Name: _____ Date: _____

What Do Pandas Eat?

Reading level 11 (7th grade) · 1041 words

Early on a spring morning in the Qinling Mountains of China, a panda sits in a bamboo thicket with her legs stuck out in front of her. She grabs a stem, bites off the tough outer layer in long strips, and crunches up the soft middle. Then she reaches for the next one, and the next. What do pandas eat? Bamboo, almost always. Of all the food a wild panda eats, about ninety-nine parts in every hundred are bamboo, a giant kind of grass.

That is a strange menu, because a panda is a true bear, a member of the bear family. Her stomach and gut are built more like a meat eater's than a plant eater's, and she is very bad at breaking down the tough walls of plant cells. So most of each stem rushes straight through her body without giving up much energy or protein. Out it comes again, often: a panda can poop up to forty times in a single day.

So she makes up for it by eating a lot, for a very long time. A panda may spend ten to sixteen hours a day finding and chewing food. That is like starting at breakfast and still munching at bedtime. Experts do not agree on how many pounds of bamboo all that chewing adds up to, and their guesses are far apart. They do agree that it is a great deal of bamboo, and a great deal of work for her jaws.

Watch her paws and you will see a trick. A panda has five fingers, plus a sixth bump on the inside of her wrist. It is a long, enlarged wrist bone under a soft pad of skin, and it works almost like your thumb. She hooks a stem between the bump and her fingers and holds it steady while she peels. To eat the leaves, she strips them off the stalk, rolls them into a wad, and stuffs the whole bundle into her mouth.

Bamboo gives so little energy that a panda has to save every scrap. Wild pandas and zoo pandas alike burn far less energy than other animals their size. A wild panda rested for more than half the day, napping between meals. Over a whole day, she covered only about twenty meters an hour on average. That is roughly the length of two school buses, in a whole hour. You could walk that far in less than half a minute. Even her skin stays cool: seen through a heat camera, a panda's surface is much cooler than that of other black and white animals.

How does her body do it? Pandas have very low levels of thyroid hormones, the chemicals that help set how fast a body burns fuel. A gene that helps make those hormones seems to have changed in pandas. Their brains, livers and kidneys are also small for a bear, and smaller organs likely need less energy. So she saves energy in many ways at once: in her body, in how she behaves, and even in her genes. It looks lazy, but it is a clever way to live on grass.

Saving energy has a cost. Some bears grow fat in autumn and then sleep through much of the winter. A panda can never store enough fat to do that, so she stays awake all year and keeps eating, even in the snow. Her thick fur helps hold in the little heat her body makes. Scientists think her black and white coat may help, too: the white hides her against snow, and the black hides her in the shade. The dark patches around her eyes may even help pandas recognize one another.

Scientists put tracking collars on six pandas in these mountains and followed them for years. They discovered that the pandas do not stay in one place all year. In spring they climb from the valleys up the mountains, and in autumn they come back down. They are not wandering around at random, either. They are following two kinds of bamboo, called arrow bamboo and wood bamboo, and switching between the shoots and the leaves of each kind as the seasons change.

Why go to all that trouble? The summer food is full of protein, which builds muscle, but it has very little calcium. The winter food is the other way around, rich in calcium but low in protein. A mother panda needs calcium to make milk, and her cub will drink that milk for many months while its bones grow. Bamboo shoots come up from about April to August, so summer is when she feasts on them. Only by moving with the seasons can she get enough of both to raise a cub.

Then came a real surprise. A team measured what pandas take in from their food, not just what they eat. About half of the energy a panda gets from her bamboo comes from protein. Even panda milk has a mix of nutrients like the milk of meat-eating animals. That is close to the share for wolves, and for feral cats, pet-type cats that live wild and hunt. Judged by the food on her plate, a panda is a plant eater. Judged by the nutrients inside it, she eats like a meat eater.

A panda's menu is not only bamboo. In the wild, pandas have been known to eat grasses, bulbs, fruits and insects, and every so often eggs or a little meat. But bamboo is the main meal, and that brings one danger. All the plants of one kind of bamboo can flower at the same time and then die together. A panda needs at least two kinds of bamboo nearby, so that if one kind dies off, she does not starve.

Some questions are still open. Fossils show that pandas were eating bamboo at least seven million years ago, but nobody knows for sure why their meat-eating ancestors turned to plants. Today, wild pandas live only in a few mountain ranges in China, and they have been moved from endangered to vulnerable, which means their risk of dying out is lower than it was, though still real. If you could ask the panda in the thicket one question, what would it be?

Questions

1. What do wild pandas eat most of the time?

A. Fish and eggs
B. Bamboo
C. Fruit and honey

2. Why does a panda have to eat for so many hours a day?

A. Her body gets little energy out of bamboo
B. Bamboo is very hard to find
C. She is always growing new teeth

3. Why do the pandas in the Qinling Mountains move up and down the mountain?

A. To get away from other pandas
B. To stay cool in winter
C. To get both protein and calcium from different bamboo

4. In this book, what does "thicket" mean?

A. A thick coat of fur
B. A crowded patch of plants
C. A deep river valley

5. What surprised the team that measured what pandas take in from their food?

A. Pandas never eat bamboo leaves
B. Pandas can digest wood easily
C. About half of a panda's energy comes from protein, like a wolf's

6. Why can't a panda sleep all winter like many other bears?

A. It cannot store enough fat
B. It is too cold in China
C. Its cubs need it awake

Words to know

thicket: dense plant patch
protein: muscle-building food
calcium: bone-building mineral
hormones: body's chemical messengers
vulnerable: at risk

Answer key: What Do Pandas Eat?

1. B. Bamboo
2. A. Her body gets little energy out of bamboo
3. C. To get both protein and calcium from different bamboo
4. B. A crowded patch of plants
5. C. About half of a panda's energy comes from protein, like a wolf's
6. A. It cannot store enough fat