LIGHTBOX Activities

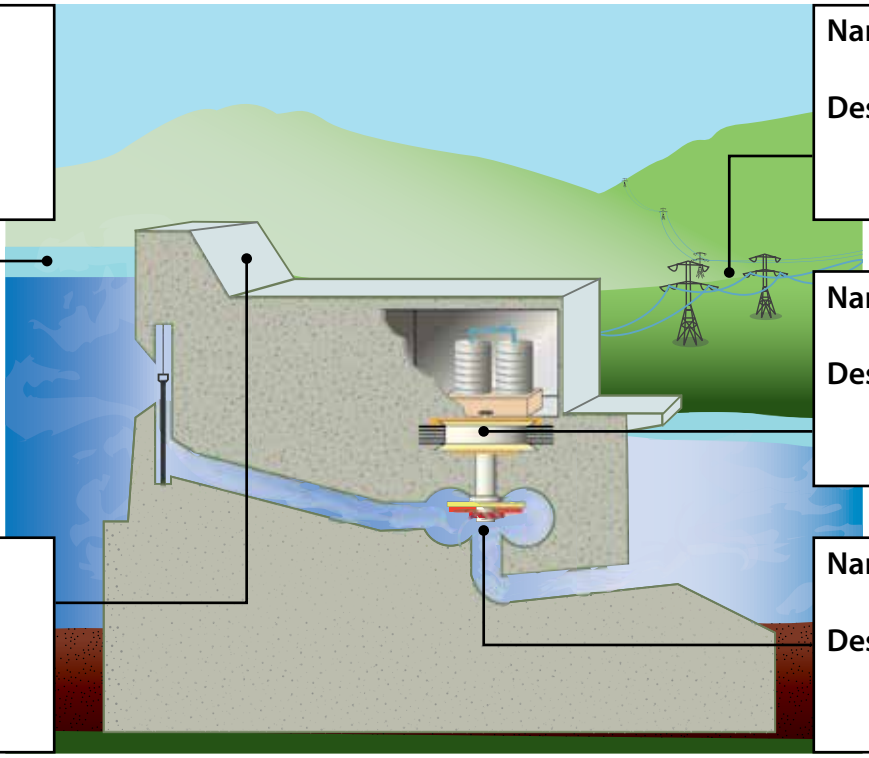
# Hydropower Plant Activity

Follow the instructions to complete the activity.

NAME

DATE

This diagram highlights the five main elements of a hydropower plant on a river. Fill in the blanks on the diagram by naming each section and providing a brief description. Use the information you learned on pages 6 and 7 of the book.



**Name:**

**Description:**

**Name:**

**Description:**

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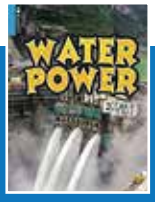
**Description:**

Answer the following questions about hydropower plants.

1. What is the name of the force that hydropower plants change into electricity?

2. Which two devices in hydropower plants produce electricity?

3. On which bodies of water are hydropower plants most commonly built?




**Earth's Water**
**Water Power**

Reference: Pages 6-7

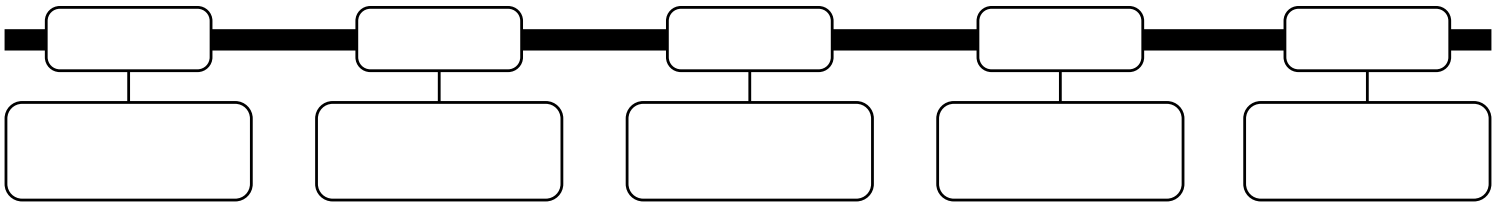
# Water Power through History

Follow the instructions to complete the activity.

NAME

DATE

1. What have you learned about the history of water power? Using this understanding combined with information from the library and online sources, create a list of significant water power-related events throughout time. Organize the events by date, from the earliest to the most recent. Then, create a timeline in the boxes below using five of the events from your list.

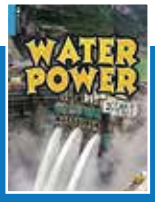


2. Using your timeline, the information on pages 10 and 11, and online sources answer the following questions.

   a. In which U.S. city did the country's first power plant that burned coal to make steam open?

   b. Describe a significant advancement that has been made to hydroelectric power since the 1880s.

   c. What are some examples of rivers that provide hydroelectricity to the United States today?



