

First Contact Protocols

Diplomacy, Danger, and Speaking for All of Humanity

Name _____ Class _____ Date _____

PART 1: THE DAY AFTER DETECTION



The Very Large Array in New Mexico. Radio telescopes like these scan the sky for signals, but what happens if we actually find one?

Photo: CGP Grey (CC BY 2.0)

Imagine that astronomers detect an unmistakable artificial signal from a star system 12 light-years away. After weeks of checking, the scientific community confirms that the signal contains structured mathematical sequences that no natural phenomenon could produce, and that we are not alone. The discovery leaks to the press before any official announcement, and within hours the news has reached every corner of the planet. Who speaks for humanity now? What do we say and, perhaps more importantly, what do we leave unsaid?

The question is not purely hypothetical. The International Academy of Astronautics (IAA) has had a set of protocols for exactly this situation since 1989, and it approved a major update in 2026. The protocols ask the discoverers to have the signal confirmed by an independent observatory before making any announcement, and then to inform the United Nations, other scientists and the public openly. Most importantly, they say that no reply should be sent without international consultation.

These protocols are voluntary, however, and no government is legally bound by them. The original version was also written for a world without social media, which is why the 2026 update adds guidance on leaks, online rumors and the use of artificial intelligence in checking a signal. A rehearsal in 2023 showed how messy the real thing could be. The European Space Agency beamed a simulated alien

message from a spacecraft orbiting Mars, and thousands of volunteers around the world worked on it together online. It took them more than a year to decode it, and they are still arguing about what it means.

PART 2: WHO SPEAKS FOR EARTH?

Representation is perhaps the most difficult political problem that first contact would create. The United Nations has 193 member states, but it was designed to manage relations between human nations. If another civilization contacted Earth, should the reply come from the General Assembly, from the Security Council, from a committee of scientists, from the nation whose telescope made the discovery, or from the leader of the most powerful country?



The General Assembly Hall of the United Nations in New York. The UN was designed to manage relations between nations, not between species.

Photo: The White House (public domain)

Each option carries risks. A committee of scientists might write the most rational message but would lack political authority. A single nation that replied unilaterally could trigger an international crisis, since neither China nor the United States would accept the other speaking for all of humanity. The UN, slowed by bureaucracy and competing national interests, might take years to agree on anything.

Meanwhile, anyone with a powerful enough transmitter could send a message of their own. In Liu Cixin's *The Three-Body Problem*, it is a single disillusioned scientist, Ye Wenjie, who answers the Trisolaran signal, and her decision changes the fate of two civilizations. Real scientists have worried about the same thing. In 2015, a group of researchers and technology leaders signed a public statement on the subject. The decision to transmit, they argued, should rest on a worldwide consensus and not on "the wishes of a few individuals with access to powerful communications equipment."

PART 3: WHAT SHOULD WE SAY?

The content of a reply matters as much as who sends it, and different kinds of information carry different levels of risk. Basic mathematics and physics are probably safe, because any technological civilization would already know them. Images of Earth, our biology and our population are more dangerous, since they reveal our capabilities and our vulnerabilities. Our location is the most sensitive information of all, although anyone whose signal we are answering already knows roughly where we are.



Every point of light in this Hubble image is a galaxy of billions of stars. Someone may be listening; the question is whether we should answer.

Image: NASA and the European Space Agency (public domain)

This is the paradox of first contact. To build trust you need to share information, but sharing information makes you vulnerable, and you cannot check the intentions of the other side before you commit. Game theorists would recognize a prisoner's dilemma on a cosmic scale: both sides would benefit from cooperation, yet neither can be sure that the other will not exploit it. The Dark Forest Theory from Lesson 1 is the most pessimistic answer, in which the only rational move is silence because any reply could be fatal.

PART 4: LESSONS FROM HUMAN HISTORY

Human history offers imperfect but instructive analogies. When European explorers encountered indigenous peoples in the Americas, Africa and the Pacific, the result was almost always devastating for the society with less advanced technology, whether through conquest, disease or cultural destruction. Not every encounter followed this pattern, however. The Roman Empire and Han Dynasty China traded for centuries through intermediaries along the Silk Road without ever threatening each other directly.



