Beyond the Solar System Unit

Preview is a compressed file

can form stars and galaxies

- Nebulae are divided into two catego (Bright and Dark)
  - Bright nebulae are close to stars.
  - Dark nebulae are not close to stars an visible when a bright nebulae is behin

A Barred

B Irregular

C Elliptical

D Spiral

Pegasus, Andromeda

Fall

Winter

Orion, Canis Major

Sun

Leo

Leo, Virgo

- This is the name for a large cloud of gas and dust which can form stars and galaxies.

NEBULA 5

- Super-Earth GJ 1214b is an example of a…

13

Extrasolar Planet or Exoplanet

Answer is

- A light-year is a unit o
  - It is the distance that l (9,500,000,000,000 kil
  - Light moves at a velocity of about 3 kilometers (km) each second in a vac

- Name two methods for detecting extra solar planets?
  - Transit method, radial velocity method, and direct imaging method.

A Transit Method

B Radial Velocity Method

C Direct Imaging

14

gravitational field.

- A region of spacetime from which gravity prevents anything, including light, from escaping.

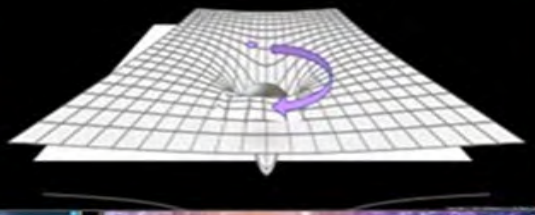
A black hole is anything but empty space. Rather, it is a great amount of matter packed into a very small area.

Not empty!

Interactive Slideshows

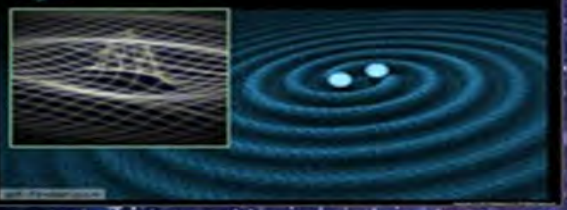
- Which is the Spiral Galaxy from the g
  below? Answer: D

- Activity! Spacetime.
  - 3) Toss in lots of small marbles with an orbital velocity so they orbit the "Sun/ Shotput"



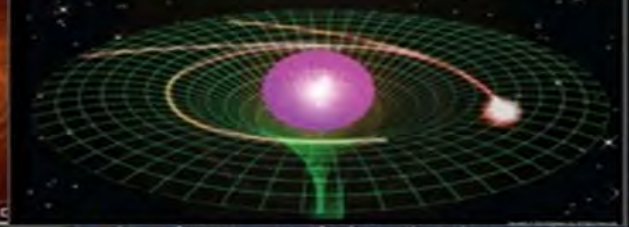
- What causes different stars to appear in the sky at different times of the year?
  - There are two major motions affecting the Earth:
    - The earths rotation around its axis, and its rotation around the Sun (revolution).

- Gravitational Wave: Disturbances or ripples in the curvature of spacetime, generated by accelerated masses, that propagate as waves outward from their source at the speed of light.



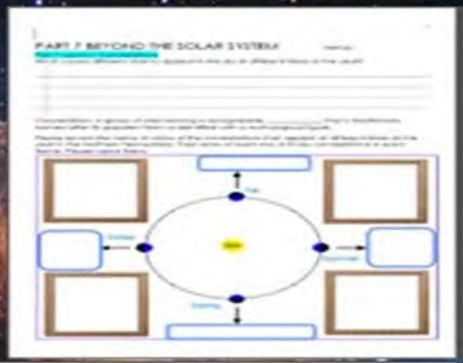
- Video (Optional) Crash Course Astronomy Black Holes.
  - https://www.youtube.com/watch?v=qZWPBKUI

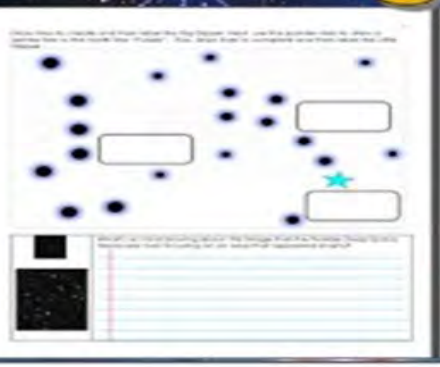
- Warping the Fabric of Space and Time.
- https://lab.nationalmedals.org/gravity/
- 1) How does an objects mass and distance change gravitation?
  - Change the mass and distance of celestial bodies. 5 minutes how it works / play.

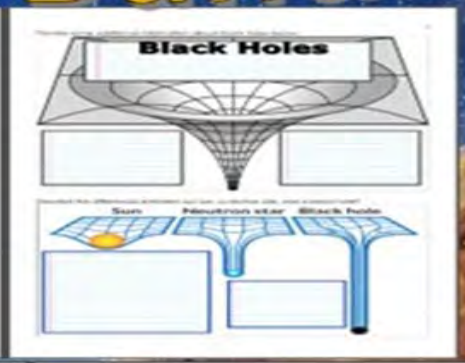


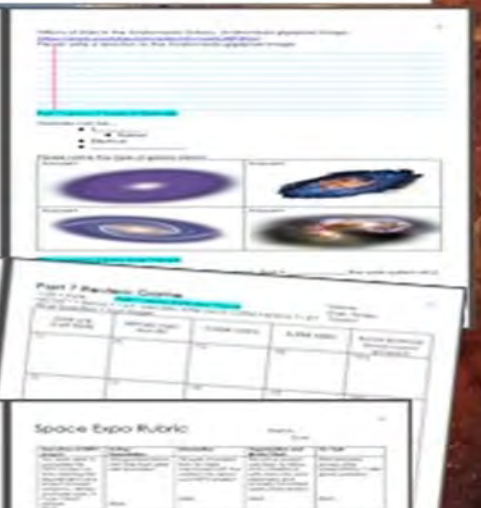
- It's been serviced in space five times and been in use for more than 25 years.
  - It has changed our view of the universe and our place within it.

Follow Along Work Bundle





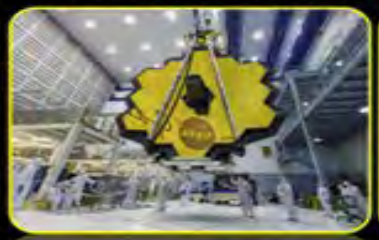




15+ Pages

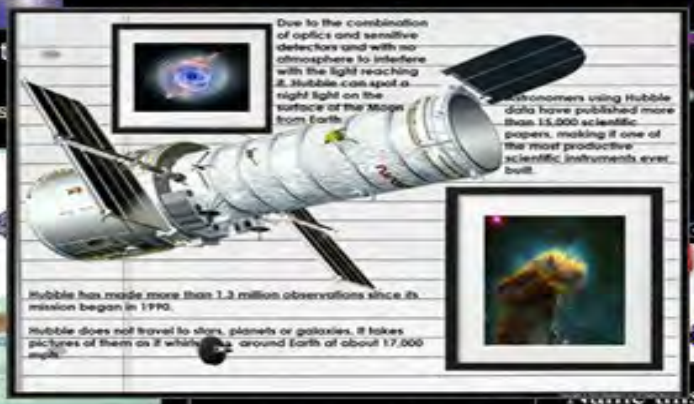
Activities, Notes, Keys, Assessments and more all built-in

- The James Webb Space Telescope is a space telescope currently conducting infrared astronomy.
  - Equipped with high-resolution and high-se instruments, allowing it to view objects too distant, or faint for the Hubble Space Teles



- Neutron Star: Type of star leftover when a star collapses.

- Don't think of the expansion as just headed away from each other.
  - Space is expanding, and the galaxies along for the ride.



named after its apparent form or identi with a mythological figure.

on the spiral arm of the Milky Galaxy.

Galactic Year

How many Galactic Years has our solar system experien

A.) 200,000,000
B.) 2,000
C.) 20
D.) 2

225-250 million years

Name this very important device?

3

Hubble Space Telescope

answer is...

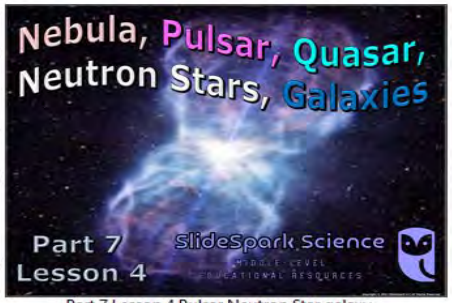
Astronomy Unit Part 7: Constellations, Hubble Space Telescope, Spitzer Space Telescope, Speed of Light, Nebulas, Types of Nebulas, Galaxies , Type of Galaxies, Gravity, The Special Theory of Relativity , Blackholes, Neutron Stars, Spacetime, Pulsars, Quasars, Exoplanets, Hubble Deep Field, Beyond the Solar System, Black holes, Exoplanets, The Big Bang, Evidence for the Big Bang

