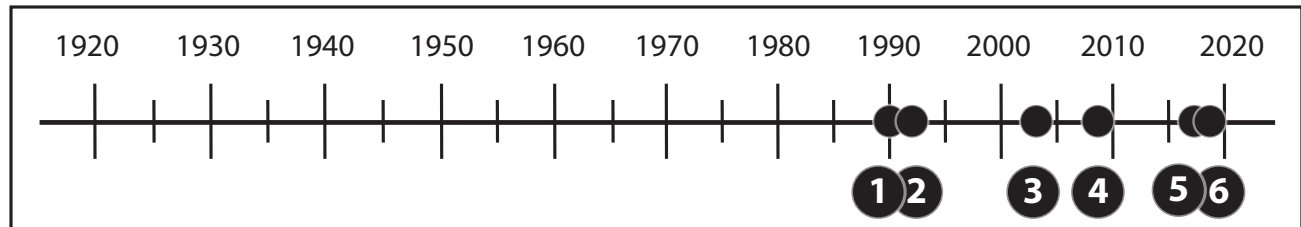## AV2 NONFICTION

Activities

Timeline
Follow the instructions to complete the activity.

NAME

DATE

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 17 of the book.

| 1920 | 1930 | 1940 | 1950 | 1960 | 1970 | 1980 | 1990 | 2000 | 2010 | 2020 |

1 2   **3**   **4**   **5 6**

The *Cassini* space probe, which was launched to study Saturn and its system, crashed into Saturn. This ended its 20-year mission.
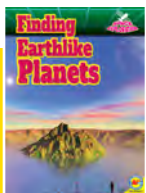
The Hubble Space Telescope was launched.

Planet GJ 436b was discovered.

The Kepler Space Telescope mission was launched.

More than 3,700 exoplanets in total have been located. The Kepler mission was retired, and the TESS mission was launched.

The first exoplanet was found orbiting around PSR B1257+12.

Activities

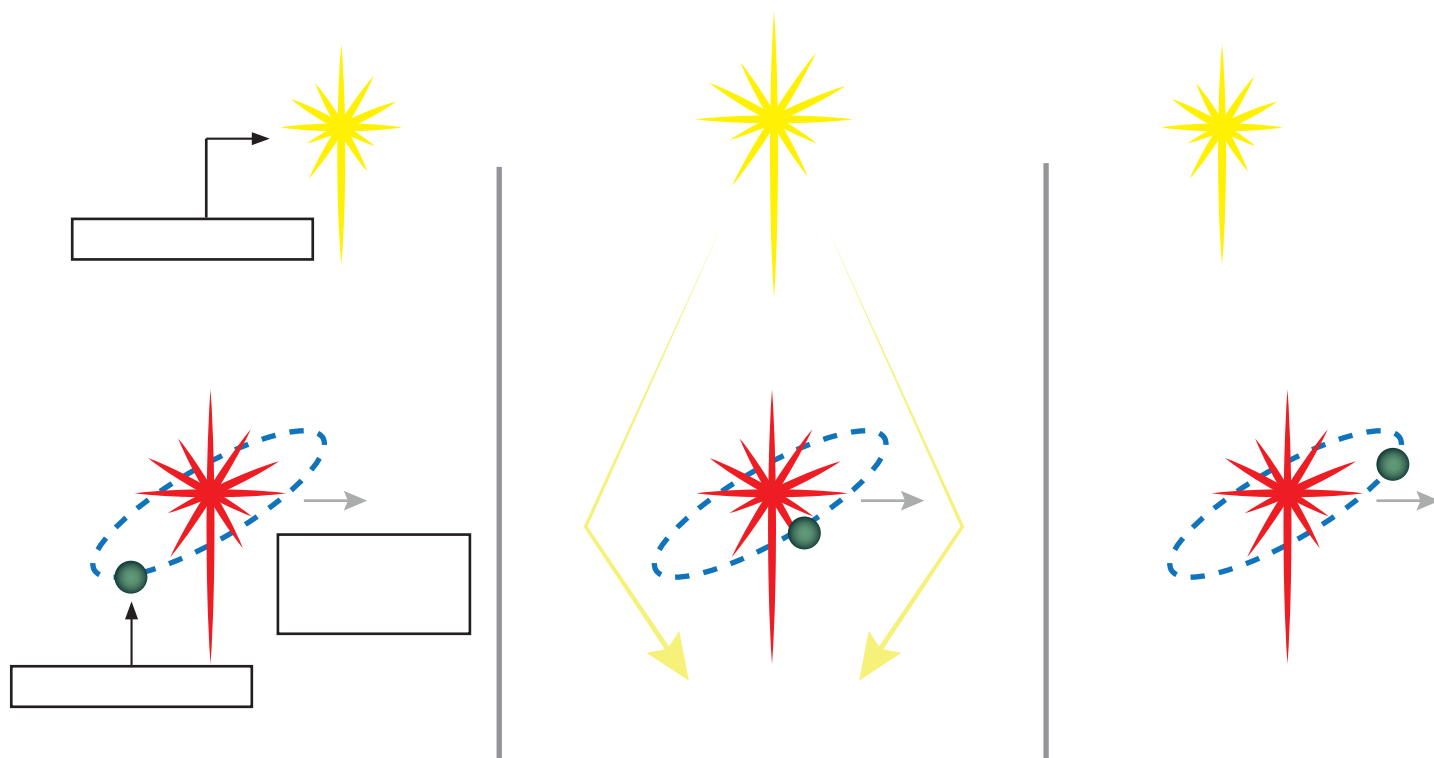AV2 NONFICTION

Bending Starlight
Follow the instructions to complete the activity.