Dejima, the small artificial island in Nagasaki Bay where Dutch traders were confined, in a Japanese painting of the Edo period

Image: public domain

Japan offers another model. For more than two hundred years during the Edo period, the government limited foreign contact to a few tightly controlled gateways. Dutch merchants, the only Europeans allowed to trade, were confined to Dejima, a small artificial island in Nagasaki harbor. Japan could buy foreign goods and study Western science through this narrow window while keeping its independence, which suggests that controlled, gradual engagement can protect the weaker side.

The key variable may be the power differential. When two societies are roughly equal in capability, trade and diplomacy tend to prevail, but when one is vastly more powerful, domination is the historical norm. A civilization that has mastered interstellar travel would be far ahead of a humanity that has barely reached the Moon. Our best strategy might therefore be cautious cooperation: reply slowly, share selectively, verify whatever can be verified, and always keep the ability to go silent.

KEY VOCABULARY

Term	Meaning	Term	Meaning
<i>protocols</i>	official procedures or rules for handling a situation	<i>verification</i>	the process of confirming that something is true or accurate
<i>consensus</i>	general agreement among a group	<i>representation</i>	speaking or acting on behalf of others
<i>bureaucracy</i>	a complex system of administration with many rules and procedures	<i>vulnerabilities</i>	weaknesses that can be exploited

<i>paradox</i>	a situation that seems contradictory but may be true	<i>prisoner's dilemma</i>	a situation in which cooperation would benefit both sides but trusting the other is risky
<i>analogies</i>	comparisons between similar situations, used to explain or clarify	<i>intermediaries</i>	go-betweens; people or groups that connect two parties
<i>differential</i>	a difference in level or amount between two things	<i>cautious cooperation</i>	working with another party carefully, sharing slowly while watching for threats
<i>unilaterally</i>	by one side alone, without the agreement of others	<i>rational</i>	based on logic and reason rather than emotion

Discussion & Analysis

First Contact Protocols · Lesson Activities

A. COMPREHENSION

1. What do the IAA protocols ask discoverers to do before and after announcing a detection?

2. Why might the protocols fail in practice? Give two reasons from the reading.

3. What did the 2023 simulated message exercise show?

4. Name three possible candidates to speak for Earth and explain the risk of each.

5. Which kinds of information does the reading describe as safe, more dangerous, and most sensitive?

6. How does the prisoner's dilemma apply to first contact?

7. How did Japan manage contact with Europeans during the Edo period, and why is this relevant?

8. According to the reading, what is the most important variable in whether contact is peaceful or destructive?

B. VOCABULARY IN CONTEXT

Complete each sentence with a term from the vocabulary list. Use each term once.

analogies · bureaucracy · consensus · differential · intermediaries · protocols · representation ·
unilaterally · verification · vulnerabilities

1. The country acted _____ when it withdrew from the treaty without consulting its allies.
2. The security team identified several _____ in the network that hackers could exploit.
3. Before publishing the research, the university required independent _____ of the results.
4. The committee could not reach _____ on the new policy, so the vote was postponed.
5. Silk Road merchants acted as _____ between China and Rome, connecting empires that never met directly.
6. Government _____ often slows decisions with layers of rules and approvals.
7. The power _____ between the two civilizations made an equal partnership impossible.
8. Hospitals follow strict _____ when a new and unknown disease appears.
9. The colonies demanded _____ in the parliament that was making their laws.
10. Historians use _____ with the past to think about situations that have never happened before.

C. CRITICAL THINKING

1. If you discovered an alien signal, would you follow the IAA protocols and wait for international consultation, or would you reply immediately? Explain your reasoning.

2. Ye Wenjie answers an alien signal without anyone's permission. Was she wrong? Does one person ever have the right to make a decision that affects all of humanity?

3. The reading compares first contact with encounters between unequal human societies. Is this comparison fair? How might contact with aliens differ from European colonization?

4. Is cautious cooperation the right strategy for first contact, or is the absolute silence of the Dark Forest more logical? What are the costs of each?

