

**TOPIC: MARS MISSION**



# **THE GREAT DEBATE**

**SCIENCE MATTERS**

Support opinions with facts

Develop communication skills

**DEBATE TOPIC:**  
Should we send a human mission to Mars?

Character Name: \_\_\_\_\_ Character's Position: For / Against

**Supporting Evidence:**  
Read your characters argument, research some facts that support this position, write your evidence below:

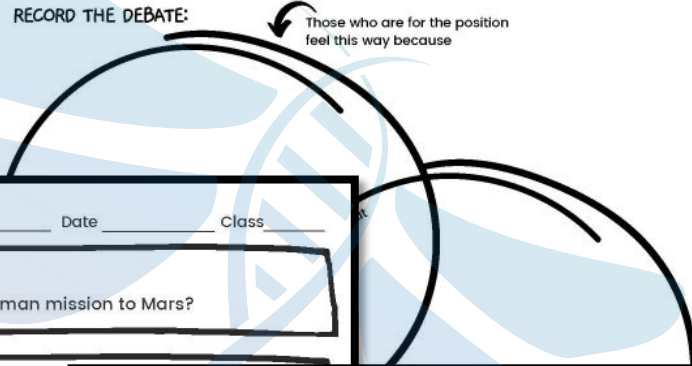
1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

**KEYS TO A SUCCESSFUL DEBATE:**

- Do not interrupt when others are speaking
- Keep answers short and concise
- Listen carefully to your opponent and ask questions
- Speak calmly and politely
- There are no bad ideas
- Do not raise your voice

**RECORD THE DEBATE:**

Those who are for the position feel this way because



**STUDENT WORKSHEETS FOR STUDENTS ACTIVELY DEBATING OR FOR STUDENTS IN AUDIENCE**

Planning  
Think  
resources

**DEBATE TOPIC:**  
Should we send a human mission to Mars?

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

**Research Topic:**

Research using articles and/or websites that help you understand controversy behind the topic. Write down the information in the debate.

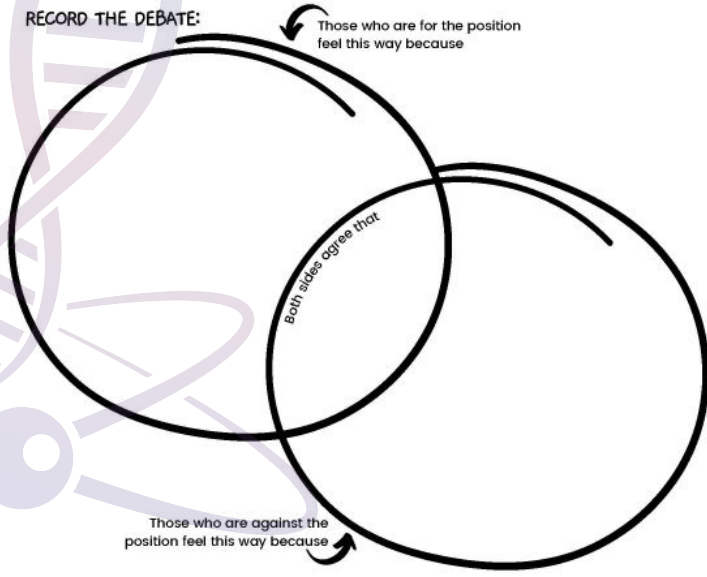
1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

**KEYS TO A SUCCESSFUL DEBATE:**

- Do not interrupt when others are speaking
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**RECORD THE DEBATE:**

Those who are for the position feel this way because



Those who are against the position feel this way because

**Questions:**

Think about both sides of the debate and prepare three questions. Questions should result in more than a "yes" or "no" response.

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

**TAKE A STANCE:**

You have just heard compelling arguments from both sides, use the space below to explain your own opinion using supporting facts.

**TEACHER GUIDE PROVIDES OBJECTIVES, BENEFITS, AND OPTIONS FOR A SUCCESSFUL DEBATE.**

**DEBATE OBJECTIVES:**

- To practice debating and discussing topics and
- Think about different points of view
- Use facts to support opinions
- To structure and argument using points and evidence
- Understand debates have a for/against structure

**KEY VOCABULARY:**

**Fact** – a thing that is known or proven to be true  
**Opinion** – a belief or attitude about something  
**Point** – a short sentence that explains why you  
**Explanation** – how and why your point is true.  
**Pro** – An argument or consideration in favor of  
**Con** – An argument or opinion against something  
**Rebuttal** – a statement that a claim or criticism

**FOR BEGINNERS, MODEL A DEBATE:**

In order to get your students into the Great Debate mindset, begin by modeling a debate by putting a controversial topic on the board like "Homework should be banned!"

Next to the debate topic write down these terms: fact, opinion, point, explanation, pros, cons, and rebuttal. Discuss each term and its meaning.

standing:  
 opinion?  
 ?  
 tion on your topic?  
 ce?

**NOW YOU'RE READY TO START THE GREAT DEBATE**

Choose your debate style (options next page) and assign character cards. Each debate character card is a position for/against the topic being debated. A rebuttal card is a point that helps the student to understand when they find facts to support their point of view. A question card is a question which they will use to engage with the other side of the debate. What might someone on the opposite points of view.

**Students Actively Debating:**

If students are actively debating, they will come up with their own questions. First, they will fill out their character information and research and find three facts to support their point of view. Then they will use their questions to engage with the other side of the debate. What might someone on the opposite side of the debate should plan to come up with potential responses?

When prep and research are completed by the students, the moderator presents first.

**Students As Audience:**

If your debate option includes having someone present articles or websites ready for them to use during the debate. Audience members should come up with questions to ask both debate teams.

