

## True or False

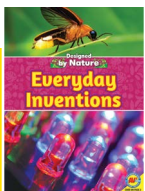
Follow the instructions to complete the activity.

NAME

DATE

Using the information in *Everyday Inventions*, verify whether the following information is true or false. Check your answers in the book. List the page number where you found your information beside your answer.

Statement 1	Bones are made from minerals and proteins.	<input type="checkbox"/> True <input type="checkbox"/> False	Page Number <div></div>
Statement 2	The common rose butterfly has pink wings.	<input type="checkbox"/> True <input type="checkbox"/> False	Page Number <div></div>
Statement 3	Bats use a process called echolocation to navigate in the dark.	<input type="checkbox"/> True <input type="checkbox"/> False	Page Number <div></div>
Statement 4	Today, most buildings are made of wood and stone.	<input type="checkbox"/> True <input type="checkbox"/> False	Page Number <div></div>
Statement 5	Bees communicate with each other by dancing.	<input type="checkbox"/> True <input type="checkbox"/> False	Page Number <div></div>



## Fill in the Blanks

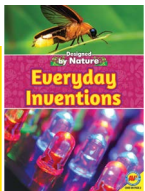
Follow the instructions to complete the activity.

NAME

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Use the information found in *Everyday Inventions* to help you complete the following activity.

1. Geckos have stiff  on their toe pads.
2. Retractable claws help a cat  without making any sound.
3. Scientists of  study plants and animals in their labs.
4. Fireflies glow because of a  reaction in their light organs.
5. Morpho butterfly wings have tiny  that reflect light.
6. The Venus flower basket has a -like structure.



## Know Your Numbers

Follow the instructions to complete the activity.

NAME

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Complete the statements by entering the correct number in the box.

Nearly this percentage of energy use in U.S. homes goes toward appliances, electronics, and lighting.

**700**

Human bones contain this percentage of calcium.

**30**

A new adhesive inspired by the feet of geckos is so strong that one small piece can hold up to this many pounds.

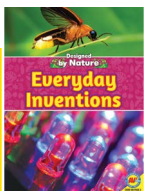
**70**

Building construction makes up this percentage of energy use in the United States.

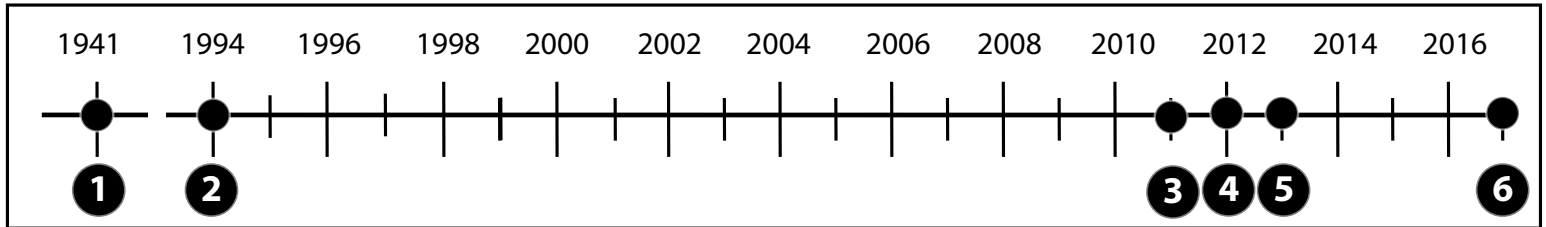
**300**

Humans are born with about this many bones.

**35**



Number the events below in the order they should appear on the timeline. Write the number in the box beside each event. Check your answers with page 27 of the book.



A start-up company in the United States begins work on a self-filling water bottle based on the shell of Namib Desert beetles.

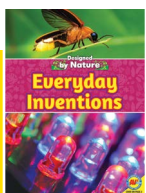
British Telecom, a phone company, uses the behavior of an ant colony to make their computer systems more adaptable.

American engineer Toshi Fukaya invents a cat-claw-based thumbtack. It wins the 2011 Red Dot Award for Design Concept.

