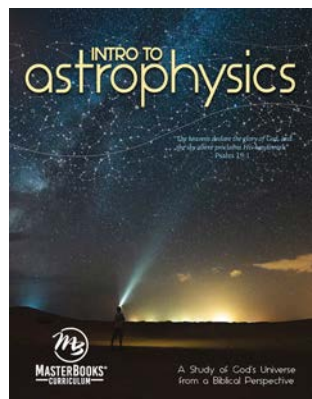




INTRO TO astrophysics worksheets

For use with:
*Intro to
Astrophysics*



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Reference: Pages 5–9 to Scriptural Perspective

Fill in the Chart: Put an X in the column to indicate whether the belief is that of a creationist or an evolutionist.

	a. Creationists	b. Evolutionists
1. Have a bias toward God and the supernatural		
2. Hold that truth is relative and changeable, with new information or new perspectives		
3. Hold certain things forever to be true and hence beyond debate		
4. Have a bias against the possibility of the supernatural		

Matching Terms: Mark the letter in front of the best answer.

- a. Astronomy b. Astrology

5. _____ Comes from two Greek words that mean “star” and “word”
 6. _____ Comes from two Greek words that mean “star” and “to arrange”

Fill in the Blank: Write the best answer in the line provided.

7. A full moon at the first _____ allowed the Hebrews to travel at night.
 8. One purpose for heavenly bodies is the marking of _____ and time.
 9. Astrology is a pagan religion that is _____ to Christianity.

Short Answer: Write out the best possible answer as addressed in the text.

10. What does the text say regarding Romans 1:25?

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Reference: Pages 9–14 (from Scriptural Perspective)

Biblical Short Answer: Write out the Scripture verse in the translation provided in the student text or in your preferred version.

1. Write out the passage from Isaiah 40:26.

Fill in the Blank: Write the best answer in the line provided.

2. _____ is the science that the Bible most explicitly mentions.
3. Science is not _____, but instead it is the man-made method of studying the natural world.
4. Science is a very changeable thing, but the _____ of God never changes.

Matching Terms: Mark the letter in front of the best answer.

- a. Natural b. Special c. Dual

5. _____ Revelation that believes the other forms of revelation are parallel ways of finding God's truth
6. _____ Revelation that is the concept that the world shows that God exists
7. _____ Revelation that is the revealed truth of the Bible

Glossary Terms: Write out the definition of each word from the glossary (starting on page 363 of the student text).

8. Scientific method: _____

9. Hypothesis: _____

10. Naturalism: _____



Glossary Terms: Write out the definition of each word from the glossary.

- Heliocentric theory: _____

- Geocentric theory: _____

Short Answer: Write out the best possible answer as addressed in the text.