Part 7: Astronomy Unit

Part 7 Lesson 1 Constellations Hubble

Part 7 Lesson 2 Speed of Light More

Part 7 Lesson 3 Spacetime



Part 7 Lesson 4 Pulsar Neutron Star galaxy

Part 7 Lesson 5 Galaxies

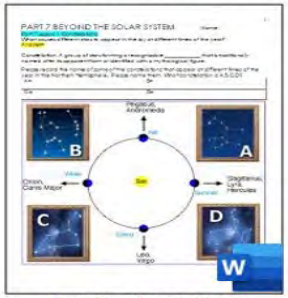
Part 7 Lesson 6 Exoplanets

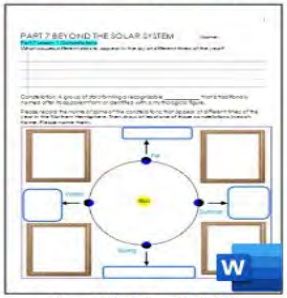
Part 7 Lesson 7 Big Bang

Part 7 Lesson 8 Review Game

Part 7 Lesson 9 Review Game Answers


Part 7 Work Bundle Answers


Part 7 Work Bundle Digital

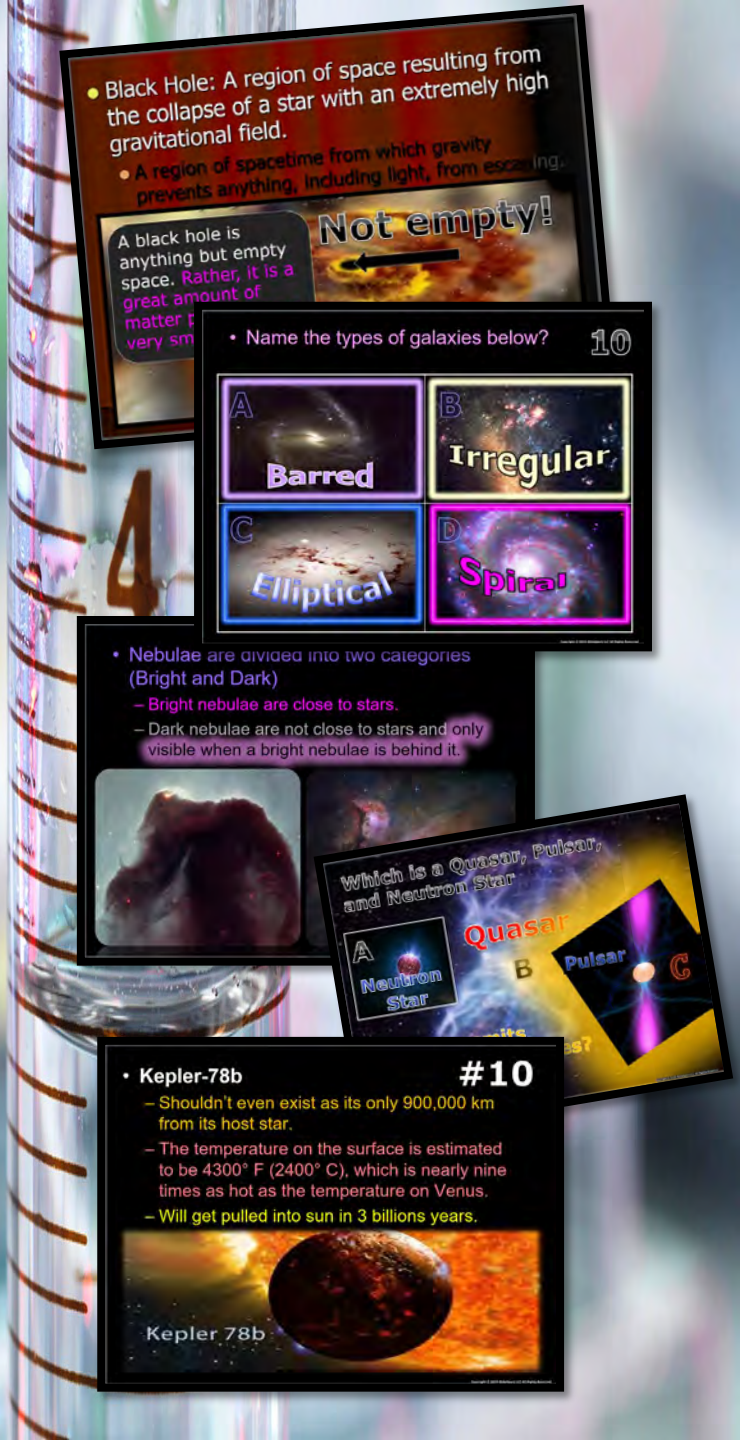

Part 7 Work Bundle Print

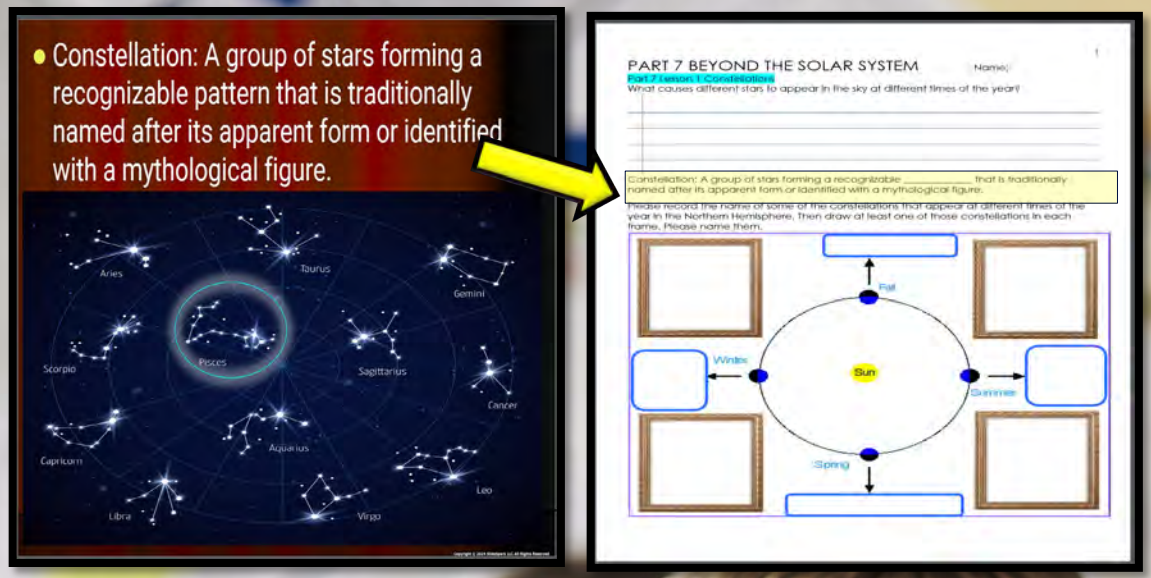
SlideSpark Science

MIDDLE-LEVEL EDUCATIONAL RESOURCES

Interactive slideshows provide the roadmap for an amazing learning experience for students in grades 5-9. A Detailed set of work bundles chronologically follow the digital learning, providing a clear and intuitive roadmap to understanding. As the teacher or student advances through a slideshow, exciting hands-on activities, fantastic visuals, fill-in notes, review opportunities, video links, assessments, and much more are strategically placed throughout. Interactive learning unfolds step by step and supported by the work bundle to reach all types of learners. Everything you need to run to an amazing learning experience is provided in this one-of-a-kind science curriculum.

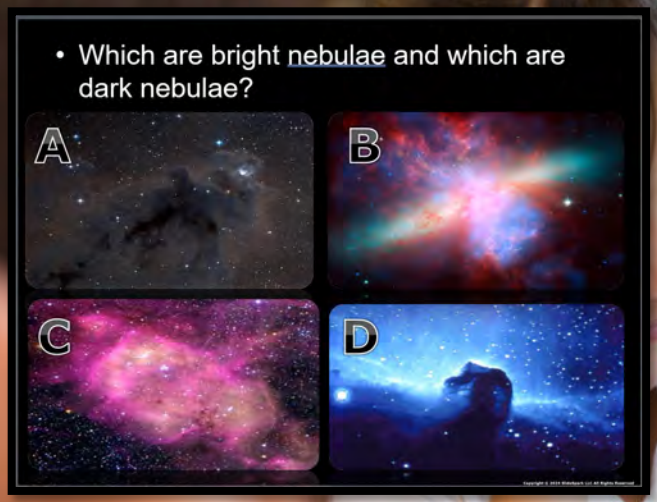
Each unit in the curriculum is designed to help teachers deliver the best possible learning experience for their students. Our interactive science slideshows are filled with questions and answers, important fill-in notes, hands-on activities, projects, games, built-in quizzes, and end of the unit assessment pieces. Students follow along with a work bundle that documents the entire learning experience for a fantastic review and assessment piece.





Red Slide Notes: Help students record important information in a fun and easy-to-understand way. Designed red-colored slides contain a few pieces of crucial information that students must record into their work bundle to complete the notes. Students will use these important notes throughout the work bundle.

The set-up of the slideshows are designed to make learning fun and interactive for students. With a mix of questions and answers, teachers can use these slides to get their students thinking and actively participating in their education. Plus, the answers are always revealed on the next slide, providing students with immediate feedback and helping teachers assess their understanding.

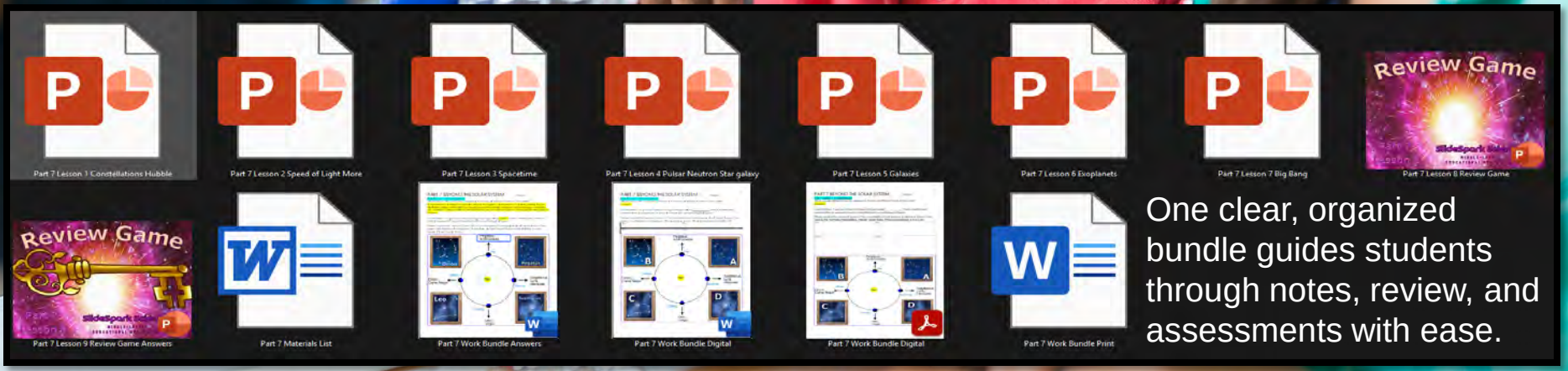


Next Slide

Slideshow supports Work Bundle

Lesson Planning

Daily lessons space exciting hands-on activities, red slide notes, video and academic links, projects, simulations, readings, built-in quizzes, and review opportunities throughout the slideshows. A typical day may have many different learning styles being targeted. Daily lesson planning becomes advancing through the slideshow roadmap the night before. Each lesson is roughly 50 minutes, but sometimes things can speed up or slow down. The best strategy is just to go at your classes own pace. The work bundle chronologically follows the interactive slideshow and you can always spend extra time assessing the quality of the writing within. If you don't quite finish a lesson, you can always pick it up the next day where you left off. The only real trick in timing is not starting a larger activity if you don't have the available time to complete. The slideshows have been designed to be a low stress, go at your classes own pace experience. Most activities are designed to be cost effective, using general materials that can be gathered from your local stores.



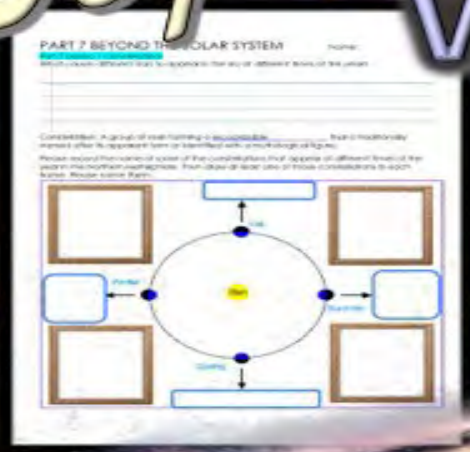
One clear, organized bundle guides students through notes, review, and assessments with ease.

