thinkalong™
Current events for the curious classroom

SHOULD WE SEARCH FOR EXTRATERRESTRIAL LIFE?

THIS ACTIVITY SHOULD TAKE ABOUT 90 MINUTES. IF LEARNERS ARE ABLE TO REVIEW MEDIA PRIOR TO THE LESSON, ACTIVITY TIME SHOULD BE 45 TO 60 MINUTES.

INVESTIGATE

Read, watch, and listen to the three media resources on the Thinkalong module. Learners can use the Investigate graphic organizer to summarize each piece of media and record new information. Below are summaries of the three pieces of media curated in the Thinkalong module.

IS THIS WHY WE HAVEN'T FOUND ALIEN CIVILIZATIONS?

Stellar | July 26, 2019 | Video
8:49 minutes

Dr. Joe Hanson explores why we haven't seen any other intelligent civilizations even though the universe is vast and old.

- New powerful telescopes allow scientists to discover exoplanets and learn the planets' sizes, orbits, and the chemical makeup of their atmospheres to see if these planets can be home to life.
- Frank Drake formulated the Drake Equation, which allows scientists to estimate the number of intelligent civilizations that could exist in our galaxy. However, we only have about half the information to complete the equation.
- Chief Scientist John O'Meara explains that there are different ways to discover planets and determining their distance from a star and the possible makeup of their atmosphere. The next step is to search for "biosignatures," like oxygen and methane in a planet's atmosphere, and then search for life within the planet's atmosphere. But O'Meara says that these signs might not mean that there is life on another planet.
- O'Meara says that if we look at Earth as an example, we can see that life can exist in harsh and unexpected places.
- The Great Filter Argument says that there might be biological or technological issues that keep extraterrestrial civilizations from being discovered. Dr. Hanson uses climate change as an example of an issue that puts civilizations at risk.

A POSSIBLE SIGN OF LIFE RIGHT NEXT DOOR TO EARTH, ON VENUS

NPR | September 14, 2020 | Audio | Transcript
3:33 minutes

The discovery of a poisonous gas on Venus could be a sign of life on Earth's closest neighbor.

- Phosphene gas, an extremely dangerous molecule to most life on Earth, was discovered in the atmosphere of Venus. The gas exists on Earth, created by microbes that don't need oxygen.
- Astrochemist Clara Sousa-Silva says that scientists have tried to explain the presence of phosphene on Venus and have run out of reasons – except for the existence of life.
- In the 1960s, astronomer Carl Sagan talked about clouds being home to life on Venus because the planet's surface is too harsh for life. Janusz Petkowski, a researcher at MIT, says that clouds on Venus are concentrated sulfuric acid, and could potentially be a place where life could survive.
- Scientists discovered phosphene in the atmosphere of an exoplanet around another star, and finding the gas on Venus could mean that searching for life mean not sending a mission out of the solar system and instead, to our neighbor.

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SEARCHING FOR LIFE BEYOND EARTH, FINDING OUR DREAMS INSTEAD
NOVA Next | May 9, 2018 | Article
2000 words

Searching for extraterrestrial life sometimes means looking to Earth – and humans' place in it.

- Lisa Messeri is an anthropologist that studies the scientists and researches who are searching for other life in the universe. She says that often scientists are looking for an Earth without humans – not a planet with an intelligent civilization.
- The search for extraterrestrial life began around 1960 with radio astronomy, and has grown to include astrophysics, astrochemistry, astrobiology, and other scientific fields that could help identify life on other planets. Messeri says that because we only have one intelligent form of life – ourselves - to compare discoveries to, we might not find a form of life that we wouldn't recognize.
- SETI believes that alien life has probably been around for a long time. Comparatively, the Earth's broadcast signals have been sent into space for only about 100 years, so we might not have reached other life forms searching like we are.
- Researcher David Duner brings up that alien civilizations might have encountered similar difficulties like we have, like war, disease, famine, climate change, pollution, or other factors that could have stopped their progress.

KEY WORDS

Look out for these important keywords in the news stories. Discuss the definitions with your learners and see how they affect the understanding of the story.

- Exoplanet
- Astronomy

CONTEMPLATE

Learners will use media literacy questions to critically engage with news by thinking about its purpose, searching for bias and discussing missing perspectives. They will answer the 5 Key Questions of Media Literacy created by the Center for Media Literacy, which are:

1. Who created this message?
2. What creative techniques are used to attract my attention?
3. How might different people understand this message differently than me?
4. What values, lifestyles and points of view are represented in, or omitted from, this message?
5. Why is this message being sent?

A graphic organizer is included in this guide and the Thinkalong website to help learners answer these five questions about each piece of media.

DEBATE

Use the debate tool on the module webpage to help form evidence-based responses to the debate question.

Thinkalong is designed to help learners engage with real issues that are relevant to their lives. Structured discussions allow learners to practice their critical thinking skills through evidence-based debate with their peers. Discussions are designed to take about 30 minutes. Educators are encouraged to modify aspects that work best for their learners.
To encourage civil discourse, please review the Code of Conduct with your learners.