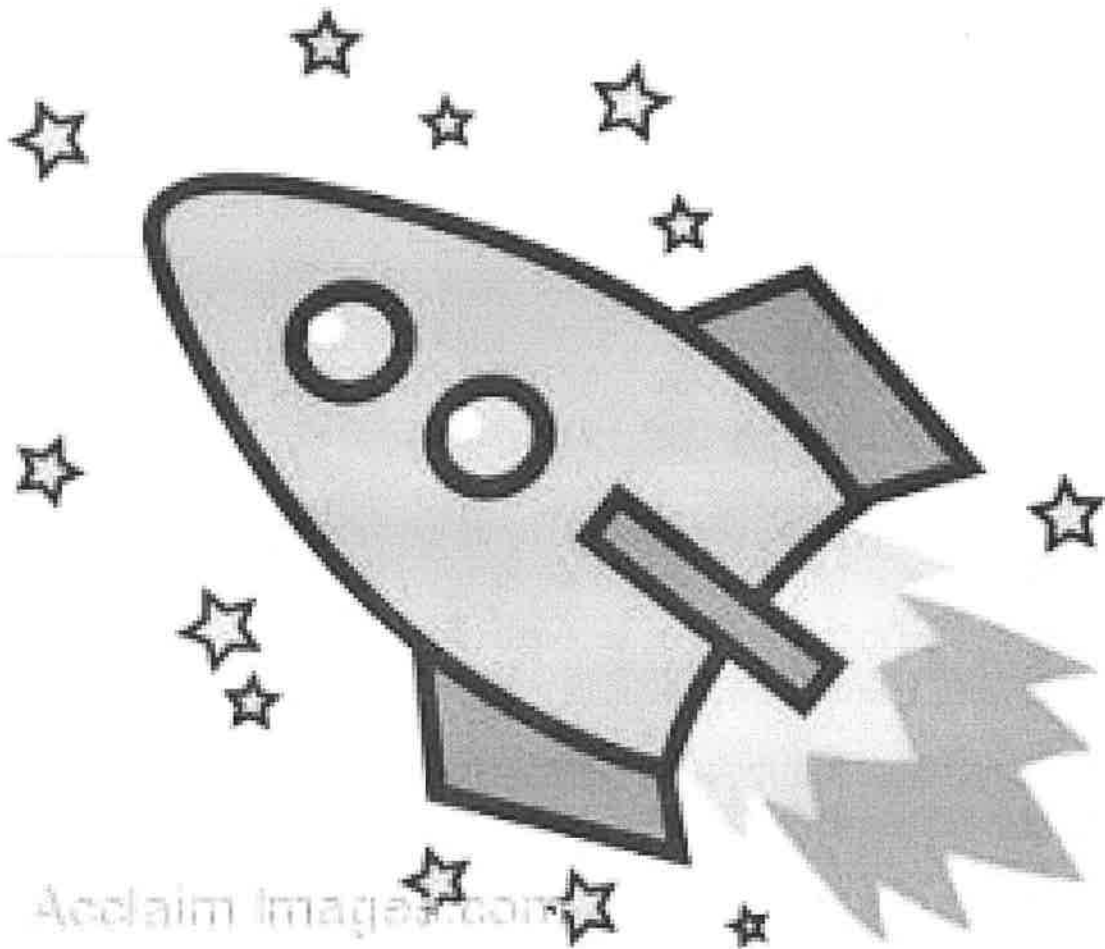


# Astronomy Packet



Name \_\_\_\_\_

# Astronomy Article Review

Name \_\_\_\_\_ Date \_\_\_\_\_

## Directions

Read and summarize a relatively recent article about Astronomy. Complete this handout.

Article Title \_\_\_\_\_

Source \_\_\_\_\_

Author \_\_\_\_\_

Celestial Body \_\_\_\_\_

Highlights \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Significance \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Your Opinion \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Science: Astronomy**  
**Chapter 8, Lesson 1: The Earth-Sun System**

Name \_\_\_\_\_ Date \_\_\_\_\_

1. What is the definition of astronomy? page 422
  
2. What is invisible light? page 423
  
3. What is one complete spin of the Earth on its axis called? page 424
  
4. What causes the Earth to have seasons? page 426
  
5. One complete trip around the Sun is called a \_\_\_\_\_ page 426
  
6. What limits our ability to see space objects from Earth? page 428
  
7. What do people need to survive in space? page 428
  
8. Would you want to travel to another planet? Why or why not?

# Science: Astronomy

## Chapter 8, Lesson 2: The Moon

Name \_\_\_\_\_ Date \_\_\_\_\_

1. Why are more craters evident on the Moon compared to the Earth? page 435

2. The moon does not actually change shape. What changes is the amount of page 437  
the Moon's \_\_\_\_\_ side that we can see. The Moon does not give off it's  
own \_\_\_\_\_; it reflects the light of the \_\_\_\_\_.