Follow Along Work Bundle

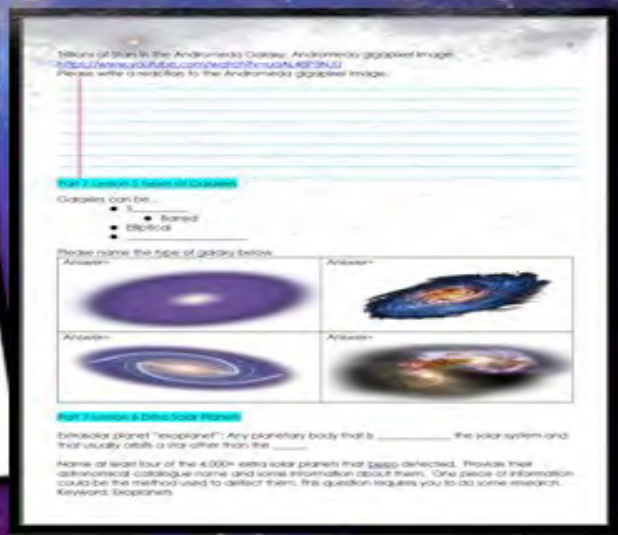
Each science unit comes with several work bundles. The bundles should be printed before the unit begins and distributed to the students on the first day of the unit. The work bundles will be due shortly after the completion of the unit. The work bundle will become a resource for the review games, crossword puzzles, and will be collected for assessment. The work bundle follows the entire learning experience and will be used every day. They are chronological to the lessons and provide places to record fill-in notes, answer questions, collect data, graph and much more. An answer version is provided that can that be distributed to your support professionals. A digital version of the work bundle and some writable .pdf versions are provided if you want to go paperless. These work bundles are perfect for students looking for an easy and organized way to track their progress and stay on top of their studies.

Beyond the Solar System

Work Bundle


PART 7 BEYOND THE SOLAR SYSTEM

Name:



Billions of Stars in the Andromeda Galaxy. Andromeda gigapixel image!

Please write a reaction to the Andromeda gigapixel image.

Galaxies can be...

- S_____
  - Barred
- Elliptical
- _____

Please name the type of galaxy below.

Answer=

Answer=

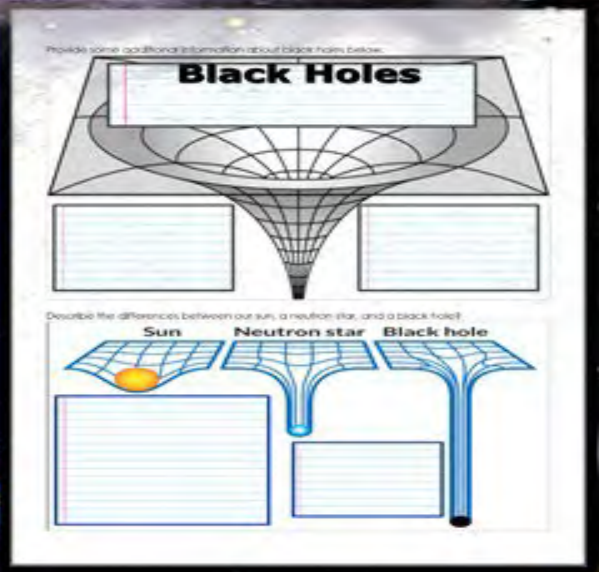
Answer=

Answer=

Part 7 Lesson 4 Extra Solar Planets

Extrasolar planet "exoplanet": Any planetary body that is _____ the solar system and that usually orbits a star other than the _____.

Name at least four of the 4,000+ extra solar planets that have detected. Provide their astronomical catalogue name and some information about them. One piece of information could be the method used to detect them, this question requires you to do some research. Keyword: exoplanets



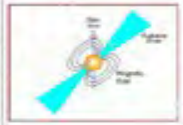
Pulsar: A rapidly _____ neutron star that emits radiation, usually _____ waves, in narrow beams.

Which is a Pulsar, Neutron Star, and Quasar

Answer=

Artistic rendition

Answer=



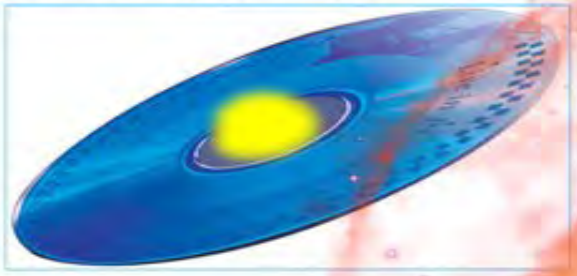
Answer=

Artistic rendition

Galaxy: Large group of stars, gas, and dust that constitute the Universe.

- Hundreds of _____ of stars.

Please label this old CD with a gumdrop as if it were a galaxy.

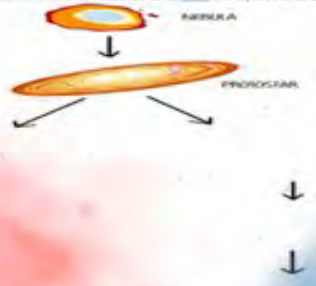


What type of Nebulas are below?

Answer=

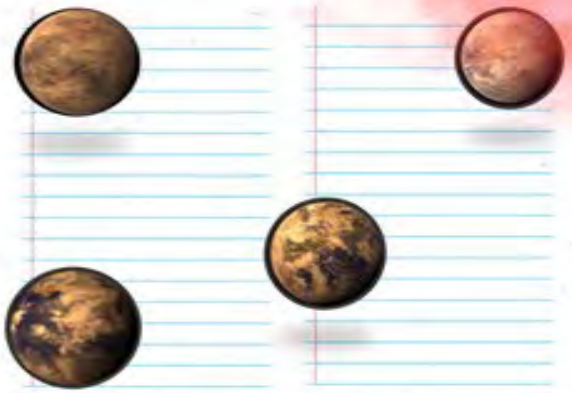
Answer=

Please provide a review about the role of nebulas and then life cycles of stars.

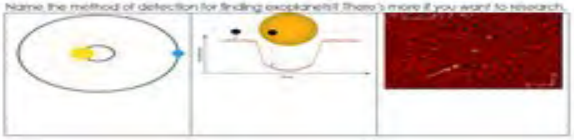


Quasar: Extremely bright masses of _____ and light.
-Emits enormous _____ and extremely old.

Neutron star: type of star left over when a star _____



Name the method of detection for finding exoplanets!! There's more if you want to research.



Part 6 Lesson 6 Spacetime

Einstein's theory describes that _____ and _____ are actually different aspects of the same thing space-time. Gravity is the bend in space-time. Gravity is....Ripples and warps in the fabric of space and time.

Please fill in the blanks below from Newton to Einstein.

two objects exert a f_____ of attraction on one another known as g_____. Sir Isaac N_____ quantified the gravity between t_____ objects when he formulated his three laws of the _____. the force tugging between t_____ bodies depends on how mu_____ are each one is and how f_____ apart the two lie. Even as the center of the Earth is pulling you, your center of m_____ is pulling b_____ at the Earth. Newton's universal law of gravitation: F = Gm1m2/R, where F is the fo_____ due to gr_____ between two m_____ es (m1 and m2), which are a g_____ e_____ apart; G is the g_____ ftional constant. The more m_____ tive body barely feels the tug from you, while with your much smaller m_____ you find yourself firmly rooted thanks to that same fo_____. Newton's l_____ assume that gravity is an invisible force of an object that can act over a di_____. Albert E_____. In his theory of special r_____, determined that the laws of phy_____ are the sa_____ for all non-accelerating observers, and he showed that the speed of l_____ within a vacuum is the s_____ no matter the sp_____ of which an observer travels. As a result, he found that spa_____ and t_____ were interwoven into a single continuum known as space t_____. Events that occur at the same ti_____ for one observer could occur at different times for another. The equations for his general th_____ of relativity, Einstein realized that _____ ssive objects caused a distortion in s_____-time. Imagine setting a bowling ball in the center of a trampoline. The body would press down into the fa_____ of "space-time", causing it to bend. A marble rolled around the edge would spiral inward toward the bo_____ it, pulled in much the same way that the gr_____ of a planet pulls at obj_____ in sp_____.

Visit Gravity Simulator. Warping the Fabric of Space and Time. Create all of the examples https://phet.colorado.edu/en/simulation/gravity-and-orbits

1) How does an object's mass and distance change gravitation!! Change the mass and distance of celestial bodies. 5 minutes how it works.
2) Create a Sun. Lay out lots of small objects and then put something massive in the middle. What happened!!
3) Create Sun, with orbiting Earth, and orbiting Moon.
4) Create a model of our solar system 8 planets Needs s Large Planet (Jupiter and Saturn)
5) Create a Binary System of two stars. Create a Binary System of two stars with at least two planets that orbit each star. Create a triple or Quadruple Star System
6) Create a Blackhole! It's going to need a lot of mass.

Part 7 Lesson 4 Pulsar, Quasars, Galaxies

Nebula: Large cloud of _____ and _____ which can form _____ and _____.

- Nebulae are divided into two categories (Bright and Dark)

Bright nebulae are _____ by stars.
Dark nebulae are not close to stars and only visible when a bright nebula is _____ it.

Across

3. S____ Galaxies: These are the most common type of galaxy.
5. A region of space resulting from the collapse of a star with an extremely high gravitational field.
6. Extremely bright masses of energy and light.
9. The Big _____ is a clipped version of the constellation Ursa Major the Big Bear.
11. _____ Star: Type of star leftover when a star explodes.
14. A black hole is a region of s_____ from which gravity prevents anything, including light, from escaping. A blackhole is anything but empty! Rather, it is a great amount of matter packed into a small area.
15. General relativity describes that space and _____ are actually different aspects of the same thing -space-time.
16. Gravity: The force tugging between two bodies depends on how massive each one is and how f___ apart the two lie.
17. A nebula can form s____
18. It is the distance that _____ can travel in one year. (9,500,000,000,000 kilometers.)
20. The _____shift of Galaxies is one evidence of the Big Bang.
21. The name of the north star is_____. It's the brightest star of the constellation – Ursa Minor.
22. _____ Space Telescope. Since its 1990 launch, it has changed our fundamental understanding of the universe.
23. Large cloud of gas and dust which can form stars and galaxies.

