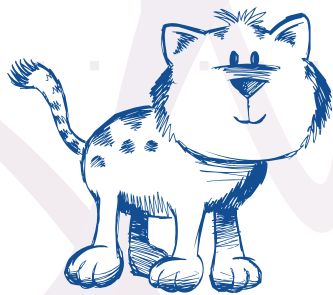
buzz

tick tock

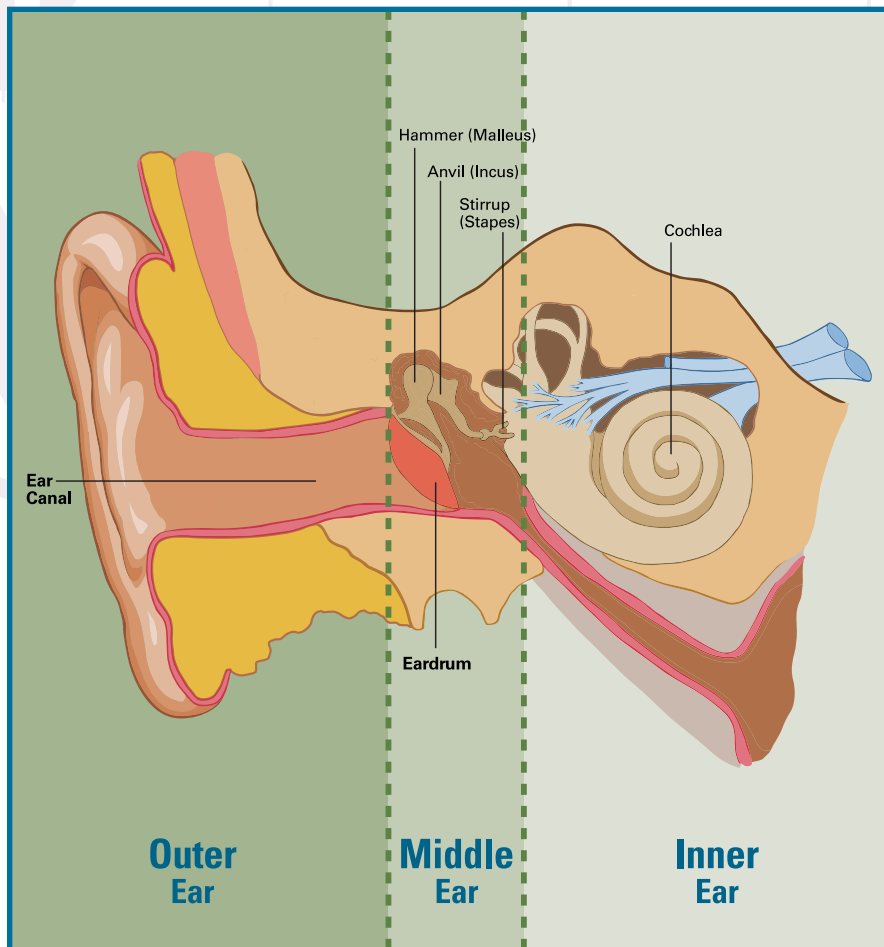
vroom

crack

moo



## What happens inside the ear when you hear sounds?



Your ears are amazing instruments! Each ear is divided into three parts: the outer ear, middle ear, and inner ear. The three parts work together so you can hear sound.

- Hearing starts at the **outer** ear, which carries sound from the air through the ear canal to the eardrum.
- The eardrum vibrates, which causes three bones (malleus, incus, and stapes) in the **middle** ear to move mechanically.
- The middle ear sends mechanical vibrations to the **inner** ear (cochlea) where they are picked up by hair cells, which send electrical impulses to the brain.

The tiny hair cells in the inner ear are very important. Why? Because when those hair cells are damaged, they do not heal and can cause hearing loss. Think of hair cells as blades of grass. When you walk on grass the blades spring back up but if you walk over them too much, the blades stop springing back, and the grass flattens out. The same thing happens in your ears when you listen to sounds that are too loud for a long time—they may damage the tiny hair cells in your inner ears.

