

Astronomy

Lesson 1 – What is Astronomy?

Vocabulary:

astronomy: _____

constellations: _____

compass: _____

gravity: _____

solar system: _____

NASA: _____

artificial: _____

People (What are they known for):

Nicolas Copernicus: _____

Galileo Galilei: _____

Study Questions:

1. Why did God create the stars and planets?

2. What are the names of the planets?

3. What is the name of America's Space Program?

4. What does NASA do?

5. What is the name of the astronomer who first said that the earth revolves around the sun?

6. What is the name of the astronomer who learned how to study space with a telescope?

Exploring Creation with
Astronomy
Lesson 2 – The Sun

Vocabulary:

Part 1

orbit: _____

satellite: _____

rotate: _____

solar flare: _____

auroras: _____

sunspots: _____

droughts: _____

Part 2

thermonuclear fusion: _____

absorb: _____

atmosphere: _____

solar eclipse: _____

total eclipse: _____

annular eclipse: _____

partial eclipse: _____

craters: _____

Bailey's Beads: _____

Study Questions:

1. How many Earths would fit inside the sun?

2. How many miles away is the sun from Earth?

3. What is the solar system?

4. What are sunspots?

5. Do sunspots help us at all? How?

6. Does the sun have a satellite?

7. What is the difference between revolving and rotating?

8. How does the sun tell us that there were not living things on the earth billions of years ago?

9. Why do we see color?

10. Which color has short waves?

11. What is a solar eclipse

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Lesson 3 - Mercury

Vocabulary:

atmosphere: _____

elliptical orbit: _____

asteroids: _____

terrestrial: _____

gaseous: _____

unmanned spacecraft: _____

transit: _____

composite: _____

Study Questions:

1. Why does the sun always appear white on Mercury?

2. What is Mercury so cold at night even though it is right next to the sun?

3. How long is a day on Mercury?

4. How long is a year on Mercury?

5. Does Mercury orbit in a circle or in an oval around the sun?

6. What is the shape of Mercury's orbit called?

7. Is it hot or cold on Mercury?

8. Why is it so cold at night?

9. What kind of planet is Mercury, terrestrial or gaseous?

10. What does the surface of Mercury look like?

11. What are some reasons it might look the way it does?

12. What would the sky look like if you were on Mercury? Why?

13. When is the best time to see Mercury from Earth? Why?

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Lesson 4 - Venus

Vocabulary:

lava: _____

terrestrial: _____

radar: _____

crescent: _____

Study Questions:

1. Why did astronomers think Venus was a twin of the earth? _____

2. What would it feel like on Venus? _____

3. What is the atmosphere like on Venus? _____

4. What is special about the rotation of Venus? _____

5. Have very many spacecraft visited Venus? How many? _____

6. Since we can't see through the thick clouds over Venus, how do we know what the planet's surface looks like? _____

7. Why does Venus go through phases? _____

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Lesson 5 - Earth

Vocabulary:

matter: _____

mass: _____

gravity: _____

rotational period: _____

atmosphere: _____

greenhouse: _____

meteorite: _____

equator: _____

Northern hemisphere: _____

Southern hemisphere: _____

counterclockwise: _____

magnetosphere: _____

solar wind: _____

Layers of the earth – what's in each:

crust: _____

mantle: _____

outer core: _____

inner core: _____

Study Questions:

1. What are the seven things that make the earth able to support life? explain how each of those things help us to live on earth.

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

2. Explain why those things help us to live on the earth.

3. Why do we have different seasons?

4. What are the four major sections of the earth?

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Lesson 6 – The Moon

Vocabulary:

lunar eclipse: _____

maria: _____

lunar rover: _____

bulge: _____

Illustrate the phases of the moon:

new moon:

crescent moon:

quarter moon:

gibbous moon:

full moon:

People (What are they known for):

Neil Armstrong:

Study Questions:

1. What is the atmosphere like on the moon?

2. What is the color of the moon's sky during the moon's daytime?

3. Why does the moon have phases?

4. What is a lunar eclipse?

5. Why are the astronaut's footprints probably still on the moon?

6. How does the moon affect the ocean?

7. How are the tides helpful to the earth?

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Lesson 7 - Mars

Vocabulary:

artificial ecosystem: _____

dry ice: _____

polar icecaps: _____

permafrost: _____

Study Questions:

1. What makes Mars look red?

2. What is the atmosphere like on Mars?

3. What is the surface like on Mars?

4. What is the name of the biggest volcano in our solar system?

5. What are the names of the moons of Mars?

6. What do they look like and how are they orbiting?

7. How long does it take for Mars to revolve? to rotate?

8. What is the weather like on Mars?

9. What do some astronomers think Mars would be a good place to visit and perhaps live?

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Lesson 8 – Space Rocks

Vocabulary:

Nucleus: _____

Comet: _____

Coma: _____

meteor showers: _____

short-period comet: _____

long-period comet: _____

meteoroids: _____

meteor: _____

meteorite: _____

planetoids: _____

asteroids: _____

Famous Comets – tell a bit about them:

