

SHOULD HUMANS COLONIZE MARS?

THIS ACTIVITY SHOULD TAKE ABOUT 90 MINUTES. IF STUDENTS ARE ABLE TO REVIEW MEDIA FOR HOMEWORK, IN-CLASS TIME SHOULD BE 45 TO 60 MINUTES.

INVESTIGATE

Read, watch, and listen to the three media resources on the [Thinkalong module](#). Students 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.

ARE HUMANS REALLY HEADED TO MARS ANYTIME SOON?

NPR | March 17, 2015 | Audio

7:02 minutes

An NPR story on our preparedness to go to Mars.

- Mary Lynne Dittmar, an aerospace consultant, says we're nowhere near ready to go Mars and that most people don't understand how hard it would be to go.
- Dittmar says we don't know yet how to land on Mars because of its thin atmosphere. In addition to the ton of food and oxygen that astronauts would have to bring along, they would have to deal with cancer-causing radiation and dust.
- Mars One has a plan to colonize Mars by 2025. The plan is led by Bas Lansdorp who is a mechanical engineer. He says the Mars voyage will pay for itself because everyone would pay to watch it like a reality show.
- The Mars One plan calls for sending out a small robotic lander about 3 years from now to Mars, which would still cost hundreds of millions of dollars. Lansdorp won't say how much money he's raised towards the lander.
- John Logsdon is a space policy expert at George Washington University who thinks that the Mars One plan isn't credible. He does believe that we can travel to other planets - but somewhere in the 2030s.
- NASA's stated goal is humans in Mars by 2030s.
- Jason Crusan, who is the director of Advanced Exploration Systems at NASA, says that NASA is building a huge new rocket to help them get into deep space and later toward Mars.
- Robert Zubrin, an aerospace engineer and president of the Mars Society, says that the NASA program doesn't actually have a plan even though they're building the rocket. He points out that there is no habitation module that astronauts would need for a long-term mission.
- Zubrin thinks the best hope humans have for going to Mars is the Space X initiative.
- Space X is founded by Elon Musk, and is the first private company to have a capsule docked with the international space station.
- Zubrin says that Space X developed a spacecraft for less money and less time than NASA and other aerospace companies have done.

Using public media — video, audio and digital reports — about newsworthy topics, these classroom-based exercises help students to think critically about media messages, develop informed opinions, and practice how to take a stand.

SHOULD YOU GO TO MARS? FT. BILL NYE

PBS Digital Studios | June 28, 2016 | Video

10:06 minutes

Physics Girl Dianna Cowern interviews scientist Bill Nye about Mars exploration and whether it can be done.

- Bill Nye thinks we should go to Mars because if we found evidence of life on Mars, like fossils, bacteria or microbes, it would change the course of history.
- Evidence says Mars possibly could have had oceans based on a line around the entire planet that may mark an ancient shoreline. Based on evidence of this sea level line, scientists think that 1/5 of Mars could have been covered in ocean.
- Getting to Mars isn't easy. Cosmic rays constantly bombard astronauts with radiation that could give them cancer. The zero-gravity environment could take away bone density and muscle mass, making the astronauts too weak to do anything when they got Mars after the 300 days of travel.
- New technology has to be invented to be able to breathe on the planet and humans and supplies could only go after every 26 months. There's a proposal for a series of rockets to bring food and other supplies because it would too heavy and costly for one rocket.
- Orbiting Mars could be a more feasible goal rather than immediately building encampments. Bill Nye thinks we should explore but not colonize Mars because humans could bring Earth microbes and contaminate any possible life.

SHOULD WE COLONIZE VENUS INSTEAD OF MARS?

PBS Digital Studios | March 4, 2015 | Video

7:36 minutes

A video from SpaceTime about an alternative inter-planetary colonization plan: Venus' upper atmosphere.