# Water Power around the World

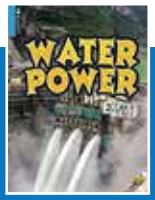
Follow the instructions to complete the activity.

NAME _____

DATE _____

Complete the chart using the featured dams on pages 12–13 of the book. List the dams in order of highest to lowest in capacity. The dam with the highest capacity has already been completed as an example.

| | DAM NAME | CONTINENT | LOCATION | CAPACITY |
|---|---|---|---|---|
| 1 | Three Gorges Dam | Asia | China | 22,500 MW |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |



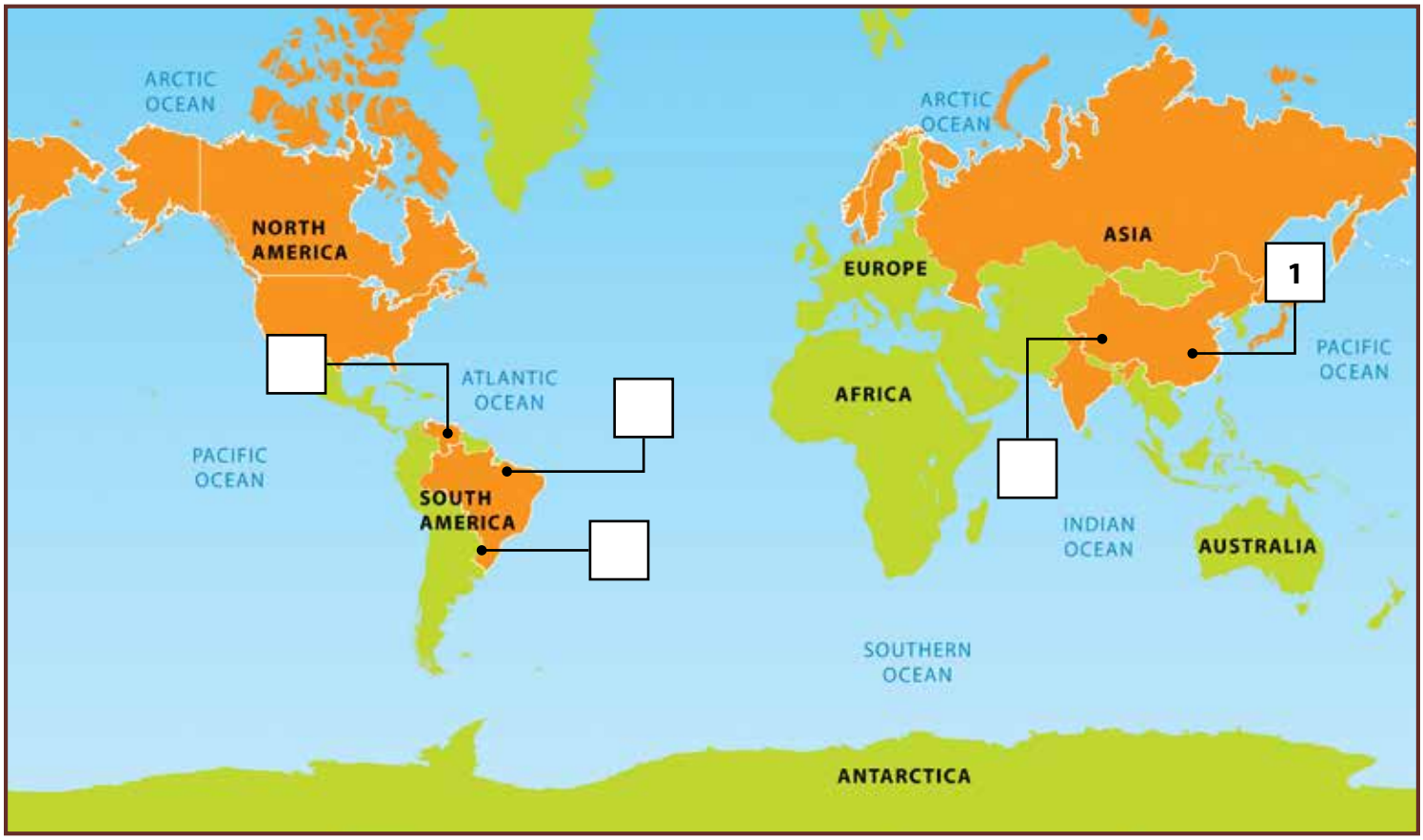
# Water Power around the World

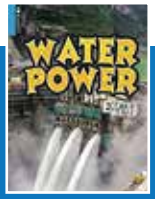
Follow the instructions to complete the activity.

NAME

DATE

Using the chart from page 1 of the activity, label the dams on the map from 1 to 5 (highest capacity to lowest capacity) by writing the correct number at the location of each dam. The dam with the highest capacity has already been completed as an example.



# Write an Expository Paragraph

Follow the instructions to complete the activity.

