44.1 The Solar System (part I)

Physical Science

Summarize main points from each video.

Video Title / topic _____

Video Title / topic _____

Video Title / topic _____

Topic Introduction

Summarize your understanding of each paragraph.

The Solar System is made up of the Sun and all the objects that orbit around it. The Sun is orbited by planets, asteroids, comets and other things. It is billions of years old.

There are eight planets in the Solar System. From closest to farthest from the Sun, they are: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune. The first four planets are called terrestrial planets. The last four planets are called gas giants.

The Solar System also contains other things. There are asteroids, mostly between Mars and Jupiter. Further, there is the Kuiper belt. There are dwarf planets, including Pluto. There are thousands of small objects - comets, centaurs, and interplanetary dust.

The formation and evolution of the Solar System began 4.6 billion years ago with the gravitational collapse of a small part of a giant molecular cloud. Most of the collapsing mass collected in the center forming the Sun.

Adapted from: https://simple.wikipedia.org/wiki/Solar_System

Read/Summarize Text

1. **Read the passage.**
2. **Underline key expressions in each sentence.**
3. **Re-write each word (or expression) you underlined.**
4. **Summarize the passage.**

What is the Solar System?

1

2

The Solar System is made up of the sun and everything that orbits around it. This includes planets, moons, asteroids, comets and meteoroids. Something many adults don't know is that our solar system is the ONLY solar system.

Everything else is called a stellar system or star system. Sometimes we call other star systems a "solar system" … but, really it is more accurate to call them a star system.

The accepted idea is that 4.6 billion years ago, there was a big cloud of gas in our area of space, known as a nebula. (The process by which star systems are created is called the nebular theory).

https://simple.wikipedia.org/wiki/Formation_and_evolution_of_the_Solar_System

Re-write words you underlined

3

_____ _____ _____

_____ _____ _____

Using a complete sentence, summarize or rephrase the passage

4

Read Text for Comprehension

Read this article for deeper understanding. No summary is required, although you may want to circle, underline, or mark key ideas and words.

Kuiper belt Overview

The Kuiper belt is a region of the solar system beyond the orbit of Neptune, believed to contain many comets, asteroids, and other small bodies made largely of ice.

Similar to the asteroid belt, the Kuiper Belt is a region of leftovers from the solar system's early history. Like asteroid belt, it has also been shaped by a giant planet, although it's more of a thick disk (like a donut) than a thin belt.

The Kuiper Belt shouldn't be confused with the Oort Cloud, which is a much more distant region of icy, comet-like bodies that surrounds the solar system, including the Kuiper Belt. (But both the Oort Cloud and the Kuiper Belt are thought to be sources of comets.)

The Kuiper Belt is truly a frontier in space -- it's a place we're still just beginning to explore and our understanding is still evolving.

When NASA’s New Horizons probe launched in January 2006, it was hard to believe it would ever reach the dwarf planet Pluto. Many astronomy lovers were impatient to see what the dwarf planet looks like and eagerly waited for the moment it would pass by it.

Following this, NASA’s Pluto exploring probe has headed past Pluto and towards the Kuiper Belt. NASA hopes to learn more about the icy objects in the outer asteroid belt.

