

Space: The Study Of The Universe

Digital Interactive Notebook

PLUS 9 LESSONS

Chapter 1 - Space - An Introduction

Chapter 2 - Our Solar System

Chapter 3 - The Life and Death of Stars

Chapter 4 - The Seasons and Earth's Tilt

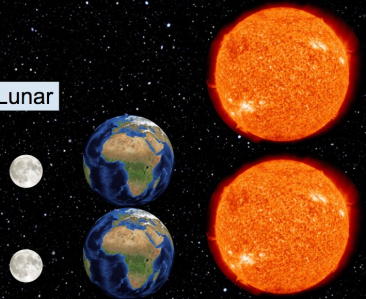
Chapter 5 - The Moon

100% Digital and Interactive

Place the moon, Sun, and Earth in the proper order for each type of eclipse.

Solar

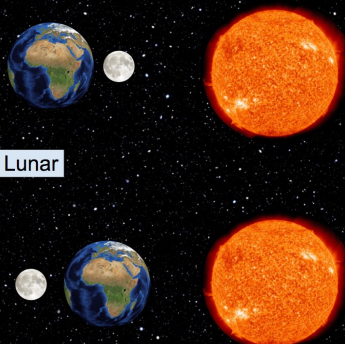
Lunar



Place the moon, Sun, and Earth in the proper order for each type of eclipse.

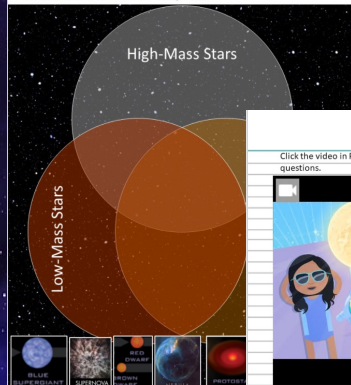
Solar

Lunar



Stellar Evolution

Directions: Drag and drop the different stages of stellar evolution into the Venn diagram.



Video

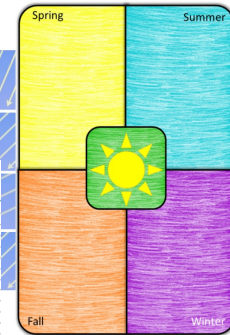
Click the video in Present Mode to play, then answer the following questions.



1. What is an orbit?
2. In June, the Northern hemisphere is leaning the Sun.
3. In December, the Northern hemisphere is tilted the Sun.
4. What is indirect sunlight?
5. Why are spring and fall temperatures more moderate?

Seasonal Sunlight

Drag and drop the images below to show how sunlight strikes the surface where you live during the four seasons.



Chapter 6 - Eclipse - Solar and Lunar

Chapter 7 - Galaxies, Other Objects and the Universe

Chapter 8 - The Immensity of the Universe

Chapter 9 - Life in outer space - how humans meet their needs

Space Digital Interactive Notebook PLUS 9 LESSONS

Thank you so much for taking the time to sample my space digital bundle.

This bundle contains **28** activities and **46** total pages within the Digital Interactive Notebook AND 9 Complete Lessons on Space. These lessons follow the same curriculum as the notebook chapters.

Everything is fully editable for your convenience.

Space: The Study Of Our Universe

Digital Interactive Notebook

- So easy to understand and post.
Have your students working in under 10 minutes
- The majority of the items in this resource are fully editable
- Slides can be added or removed easily to suit your classroom needs.

Click here to immediately download a sample Digital INB →

<http://bit.ly/TWF-DINB>

What's Included?

This Digital Interactive Notebook is broken down into 9 chapters. Chapters can easily be removed if they don't correspond to your curriculum needs.

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Chapter 3 - The Life and Death of Stars

Chapter 4 - The Seasons and Earth's Tilt

Chapter 5 - The Moon

Chapter 6 - Eclipse - Solar and Lunar

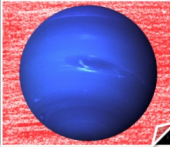
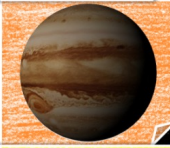
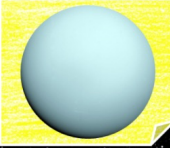
Chapter 7 - Galaxies, Other Objects and the Universe

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The Planets

Directions: Compare the following planets.

	Name: Neptune Composition: Size: Day length: Year length:
	Name: Jupiter Composition: Size: Day length: Year length:
	Name: Uranus Composition: Size: Day length: Year length:

Science Notebook

Your Name Here:

Space: The Study Of The Universe

Research

1. How do black holes form?

Type your answer here:

How does a black hole form?

