

# Ask®

## Why Sleep?

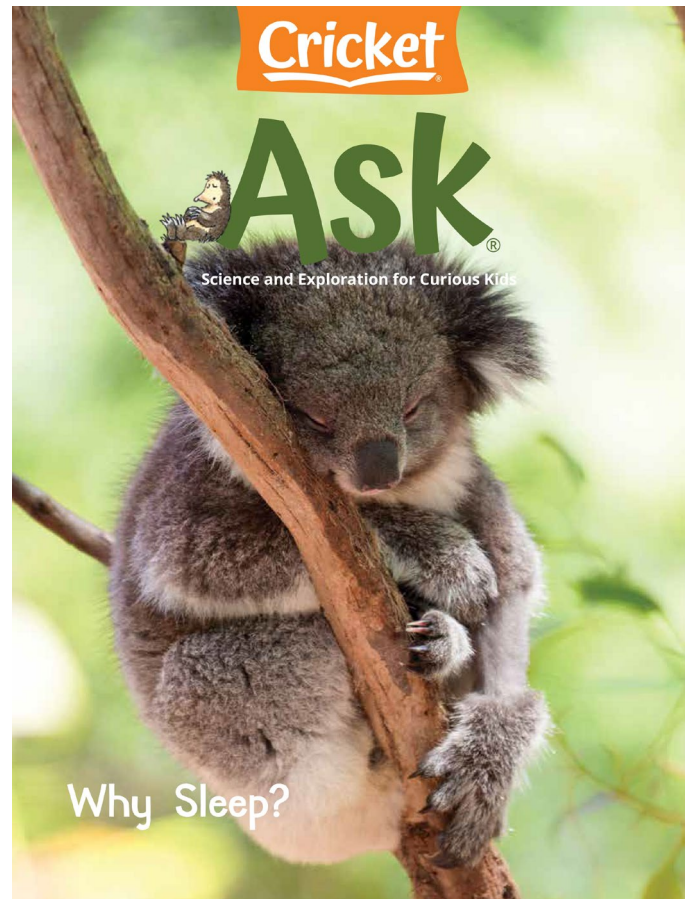
An ancient Irish proverb states, "A good laugh and a long sleep are the best cures in a doctor's book." This month's issue of ASK magazine delivers you to the land of nod to explore how sleep is not just a luxury, but a necessity.

### CONVERSATION QUESTION

Why is sleep necessary?

### TEACHING OBJECTIVES

- Students will learn why sleep is a necessity for both the body and the mind.
- Students will learn about the sleep habits of different animals.
- Students will learn how animals survive when cold weather comes to northern forests.
- Students will explore the cause-and-effect relationship between sleep and body functions.
- Students will obtain and classify information.
- Students will examine the biological process of hibernation.
- Students will use a bar model to represent fractional parts of a whole number.
- Students will compare the number of hours that various animals sleep using inequalities (< >).
- Students will create an acrostic poem detailing the studied scientific process of hibernation.



In addition to supplemental materials focused on core STEAM skills, this flexible teaching tool offers vocabulary-building activities, questions for discussion, and cross-curricular activities.

### SELECTIONS

- **Why Do We Sleep?**  
Expository Nonfiction, ~700L
- **SHHHH! Animals Sleeping**  
Expository Nonfiction, ~700L
- **The Big Sleep**  
Expository Nonfiction, ~700L

## Why Do We Sleep?

pp. 6–11, Expository Nonfiction

Grab your pillow and learn how scientists are beginning to unravel some of the mysteries of sleep. This article explores the sleep cycle and the benefits of peaceful slumber.



## RESOURCES

- Cause and Effect Organizer

## OBJECTIVES

- Students will learn why sleep is a necessity for both the body and the mind.
- Students will explore the cause-and-effect relationship between sleep and body functions.
- Students will use a bar model to represent fractional parts of a whole number.

