

Mystery Message from Space

Topic: Deciphering a message from outer space

Objective: Students will apply what they have learned about our solar system, the components and distances of the universe, and communicating with intelligent life forms as they decipher a coded message sent from another planetary system.

Background: The likelihood of our receiving a message from another planetary system is extremely remote due to the great distances in space. The message will take thousands of years to reach our planet. Any life forms intelligent enough to send such a message will realize that those who might receive it will not be familiar with their language but may be able to interpret pictures and numbers.

Materials:

copies of the Mystery Message from Space (pages 22–24) for student teams

Preparation:

Make transparencies of the Mystery Message from Space.

Procedure:

Divide the students into scientific teams and give each team a copy of the Mystery Message from Space.

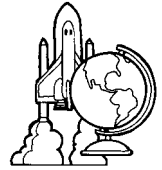
For Discussion:

- Let each scientific team discuss the message and decipher it to the best of their abilities with a minimum of teacher assistance.
- Let students use the transparency to share some of the insights after they have worked for awhile as individual teams and then let them continue deciphering the message.
- Let each team share their interpretation of the message with the entire class.

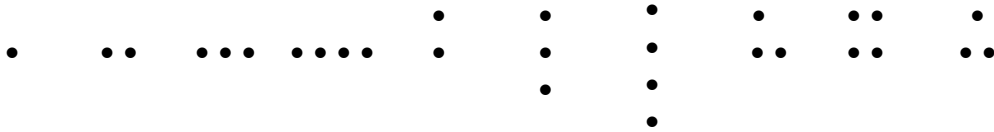
Follow Up:

Share the possible solution provided in the Answer Key.

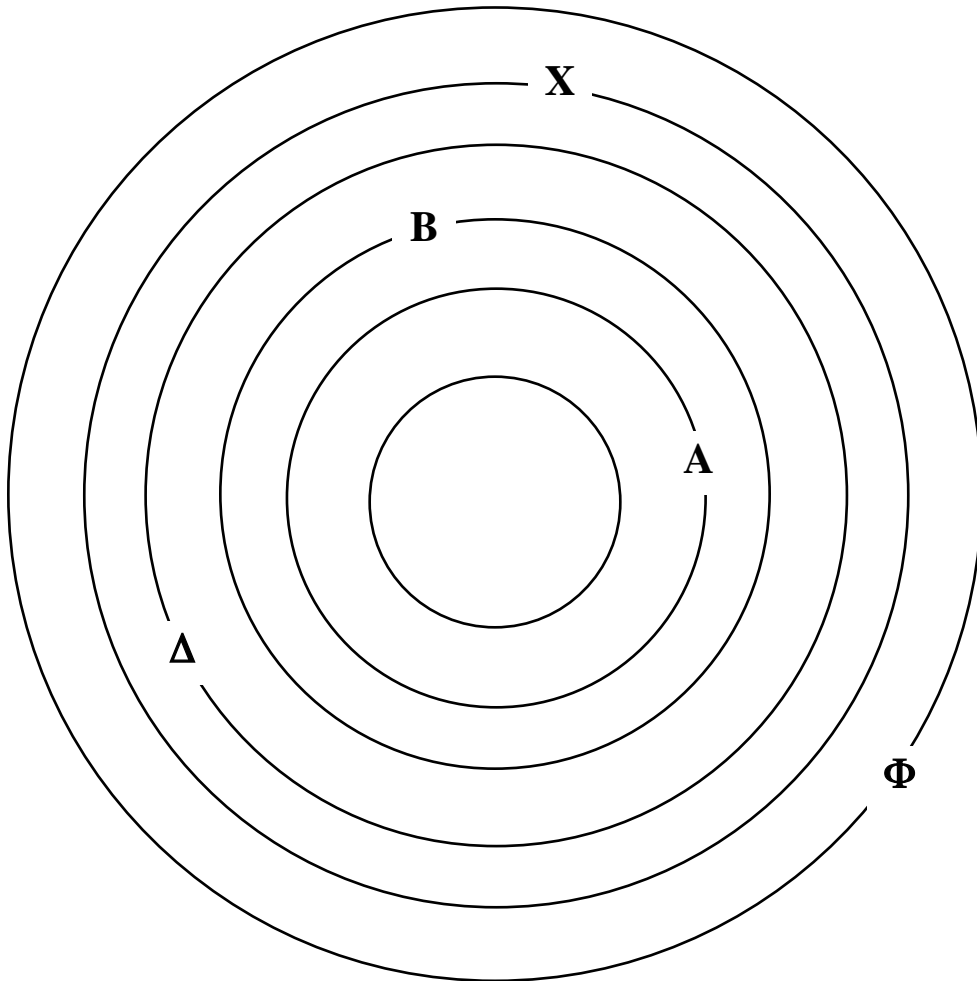
Mystery Message from Space (cont.)



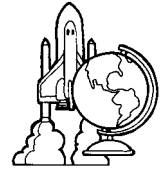
To the Scientific Team: You have just received a mysterious message from another planetary system. Your assignment is to examine the message carefully and try to decipher what it says. Write your notes and interpretations in pencil on these pages as you work, making changes as needed. The intelligent life forms who sent this message are depending upon you to figure out their message. Good luck!