Down

1. Two objects exert a force of attraction on one another known as g_____
2. The _____ Theory: The cosmic explosion that is hypothesized to have marked the origin of the Universe.
4. _____ A rapidly spinning neutron star that emits radiation, usually radio waves, in narrow beams.
7. This is the closest galaxy to the Milky Way. A_____ Galaxy.
8. Constellation: A group forming a recognizable pattern that is named after its apparent form or is identified with a mythological figure.
10. E_____ for short: Any planetary body that is outside the solar system and that usually orbits a star other than the Sun.
11. Dark _____ are not close to stars and only visible when a bright nebula is behind it.
12. One evidence of the Big Bang is Cosmic M_____ Background has been accurately measured by orbiting detectors.
13. These nebulae are close to stars.
19. Large group of stars, gas, and dust that constitute the Universe.

Possible Answers

ANDROMEDA, BIGBANG, BLACKHOLE, BRIGHT, CONSTELLATION, DIPPER, EXOPLANET, FAR, GALAXY, GRAVITY, HUBBLE, LIGHT, MICROWAVE, NEBULA, NEBULAE, NEUTRON, POLARIS, PULSAR, QUASAR, RED, SPIRAL, STARS, TIME, SPACETIME

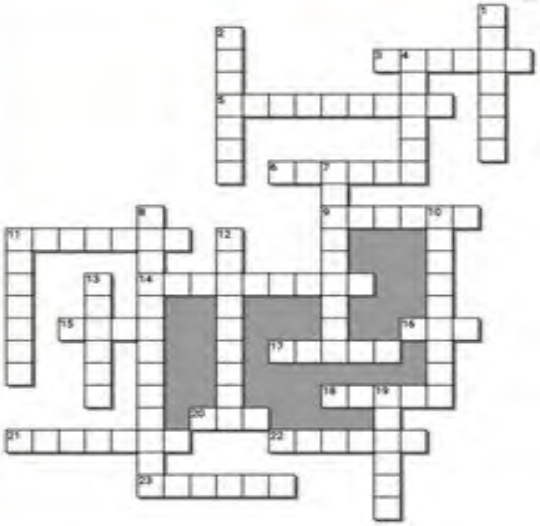
Part 7 Review Game

Name:
Due: Today

1-20 = 5 pts Part 7 Lesson 8 Review Game
* *20-25 * = Bonus = 1 pt. Correctly write out in correct space = 1 pt. Score=
Final Question = 5 pt wager

STAR LITE STAR BRITE	RIPPLES AND WAVES	OUTER LIMITS	SUPER SIZED	ROCK BOTTOM Bonus round 1pt each
1)	6)	11)	16)	*21)
2)	7)	12)	17)	*22)
3)	8)	13)	18)	*23)
4)	9)	14)	19)	*24)
5)	10)	15)	20)	*25)

Final Question Wager: ____/5 Answer: _____



Part 7 Lesson 2 The Big Bang

The Big Bang Theory: The cosmic _____ that is hypothesized to have marked the origin of the Universe.

Help Sheldon Blue he drawing board with some information about the Big Bang Theory!!
https://www.youtube.com/watch?v=9bZkp7q19f0

How will the universe end? Can you provide three theories below?

General Theme

The Universe is...

BIG

FAST

OLD

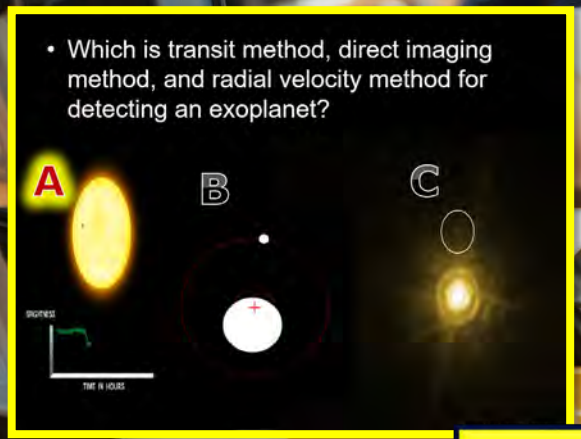
FAR

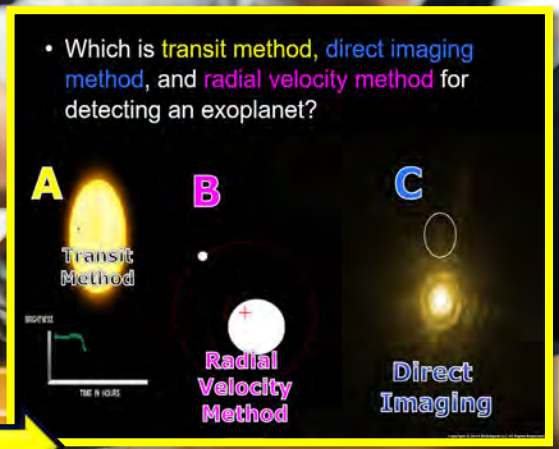
Powerful

Orion
Pegasus
Leo
Sagittarius
Black Holes
Nuclear Bulge
Kepler 22b
Kepler-186f
Kepler 452b
Ross 128 b
RIP
Part 7 Review Game

Built-in Questions and Assessments

Many slides will have relevant terms covered with a box. When advancing through the slideshow an outline around the box will glow with a bright color. The next slide will make the box disappear. These slides allow the teacher to call upon students or table groups / check for understanding before advancing. The team at SlideSpark has found that using this technique helps to keep the students focused. Constantly recalling and reviewing information learned is necessary when moving through a large unit. The slideshows don't just give everything away for free. Students should be able to demonstrate knowledge before moving on. Some slides have full questions instead of just covered terms. In these slides, the teacher should encourage small group work. The teacher can then call upon one or two groups to share before advancing the slide. The next slide will always reveal the correct answer.



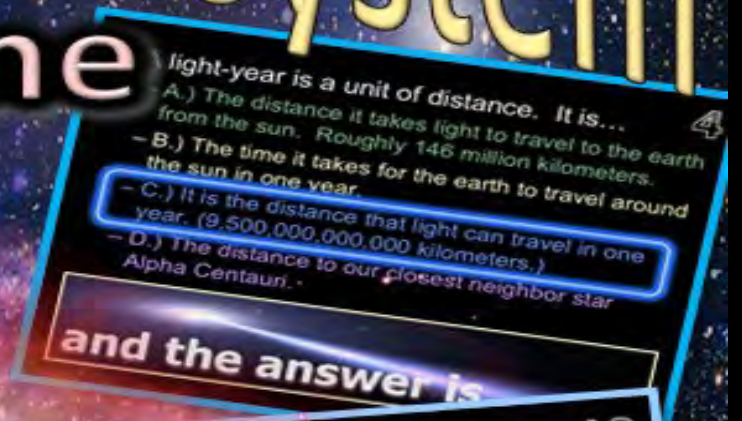


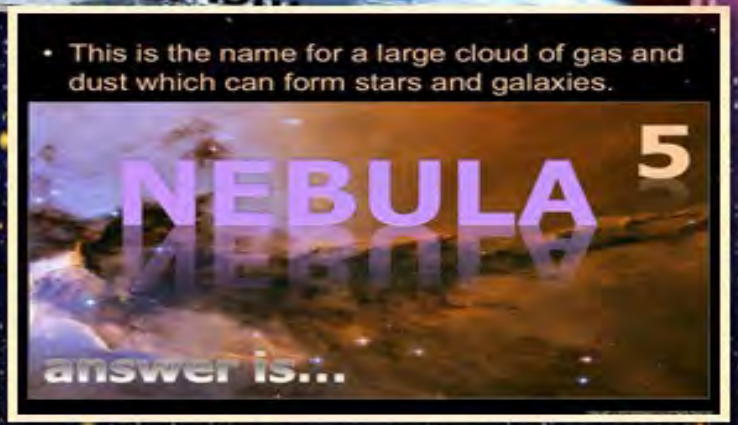
Review Game / Assessments

Each of the 11 Units concludes with a review quiz. Answers are provided in slideshow form so students can self assess. A blank template sheet is provided in the work bundle. Students can benefit from working together in small table groups with quiet communication. You can decide if you want to allow the use of work bundles or not. These are a nice review opportunity and get the students looking through their work bundles for the answers.

Beyond the Solar System

Quiz Game





- This is the type of star leftover when a star collapses.
  - Very small and dense star made almost completely of... Neutrons

8 **Neutron Star**

answer is...

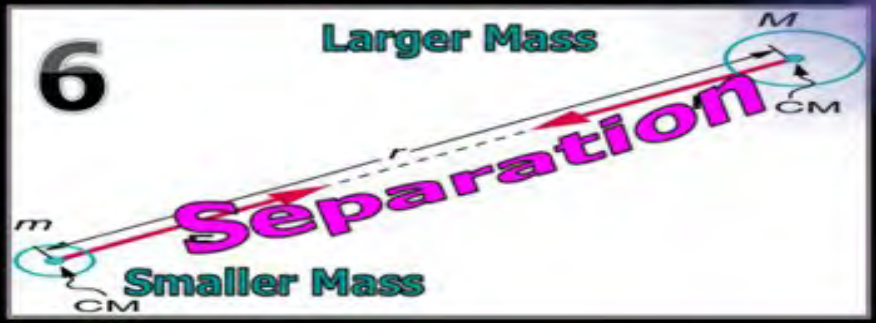
- This is the name for a large group of stars, gas, and dust that constitute the Universe.
  - Large = Hundreds of billions of stars.

GALAXY 9

answer is...

- ...is a region of space resulting from the collapse of a star with an extremely high gravitational field.
  - A region of spacetime from which gravity prevents anything, including light, from escaping.

- Law of Gravity $F = G M m / r^2$
  - Gravity is an attractive force between two bodies which depends only on the mass of the two bodies (M and m) and inversely on the square of the separation between the two bodies.



Name the Galaxy we live in?

The Milky Way

Galactic Disc

12

- Name two methods for detecting extra solar planets?
  - Transit method, radial velocity method, and direct imaging method.

A B C 14

What is this, it ta... of hundred million years?

A Galactic Year

- This is the cosmic explosion that is hypothesized to have marked the origin of the Universe.

15

THE BIG BANG THEORY

answer is...

- Super-Earth GJ 1214b is an example of a...

13

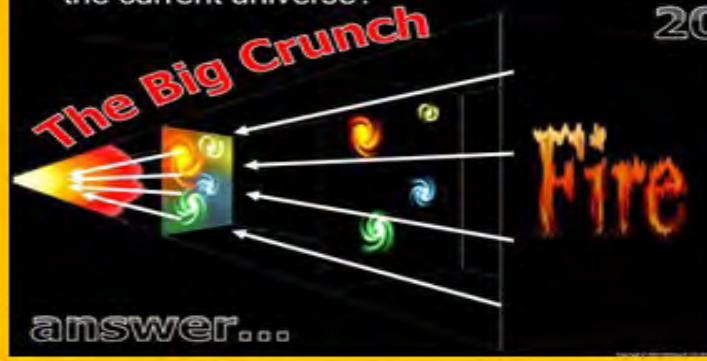
Extrasolar Planet or Exoplanet

Answer is...

