

Name _____

Teacher _____

What Happens When I Sleep?

If you've ever wondered what happens when your brain tunes out the world and you're snoozing away, you're not alone. Scientists have been curious about this too, and they have studied lots of people sleeping to get some answers.

1 One important finding researchers have made is that sleep is complicated! By using special equipment to carefully monitor the brain waves and eye and muscle movements of sleeping people, they have learned that sleep has a specific, repeating pattern during a normal night's rest. Moreover, even though you may think the body is quiet during sleep, experts say that at some points, vigorous mental and physical activity is going on.

My notes about what I am reading

2 Here's what really happens when those eyelids get heavy and you turn out the light. Gradually, your body starts to relax and your mind begins to wander. However, you're still vaguely conscious of what's going on. Then, all of a sudden, your brain breaks off contact with the outside world. You don't hear or see anything any more, and under your lids your eyes slowly drift from side to side: You are asleep!

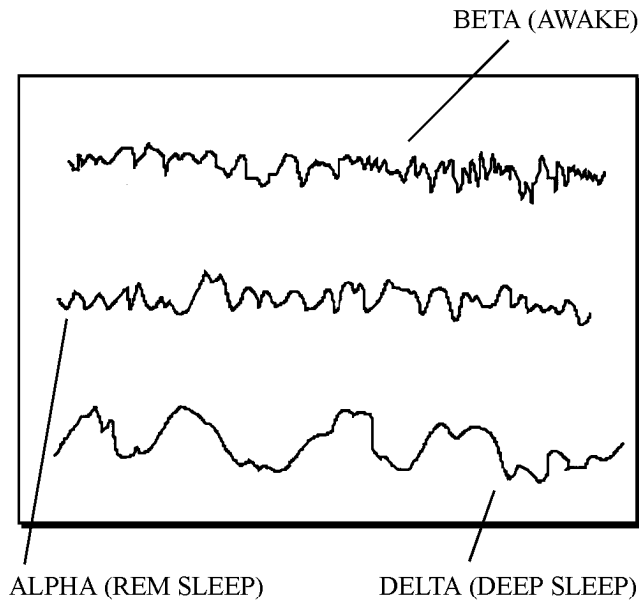
3 At first, you sleep very lightly and can be easily awakened. If your brain were being monitored for electrical activity, scientists would notice what they call "slow waves with spindle bursts." Very soon, however, you begin to descend into a sounder and sounder sleep. Eventually, the slumber is so deep that it would take someone several minutes to rouse you, if you could be awakened at all. At this point, your brain output has a different look—what scientists call delta waves. Also, your body is completely relaxed and your heart rate and blood pressure have dropped.

4 After sleeping very soundly for a while, you gradually pass back through the stages of heavier slumber until your sleep is light again. Now, a new phase called Rapid Eye Movement, or REM, sleep begins. It's during this time that dreaming occurs. Scientists call this phase REM sleep simply because the eyes move back and forth rapidly under the lids as though they are looking at something. Actually, it may be that the eyes *are* looking at something—the unfolding events of the dream!

5 Not only do your eyes dart back and forth during REM sleep, but a lot of other changes take place. Your breathing is irregular and muscles in your face and fingers twitch. Also, the

blood flow and temperature in your brain increases, signaling heightened mental activity. If your brain waves were being monitored, they would look very much like those that occur when you're awake. REM sleep is a very busy time!

BRAIN WAVES



6 After awhile, the period of REM sleep ends and you begin passing through the stages of lighter to heavier non-REM sleep again. Scientists say that all of us go through this nondreaming, then dreaming, then nondreaming cycle a number of times during the night. However, the amount of time we spend in each part of the cycle depends partly on our age. Newborn babies, for example, spend half their snoozing time in REM sleep. (Nobody knows what they dream about!) In contrast, adults usually dream less than two hours a night. Elementary and middle school age children spend more hours than grownups in deep, nondreaming sleep, perhaps because this is the time when the largest amounts of the chemicals that stimulate their growth are released in the body.

