We have created a guide to get you started. This is designed to be a starting point that can be tweaked to your individual style/needs. Included in the general plan are the standards/access points, vocabulary, key questions and links to a variety of resources including tutorials, informational text, videos, experiments and sample activities. All of the links in this file are live and clicking on the standard will take you directly to C-Palms.

PowerPoints for The Universe:

Visual Vocabulary [Click here](http://accesstoflsresources.weebly.com/uploads/2/3/7/3/23739164/7.__the_universe_visual_vocab.pptx)

Key Questions [Click here](http://accesstoflsresources.weebly.com/uploads/2/3/7/3/23739164/7.__the_universe.essential_questions.pptx)

*Drafted by Sarasota County Teachers Dawn Byrne, Jeremy Johnson and Elizabeth Lewis, piloted 2016-17 in 5 classes and general education content review by Betsy Summerlee.*

|  | The Universe |
| --- | --- |
| **Unit/Topic Standard** | [SC.912.E.5.1:](http://www.cpalms.org/Public/PreviewStandard/Preview/1881) Cite evidence used to develop and verify the scientific theory of the Big Bang (also known as the Big Bang Theory) of the origin of the universe.[SC.912.E.5.2:](http://www.cpalms.org/Public/PreviewStandard/Preview/1882) Identify patterns in the organization and distribution of matter in the universe and the forces that determine them. |
| **Access Points** | [SC.912.E.5.In.1:](http://www.cpalms.org/Public/PreviewAccessPoint/Preview/8201) Recognize that the Milky Way is part of the expanding universe.[SC.912.E.5.Su.1:](http://www.cpalms.org/Public/PreviewAccessPoint/Preview/8202) Recognize that the universe consists of many galaxies, including the Milky Way. [SC.912.E.5.Pa.1:](http://www.cpalms.org/Public/PreviewAccessPoint/Preview/8203) Recognize that when objects move away from each other, the distance between them expands. |
| **Vocabulary** | Big Bang Theory, universe, red shift, cosmic radiation, light years, galaxy, local group, galaxy clusters, super clusters, galactic cannibalism, super massive black holes, quasars, nebula, star clusters, milky way |
| **Key Concepts** | * How Was the Universe Formed?
* What Evidence is there for the Big Bang Theory?
* How Do We Know the Universe is Expanding?
* How Big is the Universe?
* Methods Scientists Use to Measure Distance in Space?
* How Old is the Universe?
* What is the Cosmic Web or Structure of the Universe?
* What are Clusters and Superclusters?
* What Type of Galaxies Make up the Universe?
* What Type of Galaxy is the Milky Way?
* What is Galactic Cannibalism?
* What are Supermassive Black Holes?
* What Causes Quasars?
* What are Nebulae?
* What are Star Clusters?
* What are the Types of Star Systems in the Milky Way?
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| **References** | * The History of everything. A timeline project tracing major evolutionary events from the formation of the universe (~15 billion years ago) through the present. Pictures and descriptions of these events are provided: [Click Here](http://www.cpalms.org/Public/PreviewResourceUrl/Preview/4315)
* Big Bang Theory Tic Tac Toe. Explore the Big Bang Theory through academic games and a large technology-based project that accommodates all learner types, deepening their knowledge and understanding of the evidences for the Big Bang Theory: [Click Here](http://www.cpalms.org/Public/PreviewResourceLesson/Preview/152376)
* Celestial Simulation Software, Free download of space simulation software. It includes a tremendous amount of astronomical data. There are free educational lessons available for download as well: [Click Here](http://www.cpalms.org/Public/PreviewResourceUrl/Preview/24027)
* It May Be A Planet, But Could Goldilocks Live There? Analyze an informational text resource intended to support reading in the content area. This text describes scientists' research on identifying “habitable” planets: [Click Here](http://www.cpalms.org/Public/PreviewResourceLesson/Preview/154658)
* Video How the Universe was created: Big Bang Theory: [Click Here](http://www.bbc.com/future/story/20140812-how-was-the-universe-created),
* Guide to space, video 5 minutes: [Click Here](http://www.universetoday.com/106498/what-is-the-evidence-for-the-big-bang/)
* Video 4 minutes on how Edwin Hubble discovered that not only did the Universe contain many galaxies, but that it was expanding at a rapid rate: [Click Here](https://www.youtube.com/watch?v=hVApTLE7Csc)
* How large is the universe, video 25 minutes: [Click Here](https://www.youtube.com/watch?v=yaX4iGw-b_Y)
* How big is the universe, video 7 minutes: [Click Here](https://www.youtube.com/watch?v=AC7yFDb1zOA)
* Interactive timeline on the development of the universe: [Click Here/](http://www.pbs.org/deepspace/timeline/)
* Universe evolution animated, 4 minute video: [Click Here](http://www.space.com/11381-fade-black-universe-evolution-animated.html)
* Laniakea: Our home supercluster 4 minute video: [Click Here](https://www.youtube.com/watch?v=rENyyRwxpHo)
* Video 3 minutes showing the galaxies, close the ad to start video: [Click Here](http://www.teachertube.com/video/galaxies-of-the-universe-67743?utm_source=video-google&utm_medium=video-view&utm_term=video&utm_content=video-page&utm_campaign=video-view-page)
* Structure of the Milky Way, video 5 minutes: [Click Here](https://www.youtube.com/watch?v=FKmUeruJPbk)
* Video 4 minutes: [Click Here](http://www.space.com/9814-cookbook-galactic-cannibalism.html)
* Milky Way's Supermassive Black Hole Caught Eating Something video just over 3 minutes: [Click Here](http://www.space.com/18539-milky-way-s-supermassive-black-hole-seen-eating-something-video.html)
* Video 3 minutes on quasars: [Click Here](https://www.youtube.com/watch?v=qil7bKy1NrQ)
* What is a Nebula, video 2 minutes: [Click Here](https://www.youtube.com/watch?v=pN5fSt03F7M)
* Star Clusters: Crash Course Astronomy #35 video 11 minutes: [Click Here](https://www.youtube.com/watch?v=an4rgJ3O21A)
* Binary and Multiple Stars: Crash Course Astronomy #34, video 12 minutes: [Click Here](https://www.youtube.com/watch?v=pIFiCLhJmig)
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