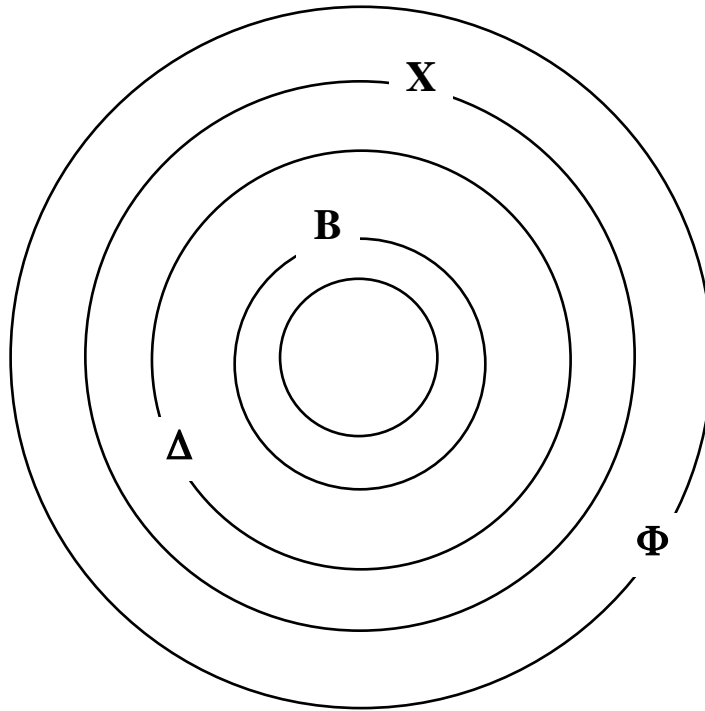
1. Decipher the code above and write it on the lines. (**Hint:** Could it be a number system?)



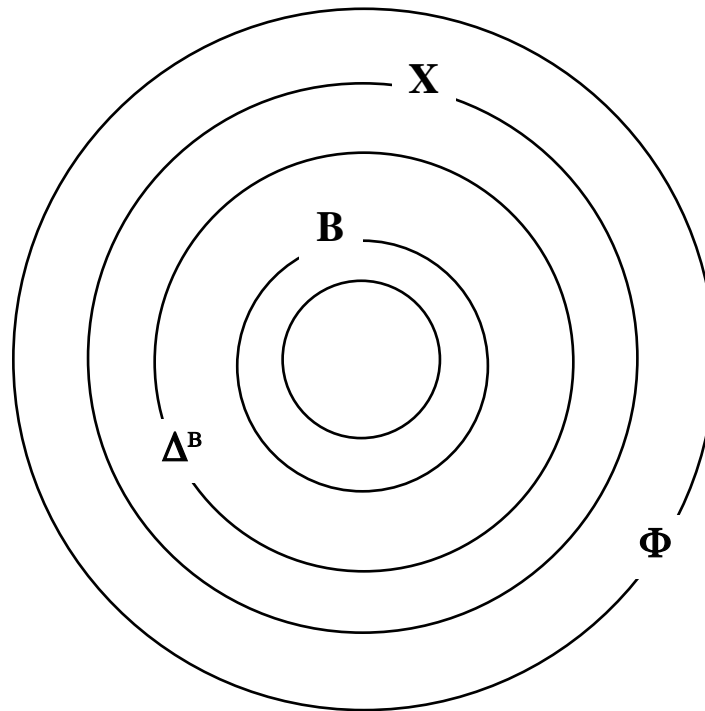
2. What do this drawing and code mean? _____



Mystery Message from Space (cont.)

