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## How do bats sleep upside down?

- 1 Imagine being in a dark cave. High above you, the ceiling is covered in bats. Hanging upside down, they sleep, seemingly unaware of your presence. You creep out quietly, hoping not to disturb them.
- 2 Although birds easily launch themselves into the air from the ground, bats lack the strength to take off this way. Their wings are unable to produce enough lift to move them from a standstill, and their tiny back legs are too small to allow them to run fast enough to pick up speed. By hanging upside down, bats are in the ideal position to take off. When they want to fly, they simply release their grip and drop into flight.
- 3 As nocturnal creatures, bats sleep while most of the world is awake and come out to hunt at night. In order to sleep safely and avoid any predators that may be lurking during the day, bats can hang out of reach, in places that most animals and people are not likely to go. Since no other flying animal can hang upside down, a bat's roost is safe from invaders as well.
- 4 A bat can safely hang upside down for hours. When you hang on a pullup bar, you use muscles to maintain your grip and can only hold it for so long without getting tired. Bats, however, use no energy to latch their talons around a branch or rafter. The tendons in a bat's claws are attached to its upper body. When it flies to its roost, it opens its claws and grips the surface. After the bat relaxes its body, its weight pulls down on the tendons and locks its talons closed. This system is so effective that, if a bat dies while hanging upside down, it will remain there until something knocks it loose.



Circle the correct answers. Write your answer to question 6.

1. Which word in paragraph 2 means “the best possible”?
  - A easily
  - B simply
  - C ideal
  - D produce
2. Why can bats not take off from a standstill?
  - A They have tiny back legs.
  - B Their wings are not strong enough.
  - C They prefer to hang upside down.
  - D Their body weight locks their talons closed.
3. What happens last when a bat hangs upside down?
  - A The bat relaxes its body.
  - B The bat opens its claws.
  - C The bat grips the surface.
  - D The bat’s weight locks its talons in place.
4. The article does *not* tell \_\_\_\_\_.
  - A what animals hunt bats
  - B where bats sleep
  - C when bats sleep
  - D how bats lock their talons in place
5. You can infer from the article that \_\_\_\_\_.
  - A many birds hang upside down to sleep too
  - B bats’ legs do not get tired from hanging upside down
  - C bats are dangerous animals
  - D bats have most of their strength in their legs

 **Context Clues**

 **Cause & Effect**

 **Sequence**

 **Details**

 **Inference & Conclusion**

6. Describe an animal that has a unique way of sleeping, moving, or standing. Why is this animal interesting to you?

## How do bobsleds go so fast?

- 1 At the top of an icy shoot, four men stand poised beside their bobsled. When the buzzer sounds, they sprint, pushing the sled for about 50 yards down the start of the run. With precision, all four men jump into the sled. The driver's head is barely visible over the front of the bobsled, while the other three crouch as low as possible. Reaching speeds over 80 miles per hour, the bobsled flies down the 4,000-foot-long course, navigating 15 turns, and reaching the bottom in less than a minute.
- 2 In races decided by hundredths of a second, bobsled teams must find an edge to gain victory. First, a strong push start is a vital element. To be both strong and fast, athletes train as sprinters and weightlifters. Once the team is in the sled, gravity accelerates it down the run. However, friction between the ice and the bobsled's blades can slow it down. If the blades are sharp and razor-thin, they skim along the ice with very little friction. Air passes over and around the bobsled creating drag, which also slows it. Teams design aerodynamic sleds with pointed tips that direct the air around the sides of the sleds rather than over the top.
- 3 Performing an important job, drivers must choose the best course for their sled. On a bobsled run, the straightest path is the best, which means that drivers want to stay in the center of the run. Going too high or too low through the curves uses up precious time that could be the difference between first and fifth places. With so much momentum moving the bobsled, the driver makes only slight adjustments to keep it on track.
- 4 In this thrilling, fast-paced sport, athleticism, science, and engineering work together to win the race.





Circle the correct answers. Write your answer to question 6.

1. A bobsled can go more than \_\_\_\_\_ miles per hour.
  - A 15
  - B 50
  - C 80
  - D 100
  
2. What can slow a bobsled down?
  - A gravity
  - B blades
  - C ice
  - D friction
  
3. You can infer from the article that \_\_\_\_\_.
  - A teams check their bobsleds carefully before a race
  - B the driver is the only strong person on the team
  - C it is easy to steer a bobsled
  - D the only part of the race that matters is the start
  
4. Which word in paragraph 2 means "gains speed"?
  - A accelerates
  - B passes
  - C design
  - D gravity
  
5. What happens third in a bobsled race?
  - A The team pushes the sled.
  - B The driver steers the sled.
  - C The team gets into the sled.
  - D The team reaches the bottom of the run.

6. Would you like to race in a bobsled race? Why, or why not?