3. What is the difference between waxing and waning Moon phases? page 437

4. When Earth blocks sunlight from reaching the Moon, a \_\_\_\_\_ page 438  
eclipse occurs. When Earth passes through the Moon's shadow, a  
\_\_\_\_\_ eclipse occurs.

5. The pull of \_\_\_\_\_ between Earth and the Moon causes tides. page 440

6. Gravity is the force of \_\_\_\_\_ among all objects. The greater page 440  
the object's \_\_\_\_\_ is, the greater it's gravitational pull.

7. The pull of gravity changes with \_\_\_\_\_. page 440

Based on your knowledge of gravity, explain why the ocean tides vary. page 440

**Science: Astronomy**  
**Chapter 8, Lesson 3: The Solar System**

Name \_\_\_\_\_ Date \_\_\_\_\_

1. What is a solar system? page 446

2. The greater the \_\_\_\_\_ of each object, the greater the \_\_\_\_\_ between them. page 446

3. What is the definition of inertia? page 447

4. What is an asteroid? page 448

5. What is the hottest planet in the solar system and why is it the hottest? page 448

6. Which planet is most similar to Earth? Explain the similarities. page 449

7. What five features do the gas giants have in common? page 450

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_
- d. \_\_\_\_\_
- e. \_\_\_\_\_

8. A comet is a ball of \_\_\_\_\_ and \_\_\_\_\_ that orbits the sun. page 452

9. What is the Kuiper Belt? page 452

# Science: Astronomy

## Chapter 8, Lesson 4: The Stars

Name \_\_\_\_\_ Date \_\_\_\_\_

1. What is the definition of a star? page 458

2. The \_\_\_\_\_ Star (Polaris) can help if you are unsure of directions. 458

3. A light-year [is] the distance that lights travels in one \_\_\_\_\_. 459

One light-year is more than 9 \_\_\_\_\_ kilometers. The nearest star, Alpha Centauri, is about 4.3 light-years away from Earth.

4. The brightness of a star is called its \_\_\_\_\_. page 460

A star's actual brightness is called its \_\_\_\_\_ magnitude.  
How bright a star looks in Earth's night sky is its apparent magnitude.

5. A star's color tells you about its surface \_\_\_\_\_. page 460

Red and orange colors indicate cooler stars. Yellow indicates hotter stars and \_\_\_\_\_ indicates the hottest stars.

6. The Hertzsprung-Russell (H-R) diagram compares the absolute \_\_\_\_\_ page 461

\_\_\_\_\_ and \_\_\_\_\_ of stars.

7. Every star begins as a \_\_\_\_\_, a huge cloud of gas and dust. page 462

8. As the cloud shrinks, it heats up and becomes a \_\_\_\_\_. page 462

9. The protostar continues to gain mass because of its \_\_\_\_\_ pull. 462

10. Eventually, the center of the protostar reaches a temperature of millions of \_\_\_\_\_ 462  
degrees Celsius. At this point, \_\_\_\_\_ reactions begin.

11. In these reactions, hydrogen atoms fuse and form \_\_\_\_\_ atoms, releasing a large amount of energy.

**NOTE:** *There are two sides to this handout.*

12. As a star uses up its hydrogen in its core, it begins to \_\_\_\_\_ . page 462

As the star expands, its surface becomes \_\_\_\_\_, and its color becomes \_\_\_\_\_ . The star becomes a red giant or supergiant, depending on its mass.

13. Briefly describe the final stages of a star's life. pp.462-3

14. Define each of the following types of stars: page 463

a) Supernova

b) Neutron star

c) Pulsar

d) Black hole

15. The Sun contains \_\_\_\_\_ of the solar system's mass. page 464

It is \_\_\_\_\_ percent hydrogen. Its hydrogen is being changed into \_\_\_\_\_ by nuclear reactions.

#### Sun Facts

Diameter	
Average Distance from Earth	
Surface Temperature	
Core Temperature	
Size Relative to Earth	

# My Planet Assignment

## Synopsis

You will create a detailed illustration of a planet and write a five-paragraph report on the planet. You will decide the specific characteristics of the planet; however, your planet must be realistic. The emphasis of the report and illustration is to demonstrate your knowledge of planets, based on your investigation of Astronomy and current news articles. You are encouraged to be creative; however, do not focus on the potential alien life or technology.

## Illustration

Your planet, dwarf planet, or moon illustration will be drawn on a regular piece of copy paper. The illustration must be done in multiple colors. Add rings, moons, or other satellites to your illustration as you see fit. You may also draw star(s) in the background. You should spend at least 30 minutes designing and illustrating your planet.

## Report

Write a five-paragraph report about your planet, dwarf planet, or moon. Your paragraphs will be focused on the following topics:

### 1. Introduction

- Name your planet, where it is located in the universe, it's supporting star(s), other planets in the solar system, and briefly describe your planet.