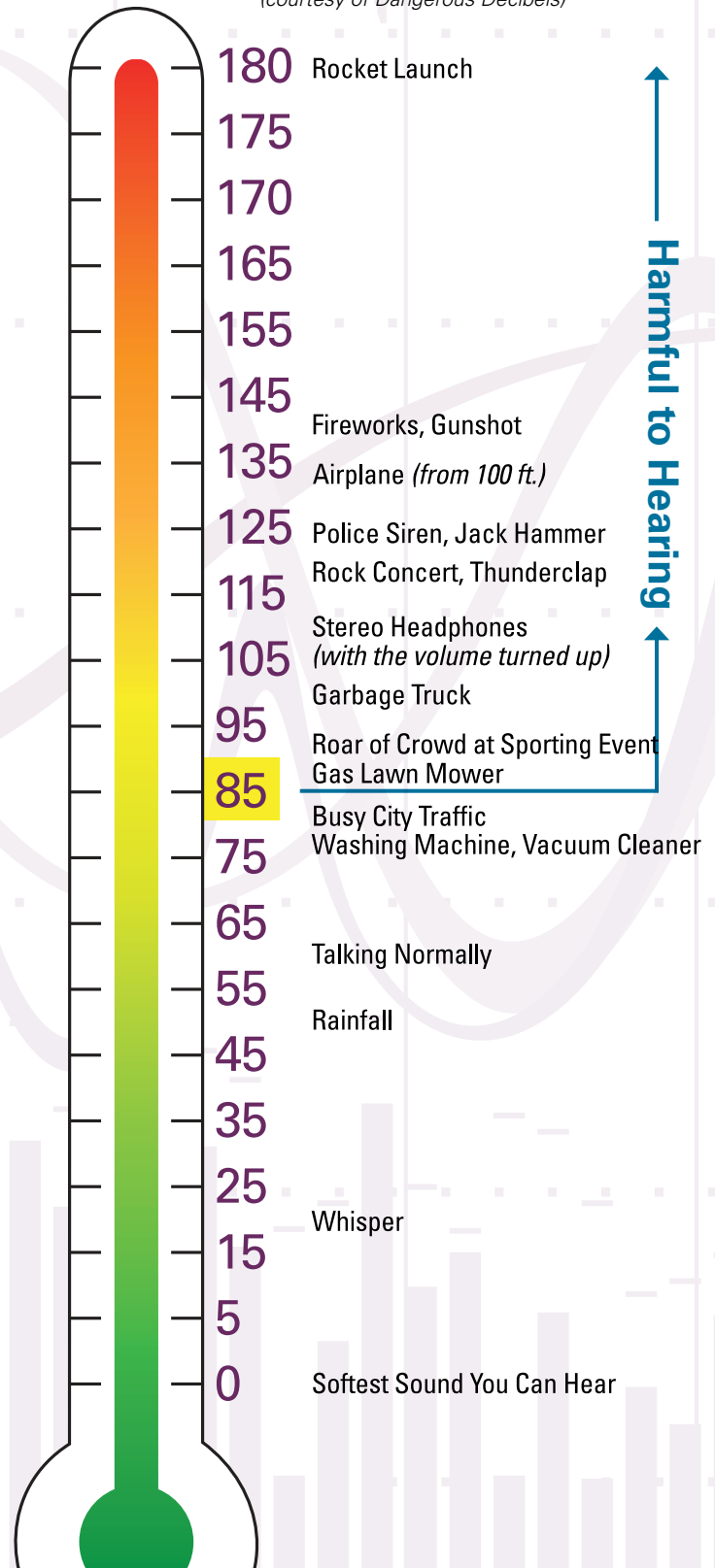


# What is Too Loud?

Sound is measured in units called decibels (*des-uh-bels*). The greater the number of decibels, the louder the sound and the more harmful it is to your ears. The sound thermometer gives you an idea of how loud some sounds are. If you are exposed to sound at 85 decibels and above, it may harm your hearing.

## Sound Thermometer

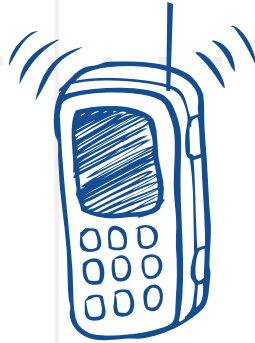
(courtesy of Dangerous Decibels)



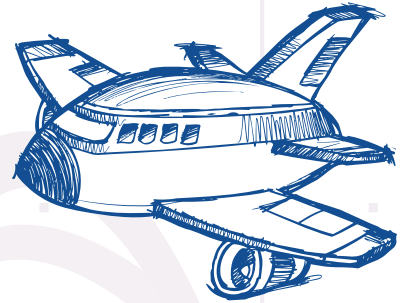
Circle the 5 pictures that produce sounds that can be harmful to your hearing. To help you, use the sound thermometer on the previous page. After you have circled all 5 pictures, you can color them.