Halley's Comet

Comet Hale-Bopp

Shoemaker-Levy comet

Study Questions:

1. What is another name for a comet?

2. What does a comet leave behind it as it orbits the sun?

3. What happens when a comet's dust particles enter our atmosphere?

4. What do people call meteors?

5. What is a meteor called when it hits the earth?

6. Where have many meteorites been found?

7. From which planet did some of the meteorites come?

8. Where is the asteroid belt located?

9. What is the Exploded Planet Hypotheses?

10. What are some reasons that this might be a correct hypothesis?

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Lesson 9 - Jupiter

Vocabulary:

gas giant: _____

Great Red Spot: _____

Galilean moons: _____

Study Questions:

1. What chemical do we need in the atmosphere to breathe?

2. How many earth years does it take to have one Jupiter year?

3. How does Jupiter protect our planet?

4. Why is Jupiter a little like the sun?

5. What is the Great Red Spot on Jupiter?

6. How long has the spot been there?

7. How big is it?

8. What are Jupiter's stripes?

9. Name Jupiter's largest moons:

10. Why are they called Galilean moons?

11. Describe Amalthea:

12. Give some details about the spacecraft Galileo:

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Lesson 10 - Saturn

Vocabulary:

shepherd moons: _____

mission: _____

Cassini Mission: _____

Study Questions:

1. Are bathtub toys more or less dense than water?

2. What is Saturn made of?

3. Why would Saturn be an unpleasant place to visit?

4. Which planet is considered Saturn's twin?

5. What are Saturn's rings made of?

6. What do shepherd moons do?

7. How many years does it take Saturn to orbit the sun?

8. Why does it look as if it is being squeezed?

9. What is the name of the space mission that is going to Saturn?

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Lesson 11 – Uranus and Neptune

Vocabulary:

Methane: _____

Eureka: _____

Great Dark Spot: _____

Geysers: _____

People (What are they known for):

William and Caroline Hershel

Study Questions:

Part 1 (Uranus):

1. What chemical makes Uranus blue-green in appearance?

2. Why does Uranus look like a ball rolling around the sun?

3. What makes it look like a loose wagon wheel?

4. Why was it so exciting to discover Uranus?

5. Who discovered Uranus?

6. How were they educated?

7. How long does it take Uranus to orbit the sun?

Part 2 (Neptune):

8. Why was Neptune discovered?

9. What made astronomers think there was another planet beyond Neptune?

10. What chemical gives Neptune its blue color?

11. What number planet from the sun is Neptune?

12. How long does it take Neptune to revolve around the sun?

13. What was the Great Dark Spot?

14. What is the name of Neptune's biggest moon?

15. What are geysers?

16. Is water coming from the geysers on Triton?

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Lesson 12 – Pluto and the Kuiper Belt

Vocabulary:

Nuclei: _____

Quaoar: _____

New Horizons: _____

Study Questions:

1. What is the Kuiper Belt?

2. How was Pluto discovered?

3. What are some of the strange features of Pluto?

4. What do some astronomers not believe Pluto is a planet?

5. What do they think it is?

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Lesson 13 – Stars and Galaxies

Vocabulary:

Star: _____

Polaris: _____

Asterism: _____

binary star system: _____

supernova: _____

black hole: _____

nebula: _____

variable star: _____

super giant: _____

light years: _____

galaxies – types: _____

Milky Way: _____

Constellations: _____

Astrology: _____

Latitude: _____

Labels of stars – define, meanings

temp, brightness, size –

Study Questions:

1. Our sun is a G-4 V star. What does that mean?

2. Why do you see different stars during different times of the year?

3. Which group of stars is always present in the night sky of the Northern Hemisphere?

4. What is the name of the North Star?

5. What is special about the star named Sirius?

6. What is the black hole?

7. What is a supernova?

8. What are the three star categories?

9. What is a galaxy?

10. What galaxy is Earth located in?

11. What is the shape of our galaxy?

12. What is a constellation?

13. How are constellations used today?

14. What is the difference between astronomy and astrology?

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Lesson 14 – Space Travel

Vocabulary:

Astronautics: _____

Sputnik: _____

space race: _____

NASA: _____

Cosmonaut: _____

space station: _____

Salyut: _____

International Space Station: _____

zero gravity: _____

modules: _____

EVA: _____

Magnetosphere: _____

People (What are they known for):

Konstantin Tsiolkovky: _____

Robert Hutchinson Goddard: _____

Laika: _____

Alan Shephard: _____

Neil Armstrong: _____

Study Questions:

1. What was the name of the first artificial satellite?

2. What was the race called between Russia and the United States?

3. Why was the U.S. worried about Russia's space program?

4. What did the U.S. do first?

5. What did Neil Armstrong say when he stepped on the moon?

6. What is a space station?

7. What is the name of the best space station?

8. What is the job of people who live on this space station?

9. What is life like on the space station?

10. How do you become an astronaut?