- This is a rapidly spinning neutron star that emits radiation, usually radio waves, in narrow beams.

- What's the name for this possible ending to the current universe?

20



- The second law of thermodynamics reminds us that the fate of the universe could be...?
  - A.) The universe will eventually run out of energy. Everything will become lifeless and frozen at some point.

- True or False? The atoms that make up your hand were once part of a star that exploded?

18

- Which comment below is [illegible]tely bogus about the Big Bang Theory?

17

  - A.) As the Universe expanded and cooled some of the elements that we see today were created.
  - B.) The cosmic forces in the universe have been increasing in size and scale as described by increasing radiation.
  - C.) The redshift of distant galaxies means that the Universe is probably increasing.
  - D.) The Cosmic Microwave Background has been accurately measured by orbiting detectors.

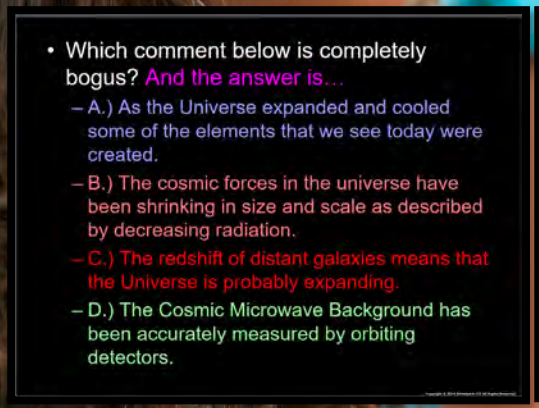
answer is...

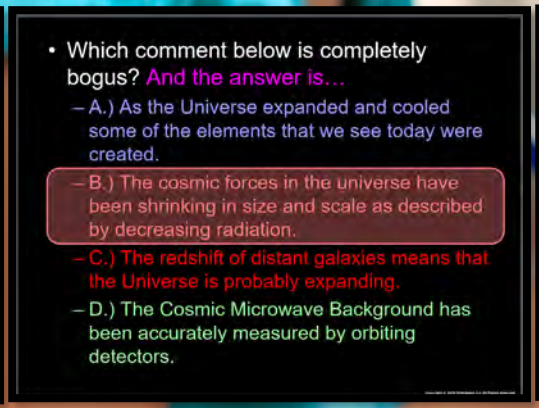
- Using information gathered from the WMAP satellite, the universe is believed to be [illegible] old?
  - A.) 157 thousand years old
  - B.) 57.6 Trillion years old?
  - C.) 57 Billion years old?
  - D.) 13.75 Billion years old?
  - E.) The WMAP satellite is a governm[illegible]up.

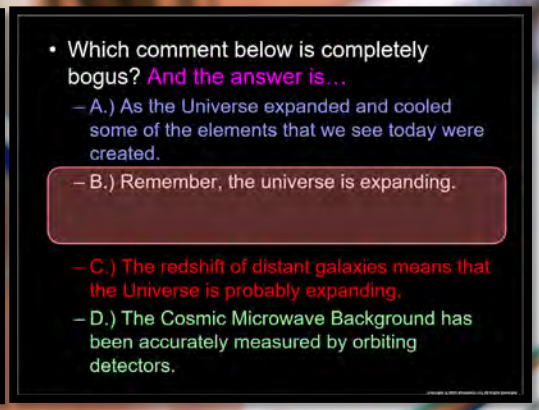
16

Built-in Assessment

This unit contains built-in assessment questions that students answer in their work bundle. With the question revealed before the answer, the teacher can easily call on individual students or table groups to respond. These provide an effective and efficient way for teachers to assess student learning.





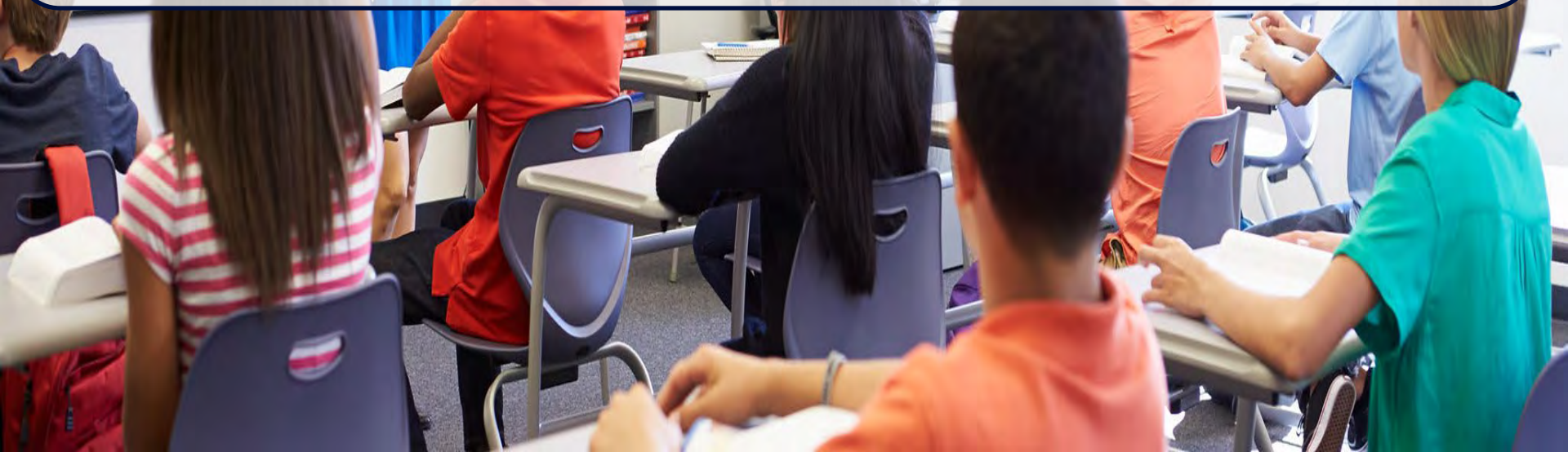


Built-in Video Links

Our science education program is designed with the modern, multimedia learner in mind, and our video and academic links are a perfect complement to our educational materials. These short clips are embedded into the slideshow at just the right places for a fantastic review. Whether you're studying biology, chemistry or physics, our video links are an excellent way to reinforce your learning.

Games and Review

Games are a fantastic way for students to learn scientific concepts while having fun. We incorporate a variety of games into our curriculum, including interactive quizzes and puzzles that challenge students to think critically about the material. Our Hidden Box Games are a particularly popular feature, which conclude each unit by revealing a picture related to the topic. Students try to guess what the picture might be, making learning an engaging experience.



The Owl - Each Part of the slideshow has a small clipart Owl hiding somewhere in a slide. The owl is incredibly small and blended into just the right slide. If a student spots the “Owl” they can raise their hand high into the air. When you call upon the student they can say “Owl" and be the student who spotted the Owl. Each PowerPoint Review game also has an owl hiding in it worth one point. Remind the students that they secretly write the word "owl" rather than yell it out during the review games. The Owl search is not included in every lesson. A slide at the beginning of the lesson will alert the students that today is an “Owl’ day. Everything arrives editable so delete if you wish. You will find that some students will become the expert owl hunters in the group.

Google Classroom Compatible

Our digital learning programs are designed for students to learn science in a flexible and engaging environment. Our Google Classroom-compatible units provide a seamless learning experience whether your students are in the classroom or learning from home. Our step-by-step slideshows and student work bundles ensure that students can complete their work independently. The PowerPoint Slideshows and step-by-step work bundles can easily be loaded to your Google Drive and posted in your Google Classroom. These are great for daily lessons, students who need additional time, and for a student who was absent and looking to catch up in their work bundle.

Part 7 Lesson 4 Pulsar Neut...

Google Slides

Part 7 Lesson 8 Review Game

Google Slides

Part 7 Lesson 7 Big Bang

Google Slides

Part 7 Lesson 3 Spacetime

Google Slides

Part 7 Lesson 5 Galaxies

Google Slides

Part 7 Lesson 2 Speed of Li...

Google Slides

Part 7 Lesson 6 Exoplanets

Google Slides

Astronomy Unit

Astronomy Unit

60 Lessons (6^{th} -8^{th} Medium Difficulty) Part 1 is 6 Lessons and 18 Page Work Bundle, Part 2 is 10 Lessons and 19 Page Work Bundle, Part 3 is 14 Lessons and 19 Page Work Bundle, Part 4 is 9 Lessons and 20 Page Work Bundle, Part 5 is 6 Lessons and 13 Page Work Bundle, Part 6 is 8 Lessons and 17 Page Work Bundle, Part 7 is 9 Lessons and 19 Page Work Bundle

Part 1: Astronomy Unit : Introduction to Astronomy, Copernicus, Heliocentrism, Galileo, Kepler's Laws of Planetary Motion, Ellipse, Perihelion, Aphelion, Orbits, Orbital Velocities, Eccentricity, Calculating Eccentricity, Astronomical Units, Distances in the Solar System, Graphing Planetary Data, Order of the Planets, Box Game Review, Crossword Puzzle, End Unit Assessment with Answer Version so Students can Self-Assess.