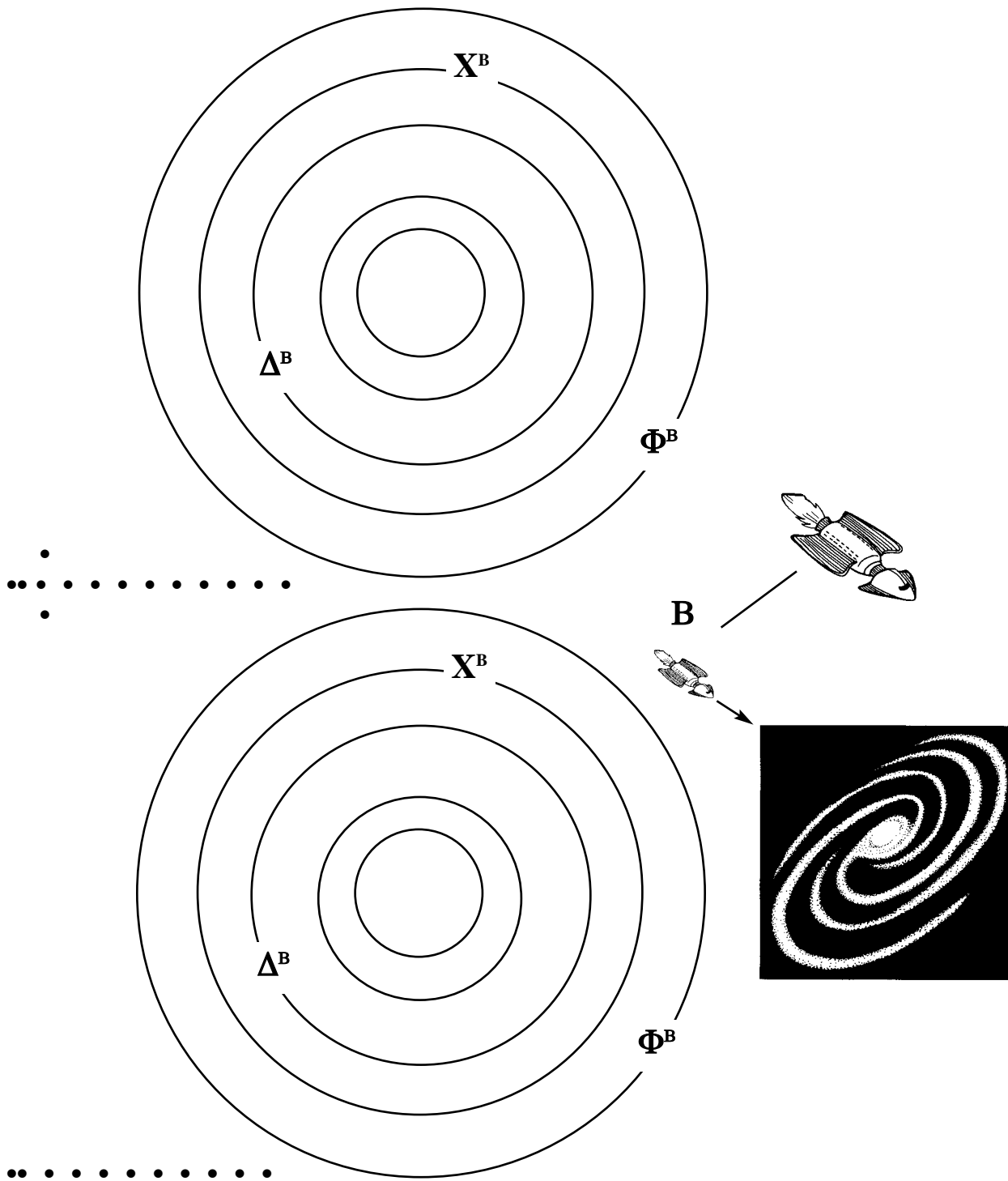


3. What do this drawing and code mean? _____



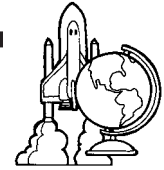
4. What do this drawing and code mean? _____

Mystery Message from Space (cont.)



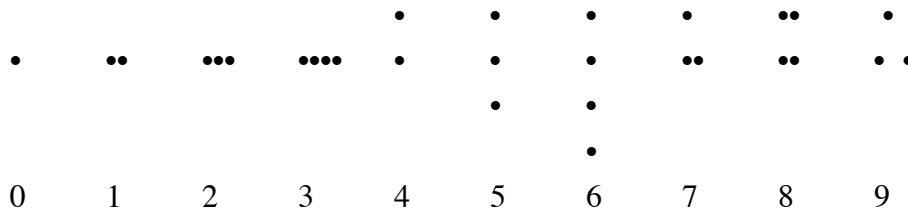
5. What do these final two drawings and codes mean? _____

Answer Key *(cont.)*



Mystery Message from Space (pages 22–24)

- The message tells the history of a planetary system in another galaxy near our Milky Way Galaxy. The span of time shown is between five billion and one billion years ago. The numerical code is given in the beginning of the message and can be interpreted as follows:



- The number system is base 10, as ours is. Applying this code, the first date depicted is
 -
 - • • • • • • • • • = 5,000,000,000 years ago.
 -
- and 4. The message shows that the sun increased in size, resulting in the destruction of the planet nearest the Sun 3.5 billion years ago. By 2,000,100,000 years ago, the expanding Sun threatens planet B, where intelligent life forms exist. They take steps to protect themselves by gradually establishing settlements on a neighboring planet. They eventually develop the technology to colonize other planets.
- The end of the message depicts the launch of an intergalactic spacecraft one billion years ago. The mission of the crew of this spacecraft is to ferry life to another planetary system in a nearby galaxy which is our Milky Way Galaxy.

Plates on the Move (page 71)

- Deep ocean trenches (i.e., Aleutian) are located along the northern and western borders of the Pacific Plate. This is an area of volcanic and earthquake activity due to the Pacific Plate diving under the adjoining plates in this area. Thus, this area is called the “Ring of Fire.”
- The ridges along the edges of the Pacific Plate and on the Atlantic Ocean floor are caused by the plates separating and magma from the mantle pushing through.
- The Himalayan Mountains were created when the Indian Plate pushed into the Eurasian plate. Since the Indian Plate is still pushing slowly northward, these mountains continue to rise.