Type your answer here:

Video

Click the video in Present Mode to play, then answer the questions.

HOW DO WE MEASURE DISTANCE

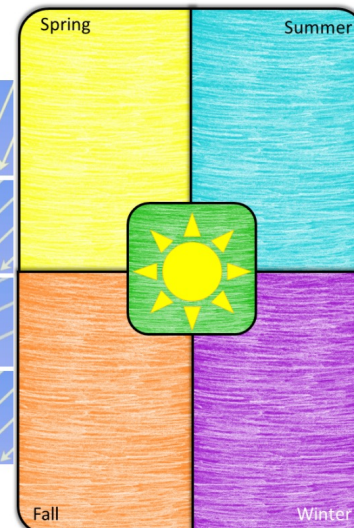


1. How far does light travel in 1 year?
2. How far is the moon from Earth?
3. How far is Proxima Centauri from Earth?
4. How large is the Milky Way?
5. How far away is Andromeda from the Milky Way?

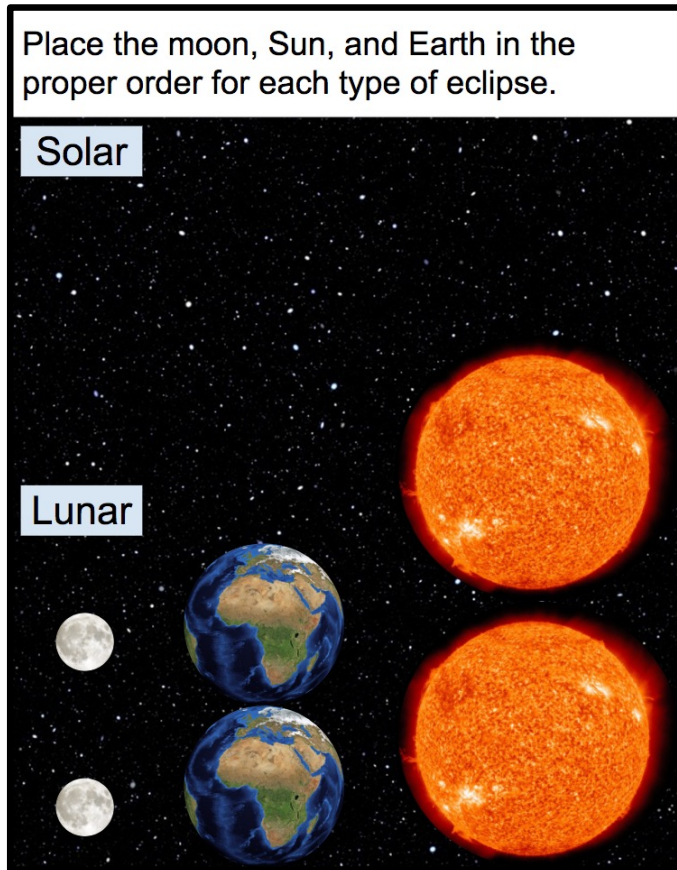


Seasonal Sunlight

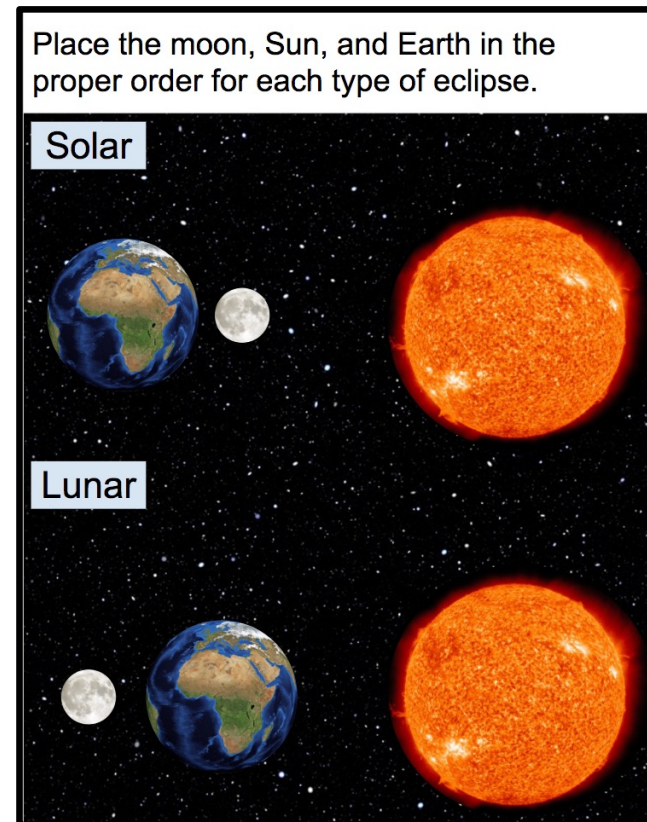
Use the images below to show how sunlight strikes the place where you live during the four seasons.