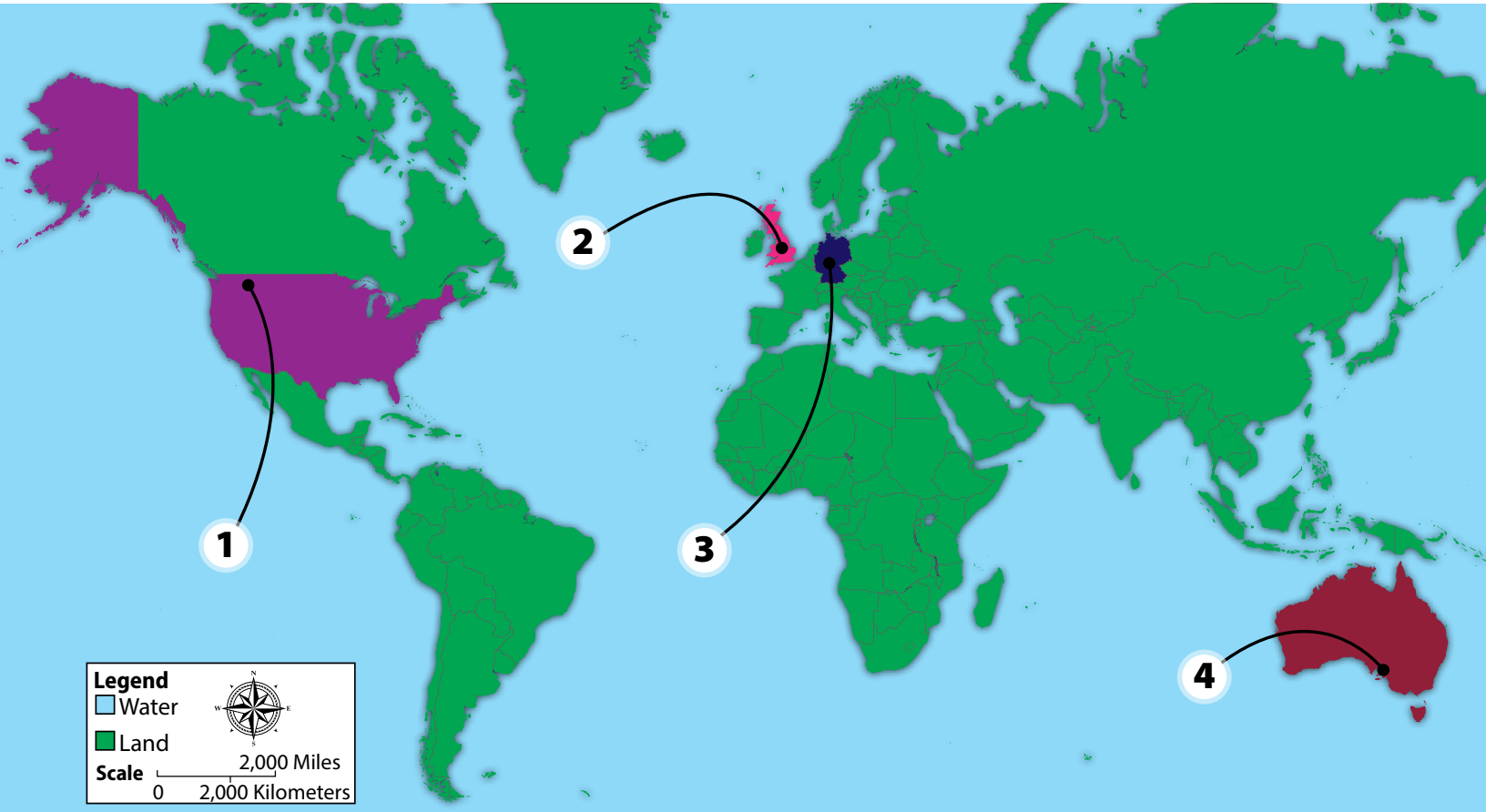
Inventor George de Mestral, inspired by burrs, creates Velcro fasteners.

Researchers at Germany's Karlsruhe Institute of Technology use the structure of common rose butterfly wings to make solar panels more efficient.

Felsuma is founded. This company develops and sells adhesive products based on gecko feet.



Using the information on pages 28–29 of the book, fill in the blanks with the development relating to everyday inventions in each location. Using information found in the book and research online, briefly explain why each location is important to the field of biomimimetics.

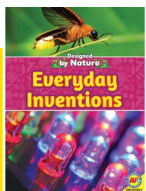


1

2

3

4



## Quiz

Test your knowledge by answering these quiz questions.

NAME

DATE

**1** What is reflected by orb-weaver spider silk?

**2** Where is Arnold Glas headquartered?

**3** What is the strongest bone in the human body?

**4** Which butterfly has tiny, light-scattering holes in its wings?

**5** What are setae?

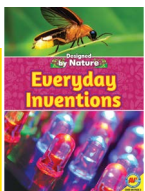
**6** What happens to a cat's paw when it extends its claws?

**7** What do bats use to map their surroundings?

**8** How many layers are bones made of?

**9** How much energy use in American homes goes toward appliances, electronics, and lighting?

**10** Are LEDs more harmful to the environment than incandescent bulbs?



## Key Words Match-Up

Write the words from the list below in the box above the correct definition for each word.

NAME

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### KEY WORDS

lattice  
ultrasonic  
microseconds  
incandescent  
ultraviolet

adapt  
sheath  
adhesives  
tendons  
ventilation



1.   
a close-fitting cover, often for something sharp
2.   
units that are one-millionth of a second
3.   
tissues in the body that attach muscles to bones
4.   
the process of allowing fresh air to enter and move through a room or building
5.   
substances used for sticking objects together

6.   
to change over time to deal with a certain situation
7.   
a type of light bulb that gives off light when heated
8.   
having to do with sounds that are too high for humans to hear
9.   
light that is invisible to human eyes and has a shorter wavelength than that of visible light
10.   
a structure made of strips that cross one another