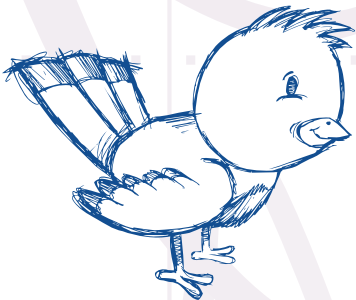
Garbage Truck



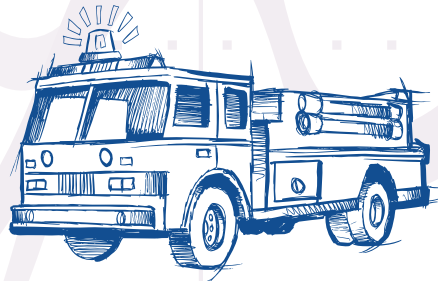
Cell Phone



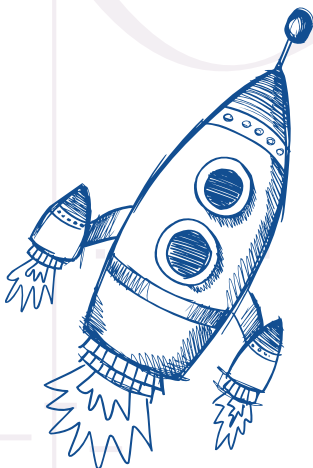
Airplane



Bird



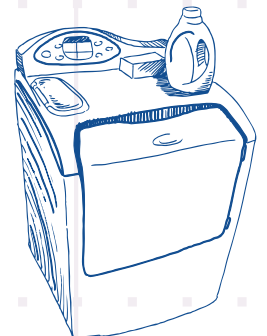
Fire Truck



Rocket



Stereo Headphones



Washing Machine

# Think Quiet

Sound can harm more than just your hearing; it can also cause harm to your health. While at home, school, or play, think quiet...to keep your ears and health from being harmed by sound.

+24dB



## While at home, sound can cause problems like:

- Trouble sleeping
- Headaches
- Trouble concentrating on your homework
- Difficulty hearing your family members



## While at school, sound can cause you to:

- Have trouble concentrating
- Become frustrated when you can't hear
- Not think clearly
- Have difficulty hearing your teacher and classmates



## While at play, the sound is too loud if:

- You can't hear the person next to you
- It shakes or vibrates your body
- You hear a ringing sound in your ears after exposure to loud sounds

# Word Search

There are 18 words hidden in this word search that relate to sound and your hearing. Can you find them? Don't forget to look up, down, forward, backward, and diagonal!

