



NEW
for Years 6 to 10!

PATHWAYS: SCIENCE

An Interactive, Step-by-Step Approach to Understanding Science

Why is it warmer in the summer? What is the shape of a plant cell? How does light travel?

With Pathways: Science, students use an interactive, hands-on approach so that they learn by doing, participating, discussing, and concluding.

Pathways: Science is a new standards-correlated online tool that uses a “probe” framework to **target commonly held misconceptions** within the context of the existing science curriculum. Each lesson uses probe questions to help start the conversation about what students are thinking and why, and then **follows a consistent progression** based on student responses.



Science coverage includes earth systems, matter, living things, and scientific reasoning and inquiry.

Pathways: Science will

- Eliminate more than 100 common misconceptions about key scientific topics.
- Improve test scores and reach annual goals by helping students understand science.
- Engage students through inquiry-based learning.
- Practice testing beliefs and ideas, digging for evidence, evaluating data, and reaching conclusions.



The 10-step framework in Pathways: Science gets you started.

Britannica PATHWAYS SCIENCE

WHAT DO YOU THINK?

Let's see what you know about stars. Where do you find the stars in relation to the Earth, Moon, and Sun?

- Idea 1** Other stars are about the same distance from Earth as the Sun.
- Idea 2** Other stars are much farther away from Earth than the Sun.
- Idea 3** Most stars are between the Sun and the edge of the solar system.
- Idea 4** A few stars are as close to Earth as the planets.

The **probe question** uncovers student ideas about a concept and encourages class discussion.

Students **formulate hypotheses** and consider what evidence they would need to evaluate whether each hypothesis is correct.

Form a Hypothesis Where do you find the stars in relation to the Earth, Moon, and Sun?

<p>Hypothesis 1 There are stars within the solar system besides the Sun. IF this is true, THEN we should find evidence such as . . .</p> <p>* pictures of shining objects within the solar system that look like stars * distances to stars that are no further than the distance to the Sun or further than Pluto or Neptune * how "falling stars" reach Earth's atmosphere</p>	<p>Hypothesis 2 All stars other than the Sun are outside of the solar system. IF this is true, THEN we should find evidence such as . . .</p> <p>* distances to stars that are much farther away than Pluto or Neptune * that the definition of "solar system" does not include stars other than the Sun</p>
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THE UNIVERSE

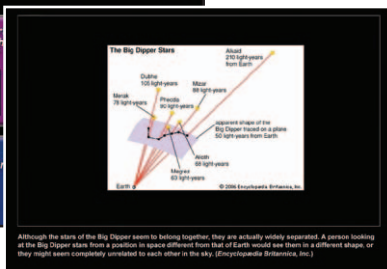
- Distance to Objects in Space
- What Do You Think?
- What Does It Mean?
- Form a Hypothesis
- Dig for Evidence
- Record Your Data
- Key Points Quiz
- 1 2 3 4 5
- Check Your Hypothesis
- Draw Your Conclusion
- What Do You Think NOW?

Dig for EVIDENCE Use the Investi-Grid to find evidence to support your idea.

INVESTI-GRID

- How big is the solar system?
- What does a planet look like in the night sky?
- How far apart are stars in the Big Dipper?
- How many stars are in a galaxy?
- What does the Milky Way Galaxy look like from Earth?
- What is a star?

Students **collect data** in support of their hypotheses using articles, illustrations, and video. This inquiry helps them think about problems in new ways.



Whiteboard Compatible and Works with Your Existing Response Pad Technology!

Record Your Data Where do you find the stars in relation to the Earth, Moon, and Sun?

<p>Hypothesis 1 There are stars within the solar system besides the Sun. Key points we found . . .</p>	<p>Hypothesis 2 All stars other than the Sun are outside of the solar system. Key points we found . . .</p>
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Record and evaluate data in conjunction with each hypothesis. Class discussion ensures that students confront their original ideas.

Key Points Quiz

Let's see what you learned about distances in space.

1. A light-year is a unit of _____.

- A. time
- B. space
- C. distance

The **final probe** helps you determine if the accurate concept has been internalised.

WHAT DO YOU THINK NOW?

Proxima Centauri is the second closest star to Earth. Which describes where you think it is located?

- A. in the solar system on the other side of the sun
- B. in the solar system, beyond Neptune
- C. beyond Pluto's orbit, a few light-years away