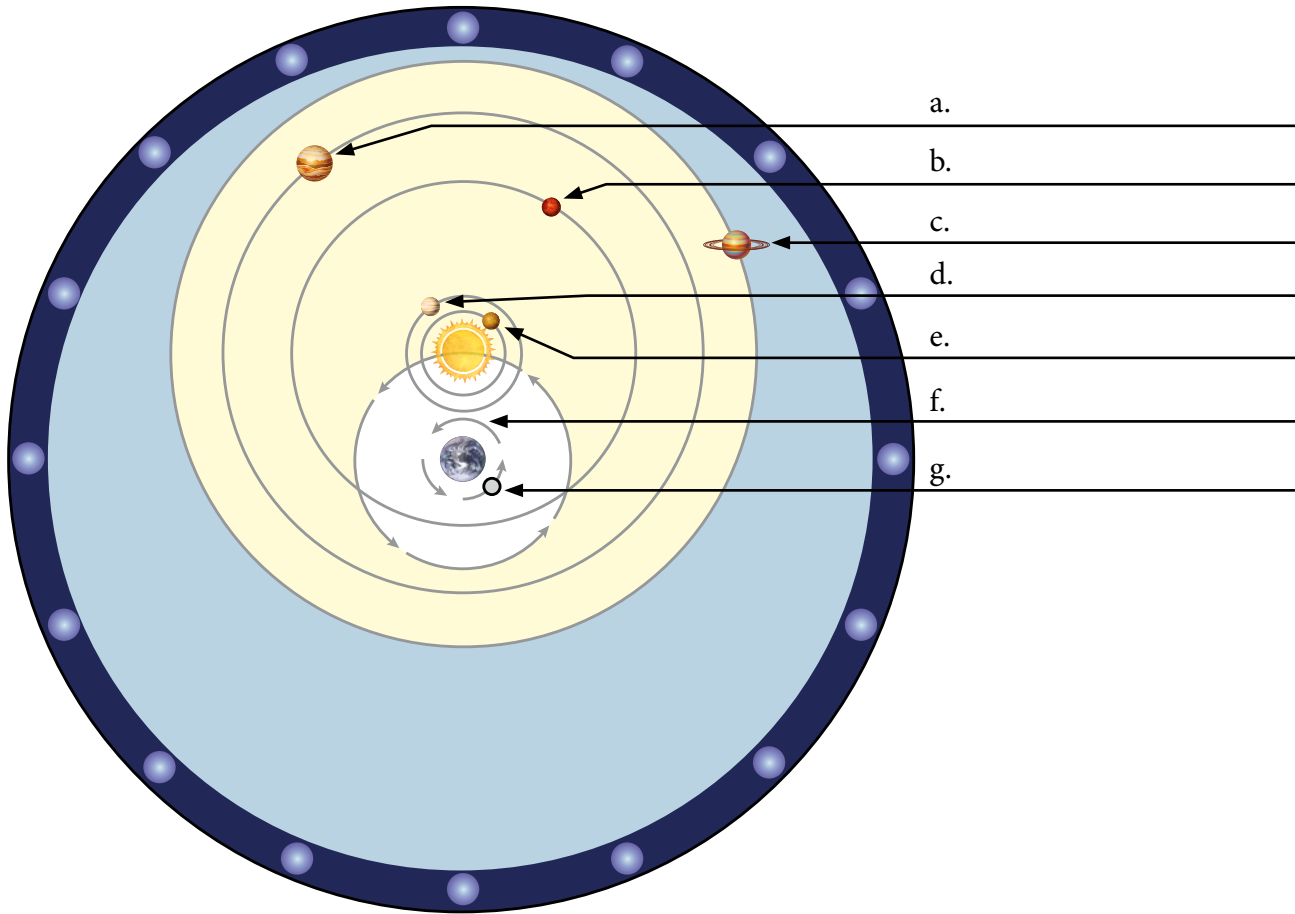
- Discuss why creationists believe the theory of evolution is an attack on God’s Word and what this is based on.

Fill in the Blank: Write the best answer in the line provided.

- One limitation of science is our fallibility, meaning that we make _____.
- Another limitation of science is that we have incomplete _____.
- One more limitation is that competing _____ may equally explain data.
- Science is also limited by the fact that all people have _____.
- A bias that all scientists have is that the natural world is _____.
- _____ razor suggests that when confronted with two competing explanations of some phenomenon, we tend to choose the simpler one as the correct one.

Complete the Diagram: Draw and/or label the diagram as instructed.

10. Label the diagram depicting the Tychonian geocentric system.





Short Answer: Write out the best possible answer as addressed in the text.

1. Summarize the text that responds to the statement on page 19: “If evolution were true...”

Fill in the Blank: Write the best answer in the line provided.

2. Scientists such as Johannes _____ pursued their work to the glory of God, and freely wrote such opinions in their work.
3. Most scientists now assume that everything must have a _____ explanation, rather than assuming the world is a creation of God.
4. _____ has become the single unifying theme of science to many scientists and science educators.

Matching Terms: Mark the letter in front of the best answer.