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

damage  
decibels  
eardrum  
earplug  
ears  
hair cells

hearing  
harmful  
inner ear  
listen  
loss  
loud

middle ear  
noise  
outer ear  
protection  
quiet  
sounds



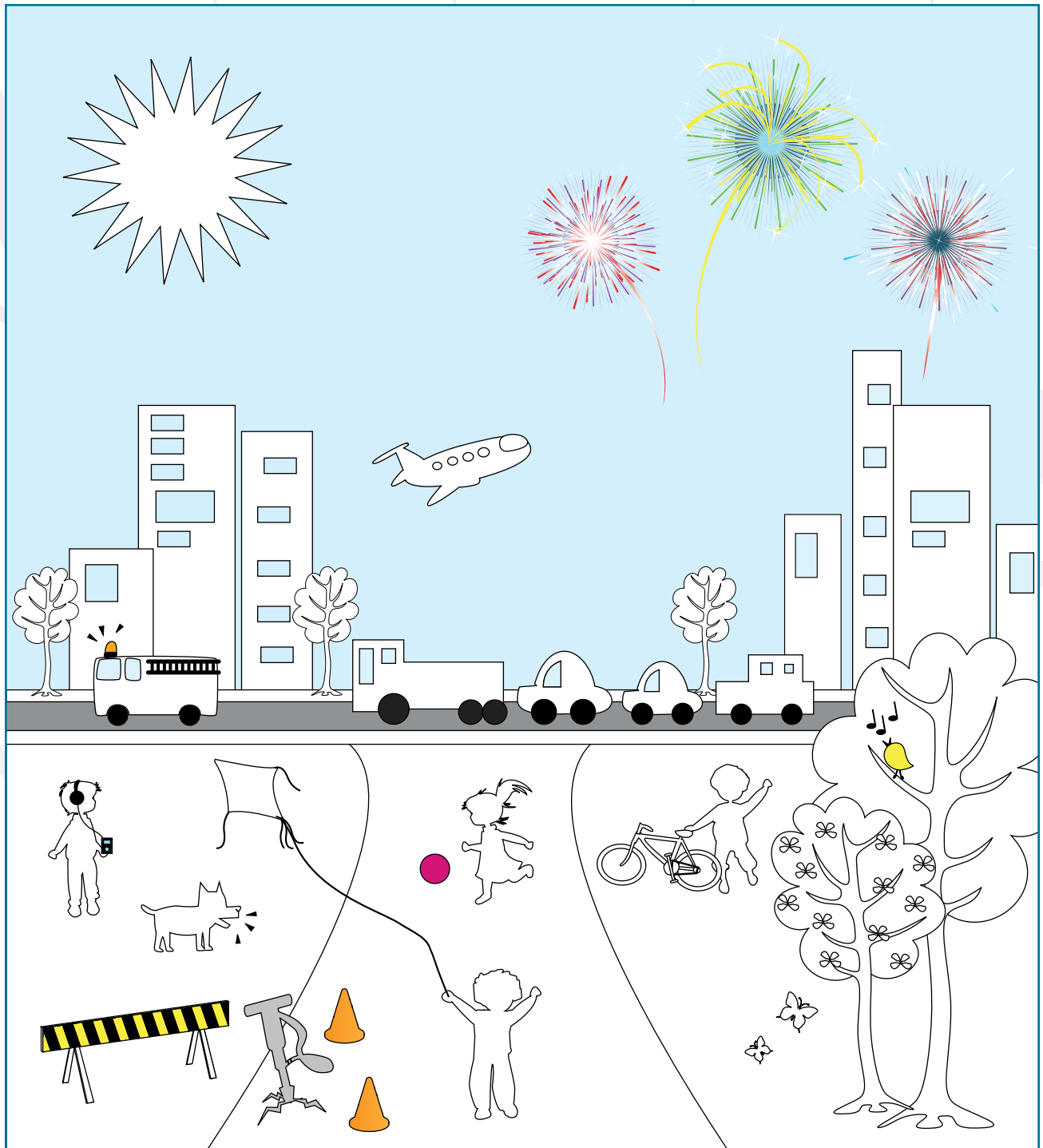


# Connect-the-Dots

Connect the dots below to complete the picture. And remember, some sounds may be enjoyable but listening to them for too long and too loud can damage your hearing.



There are some sounds that can harm your hearing or interfere with your sleep and study. Can you find and circle the 7 objects in the picture below? After you have circled the 7 objects, you can color the page.



# Word Scramble

Finish unscrambling the letters below for words that relate to sound and your hearing.

R A S E      E    \_    R    \_

I O N E S      \_    O    \_    S    \_

A G A E D M      D    A    \_    \_    G    \_

R M D A R U E      E    \_    R    D    \_    U    \_

E T U Q I      Q    \_    \_    \_    T

N U D S S O      \_    O    \_    N    \_    S

D O L U      L    \_    U    \_

E I D L E C B      \_    E    C    \_    B    \_    L

R H E A      H    \_    \_    R

F M E R A U F      \_    \_    R    M    U    \_    F

# You Can Do It!

## Start protecting your hearing and your health today!

- Homework and studying should be done in a quiet place.
- Turn down the volume on your television, video game, radio, and music player.
- Walk away from sound that is too loud.
- Wear hearing protectors while attending or participating in loud activities.
- Inform your parents or teacher when you are having difficulty hearing.
- If you hear a ringing sound in your ears after exposure to loud sounds, please tell your parents.
- Teach classmates, friends, and family about sound.

List other things you can do:

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To learn more, visit  
[www.epa.gov/air/noise.html](http://www.epa.gov/air/noise.html)

### Other Resources:

[www.cdc.gov/healthyyouth/noise](http://www.cdc.gov/healthyyouth/noise)

[www.dangerousdecibels.org](http://www.dangerousdecibels.org)

[www.hearingconservation.org](http://www.hearingconservation.org)

[www.listentoyourbuds.org](http://www.listentoyourbuds.org)

[www.noisyplanet.nidcd.nih.gov](http://www.noisyplanet.nidcd.nih.gov)