NAME

DATE

Fill in the blanks in this diagram of bending starlight.

a.   Distant star

b.   Star the exoplanet orbits

c.   Exoplanet

Space Exploration

Finding Earthlike Planets

Reference: Page 20

Page
1 of 5

LIGHTBOX
LEARNING

AV2 NONFICTION

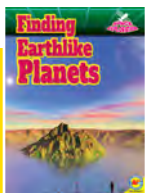**Activities**

True or False
Follow the instructions to complete the activity.

NAME

DATE

Using the information in *Finding Earthlike Planets*, 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

Many of the first exoplanets scientists discovered were small gas giants.

☐ True
☐ False

Page Number ☐

Statement 2

KELT-9b, the hottest exoplanet discovered so far, is even warmer than some stars.

☐ True
☐ False

Page Number ☐

Statement 3

Most exoplanets take a few hours to cross in front of a star.

☐ True
☐ False

Page Number ☐

Statement 4

The exoplanet GJ 436b is approximately the same size as Mars.

☐ True
☐ False

Page Number ☐

Statement 5

Cassini observed many lakes on Titan's surface.

☐ True
☐ False

Page Number ☐

Space Exploration

Finding Earthlike Planets

Reference: All Pages

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LIGHTBOX LEARNING

Activities

Fill in the Blanks
Follow the instructions to complete the activity.

NAME

DATE

Use the information found in *Finding Earthlike Planets* to help you complete the following activity.

1. In the mid-2000s, scientists began finding large _____ that are farther from their stars.

2. The strength of _____ depends on mass and on the distance between a planet and its star.

3. The planets in our solar system are more than _____ years old.

4. A red dwarf star's _____ might even be strong enough to wear away at a planet's atmosphere.

5. _____ water and _____ gas spray from geysers near the south pole of Saturn's moon Enceladus.

6. Some astronomers hoped to send a _____ into space with WFIRST.

Know Your Numbers

Follow the instructions to complete the activity.

NAME

DATE
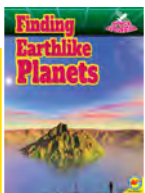
Complete the statements by writing the correct number in the box.

The largest exoplanets are called Super-Jupiters. One of the largest is this many times larger than Jupiter.

24,500

Mercury's temperature can reach this many degrees Fahrenheit on the side facing the Sun.

2026

The Hubble Space Telescope weighs this many pounds. That is as much as two grown elephants.

800

The European Space Agency will launch Planetary Transits and Oscillations (PLATO) to search for habitable exoplanets with liquid water in this year.

2013

In this year, John Asher Johnson joined Harvard University in Massachusetts. He leads a research group called ExoLab.

20
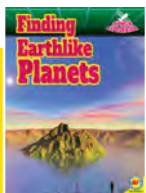
Key Words Match-Up

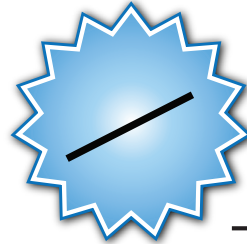Write the words from the list below in the box above the correct definition for each word.
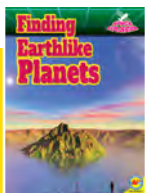
NAME

DATE

KEY WORDS

atmosphere	hydrocarbons	probe
dense	lasers	radius
diameter	massive	
gravity	orbiting	

Your Score is

_____ %

1. _____

relatively heavy or massive for its size. Density is calculated by dividing an object's mass by its volume

2. _____

the attractive force between two objects that is due to their masses and affected by how far apart they are

3. _____

devices that produce a very intense, narrow beam of light

4. _____

repeatedly following a curved path around another object because of gravity

5. _____

a straight line from the center of a circle or sphere to its edge

6. _____

the layers of gases that surround a planet or moon

7. _____

a straight line through the center of a circle or sphere that connects its opposite sides

8. _____

substances that contain only carbon and hydrogen. Titan's surface has the hydrocarbons methane and ethane in liquid form

9. _____

having a large mass, a measurement of how much physical matter an object contains. Mass is related to, but not the same as, weight

10. _____

a device used to explore

Quiz
Test your knowledge by answering these quiz questions.

NAME

DATE

1 What are three traits of an Earth twin?

2 What are habitable planets called?

3 What was the date of the discovery of the first exoplanet?

4 Why would blocking light from stars make it easier to detect exoplanets?

5 What is the name of the research group that John Asher Johnson leads?

6 What was the length of the Kepler space telescope?

7 When was the Hubble Space Telescope launched?

8 How many exoplanets had been identified by 2018?

Space Exploration
Finding Earthlike Planets
Reference: All Pages

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LIGHTBOX
LEARNING