- a. Evolution b. Error c. Scripture d. Atheistic

5. _____ We will assume that when the Bible and science disagree, it must be science that is in _____.
6. _____ At its core, evolution is an _____ idea.
7. _____ A Christian who believes in _____ fails to see its philosophical foundation.
8. _____ We should interpret science in the light of _____.

Calculation: Write out the mathematical equation as instructed.

9. Write out 93,000,000 miles in scientific notation.

10. Write out 149,730,000 kilometers in scientific notation.

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Fill in the Chart: Put an X in the column to indicate whether the belief is that of a creationist or an evolutionist.

	a. Creationist	b. Evolutionist
1. Was surprised to learn that Pluto has regions on its surface with few craters		
2. Was not surprised to learn that Pluto has few craters on portions of its surface		
3. Believes comets indicate the solar system is not billions of years old		
4. Thinks that comets originate from the Kuiper belt and the Oort cloud		

Fill in the Blank: Write the best answer in the line provided.

- A _____ microscope allows a person to rapidly alternate views of two photographs made on separate nights.
- Clyde _____ found Planet X, which astronomers chose to name Pluto.
- Astronomers now classify Pluto as an asteroid, or _____ planet.
- Some creationists think that there used to be a _____ where the asteroid belt is now, but that a catastrophe destroyed it.
- God often intervenes in a way that would violate normal _____ law.

Fill in the Chart: Complete the chart as directed.

10. Fill in the missing information from Table 9.1.

Planet	Bode's Law Distance	Actual Distance
Mercury		
Venus		
Earth		
Mars		
Vesta		
Jupiter		
Saturn		
Uranus		
Neptune		
Pluto		



Reference: Pages 176–181 (to Comets)

Matching Terms: Mark the letter in front of the best answer.

- a. Trojan
- b. Metals
- c. Planets
- d. Composition

1. _____ Astronomers know that a few dozen minor ones of these have orbits that cross the earth's orbit, which are called near-earth orbit (NEO) asteroids.
2. _____ A group of minor planets is called this kind of group, named from characters in Homer's history.
3. _____ In addition to classification based upon their orbits, we can group minor planets according to this.
4. _____ The M-type minor planets contain large amounts of this, presumably iron and nickel.

Fill in the Blank: Write the best answer in the line provided.

5. Pluto and Charon have wide portions of their surfaces with relatively few craters, which suggests much _____ of their surfaces, though this is not easy to explain from a secular standpoint.
6. When astronomers reclassified Pluto as a minor planet, they also created a new category of minor planets: _____ planets.
7. A planet orbits the sun, while a _____ orbits a planet or minor planet.
8. Our understanding of Pluto improved dramatically with the arrival of the New _____ mission to Pluto in the summer of 2015.
9. _____ would have been given the provisional designation 1801 AA.

Short Answer: Write out the best possible answer as addressed in the text.