## KEY VOCABULARY

- **REM (p. 8)** rapid eye movement; the phase of the sleep cycle when your brain is making connections
- **regulate (p. 9)** to control or maintain a process
- **microsleep (p. 11)** a period of sleep that lasts less than a minute

## ENGAGE

**Conversation Question:** Why is sleep necessary?

Share these examples of how the mind is 'thinking while asleep' as Aristotle stated: Albert Einstein reportedly discovered the principle of relativity after having a vivid dream. Several of Edgar Allen Poe's poems were inspired by nightmares. (Additional examples on page 11.) Ask students to share any dreams that may have affected an event in their waking life.

## INTRODUCE VOCABULARY

Post the key terms and discuss the definitions. Instruct students that they will be creating a word search puzzle using those three words, in addition to another 17 sleep-related words. Suggest that they highlight topical words as they read for use in the word search. Share the puzzles with another class for use as a pre-reading exercise for this article.

## READ & DISCUSS

Reinforce comprehension of the concepts presented in the article by using the following prompts to direct discussion.

1. What happens during the twilight zone between asleep and awake?
2. Why does your brain ignore new messages from your senses as you sleep?
3. Why is sleep-talking and sleepwalking more common in children?
4. Explain the sleep cycle process and what occurs in each phase.

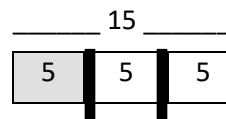
## SKILL FOCUS: Cause and Effect

**INSTRUCT:** Lead the students in a discussion that guides them to recognize the primary cause-and-effect relationship (a relationship in which one event makes another event happen) that is presented in this article. Introduce the graphic organizer, *Sleep Tight*, and advise students that they will be searching through the article for information that demonstrates the relationship between sleep and body functions.

**ASSESS:** Converse with students as they are working. Collect and review the worksheets to evaluate individual understanding of cause-and-effect relationships. Consider arranging peer remediation groups if necessary.

## EXTEND

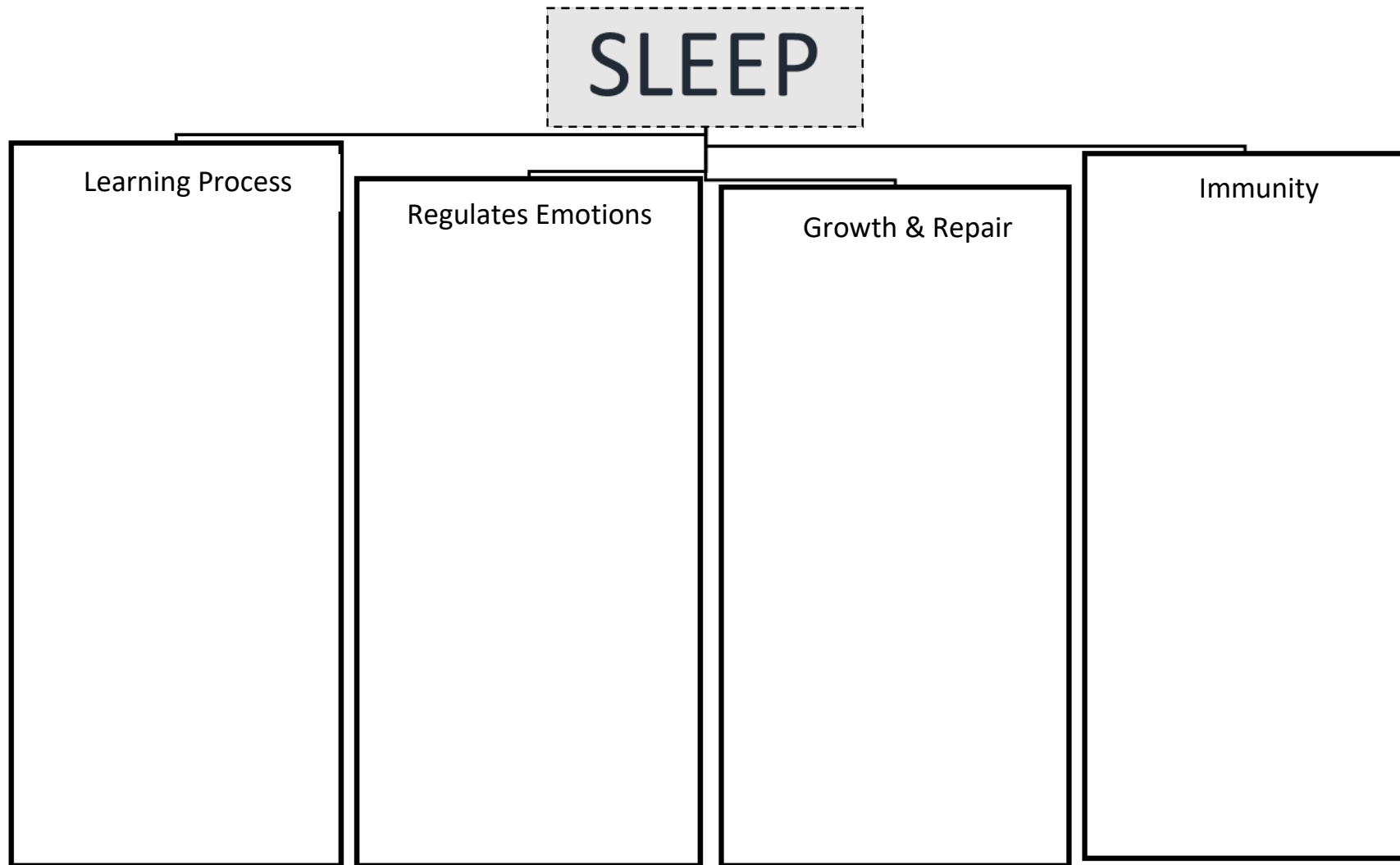
**Mathematics** Direct students to the first paragraph of the article on page 6, which states, "Humans spend about a third of their lives asleep. A 15-year-old has slept for about 5 years!" Discuss fractions by using a bar model to represent that  $\frac{1}{3}$  of 15 is 5.