Part 2: Astronomy Unit: The Sun, Absolute Magnitude, Apparent Magnitude, Parsec, Stellar Classification / Spectra, Hertzsprung Russell Diagram, Composition of the Sun, Nuclear Synthesis, Layers of the Sun, Solar Flares, Coronal Mass Ejections, Carrington Event, Life Cycle of a Star, Blackhole, Neutron Star, Solar System Formation, Shadows, Sun Dials, Eratosthenes, Graphing Shadow length, Solar Eclipse, Lunar Eclipse, Path of Totality, Box Game Review, Crossword Puzzle, End Unit Assessment with Answer Version so Students can Self-Assess

Part 3: Astronomy Unit: The Habitable Zone, Important data about Mercury, Venus, Earth, Venn Diagram of Earth and Venus, Moon Formation Theories, Earth's Axial Tilt, Seasons on Earth, Equinox, Solstice, Earth's EM Field, Aurora borealis, Synchronous Orbit of the moon, Features of the moon, Phases of the Moon (with OREOS), Tides, Neap Tide, Spring Tide, Tidal Cycle, Reading a Tide Chart, Mars, Features on Mars, Moons of Mars, Rover Exploration, Missions Past and Future, End Unit Assessment with Answer Version so Students can Self-Assess

Part 4: Astronomy Unit: Rocketry, Apollo Missions, Parts of the Saturn V Rocket, Apollo Modules, Parts of a Rocket, Water Bottle Rockets, Newton's Laws, Lift, Drag, Thrust, Weight, Law of Gravitation, Einstein and Gravity, Spacetime, Space Shuttle Program, International Space Station, Future in Space, Box Game Review, Crossword Puzzle, End Unit Assessment with Answer Version so Students can Self-Assess

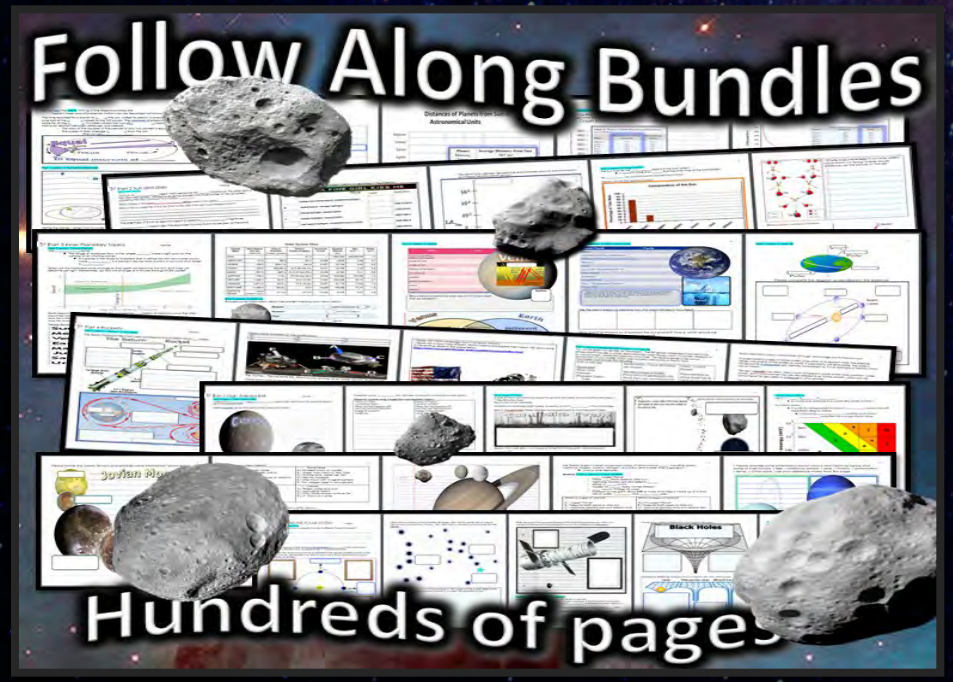
Part 5: Astronomy Unit : Main Asteroid Belt, protoplanet Ceres, Vesta, Meteors, Meteorites, Asteroids, Bolides, Chicxulub Crater, Tunguska Event, Chelyabinsk meteor, Craters, Parts of a Crater, Crater Impact Activity, NEO's, Torino Scale, Box Game Review, Crossword Puzzle, End Unit Assessment with Answer Version so Students can Self-Assess

Part 6 Astronomy Unit: The Outer Planets, Gas Giants, Ice Giants, Density of Outer Planets, Jupiter, Red Spot, Composition of Outer Planets, Jovian Moons, Saturn and its Moons, Uranus and its Moons, Neptune and its Moons, The Kuiper Belt, Demotion of Pluto, Oort Cloud, Comets, Box Game Review, Crossword Puzzle, End Unit Assessment with Answer Version so Students can Self-Assess

Part 7: Astronomy Unit: Constellations, Hubble Space Telescope, Spitzer Space Telescope, Speed of Light, Nebulas, Types of Nebulas, Galaxy, Type of Galaxies, Gravity, The Special Theory of Relativity , Blackholes, Neutron Stars, Spacetime, Pulsars, Quasars, Exoplanets, Hubble Deep Field, Beyond the Solar System, Black holes, Exoplanets, The Big Bang, Evidence for the Big Bang, Box Game Review, Crossword Puzzle, End Unit Assessment with Answer Version so Students can Self-Assess


Astronomy
Mega Bundle
Neutron Star
The Habitable Zone
Penumbra
Cooler
Warmer
Really Hot
7 Units


INTERACTIVE
SLIDESHOWS
Barred
Irregular
Elliptical
Neutron Star
NEBULA
Venus
Earth
Olympus Mons
Name A,B,C,D?
Equinox March 20th
Equinox September 20th
Secure with Duct Tape

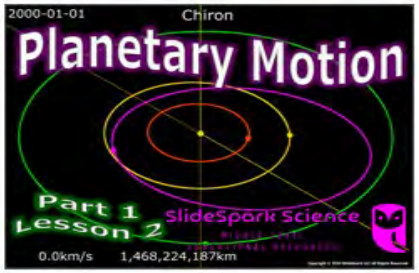

Follow Along Bundles
Hundreds of pages


Activities, Projects,
Assessments, All Built-in
Our Sun
The size and color tell us where the star is in its life cycle.
Johannes Kepler
Galileo Galilei
Nicholaus Copernicus
Eccentricity
Cooler
Warmer
Really Hot

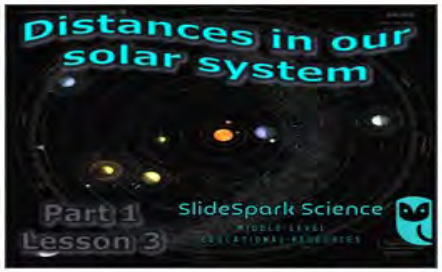
Introduction to Astronomy, Copernicus, Heliocentrism, Galileo, Kepler's Laws of Planetary Motion, Ellipse, Perihelion, Aphelion, Orbits, Orbital Velocities, Eccentricity, Calculating Eccentricity, Astronomical Units, Distances in the Solar System, Graphing Planetary Data, Order of the Planets, Box Game Review, Crossword Puzzle, End Unit Assessment with Answer Version so Students can Self-Assess

Part 1: Astronomy Unit

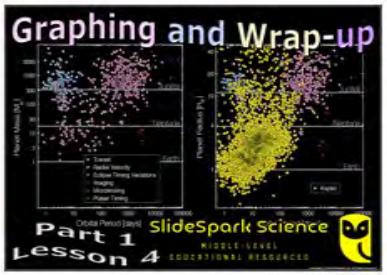
Part 1 Lesson 1 Introduction Kepler



Part 1 Lesson 2 Planetary Motion



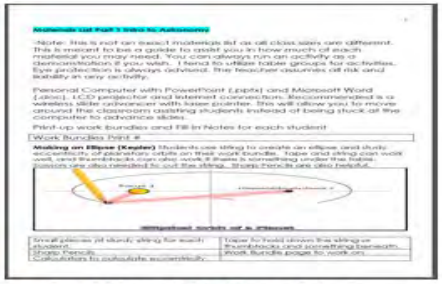
Part 1 Lesson 3 Distances Solar System

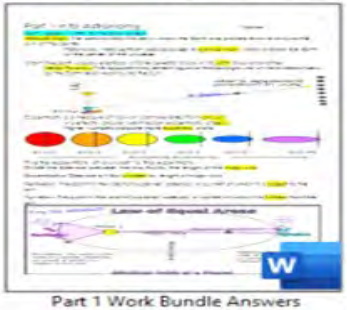


Part 1 Lesson 4 Graphing Wrap Up

Part 1 Lesson 5 Review Game

Part 1 Lesson 6 Review Game Answers


Part 1 Materials List Intro to Solar System


Part 1 Work Bundle Answers


Part 1 Work Bundle Digital


Part 1 Work Bundle Print


Part 1 Work Bundle Writable pdf

Part 2: The Sun, Absolute Magnitude, Apparent Magnitude, Parsec, Stellar Classification / Spectra, Hertzsprung Russell Diagram, Composition of the Sun, Nuclear Synthesis, Layers of the Sun, Solar Flares, Coronal Mass Ejections, Carrington Event, Life Cycle of a Star, Blackhole, Neutron Star, Solar System Formation, Shadows, Sun Dials, Eratosthenes, Graphing Shadow length, Solar Eclipse, Lunar Eclipse, Path of Totality, Box Game Review, Crossword Puzzle, End Unit Assessment with Answer Version so Students can Self-Assess

Part 2: Astronomy Unit

Part 2 Lesson 1 The Sun

Part 2 Lesson 2 HR Diagram

Part 2 Lesson 3 Inside the Sun

Part 2 Lesson 4 Solar Flares

Part 2 Lesson 5 Life Cycle of Stars

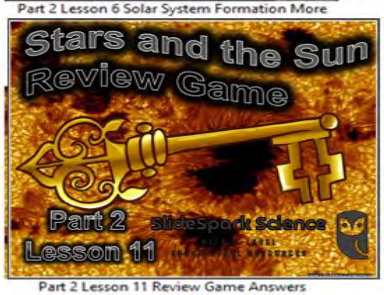
Part 2 Lesson 6 Solar System Formation More

Part 2 Lesson 7 Optional Sun Song

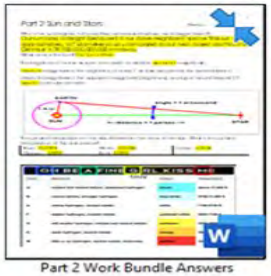
Part 2 Lesson 8 Shadows Sun Dials

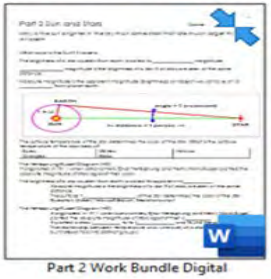
Part 2 Lesson 9 Solar Lunar Eclipse

Part 2 Lesson 10 Review Game



Part 2 Lesson 11 Review Game Answers


Part 2 Work Bundle Answers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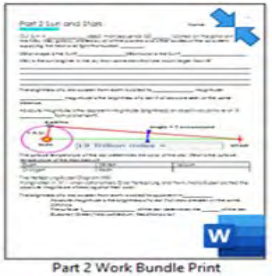

Part 2 Work Bundle Print


Part 2 Work Bundle Writable pdf

Part 3: The Habitable Zone, Important data about Mercury, Venus, Earth, Venn Diagram of Earth and Venus, Moon Formation Theories, Earth's Axial Tilt, Seasons on Earth, Equinox, Solstice, Earth's EM Field, Aurora borealis, Synchronous Orbit of the moon, Features of the moon, Phases of the Moon (with OREOS), Tides, Neap Tide, Spring Tide, Tidal Cycle, Reading a Tide Chart, Mars, Features on Mars, Moons of Mars, Rover Exploration, Missions Past and Future

