



Teacher Resource

# Voyager Spacecraft

## Focus Questions

Discuss the BTN story as a class and record the main points of the discussion. Students will then respond to the following:

1. When was the Voyager spacecraft launched?
  - a. 1967
  - b. 1977
  - c. 1987
2. Voyager did flybys of which planets?
3. What discoveries did Voyager make?
4. What is the Golden Record and what information does it contain?
5. Do you think space exploration is important? Why or why not?

## Activity: Class Discussion

Discuss the BTN Voyager Spacecraft story as a class. Ask students to record what they know about the spacecraft and mission. What questions do they have? Use the following questions to help guide discussion:

- When was Voyager launched?
- What was the purpose of the mission?
- What is significant about the Voyager mission?
- What discoveries has Voyager made?
- Think of three unanswered questions you have about the Voyager mission.



## Activity: Q&A

Are you curious about space? Students will make a list of questions they have about the BTN story and space exploration. Students will find answers to their questions and share their findings with the class.

What do you know about the Voyager mission?

Why do we explore space?

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### KEY LEARNING

Students will learn more about the mission of the Voyager spacecraft and the discoveries it has made.

### CURRICULUM

#### Science – Year 5

Scientific understandings, discoveries and inventions are used to solve problems that directly affect peoples' lives.

The Earth is part of a system of planets orbiting around a star (the sun).

#### Science – Years 5 & 6

Scientific knowledge is used to solve problems and inform personal and community decisions.

#### Science – Year 7

Scientific knowledge has changed peoples' understanding of the world and is refined as new evidence becomes available.

## Activity: Glossary

Students will brainstorm a list of key words that relate to the BTN Voyager Spacecraft story. Here are some words to get them started.

SPACECRAFT	MISSION	SOLAR SYSTEM
DISCOVERY	EXPLORATION	OUTER PLANETS

Ask students to write what they think is the meaning of each word (including unfamiliar words). They will swap definitions with a partner and ask them to add to or change the definition. Check these against the dictionary definition.

Students will add to their glossary by downloading the transcript for the BTN Voyager Spacecraft story and highlighting all the words that relate to the topic, for example, space probe, interstellar, gas giant, Golden Record.

## Activity: The Discoveries of Voyager

Students will learn more about the discoveries of the Voyager spacecraft. Below are some questions to guide students' research on the topic.

- How did Voyager change our understanding of Jupiter and its moons?
- What did Voyager reveal about the rings of Saturn that scientists didn't know before? Learn more about why Saturn has rings here [Curious Kids: Why does Saturn have rings? - ABC Education](#)
- Why was the [image of Earth](#), known as the *Pale Blue Dot*, significant?
- What has the Voyager mission taught us about the importance of space exploration?



Students can explore the image galleries on the NASA website to find out more about the discoveries of the Voyager spacecraft.

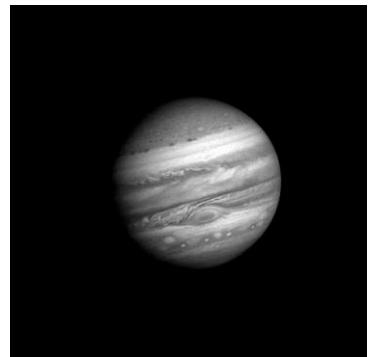
[Voyager at Jupiter](#)

[Voyager at Saturn](#)

[Voyager at Uranus](#)

[Voyager at Neptune](#)

Students choose an image taken by the Voyager spacecraft and respond to the following questions:

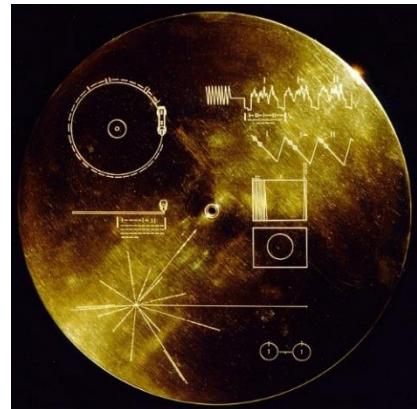


- Describe the image. What can you see?
- What does the image reveal about the planet?
- What questions do you have about the image?

## Activity: Voyager's Golden Record

Both Voyager 1 and 2 carry a *Golden Record* that contains sounds and images that portray life on Earth and are intended for any intelligent extraterrestrial life form who may find them. Ask students to respond to the following questions:

- What is the *Golden Record* onboard Voyager? Write a brief explanation.
- Why did scientists decide to send it into space?
- What information does it contain? Give some examples. Here is [more information](#) about what's on the *Golden Record*.
- What would you include on a *Golden Record*? Give reasons for your answer.
- What message would you send to aliens? What would you want them to know about Earth?
- What does the *Golden Record* tell us about human's curiosity and hope about finding alien life?



*Sounds of Earth* record cover

### Sounds of Interstellar space

Watch [this video](#) that explains how NASA's Voyager 1 spacecraft captured sounds of Interstellar space. Why was this an important moment in space exploration?

## Activity: Voyager Quiz

Hold a class discussion asking students to share one interesting fact they learned about the Voyager spacecraft, mission and discoveries. Record students' responses to create a list of facts.

Students will use the facts they have discovered to create a quiz and then test their classmates. Students will include a range of quiz styles, for example:

- Multiple choice
- True or false
- Fill in the blank
- Use photos or pictures
- When an answer is revealed, provide extra information to explain the answer.



Students can make their quizzes in [Kahoot](#) or [Quizizz](#).

## Useful Websites

- [Voyager](#) – NASA
- [The Golden Record](#) – NASA
- [Voyager](#) - BTN
- [NASA's Voyager 1 reconnects with scientists 15 billion miles away from Earth](#) – Newsround