**After Debate:**

After the debate is completed, have student questions presented during the debate. What were the main points? Was there anything they agreed on? Finally, have the audience ask questions on what they just heard using supporting facts.

**Assessment:**

- A grading rubric has been provided for the debate.
- A peer assessment has also been provided to assess the behavior of each team.

**DEBATE OPTIONS:**

**THREE QUESTION DEBATE (ONE CLASS PERIOD)**

Divide the class into two teams. Small groups focus on their character cards.

Alternate which team delivers main points first.

15 minutes: Prep/Research

3 minutes: Team A Main Points from character cards

3 minutes: Team B Main Points from character cards

2 minutes: Team A Rebuttal (Q1, Q2, Q3)

2 minutes: Team B Rebuttal (Q1, Q2, Q3)

Debrief

**SMALL GROUP DEBATE (ONE CLASS PERIOD)**

Generate two debate teams of 2-4 students (cards assigned).

\*Often done multiple times per semester until each student has had a chance to debate a topic\*

5-10 minutes: Prep/Research

5 minutes: Opening Statement (Team A)

5 minutes: Opening Statement (Team B)

5 minutes: Rebuttal (Team A)

5 minutes: Rebuttal (Team B)

15 minutes: Audience ("media reporters") questions both teams

Debrief

**TOWN HALL (ONE CLASS PERIOD)**

Assign some students roles to represent.

Introduce topic.

5-10 minutes: Prep/Research

2 minute persuasive speeches (pro)

2 minute persuasive speeches (con)

2 minute: Q and A each side

10 minutes: Audience ("citizens") question both teams

"Citizens" vote

Name of Assessor: \_\_\_\_\_  
 Debate Team and Position: \_\_\_\_\_

Speaker Behavior
Speaks directly to the topic
Uses "because" statements to support their side
Makes good eye contact
Showed good listening skills
Builds on or adds to the topic
Disagrees using appropriate questioning
Speaks off topic
Repeats information
Interrupts or deliberately misrepresents
Negative, demeaning or disrespectful

Spee
Speaks directly to
Uses "because" sta
Makes good eye co
Showed good liste
Builds on or adds t
Disagrees using ap
Speaks off topic
Repeats informatio
Interrupts or delibe
Negative, demean

**ASSESSMENT RUBRICS PROVIDED — ONE FOR GRADING BY TEACHER AND ONE FOR STUDENTS TO ASSESS DEBATE TEAMS BASED ON BEHAVIOR IN DEBATE.**

Debate Team Name: \_\_\_\_\_

**DEBATE TOPIC:**  
 Should alternative methods of food supply be supported?

**GRADING RUBRIC:**

Criteria	4	3	2	1	Total
<b>Organization &amp; clarity</b> Main argument outlined in a clear and orderly way	Completely clear and orderly	Mostly clear and orderly in all parts	Clear in some but not all parts	Unclear and disorganized throughout	
<b>Use of evidence</b> Reasons are given that are supported by cited facts	Very strong, persuasive argument supported by evidence	Many good arguments given, few supported facts	Some satisfactory arguments, not well supported	Few or no real arguments provided with no supporting facts	
<b>Use of rebuttal</b> Ability to uphold position against questioning from opposing side	Excellent response to rebuttal and questioning	Good questioning and rebuttals with only a few mistakes	Fair questioning and rebuttals but major mistakes	Poor questioning and failure to defend position	
<b>Presentation style</b> Ability to clearly express opinion & persuade audience	Very convincing argument. All team members participated	Good convincing argument. Most team members participated	Fairly convincing argument. Few team members participated	No convincing argument. Team members did not work together	

**Comments**

## AYA LAM Astrophotographer



As an astrophotographer, I've spent 25 years taking pictures of stars, planets, comets, and galaxies. As the adage says, "A picture speaks a thousand words," and my images have appeared in hundreds of magazines speaking to people all over the world. I've watched firsthand as children's faces light up when they see what I've captured. With all of the advancements in technology, cameras, and lenses, I can only imagine how much more I could do. I've been able to get beautiful canyons

Point: The resolution of the images we have available is the greatest, with the fullest potential.

Probing Question: How can we develop the technology to send humans to Mars?

## JOSH JAMES HS Science Teacher, Traveler

As a high school science teacher, I tell my students nothing is out of their reach if they

**EACH DEBATE HAS 8 CHARACTER CARDS —  
4 ROLES ARE PRO TOPIC AND  
4 ROLES ARE AGAINST TOPIC**



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## SUZANNE Space Suit

I've spent my life designing space suits for astronauts in orbit. The suits are worn in the harsh environment of space. Astronauts are in suits when they are in spacecraft. Suits supply breathable air, allow for communication, and limit the amount of radiation. As a designer, it would be to design a suit for Mars. Its average temperature is freezing and it would be to create a suit

Point: We could adapt the human body to live in a different environment.

Probing question: How can we allow this mission to have a positive response to society?



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# THE GREAT DEBATE

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I'm afraid I  
your point.

CLASSROOM POSTERS ALSO INCLUDED!

I'd like to take  
issue with  
what you just  
said.

There are two  
issues our

According to  
other side, o  
opponents

USEFUL D

## THE GREAT DEBATE

SCIENCE MATTERS

## KEYS TO A SUCCESSFUL DEBATE

Speak  
calmly  
and politely



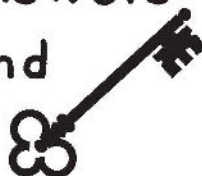
Listen  
carefully  
to your  
opponent and  
ask questions



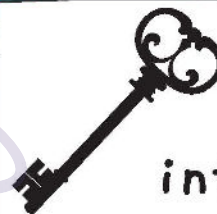
Do not raise  
your voice



Keep answers  
short and  
concise



Do not  
interrupt  
when others  
are speaking





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