7 Now you have a good idea what goes on during sleep. But if you're wondering *why* all this happens, you'll have to wait! Scientists are still searching for the answers themselves.

1. In paragraph 4, the word soundly means—
- A in a loud way
 - B noisily
 - C in a sound way
 - D when the person sleeps
2. If you wanted to learn more about what happens in your body when you are sleeping, which book would *most likely* be the best choice?
- F *Interpreting Your Dreams*
 - G *The Dangers of Sleeping Pills*
 - H *How to Stop Snoring*
 - J *Solving the Mystery of Sleep*

3. Look at this summary of the REM process:

- A. after sleeping soundly for a while, you sleep lighter again
- B. dreaming occurs
- C. _____
- D. blood flow and temperature in your brain increases

Which of these statements is missing in step 3?

- A your breathing is irregular
- B you are vaguely conscious
- C you sleep heavier
- D your wake up

4. According to the article, why do adults spend less time in deep, nondreaming sleep than do children?
- F Adults have so many memories to dream about.
 - G Adults are less likely to be learning new things.
 - H Adults are no longer growing physically.
 - J Adults have lots of aches and pains.
5. Which is a sign that a sleeping person is in REM sleep?
- A regular breathing
 - B muscle twitches
 - C heavy smoking
 - D slower heart rate
6. When would it probably be *most* difficult to awaken a sleeping person?
- F just after she falls asleep
 - G about an hour after she falls asleep
 - H when she is dreaming
 - J just before she wakes up naturally

Wolves in the Wild

Wolves have been misunderstood by many people. Read the following passage to learn some surprising facts about wolves.

- 1 In the past, people felt wolves were nasty, savage animals that loved to kill wildlife, herd animals, and even humans. The fear and hatred were so strong that people slaughtered hundreds of thousands of wolves. In many regions, cash bounties were even offered to anyone who brought in a dead wolf. By the beginning of this century, wolves were almost completely wiped out in the United States.
- 2 Fortunately, the United States government stepped in to protect the last remaining wolves. Wolves were put on the endangered species list and all hunting of them was banned.
- 3 In addition, scientists began studying wolves carefully for the first time and were surprised by what they learned. For instance, the idea that wolves hunt humans turned out to be completely false. Wolves are afraid of people and will run away or hide if they sense a human nearby. In fact, there has never been a documented case of a healthy wolf attacking a human in North America.
- 4 Wolves usually hunt large game animals, such as moose, caribou, and deer. What's more, they hunt only enough to survive and generally go after a sick or elderly animal. Such selective hunting actually helps keep herds healthy and strong.
- 5 Another surprising discovery was that a wolf pack will at times even refrain from hunting altogether. If a caribou herd is very small, wolves will often leave it alone until the caribou have had time to increase in number. Instead, the wolves will turn to other kinds of food, such as rabbit, fox, mice, and even berries. If all food is scarce, a wolf pack will even skip having pups for a year to hold down the demand for food.
- 6 Scientists realized that an animal has to be very smart to manage its food supply so carefully. This led to more research—and more surprises.
- 7 They discovered that wolves are very social animals. Wolves live in packs of from five to twenty members with two leaders, the alpha male and female. It is cooperation and shared work that ensure a pack's survival. For example, when snow piles up, every adult wolf will take a turn plowing a trail for the pack. Adult wolves share the responsibility of caring for the pups, and if a member of the pack is unable to hunt, others will bring food back to him or her.
- 8 The most startling discovery was the wolf's amazing ability to communicate. One wolf can "talk" to another through the position of ears, fur, and body, the pitch and intensity of a bark or growl, by nipping at fur, and, of course, through howling. A wolf can communicate more than just anger or fear. Wolves seem to express joy in a successful hunt, the accomplishments of a pup, and even the brilliance of a clear, dark sky filled with stars. And no matter how much time has passed, wolves will recognize and greet a long-absent member of the pack.