Interactive Drag and Drop Activities



Students are able to move objects around the screen to complete the activity



Fully Embedded Videos

Video

Click the video in Present Mode to play, then answer the following questions.



1. What is an orbit?

2. In June, the Northern hemisphere is leaning the Sun.

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Students are able to watch videos that are fully embedded into the digital notebook. Just click the video and it plays on their screen within the slide. Each video contains questions with answers found in the teacher version.

Vocabulary and Extension Activities

As additional activities for early finishers or part of the main notebook assessment, your digital interactive notebook comes with three extension activities/projects plus a vocabulary section where students match terms with their definitions.

Extension Activity #1

You are proposing a mission that will allow us to colonize Mars within the next 100 years. To accomplish this, you must first terraform the planet to make it habitable. Create a presentation you'd give to the highest ranking government officials to get your mission approved.

Your proposal must include the following:

1. An overview of what terraforming a planet would be accomplished, and the reasons why it is important.
2. This is one of the key aspects of your mission: you do your research and know what you're doing.
3. A timeline for the mission from approval to launch.
4. How you will power your colony once it's established.
5. A detailed list of possible dangers to the mission and the steps you will take to prevent them.
6. A convincing reason for WHY this mission is worth the green light. This mission will be dangerous, expensive, why should they let you do it?

Submission

- You will create your presentation here.
- You must include pictures as well as text.

Extension Activity #2

You are the main science officer aboard the first Mars colony. You have been instructed to keep a very detailed journal of your day-to-day activities. Create a journal entry for the first 5 days of your time in space.

Your journal entries need to be very detailed. They should include pictures and a deep, first-hand account of life in space. You will need to do some in-depth research here to really get a feel for how a scientist's life would be spent in space.

Make sure you include information about...

- Eating
- Sleeping
- Exercising
- Washing
- Your experiments. What are you doing? Why?

Submission

Your entries should be created by adding, and filling out, a new slide below for each day.

Extension Activity #3

Create an extensive and detailed presentation of what you learned in this unit. You should include...

1. The big picture - what are the main concepts that really summarize this unit?
2. What were the new things you learned?
3. What surprised you?
4. What was most interesting?
5. What questions do you now have about space? How are you completing it?
6. A summary of each lesson's main concepts, including pictures and information.

Submission

- You will fulfill the requirements for each slide and filling out, subsequent slides.
- Numbers 1-5 above can be done on separate slides.
- Number 6 will utilize at least a full slide for each lesson to properly summarize.

Vocabulary

Drag and drop the definition into the space next to the correct term.

TERM	DEFINITION
GALAXY	
UNIVERSE	
ASTRONOMY	
STAR	
PLANET	
SOLAR SYSTEM	
LUMINOUS	
BLACK HOLE	
ROTATION	
REVOLUTION	
A GROUP OF STARS	EVERYTHING THAT EXISTS, INCLUDING ALL MATTER AND ENERGY EVERYWHERE
BIG BALL OF BURNING GAS	SPINNING OF AN OBJECT AROUND ITS AXIS
PRODUCES ITS OWN LIGHT	RELATIVELY SMALL BALL OF ROCK OR GAS ORBITING A STAR
THE REMNANT OF A SUPERNOVA EXPLOSION THAT IS SO LARGE THAT NOTHING CAN ESCAPE ITS GRAVITY	THE SUN AND ALL THE OBJECTS THAT ORBIT IT
THE STUDY OF WHAT IS BEYOND EARTH	MOVEMENT OF ONE OBJECT TRAVELLING AROUND ANOTHER

Space: The Study Of Our Universe

Digital Interactive Notebook

- Works with Google and OneDrive cloud services
- If you don't currently have a Google account, you can sign up for one completely free and get started in 5 minutes. If you're a OneDrive user no problem. Simply download the notebook as a PowerPoint file to your computer then upload it to your OneDrive account.
- The majority of the items in this resource are fully editable. In addition, slides can be added or removed easily to suit your classroom needs.

