Could Life Exist in Other Places in the Solar System?

Overview
Children write down what they already know about our solar system. Then they examine NASA images of moons, planets, and the sun to evaluate them as possible places for life to exist.

TIME:
• 45 minutes

Connections
In the last activity, children expanded their thinking about where life can live on Earth. Now they expand their thinking even further to consider other planets as possible places for life to exist.

Materials
• Solar System Lithograph Set: Planets

Big Ideas
• Earth is a habitable planet because it is within the correct distance from the sun to receive enough energy to keep the climate in the range where water will remain liquid. Earth also has an atmosphere to regulate temperature and protect us from the sun's most damaging rays, and a magnetic field to protect us from the solar wind.
• Other planets in our solar system do not have the same combination of factors to make them good hosts for life. But the recent discoveries of life in extreme environments on Earth have led us to consider Mars, Europa (a moon of Jupiter), and Titan (a moon of Saturn) as the best candidates for places in the Solar System where life might exist.
Record prior knowledge about our solar system.
Children write about and/or draw everything they already know about the planets, moons, and the sun.

Share prior knowledge.
Invite children to share with the group what they already know about our solar system.
Search for other places in the solar system that might possibly support life.

Distribute the set of NASA images from *Our Solar System Lithograph Set: Planets* Ask them to do the following:

**FOR 5-6 YEAR OLDS:**
• Look carefully at all the pictures. Which suns, moons, or planets do you think might have life? Why do you think so? What did you see in the pictures that gave you clues?

**FOR 7-12 YEAR OLDS:**
• Look carefully at the images. Just by looking at the images, which (three) bodies in the solar system do you think might be able to support life? Why do you think so? What visual clues did you discover?
Read for information.

FOR 5-6 YEAR OLDS:
Display the images of Mars, Europa, and Titan. Help young learners gather information about them, perhaps by reading the relevant information to them. Explain that scientists choose these three places as having possibilities for life. Ask:
• Why do you think scientists picked these three places?
• Do you agree with their choices?

FOR 7-12 YEAR OLDS:
Distribute all the images to groups of 3 or 4 children, or assign groups to focus on several images each. After they have examined the images again ask them to read the information provided about each solar body. When they have finished reading, ask:
• Does the new information about the temperature, the presence or absence of water, or the materials that make up the different solar bodies change your opinion about which ones might support life?
• What have scientists concluded to date about the possibility of life in places beyond Earth?

Wrap Up
Explain again that we still don't know if life exists anywhere else in the universe, and we won't know for sure until we collect more information. In fact, the NASA missions to Mars have focused on that very question: Was there once life on Mars that has now died out? What do you think?