- President Obama, President Bush, and the Chinese government have outlined plans for manned missions to Mars, but Venus is never mentioned even though it may be a less costly and easier target for colonization than Mars.
- Venus is closer to Earth and the round trip would be 30 to 50% shorter, which could mean less fuel, less food and water, and less radiation.
- Venus has a thicker atmosphere than Mars, so there's better protection from space radiation and meteorites, and more available carbon dioxide to extract oxygen from. Venus' gravity level is also closer to Earth's, lessening the risk of decreased bone density.
- The host believes Venus isn't a popular destination because humans can't land in the planet's surface (it's too hot and the barometric pressure could crush a submarine).
- About 50 kilometers above Venus' surface is a livable area because the temperature drops to 70 degrees Celsius (still very hot but doable with firefighting equipment) and the barometric pressure drops. This means that humans would need heat resistant clothing and oxygen, but no space suits.
- NASA has unveiled blueprints of possible floating cloud cities above Venus, called HAVOC (High Altitude Venus Operational Concept).

KEY WORDS

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

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- Colonization
- Fossil Fuels
- Radiation

CONTEMPLATE

Students 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 students answer these five questions about each piece of media.

DEBATE

Students will engage their peers in an evidence-based debate using the media they just analyzed. Use the debate tool on the module webpage to help form an evidence-based response to the debate question.

In addition to rich in-class discussions, teachers can also connect with other classrooms through the Thinkalong website. [Sign up here](#) to be connected.

LET'S INVESTIGATE

NAME: _____

DATE: _____

Use this worksheet to help you investigate the media sources in the Thinkalong module.



SUMMARIZE THE TOPIC

KEY VOCABULARY

MEDIA RESOURCE 1

TITLE _____

DATE PUBLISHED _____

MAIN IDEAS

MEDIA RESOURCE 2

TITLE

DATE PUBLISHED

MAIN IDEAS

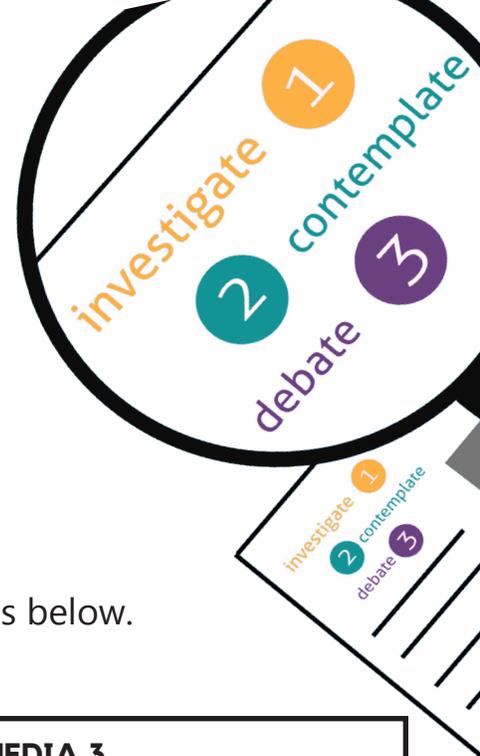
MEDIA RESOURCE 3

TITLE

DATE PUBLISHED

MAIN IDEAS

CONTEMPLATE YOUR SOURCES



NAME: _____

DATE: _____

After watching the media in the module, answer the questions below.

1. **AUTHORSHIP:** Who created this message?

MEDIA 1

MEDIA 2

MEDIA 3

2. **FORMAT:** What creative techniques are being used to grab my attention?

MEDIA 1

MEDIA 2

MEDIA 3

3. **AUDIENCE:** How might different people understand this message differently than me?

MEDIA 1

MEDIA 2

MEDIA 3

4. **CONTENT:** What values and points of view are represented? What's left out of this message?

MEDIA 1

MEDIA 2

MEDIA 3

5. **PURPOSE:** Why is this message being sent?

MEDIA 1

MEDIA 2

MEDIA 3

CREATE YOUR ARGUMENT

NAME: _____

DATE: _____

Create strong arguments for both sides from the resources in the Thinkalong module.



DEBATE QUESTION	
PRO ARGUMENT	CON ARGUMENT
REASONING	REASONING
EVIDENCE	EVIDENCE