Interactive Notebooks

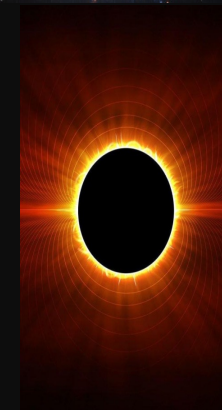
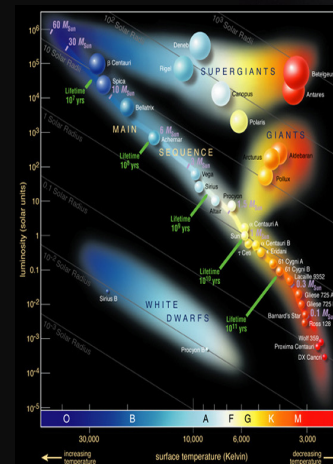
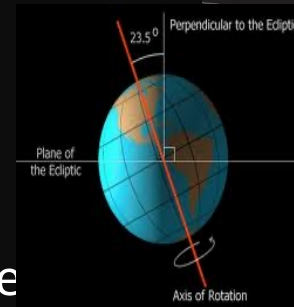
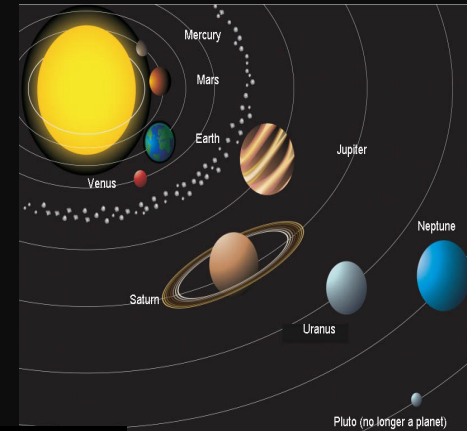
THEN: Before computers, we used interactive notebooks to engage our students and keep their notebooks organized and accessible. This, however, required a lot of material and the unwelcomed task of lugging them all home with you to mark. But we used them because they were effective and allowed us to effectively assess our students' understanding.

NOW: Why use digital interactive notebooks? As prices decrease, many schools are moving towards a 1:1, computer-student ratio and are becoming digital. The way we teach needs to keep up. You don't even need a class set of computers; a personal device (cell phone, laptop, tablet, etc.) will work just as well.

Space Unit – The Study of the Universe

- 4 weeks of teaching material
- 9 Power Points totalling 167 slides.

- 1) Space – An Introduction
- 2) Our Solar System
- 3) The Life and Death of Stars
- 4) The Seasons and Earth's Tilt
- 5) The Moon
- 6) Eclipse – Solar and Lunar
- 7) Galaxies, Other Objects and the Universe
- 8) The Immensity of the Universe
- 9) Life in outer space - how humans meet their needs



Space

- Space is HUGE!
- Distances in Space
 - Astronomical Units
 - Light Years
- The vast number of stars
- Space facts
- Voyager 1
- Space travel

1 AU = 149,600,000 km
(The distance between the Sun and Earth)

1 light year = 63,240 AU
(The distance light travels in one year)



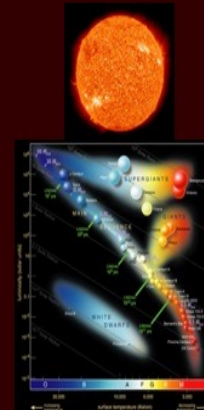
Space – Our Solar System

- Our Solar System
- The Sun
- The Inner Planets
- The Outer Planets
- Why was Pluto demoted?
- Observing Stars and Planets
- The Moon



Space – The Life and Death of Stars

- A Star's beginning
 - Nebulas and Protostars
- Fusion
- Low-Mass Stars
- Intermediate-Mass Stars
 - Red Giants
- High-Mass Stars
 - Supernovas
 - Black Holes
- HR Diagram
 - Main Sequence Stars
- Inquiry Activities



The Seasons and Earth's Tilt

- Minds-on
- Earth's
 - Rotation
 - Tilt
 - Revolution
- Inquiry Activity
- Direct vs. Indirect Sunlight
- The Seasons
- Inquiry Lab



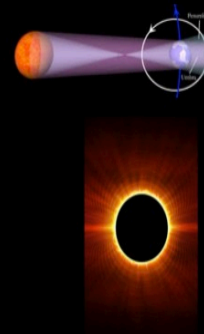
The Moon

- Minds-on Inquiry
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- The Tides
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Eclipse – Solar and Lunar