D. THE GREAT DEBATE: RESPOND OR STAY SILENT?

Scenario: The signal has been confirmed and the UN Security Council is deadlocked. Three factions have emerged.

Position A: Full transparency

Send everything: our science, our art, our history. Hiding is impractical, since they can already detect us, and it is insulting. Openness is the foundation of trust. If they wanted to destroy us, knowing more about us would not change that.

Position B: Absolute silence

Any reply is a risk with no guaranteed benefit. We cannot know their intentions, and the technology gap may be enormous. A signal is not an invitation; it could be a trap, a survey or an automated probe. Silence costs nothing, and a reply could cost everything.

Position C: Minimal reply

Acknowledge the signal with basic mathematics, which proves intelligence without revealing details. Share nothing about our biology or culture, and watch how they respond before deciding the next step. This is diplomacy, not surrender.

After the debate, write your own position in three or four sentences.

E. PROTOCOL DESIGN: YOUR FIRST CONTACT PLAN

You are chairing a UN emergency committee, and an alien signal has been confirmed. Make a decision in each area below and be prepared to defend every choice.

1. Announcement

Do you tell the public immediately, wait for full analysis, or inform governments first? How do you prevent panic and misinformation?

2. Response Team

Who writes the reply: scientists, diplomats, artists, religious leaders, or the public through a vote? How many people should be involved?

3. Message Content

What do you include, and what do you deliberately leave out? Do you present humanity honestly, with its wars and problems, or at its best?

4. Timeline

The signal came from 12 light-years away, so a reply takes 12 years to arrive and any answer to it at least 24. Does that change how urgently you act?

5. Security

How do you prevent unauthorized replies? What happens if a private citizen or a corporation sends its own message?

6. Failure Plan

What if the senders seem hostile, or never reply? What if nations cannot agree on whether to answer at all?

Notes on your three most important decisions:

F. ESSAY PROMPT

Choose ONE of the following and write a well-organized essay of 300 to 500 words on a separate sheet of paper.

- Option A: "No one has the right to speak for all of humanity." Is this true? If so, how should we make decisions that affect the entire species? If not, who should have that authority, and why?
- Option B: Write a draft of humanity's first reply to an alien signal in no more than 200 words. Then explain in a paragraph what you chose to say and what you left out.
- Option C: Compare two historical first contacts between human societies, such as Cortes and the Aztecs, European traders and Japan, or the Silk Road. What lessons do they offer for contact with another civilization?

Teacher's Notes & Answer Key

First Contact Protocols · Instructor Guide

LESSON OVERVIEW

LEVEL

Advanced (CEFR B2 to C1)

DURATION

60 to 90 minutes

FOCUS

Reading, protocol design, diplomacy simulation

Source material: IAA post-detection protocols; SETI research community statements; Edo-period Japan; Liu Cixin's trilogy

Series: Humans & The Universe, Lesson 6 of 8. Lessons 1 and 2 are recommended first but not required.

SUGGESTED LESSON FLOW

Warm-up (5 min)	Ask: a confirmed alien signal is announced tomorrow. What is the first thing humanity should do? Brainstorm as a class.
Pre-reading (5 min)	Key vocabulary: protocols, consensus, representation, prisoner's dilemma, differential.
Reading (15 to 20 min)	Parts 1 to 4. The Ye Wenjie reference connects to Lessons 1 and 2 for returning students.
Comprehension (10 min)	Section A, oral or written.
Vocabulary (10 min)	Section B. Ten gaps, word bank supplied.
Debate (10 to 15 min)	Section D, three positions. Push students to use evidence from the reading.
Protocol design (15 to 20 min)	Section E. Small groups design their protocols, then present and compare.
Homework	Section F essay. Option B, drafting the reply, is especially engaging.