### 2. Primary Characteristics

- Describe your planet's size, rotation, gravity, average temperature, color, etc.
- Does your planet have any form of satellites (e.g. moons, rings, or other objects)?

### 3. Atmosphere and Topography

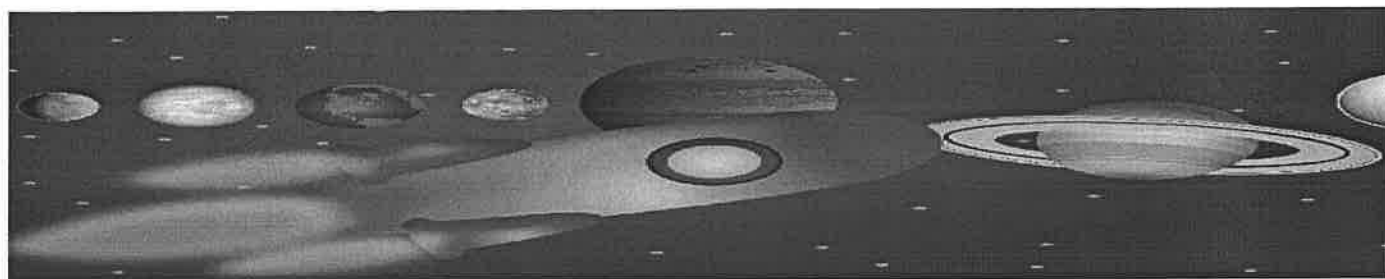
- What are the primary elements in your atmosphere and what are the primary land and water features of your planet?

### 4. Life

- What types of life, if any, exist on your planet? Describe the plants, animal, and microorganisms. If your planet doesn't have life explain why life can't exist.

### 5. Conclusion

- Summarize your planet's primary features. What is unique or special about your planet? Why would someone want to visit your planet? Conclude with a thought-provoking statement.





# Celestial Body Mini-Research Report

Name \_\_\_\_\_ Date \_\_\_\_\_

## Directions

Select a celestial body (planet, dwarf planet, moon, star, asteroid, meteor, or comet) and research the object. Please answer the following questions and include a picture or drawing.

Celestial Body Name \_\_\_\_\_

Size \_\_\_\_\_

Location \_\_\_\_\_

Description \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Notable Features \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Interesting Facts \_\_\_\_\_

\_\_\_\_\_

Research Source(s) \_\_\_\_\_

\_\_\_\_\_

# Science: Astronomy Movie

## Optional Extra Credit

Name \_\_\_\_\_

Date \_\_\_\_\_

### Synopsis

With your parent's permission, you are encouraged to watch one of the following recommended movies about space exploration. You will earn a 10% bonus on the Astronomy test. Please contact your teacher if you want to watch a different appropriate space-themed movie.

### Recommended Movies

1. The Martian PG-13 2015

The story of an astronaut's struggle to survive and escape from Mars after being left behind.

Parent Guide: <http://www.imdb.com/title/tt3659388/parentalguide>

2. Apollo 13 PG 1997

The true story of the Apollo 13 disaster and the astronauts' struggle to return to Earth.

Parent Guide: <http://www.imdb.com/title/tt0112384/parentalguide>

3. Gravity PG-13 2014

The story of a space crew's struggle to survive after a series of accidents endangers their lives.

Parent Guide: <http://www.imdb.com/title/tt1454468/parentalguide>

1. Which movie did you watch? \_\_\_\_\_

2. What is your opinion of the movie?

3. What did you learn about space exploration?

4. What did you learn about Astronomy?

5. Would you recommend that other students watch this movie? Why or why not?

# Astronomy Test Study Guide

## Synopsis

The test contains 25 questions: 10 multiple choice, 5 matching, and 10 true or false.

## Multiple Choice Questions

1. Which celestial object would NOT be found in a solar system?
2. What is the difference between a comet and an asteroid?
3. Why are there more craters evident on the Moon than Earth?
4. What chemical process do stars use to create large amounts of energy?
5. How does the Moon effect the Earth's ocean tides?
6. What is NOT a common feature of a gas giant planet?
7. Why does the Moon go through different phases?
8. What effects the gravitational pull of an object?
9. How do stars form?

10. Which celestial body helped sailors navigate the ocean at night?

**Matching (#11 to 15)**

**Match the star with its characteristics.**

Protostar

White dwarf

Supernova

Neutron star

Pulsar

**True or False**

16. The definition of a star

17. What is the Hertzsprung-Russell (H-R) diagram?

18. The difference between solar and lunar eclipses

19. What is an exoplanet?
20. What is a light-year?
21. What is the source of the Moon's light?
22. What is the definition of inertia?
23. What is the Kuiper Belt?
24. What is Pluto?
25. What is a black hole?