Challenge students to determine  $\frac{1}{3}$  of 30, 45, 69 and 114 using a bar model.

# Sleep Tight

**Cause and Effect:** Refer to the article, "Why Do We Sleep?" to record how sleep affects different processes in the body.



# Ask® Teacher Guide: January 2021

## SHHHH! Animals Sleeping

pp. 14-17, Expository Nonfiction

All creatures, great and small, need sleep. This article will bring readers on a journey through the slumber of various land, air and sea animals.



## RESOURCES

- **Classifying Information Together**

## OBJECTIVES

- Students will learn about the sleep habits of different animals.
- Students will obtain and classify information.
- Students will create mathematical comparisons between the number of hours that various animals sleep using inequalities (< >).

## KEY VOCABULARY

- **marsupials** (p. 14) mammals with a pouch
- **predators** (p. 14) animals that live by capturing and eating other animals
- **reptile** (p. 17) a cold-blooded, scaly animal that breathes air and that crawls or moves on its belly

## ENGAGE

**Conversation Question:** Why is sleep necessary?

Pose the question, "How do you prepare to go to sleep?" Invite students to share their bedtime routines. Generate a list of responses such as taking a bath/shower, brushing teeth, reading, etc. Take this opportunity to practice sequencing skills by having the students put the list items in a reasonable order.

## INTRODUCE VOCABULARY

Post and discuss the key terms and definitions. Guide students to notice that the three vocabulary words refer to different categories of animals. Give students five minutes to list as many animals as they can that belong in each group. Share and compare lists.

## READ & DISCUSS

Read the article aloud with the class. Have students reread the article in small groups to answer the questions below. Discuss responses.

1. Why are lions able to sleep out in the open?
2. What is unique about how horses and giraffes sleep?
3. Where do most birds sleep?
4. How are dolphins able to breathe air while they sleep?
5. How do scientists think that they know which animals dream, as well as what they are dreaming about?