ANSWER KEY: SECTION A (COMPREHENSION)

1. Before announcing, to have the signal confirmed by an independent observatory. Afterward, to inform the United Nations, other scientists and the public openly, and to send no reply without international consultation.
2. Any two of: the protocols are voluntary and no government is legally bound by them; news can leak and spread on social media within hours; anyone with a powerful transmitter could reply on their own.
3. That even a friendly, deliberately designed message is hard to interpret. Thousands of volunteers needed more than a year to decode it and still disagree about its meaning.
4. Accept any three with a reasonable risk: a committee of scientists (rational but without political authority); a single nation (could trigger an international crisis); the UN (slow, divided by national interests); the discovering nation or the most powerful leader (would not be accepted as speaking for everyone).
5. Safe: basic mathematics and physics. More dangerous: images of Earth, our biology and our population. Most sensitive: our location, although the sender of a signal we answer already knows roughly where we are.

6. Both sides would gain from cooperation, but sharing information creates vulnerability and neither side can verify the other's intentions first. The cautious move for each (silence) leaves both worse off than cooperation would.
7. It limited foreign contact to a few controlled gateways and confined Dutch traders to Dejima, an artificial island in Nagasaki harbor. Japan gained goods and knowledge while keeping its independence, which suggests that slow, controlled engagement can protect the weaker side.
8. The power differential. Roughly equal societies tend toward trade and diplomacy, while a large gap in capability has usually led to domination.

ANSWER KEY: SECTION B (VOCABULARY)

1. unilaterally 2. vulnerabilities 3. verification 4. consensus 5. intermediaries 6. bureaucracy
7. differential 8. protocols 9. representation 10. analogies

DISCUSSION EXTENSIONS

Film connection: In *Arrival* (2016), a linguist must learn to communicate with alien visitors while governments lose patience. Compare the film's approach with the strategies in the reading.

Link to Lessons 1 and 2: How does the Dark Forest Theory conflict with cautious cooperation? How does the SETI debate in Lesson 2 bear on the decision to reply?

Philosophy: Apply the veil of ignorance from Lesson 5: how would you design contact rules if you did not know whether you would be the stronger or the weaker civilization?

Current events: Have students research the SETI Post-Detection Hub at the University of St Andrews, founded in 2022, or the 2026 update to the IAA protocols. What do they recommend?

Section E: Strong groups will notice that area 4 undermines the case for urgency: with a 24-year gap between question and answer, there is time to consult.

KEY DISCUSSION LANGUAGE

Authority

"Who has the right to...?" / "This should be decided by..."

Precedent

"History shows us that..."

Risk

"The potential downside is..." / "What's the worst case?"

Compromise

"A middle ground would be..."

Diplomacy

"We should approach this carefully..."

Urgency

"We need to act now because..." / "Delay could mean..."

Sources & Further Reading

International Academy of Astronautics, Declaration of Principles Concerning Activities Following the Detection of Extraterrestrial Intelligence (1989; revised 2010; updated 2026).

"A Sign in Space" (2023), an art and science project by Daniela de Paulis with the European Space Agency and the SETI Institute; the message was decoded in June 2024.

"Regarding Messaging to Extraterrestrial Intelligence (METI)", public statement by SETI researchers and others, 2015.

Japan's Edo-period foreign relations: trade through Nagasaki (Dutch and Chinese merchants) and through the Tsushima, Satsuma and Matsumae domains.

Liu Cixin, *The Three-Body Problem* (2006).

Humans & The Universe

An eight-lesson advanced reading and discussion series

This lesson is part of a connected series for advanced learners. Each lesson pairs a science fiction premise with the real science, history and ethics behind it, and each works as a standalone class or as part of the full sequence.

1	The Dark Forest: game theory, deterrence and the fate of civilizations	
2	Should We Answer? SETI, the Fermi Paradox and the risk of saying hello	
3	Waking Up in the Future: hibernation, time and the cost of survival	
4	Living in Space: survival, adaptation and leaving Earth behind	
5	Scarcity and Survival: resources, rationing and who gets to live	
6	First Contact Protocols: diplomacy, danger and speaking for humanity	<i>you are here</i>
7	The Ethics of Technology: power, responsibility and dangerous tools	
8	Endings and Legacy: extinction, memory and what we leave behind	

Lesson 1, The Dark Forest, is a free download from Tahric Teaches on Teachers Pay Teachers.