Part 3: Astronomy Unit

Part 3 Lesson 1 Inner Planets

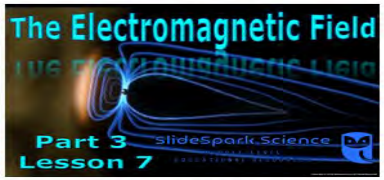
Part 3 Lesson 2 Mercury

Part 3 Lesson 3 Venus

Part 3 Lesson 4 Earth and Moon

Part 3 Lesson 5 Axial Tilt

Part 3 Lesson 6 Solstice Equinox



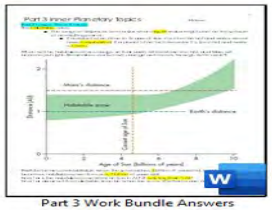
Part 3 Lesson 7 EM Field

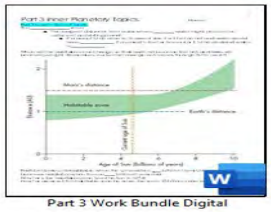
Part 3 Lesson 8 Phases of Moon 1

Part 3 Lesson 9 Phases of Moon 2

Part 3 Lesson 10 Phases Quiz


Part 3 Materials List


Part 3 Work Bundle Answers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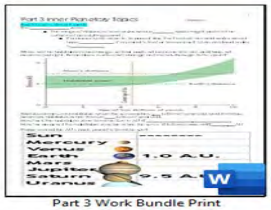

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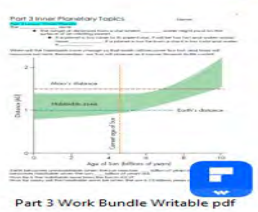

Part 3 Work Bundle Writable pdf

Astronomy Unit Part 4: Rocketry, Apollo Missions, Parts of the Saturn V Rocket, Apollo Modules, Parts of a Rocket, Water Bottle Rockets, Newton's Laws, Lift, Drag, Thrust, Weight, Law of Gravitation, Einstein and Gravity, Spacetime, Space Shuttle Program, International Space Station, Future in Space

Part 4: Astronomy Unit

Part 4 Lesson 1 Mission to the Moon

Part 4 Lesson 2 Water Rockets Gravity

Part 4 Lesson 3 Gravity Rocket Built Cont

Part 4 Lesson 4 Space Shuttle ISS

Part 4 Lesson 5 Newtons 1st Law

Part 4 Lesson 6 2nd Law of Motion

Part 4 Lesson 7 3rd Law of Motion

Part 4 Lesson 8 Rocketry Wrap Up

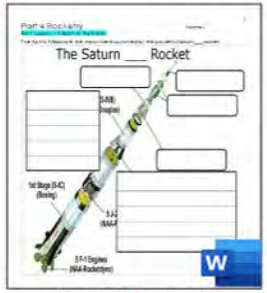
Part 4 Lesson 9 Review Game

Part 4 Lesson 10 Review Game Answers


Part 4 Materials List


Part 4 Work Bundle Answers

Part 4 Work Bundle Digital



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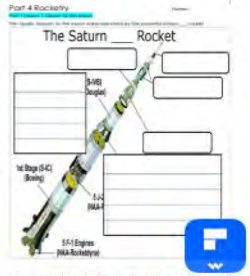


Part 4 Work Bundle Writable pdf

Part 5: Main Asteroid Belt, protoplanet Ceres, Vesta, Meteors, Meteorites, Asteroids, Bolides, Chicxulub Crater, Tunguska Event, Chelyabinsk meteor, Craters, Parts of a Crater, Crater Impact Activity, NEO's, Torino Scale,

Part 5: Astronomy Unit

Part 5 Lesson 1 Main Asteroid Belt

Part 5 Lesson 2 Tunguska Event

Part 5 Lesson 3 NEOs

Part 5 Lesson 4 Impact Lab

Part 5 Lesson 5 Research and Wrap Up

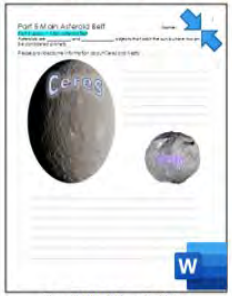
Part 5 Lesson 6 Review Game

Part 5 Lesson 7 Review Game Answers


Part 5 Materials List

Part 5 Work Bundle Answers

Part 5 Work Bundle Digital



Part 5 Work Bundle Print

Part 5 Work Bundle Writable pdf

Part 6 of Astronomy Unit: The Outer Planets, Gas Giants, Ice Giants, Density of Outer Planets, Jupiter, Red Spot, Composition of Outer Planets, Jovian Moons, Saturn and its Moons, Uranus and its Moons, Neptune and its Moons, The Kuiper Belt, Demotion of Pluto, Oort Cloud, Comets

[Part 6 Astronomy Unit]

Part 6 Lesson 1 Gas Giants

Part 6 Lesson 2 Jupiter

Part 6 Lesson 3 Jovian Moons

Part 6 Lesson 4 Saturn

Part 6 Lesson 5 Ice Giants

Part 6 Lesson 6 Outer Solar System

Part 6 Lesson 7 Review Game

Part 6 Lesson 8 Review Game Answers

Part 6 Lesson 9 Space Expo Project


Part 6 Work Bundle Answers


Part 6 Work Bundle Digital


Part 6 Work Bundle Print

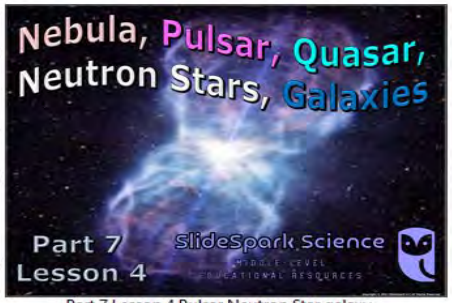
Astronomy Unit Part 7: Constellations, Hubble Space Telescope, Spitzer Space Telescope, Speed of Light, Nebulas, Types of Nebulas, Galaxies , Type of Galaxies, Gravity, The Special Theory of Relativity , Blackholes, Neutron Stars, Spacetime, Pulsars, Quasars, Exoplanets, Hubble Deep Field, Beyond the Solar System, Black holes, Exoplanets, The Big Bang, Evidence for the Big Bang

Part 7: Astronomy Unit

Part 7 Lesson 1 Constellations Hubble

Part 7 Lesson 2 Speed of Light More

Part 7 Lesson 3 Spacetime



Part 7 Lesson 4 Pulsar Neutron Star galaxy

Part 7 Lesson 5 Galaxies

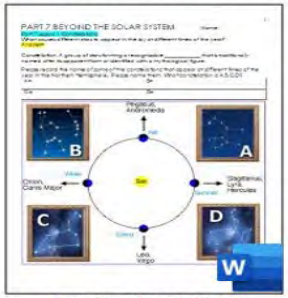
Part 7 Lesson 6 Exoplanets

Part 7 Lesson 7 Big Bang

Part 7 Lesson 8 Review Game

Part 7 Lesson 9 Review Game Answers


Part 7 Work Bundle Answers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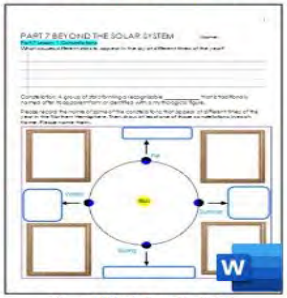

Part 7 Work Bundle Print

Curriculum Guide

Number of Lessons in each unit (50 min, daily lessons) and difficult rating scale / intended grade level.

=Easier,


= More difficult,


=Most difficult

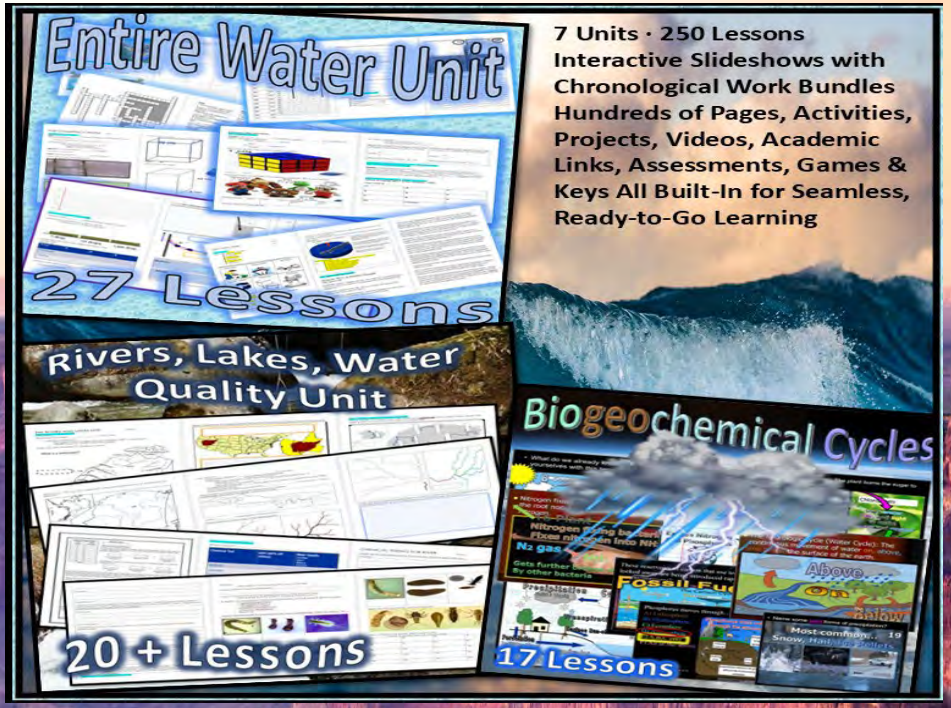
Earth Science Units	Daily Lessons	Intended Grade	
Geology Topics Unit	60 Lessons	6-8 medium difficulty	MORE DIFFICULT
Weather and Climate Unit	40 Lessons	6-8 medium difficulty	MORE DIFFICULT
Astronomy Unit	60 Lessons	6-8 medium difficulty	MORE DIFFICULT
Weathering, Soil Sciences	28 Lessons	5-7 easier	EASIEST
Rivers and Water Quality	25 Lessons	5-7 easier	EASIEST
Water Molecule Unit	20 Lessons	5-7 easier	EASIEST
Biogeochemical Cycles Unit	16 Lessons	5-7 easier	EASIEST