10. How are minor planets labeled if not given names?

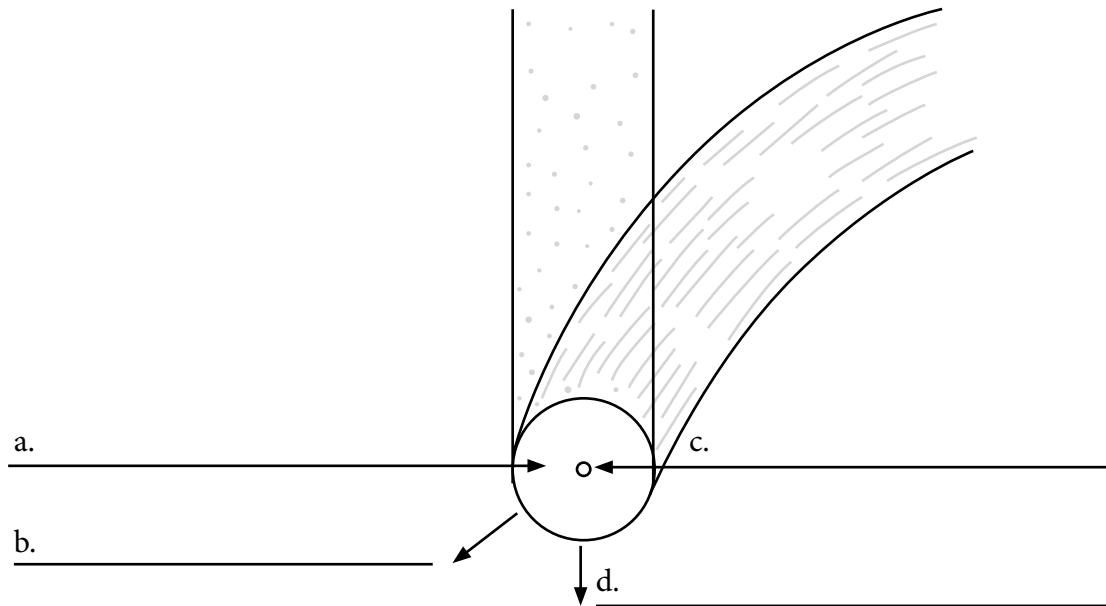
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Reference: Pages 181–187 (from Comets)

Fill in the Chart: Complete the chart as directed.

1. Label the image of Figure 9.1 showing the structure of a comet.



Glossary Terms: Write out the definition of each word from the glossary.

2. Nucleus: _____

3. Coma: _____

4. Gas tail: _____

5. Dust tail: _____

6. Oort cloud: _____

Fill in the Blank: Write the best answer in the line provided.

7. If new comets continuously enter the inner solar system at a rate that is _____ enough, then there would still be billions of comets after billions of years.
8. It is conceivable that the Oort cloud exists, but simple conception is not how science works, because science requires _____.
9. A _____ is a brief streak of light in the sky due to release of kinetic energy as a piece of ice or rock enters the upper atmosphere of the earth at high speed.
10. Before striking the earth's atmosphere, the debris of rock or ice moving through space is a _____, while if a solid piece of material survives to the ground, we call it a meteorite.



Glossary Terms: Write out the definition of each word from the glossary.

1. Iron meteorites: _____

2. Carbonaceous meteorites: _____

3. S-type asteroids: _____

4. C-type asteroids: _____

Fill in the Blank: Write the best answer in the line provided.

5. Creationists generally agree that when God made the sun, moon, and planets on the _____ day, He chose not to include the material that is now in minor planets.
6. _____ records that one of the things that happened after the opening of the sixth seal is that all the stars of heaven fell to the earth.
7. In the original languages of the Bible, the words for _____ referred to any bright object in the sky other than the sun and moon.
8. We can reasonably conclude that the falling of the stars in the Bible is a reference to _____.

Short Answer: Write out the best possible answer as addressed in the text.

9. Explain angular momentum and how it is a problem for the evolutionist.

10. What are some of the oddities of the solar system as described in the text?



Choose One of the Following Projects to Complete.

1. Using an app, locate all planets visible to the eye in the night sky. A parent’s permission is needed to confirm that the app is safe to use. Also, please use caution if the app provides secular information about space.
2. The rings of Saturn.

Supplies needed:

- Wooly Willy (You may purchase a “Wooly Willy” for a dollar or two at many toy and novelty stores. This toy has a drawing of a bald man on thick card stock under a hard, transparent plastic sheet with a small gap between the card and the plastic sheet.)

A good way to illustrate how spokes in Saturn’s rings can line up and move with the magnetic field of Saturn is to use “Wooly Willy.” You use a magnet on the end of a small wand to move clumps of iron filings trapped under the plastic to produce “hair” on the face of the man. If you pick up a clump of iron filings and slowly rotate the magnet around the axis of the wand, you will find that the iron filings will rotate with the magnet as stretched out lines.