Adapted from: https://solarsystem.nasa.gov

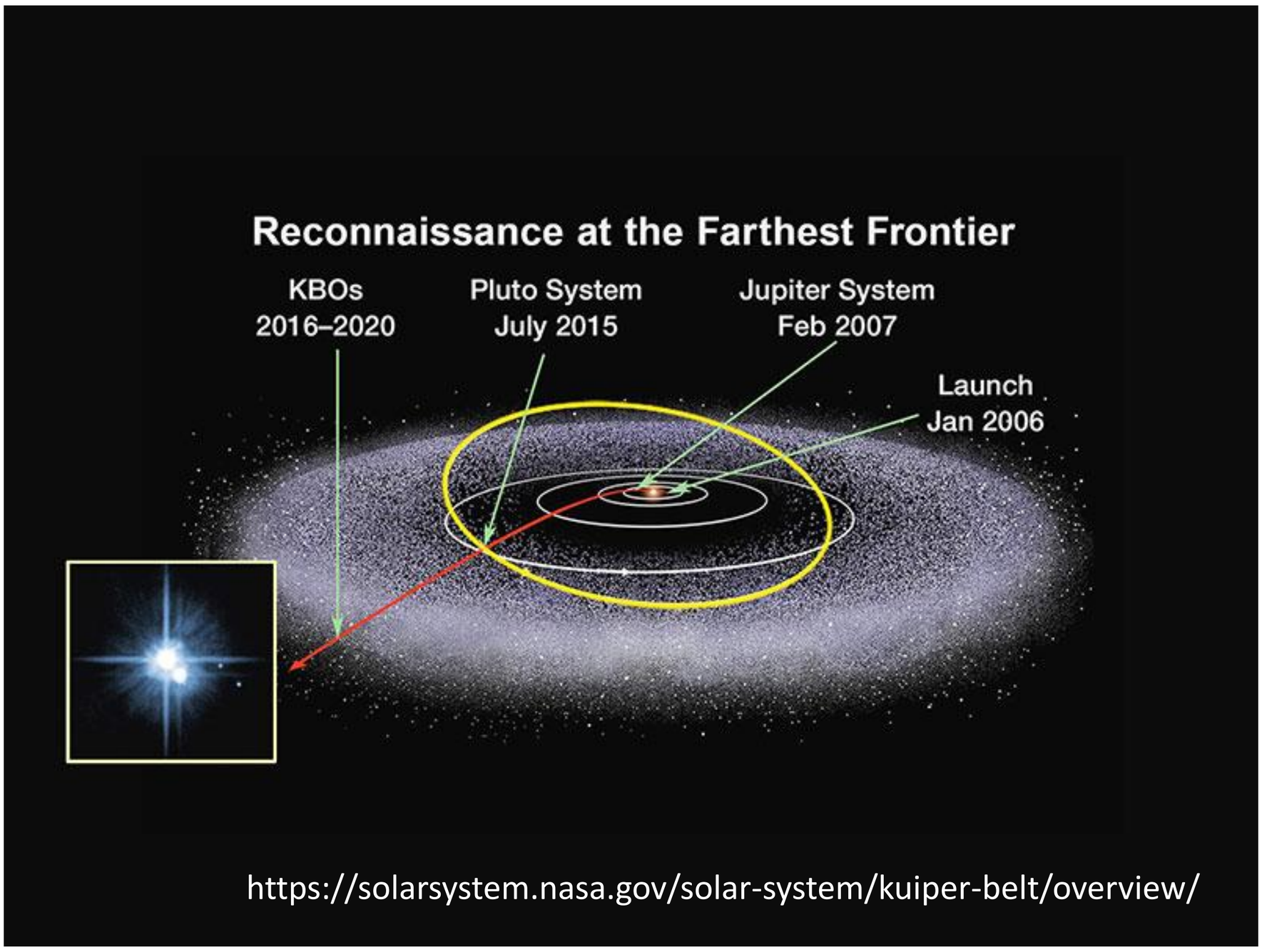
Definition

The Kuiper Belt (also known as the Edgeworth–Kuiper belt) is a region of the Solar System that exists beyond the eight major planets, extending from the orbit of Neptune (at 30 AU) to approximately 50 AU from the Sun. It is similar to the asteroid belt, in that it contains many small bodies, all remnants from the Solar System’s formation.