1. Overview
2. Solar Eclipse
 - Video and Questions
3. Lunar Eclipse
 - Online simulation



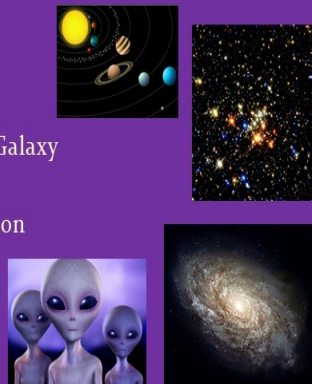
Galaxies, Other Objects and the Expansion of the Universe

- Types of Galaxies
- Asteroids
- Meteors, Meteoroids, and Meteorites
- Comets
- The expansion of the Universe



The Immensity of the Universe

- Solar Systems
- Galaxies
- The Andromeda Galaxy
- Aliens
- The Drake Equation
- Alien Inquiry



Life in Outer Space

How Humans Meet Their Needs in Space

- Human space history
- The ISS
- Obtaining O₂ and removing CO₂
- Eating in space
- Sleeping in space
- Showering and using the bathroom in space
- Experiments in space
- Getting sick in space
- The negative effects of microgravity
- Long-term solutions to life in space



Thank you for your interest

Inside the Unit

- 4 weeks of teaching material
- 9 Power Points totalling 167 slides
- Teacher and student versions for each lesson
- Many videos embedded into the slides
- Student notes in word

Jupiter's Great Red Spot

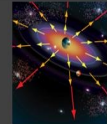
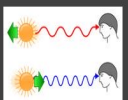
- Has a great red spot
- It is a storm that has been going on for at least 400 years
- The storm is larger than the Earth



Jupiter's Super Storm

The Universe is Still Expanding

- We know this due to the phenomenon known as red and blue shift.
- When objects are moving away at a fast rate, they appear red. When they are moving towards you quickly, they appear blue.
- _____



Red and Blue Shift

Eclipse: Solar and Lunar - Student Notes

What's the difference?

- A solar eclipse is when the _____
- A lunar eclipse is when the _____

Which is which and why?

- I know figure A is a _____ eclipse because: _____
- I know figure B is a _____ eclipse because: _____

Solar Eclipse

Solar Eclipse Video and Questions

Watch the video once then again while answering the following questions in pairs.

- 1) What causes a solar eclipse?
- 2) Why are solar eclipses rare and only last a few minutes?
- 3) Why do solar eclipses only happen during a new moon?
- 4) What two things are seen during a total solar eclipse?
- 5) Looking directly at the sun during an eclipse creates what risks?

Lunar Eclipse

- In a Lunar Eclipse, the Earth blocks sunlight from _____
- _____

Thank you for your interest

- The following lessons are included. Please click on any to preview.

[Lesson 1 - Space - An Introduction](#)

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[Lesson 3 - The Life and Death of Stars](#)

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[Lesson 8 - The Immensity of the Universe](#)

[Lesson 9 - Life in outer space - how humans meet their needs](#)

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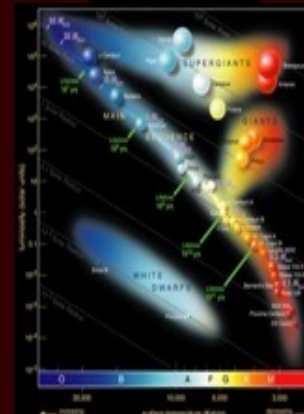
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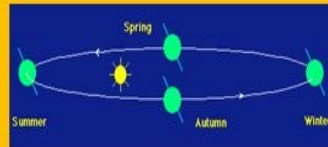
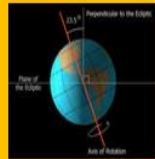
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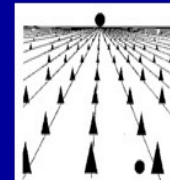
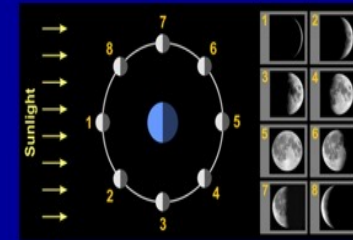
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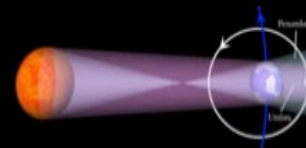
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