NAME _____

DATE _____

How do tidal power plants produce electricity? In what ways are they different from other hydroelectric plants? Using the information found on pages 14–17 of *Water Power*, as well as the library and online content, research tidal power plants. Then, write an expository paragraph explaining your findings in the space below.

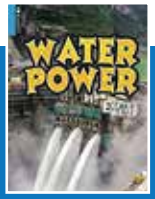
An expository paragraph is a group of sentences that provide information on a topic, give directions, or explain an event. Your expository paragraph will provide information on a topic.

An expository paragraph has three parts. The first part is the topic sentence. The topic sentence is usually the first sentence. It tells readers what the paragraph will be about and catches their attention. Supporting sentences generally follow the topic sentence. They provide details explaining or supporting the topic sentence. At the end of an expository paragraph, a sentence wraps up, or summarizes, the ideas expressed in the paragraph. This is called the concluding sentence. It is usually a strong statement.

Topic Sentence:

Supporting Sentences:

Concluding Sentence:

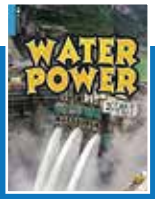


# Write an Expository Paragraph

Follow the instructions to complete the activity.

NAME

DATE




**Earth's Water**
**Water Power**

Reference: Pages 14-17

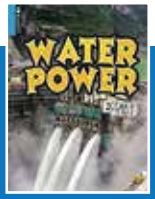
# Write a Letter

Follow the instructions to complete the activity.

NAME

DATE

Think about what it must be like to work at a hydroelectric power plant. Imagine you are a hydroelectric engineer. Write a letter describing your job. The letter should include a description of your educational background. On which continent are you located? What are the working conditions like? What kinds of tools do you use?



LIGHTBOX Activities

# Water Power Quiz

Test your knowledge of water power by answering these quiz questions. Check your answers in the activity pack.

NAME

DATE

1 What is the name for the rise and fall of water levels in the oceans?

Tides

2 What is the name of the pole at the center of a waterwheel that spins as the waterwheel turns?

The axle

3 What is the type of electricity produced using the force of moving water?

Hydroelectricity

4 What is the body of water that forms behind a dam?

A reservoir

5 Which dam is the world's largest single source of electricity?

The Three Gorges Dam

6 About how much of the electricity used in the United States comes from hydropower?

8 percent

7 Which part of a power plant has blades that spin to help produce electricity?

The turbine

8 During what decade was the Hoover Dam built?

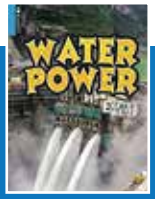
1930s

9 In what part of a hydroelectric dam are the rotor and stator located?

The generator

10 In how many directions does water flow at a tidal power plant?

Two



LIGHTBOX Activities

# Key Words Match-Up

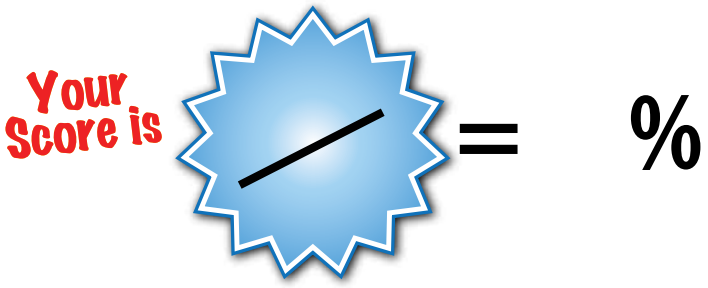
Write the words from the list below in the box above the correct definition for each word. Check your answers on page 23 of the book.

NAME _____

DATE _____

## KEYWORDS

| | | |
|---|---|---|
| **blueprints** | **estuary** | **reinforced** |
| **currents** | **irrigation** | **tides** |
| **displaced** | **megawatts** | |
| **ecosystems** | **pollution** | |




1. ecosystems
communities of plants and animals and the physical environment in which they live

2. displaced
forced to move because of a human-caused or natural event

3. tides
the regular rise and fall of water levels in the oceans

4. estuary
the mouth of a river where the river meets an ocean and is affected by tides

5. megawatts
measures of one million watts, or units of electrical power

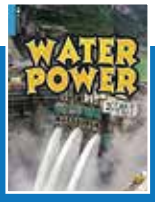
6. pollution
harmful materials such as gases, chemicals, and waste that dirty air, water, and soil

7. blueprints
detailed drawings of building plans made in white on a dark background

8. reinforced
supported with a stronger material

9. irrigation
providing water from another location to farms in order to help crops grow in dry areas

10. currents
paths along which water moves in a body of water



# Water Power Quiz Answer Key

Compare your quiz answers with the answer key below.

NAME _____

DATE _____

1. Tides
2. The axle
3. Hydroelectricity
4. A reservoir
5. The Three Gorges Dam
6. 8 percent
7. The turbine
8. 1930s
9. The generator
10. Two