3. Choose a smaller object in the solar system to do further research on, including comets or asteroids. Write a paper on your research. The paper should be one to two pages typed, single spaced. You may use the space below for your thoughts and observations.



Glossary Terms: Write out the definition of each word from the glossary.

1. Cosmology: _____

2. Cosmogony: _____

3. Static universe: _____

4. General relativity: _____

Short Answer: Write out the best possible answer as addressed in the text.

5. What is the biblical teaching in relation to an eternal universe?

Fill in the Blank: Write the best answer in the line provided.

6. Einstein imagined that _____ is something, when previously, people thought that it was nothing.
7. Wanting to keep the idea of an eternal universe, Einstein included a cosmological _____ in his solution to his equation.
8. A _____ universe is one that has a boundary or edge.
9. An _____ universe has no boundary or edge.
10. We say the universe is _____, which means that the universe has the same properties throughout.

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Glossary Terms: Write out the definition of each word from the glossary.

1. Isotropic: _____

2. Cosmological principle: _____

3. Big bang: _____

4. Hubble flow: _____

Fill in the Blank: Write the best answer in the line provided.

5. The actual model states that the big bang happened everywhere at the same time so that the big bang _____ the universe from the very beginning.
6. If _____ are cosmological, then they result from the expansion of the universe and they truly reflect distance.
7. A misconception about the big bang and the expansion of the universe is that the universe must be expanding into _____.
8. The big bang theory states that the universe and _____ had a beginning.
9. Acceptance of the big bang usually leads to acceptance of theistic evolution or progressive _____.

Short Answer: Write out the best possible answer as addressed in the text.

10. Why is it a dangerous precedent to reinterpret Scripture in terms of science?



Short Answer: Write out the best possible answer as addressed in the text.

1. What is the principle of causality in brief?

Matching Terms: Mark the letter in front of the best answer.

- a. Creation b. Isotropic c. Cosmic d. Density

2. _____ The perfect cosmological principle states that the universe is always homogeneous and this.
3. _____ The universe can remain homogeneous and at the same temperature as it expands only if this remains the same.
4. _____ A model where the universe never changes is called the steady state model or this kind of model.
5. _____ In 1964, two scientists discovered this microwave background radiation.

Fill in the Blank: Write the best answer in the line provided.

6. Medieval scholars reasoned that in the beginning there must have been some _____ Cause.
7. The best reading of the creation account is that it took _____ normal days a few thousand years ago.
8. Far from being an evidence of God's existence, the big bang is the ultimate _____ theory.
9. Theorists altered the big bang model to fit the _____, which are very loose rules for verification.
10. Neither the Cold Spot nor the _____ of Evil were expected from the big bang model, nor can the big bang model explain them.

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Short Answer: Write out the best possible answer as addressed in the text.

1. Briefly describe the anthropic principle.

2. What examples of the anthropic principle are mentioned regarding the amount of clumping in the supposed early big bang universe?

Fill in the Blank: Write the best answer in the line provided.

3. We should use our creation model to look for _____ in the world that suggests that it was designed and created for our benefit.
4. The third evidence for the big bang frequently cited is the abundances of the _____ elements in the universe.
5. If real, then red shift _____ is a difficulty for the big bang.
6. Instead of a gradual heat death, we know from the Bible that the universe will end in _____, but that God will replace it with a more glorious new heaven.

Matching Terms: Mark the letter in front of the best answer.

- a. Dark energy b. Circular c. Antimatter d. Inflation

7. _____ This kind of reasoning happens when someone starts with an assumption or bit of information, develops a conclusion based upon the starting information, and then uses the starting information as “proof” that the conclusion is true.
8. _____ When matter and its counterpart meet, they annihilate one another in a burst of energy.
9. _____ This was supposedly far faster than the speed of light at the beginning of the universe.
10. _____ Einstein introduced the cosmological constant, an idea that soon was discarded, only to be revived at the end of the 20th century and rechristened this.