9 Recently the United States Fish and Wildlife Service began a program to reintroduce wolf packs into areas where they once lived. So far, two small packs have been released in wilderness areas in North Carolina and Florida. Both packs seem to be surviving nicely, so plans are being made to place packs in Montana, Idaho, and Yellowstone National Park in Wyoming. But many people still fear wolves and do not understand their value in nature. And despite the laws, hundreds of wolves are still killed through illegal hunting. It will take many dedicated people and many years before the call of the wolves once again fills the forests of North America.

A Wolf is a mysterious creature. Read the following poems about experiences with wolves.

A Night With a Wolf

by Bayard Taylor

High up on the lonely mountains,
Where the wild men watched and waited;
Wolves in the forest, and bears in the bush,
And I on my path belated.

The rain and the night together
Came down, the wind came after,
Bending the props of the pine-tree roof,
And snapping many a rafter.

I crept along in the darkness,
Stunned, and bruised, and blinded;
Crept to a fir with thick-set boughs,
And a sheltering rock behind it.

There, from the blowing and raining,
Crouching, I sought to hide me.
Something rustled; two green eyes shone;
And a wolf lay beside me!

His wet fur pressed against me;
Each of us warmed the other;
Each of us felt, in the stormy dark,
That beast and man were brother.

And when the falling forest
No longer crashed in warning,
Each of us went from our hiding place
Forth in the wild, wet morning.

The Wolf

by Georgia Roberts Durston

When the pale moon hides and the wild wind
wails,
And over the tree-tops the nighthawk sails,
The gray wolf sits on the world's far rim,
And howls: and it seems to comfort him.

The wolf is a lonely soul, you see,
No beast is the wood, nor bird in the tree,
But shuns his path; in the windy gloom
They give him plenty, and plenty of room.

So he sits with his long, lean face to the sky
Watching the ragged clouds go by.
There in the night, alone, apart,
Singing the song of his lone, wild heart.

Far away, on the world's dark rim
He howls, and it seems to comfort him.

The Wolf Cry

by Lew Sarett

The Arctic moon hangs overhead;
The wild white silence lies below.
A starving pine stands lone and gaunt,
Black-penciled on the snow.



A lone long call floats up from the trail;
And the naked soul of the frozen North
Trembles in that wail.

1. Based on the first reading passage, which behavior makes wolves social animals?

- A cooperating and communicating
- B living in a large group
- C caring for the young
- D managing and selecting

2. Look at this dictionary entry.

game n. 1. any form of play; amusement
2. amusement or sport involving competition under rules, or a single contest in such a competition
3. the number of points required for winning
4. a scheme; plan
5. wild birds or animals hunted for sport or food
6. a business or job, esp. one involving risk

In “Wolves in the Wild,” which definition would apply to the word game in paragraph 4 ?

- F 1
- G 4
- H 5
- J 6

3. After reading “Wolves in the Wild” and stanza 2 (lines 4–8) in “The Wolf”, what are the authors trying to say about wolves?

- A because wolves are thought as savage animals, animals and humans keep their distance
- B humans and other animals enjoy the company of wolves
- C wolves like being alone
- D wolves can howl more loudly when left alone

4. Look at this outline of “Wolves in the Wild.”

- A. Wolves become endangered species
 - 1. Humans feared wolves
 - 2. Humans slaughtered hundreds of thousands of wolves
- B. Scientists discover habits of wolves
 - 1. _____
 - 2. Wolves practice selective hunting
- C. Scientists discovered that wolves are social
 - 1. Wolves cooperate and share work
 - 2. Wolves communicate with other wolves

Which of these statements belongs in the blank.

- F By the beginning of this century, wolves were almost completely wiped out in the United States
- G wolves fear people
- H adult wolves share the responsibility of caring for the pups
- J wolves express joy

5. After reading “Wolves in The Wild” and “A Night with a Wolf”, why do you think the wolf in the poem is hiding from humans?

- A it is afraid to get close to people
- B it is looking for some place to howl
- C it is afraid of being hunted by humans
- D it is afraid of being bruised

6. After reading “Wolves in the Wild” and “A Night With a Wolf” what trait of the wolf is similar in both?

- F their savageness
- G their hunting abilities
- H their social qualities
- J their love for nighttime