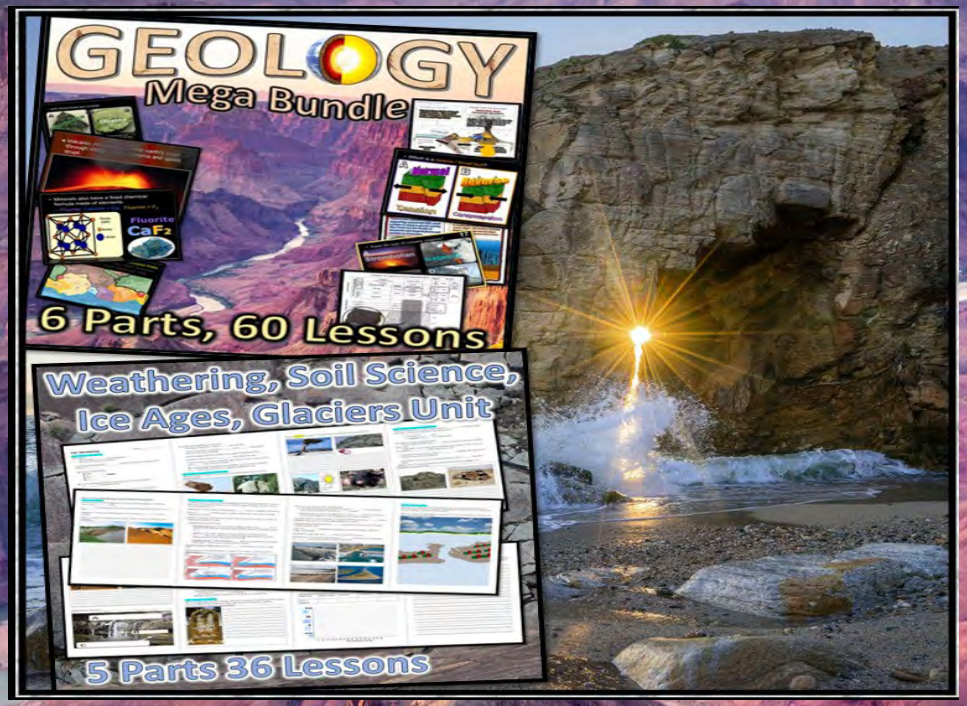
Earth Science Curriculum

Earth Science Curriculum

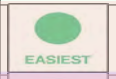
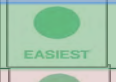
SlideSpark Science

MIDDLE-LEVEL EDUCATIONAL RESOURCES





Life Science Units

	Daily Lessons	Intended Grade	
Ecology Feeding Levels Unit	13 Lessons	5-6 easier	
Ecology Interactions Unit	30 Lessons	5-6 easier	
Ecology Abiotic Factors Unit	13 Lessons	5-6 easier	
Botany Unit	50 Lessons	5-7 easier	
Evolution and Natural Selection	40 Lessons	5-7 easier	
Taxonomy and Classification	50 Lessons	6-8 medium difficulty	
Infectious Diseases Unit	30 Lessons	7-9 more difficult	
DNA and Genetics Unit	42 Lessons	8-10 most difficult	
Human Body Systems Unit	85 Lessons	6-8 medium difficulty	
Cell Biology Unit	30 Lessons	8-10 most difficult	

Life Science Curriculum


Life
Science
Curriculum
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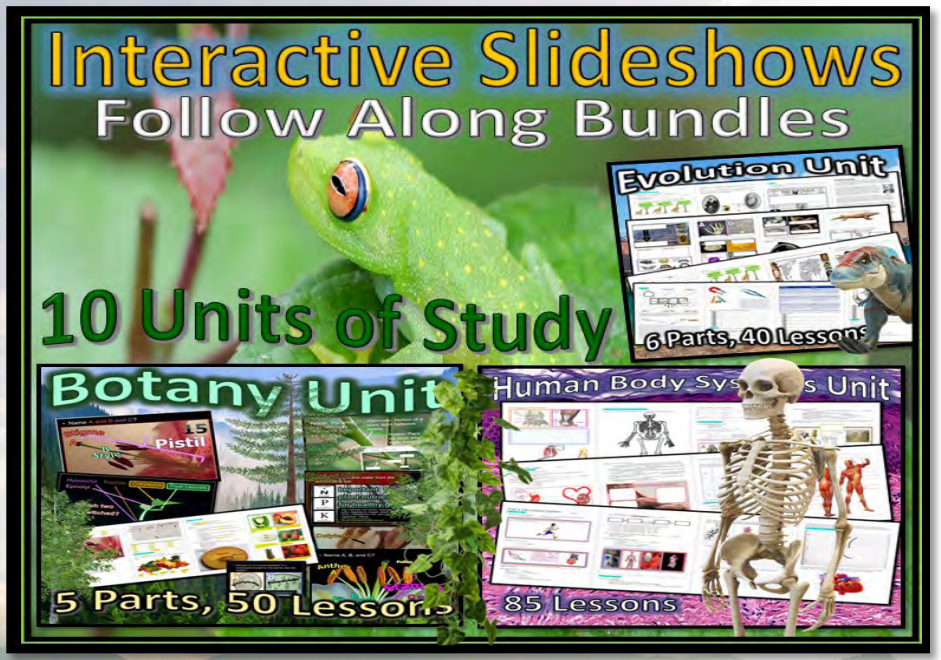
Interactive Slideshows
Follow Along Bundles
10 Units of Study
Evolution Unit
6 Parts, 40 Lessons
Botany Unit
5 Parts, 50 Lessons
Human Body Sys s Unit
85 Lessons


Cellular Biology Unit
Form Follows Function
30 Lessons of 50 minutes
DNA and Genetics Unit
40 Lessons
Infectious Diseases
30 Lessons


Taxonomy and Classification Unit
6 Parts
50 Lessons
Ecology Interactions Unit
30 Lessons
Ecology Feeding Le
Full Unit
Ecology Abiotic Factors Unit
27 Lessons

Physical Science	Daily Lessons	Intended Grade	
Laws of Motion and Machines Unit	33 Lessons	8-10 most difficult	
Matter Energy and the Environment	58 Lessons	7-10 medium difficulty	
Atoms and Periodic Table Unit	44 Lessons	8-10 most difficult	
Science Skills Unit	30 Lessons	5-7 medium difficulty	

Physical Science Curriculum

Entire SlideSpark Science Curriculum

Physical Science Curriculum

SlideSpark Science

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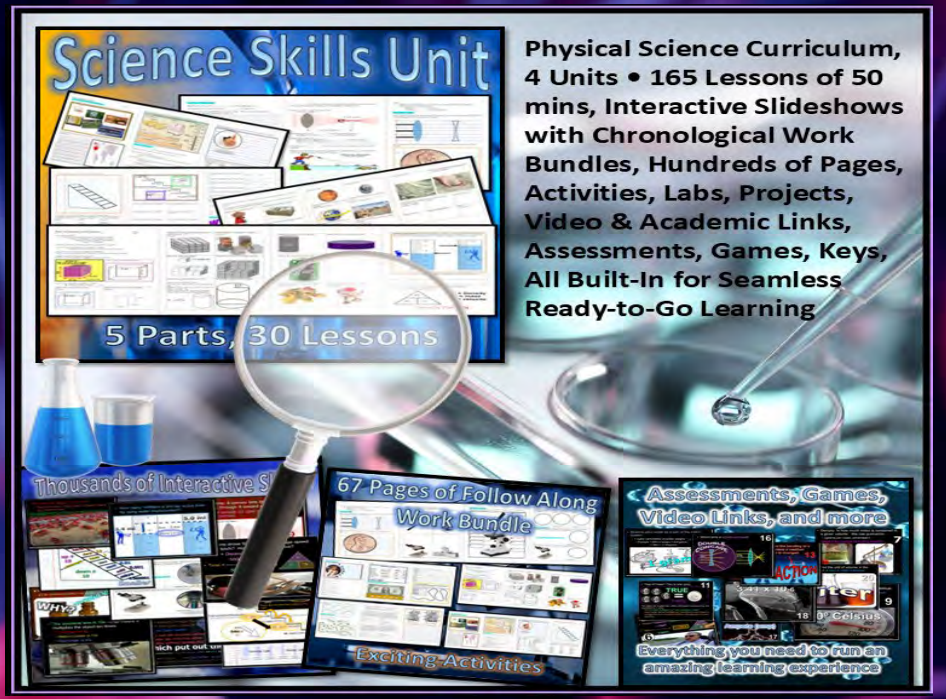

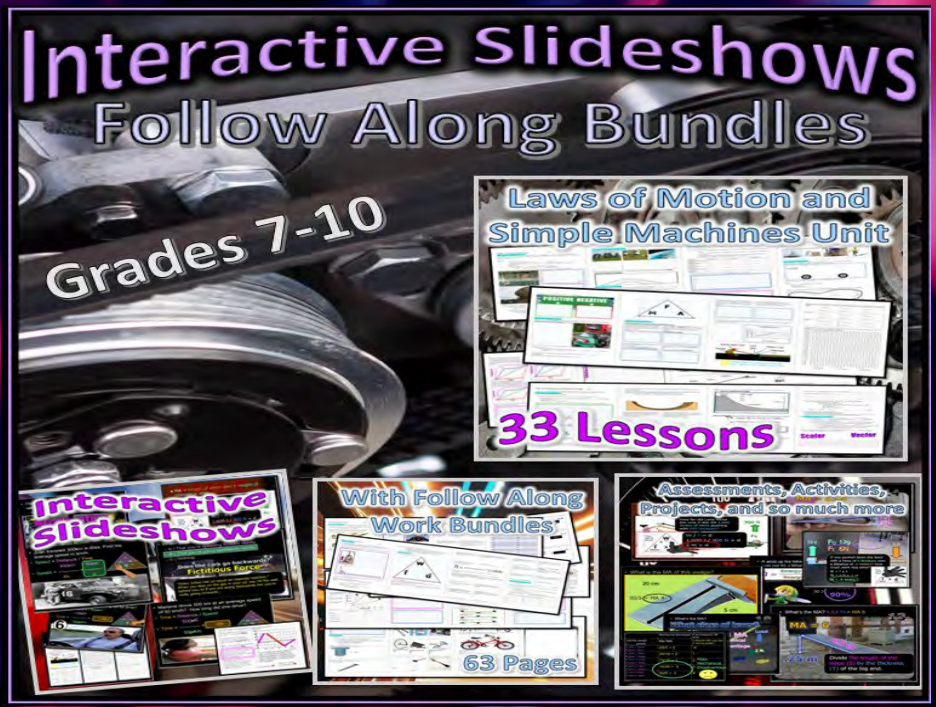

Dear Valued Educator,

Our fully editable .pptx and .doc resources are perfect for educators looking to bring enthusiasm and creativity to their lessons. We encourage you to make changes to fit your needs and style. As science educators, we're committed to providing students with the tools they need to succeed in the classroom and beyond. Each unit in the curriculum includes a range of resources that have been developed through extensive research and use in a busy classroom. Our teaching approach is designed to make science education engaging and exciting for learners of all ages. We offer a one-of-a-kind science curriculum that will challenge, inspire, and educate students to become tomorrow's scientists and leaders. Join us today and learn more about how our program can help you achieve your classroom goals.

With appreciation,

Support@SlideSpark.net

Thank you for your time and interest in our Science curriculum. We strive to provide students with engaging and informative lessons that will spark their curiosity and encourage scientific exploration. Should you have any questions or concerns, please do not hesitate to contact us. Thank you again for considering our curriculum, and we wish you all the best in your educational journey.

Sincerely,

Support@slidespark.net

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