## SKILL FOCUS: Classifying Information

**INSTRUCT:** Guide students to obtain information from the text, captions and photos in the article. Remind students that the article was written to teach readers about the sleeping habits of different animals. Introduce the *Fast Asleep* graphic organizer and instruct students to record their findings. Lead the activity and demonstrate how to reread pertinent passages and how to mark the correct column.

**ASSESS:** Review information that the students have recorded on their charts. Direct any students with incorrect findings back to the text.

## EXTEND

**Mathematics** Review the mathematical inequality symbols for less than and greater than (< >). Instruct students to use information from the article to create ten equations based on the number of hours each animal sleeps. Examples: Lion (14) > Duck (10) / Horse (3) < Gorilla (12). Challenge pairs of students to create inequalities with missing numbers, animal names or signs and to give them to a classmate to solve.

## Fast Asleep

**Classifying Information:** Use information from the article to properly classify the sleep facts below. Place an **X** in the correct column to show which animal the statement is describing.

Animal/Fact	Koala	Parrotfish	Duck	Frigate bird	Gorilla
These animals nap in rows with the animals at the end keeping one eye open.			X		
This marsupial spends most of the day sleeping.					
These human-like animals sleep in nests of branches and leaves.					
This animal keeps flying while it rests its brain.					
The leaves this animal eats are hard to digest, causing low energy.					
This animal doesn't have any eyelids so it always looks wide awake.					
This animal makes a fresh new nest every night.					
These animals will turn and face the other way to rest the other half of its brain.					
These far-flying birds get most of their sleep on land.					
These animals make a slimy sleeping bag from streams of mucus.					

## The Big Sleep

pp. 22-25, Expository Nonfiction

"And they all settled down for a long winter's nap..." Students will read about the preparation and process of hibernation, as well as discover what the animal's body needs upon waking.



## RESOURCES

- **Biological Process Organizer**

## OBJECTIVES

- Students will learn how animals survive when cold weather comes to northern forests.
- Students will examine a biological process.
- Students will write an acrostic poem detailing the experience of hibernation.

## KEY VOCABULARY

- **bare** (p. 22) having no covering
- **hole up** (p. 23) to hide out in a hole or cave
- **waste** (p. 24) material discharged by the body

## ENGAGE

**Conversation Question:** Why is sleep necessary?

Display the following phrase, "Don't poke a sleeping bear." Ask students to infer the meaning. Discuss with the class that bears are huge creatures that hibernate, and are for the most part, non-violent. However, when poked, bears can become quite angry and thus it is best not to poke the bear. The phrase is used as a warning to prevent someone from doing something that will produce a negative response. Have students provide examples of the phrase used correctly.

## INTRODUCE VOCABULARY

Post and discuss the key terms. Guide students to notice that all of these words are homophones: two or more words having the same pronunciation but different meanings or spellings. (bare/bear, waste/waist, hole/whole) As a post reading activity, have students search the article for other homophones. Who can find the most?

## READ & DISCUSS

Pose the following questions to the students to prompt meaningful discussion following the reading of the article.

1. How do animals prepare to hibernate?
2. Explain different styles of hibernation.
3. What is the difference between hibernation and estivation?
4. How is the hibernator able to survive the winter without eating?
5. In what situations would it be helpful for humans to 'learn' how to hibernate?

## SKILL FOCUS: Biological Process

**INSTRUCT:** This article presents the reader with detailed information regarding the process of hibernation. Present the *All Tucked In* graphic organizer and tell students that they will be recording details about this process. They will need to consult the article to gather accurate information that relates to each part of the process.

**ASSESS:** The objective of this lesson is to help students practice learn about hibernation by examining each component of the process. Review graphic organizers to measure their success with the task.

## EXTEND

**Language Arts** Review the strategies for creating an acrostic poem. (An acrostic poem is one in which the first letter of each line spells out a word or a message.) Instruct the students to use the word, HIBERNATION to create an acrostic poem that includes words, ideas and facts studied in this article and/or in this month's issue of ASK magazine. Encourage students to create a background or illustration to enhance their work.

## All Tucked In

**Biological Process:** Refer to the article, “The Big Sleep,” to record and explain each element in the process of hibernation.