# Game Answers



meow



vroom



tick tock



crack



woof



buzz



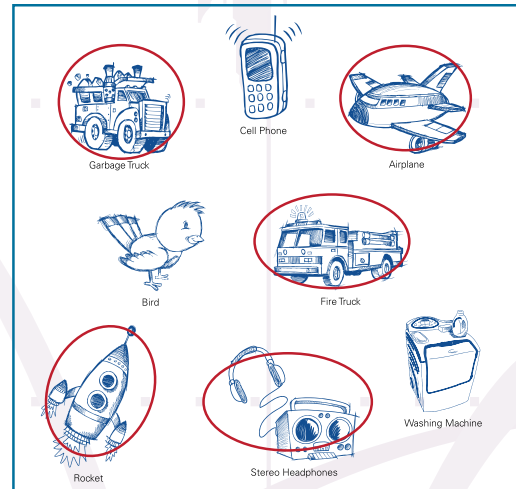
moo



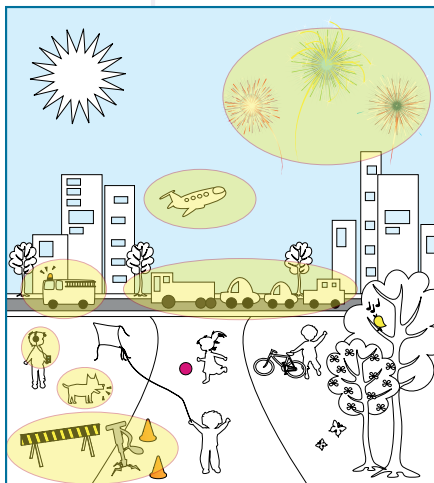
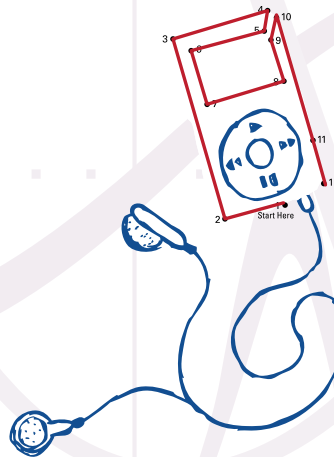
squeak



bang




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



- RASE
- IONES
- AGAEDM
- RMDARUE
- ETUQI
- NUDSSO
- DOLU
- EIDLECB
- RHEA
- FMERAUF
- E A R S
- N O I S E
- D A M A G E
- E A R D R U M
- Q U I E T
- S O U N D S
- L O U D
- D E C I B E L
- H E A R
- E A R M U F F

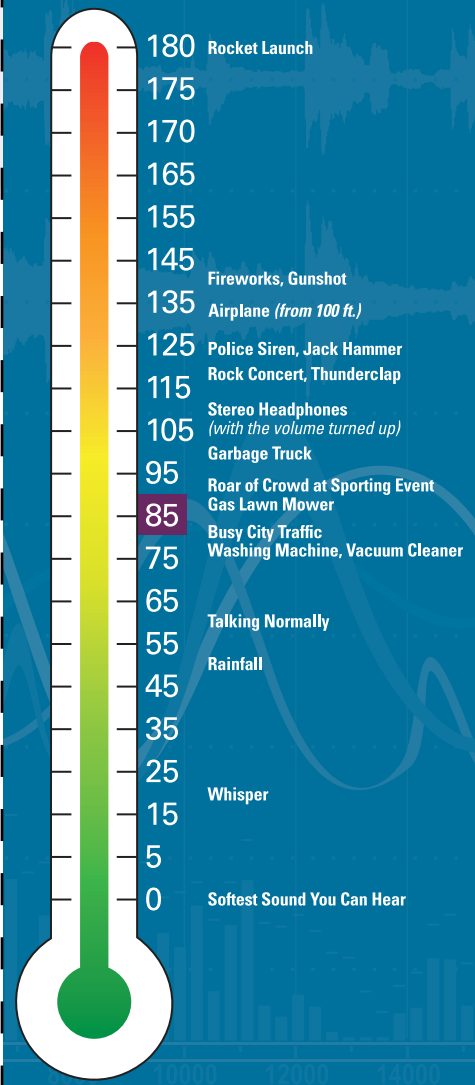
Cut out the bookmark below. Use it to mark your page and to remind you of the sounds that can be harmful and how to protect your hearing and health.

 Cut along the dotted line.



## What is Too Loud?

Sound at 85 decibels and above can harm your hearing.



## Protect Your Hearing and Your Health!

Remember, not all sounds are harmful. But the louder the sound and the longer you listen to it, the more harmful it is to your ears and your health.

- Turn down the volume on your television, video game, radio, and music player.
- Walk away from sound that is too loud.
- Wear hearing protectors when needed.
- Tell your parents, a trusted adult, or a teacher when you can't hear or if you hear a ringing sound in your ears after exposure to loud sounds.

Visit [www.epa.gov/air/noise.html](http://www.epa.gov/air/noise.html) for more information.