Extracted from https://www.universetoday.com

Draw Illustration

Copy and Label the Illustration in the Space Provided



Draw (Copy) the Illustration Here

Interpret a Graph

Write the title of the graph _____

Circle the type of chart this represents

Bar Chart *Line Chart* *Pie Chart* *Other*

If applicable,

What does the X-axis represent _____

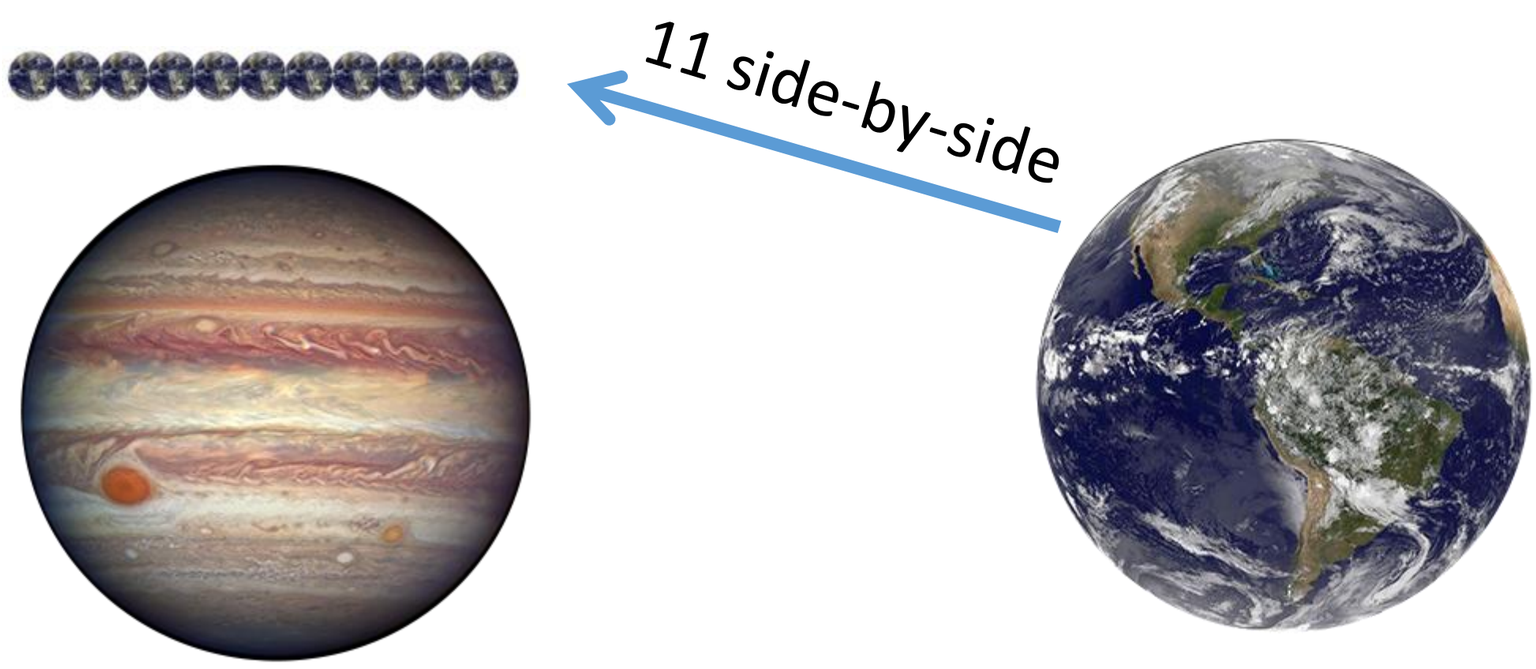
What does the Y-axis imply _____

Summarize what this graph represents or conveys

_____

Adapted images from https://solarsystem.nasa.govs

Jupiter diameter = 11.2 x Earth diameter



Jupiter is 2.5 times more massive than all the rest of the planets in the Solar System combined. Jupiter's diameter is 11.2 times larger than Earth. In other words, you could put 11.2 Earths side-by-side to match the diameter of Jupiter.

Show-Off Your Smarts!

Instructions

- Complete as an individual or small group.
- Discuss your ideas/answers/responses in a small group.
- Select one person to present your responses to the class.

Q1. List three ways this information can be applied to your life?

Q2. How do you imagine a person from 100 years ago would think about this information? (complete sentences).

Q3. How does this topic connect to other science topics or math?

To science:

To math:

Write a Short Story or Poem

Based on information provided and learned in this topic, write a short story (70 words or more), or a poem. Make this about "The Solar System."