



How to support your student as they learn about Sequences

Mathematics is a connected set of ideas, and your student knows a lot. Encourage them to use the mathematics they already know when encountering new concepts in this topic.

Where are we?



In this MATHbook topic, students explore sequences represented as lists of numbers, in tables of values, by equations, and as graphs on the coordinate plane. Students move from an intuitive understanding of patterns to a more formal approach of representing sequences as functions. The final lesson of the topic introduces the modeling process, which gives students a structure for approaching real-world mathematical problems.

Where have we been? ←

Students have analyzed numeric patterns since elementary school. They discovered and explained the features of patterns, formed ordered pairs with terms of two sequences, and compared the terms. Students have connected term numbers and term values as the inputs and outputs of a function.

Where are we going? →

As students deepen their understanding of functions, recognizing that all sequences are functions is an essential building block. Understanding arithmetic sequences is the foundation for linear functions. As students gain experience with more complex functions, the modeling process will help them solve problems.



MATHia

Encourage your students to work through the sequence of MATHia assigned to them. These workspaces deepen their understanding and provide practice with the concepts of **Sequences**.

Recognizing Patterns and Sequences

- Describing Patterns in Sequences
- Graphs of Sequences

Determining Recursive and Explicit Expressions

- Writing Recursive Formulas
- Writing Explicit Formulas



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How to support your student as they learn

MATH MYTH

Asking questions means you don't understand.

It is universally true that, for any given body of knowledge, there are levels of understanding. For example, you might understand the rules of baseball and follow a game without trouble. But there is probably more to the game that you can learn. For example, do you know the 23 ways to get on first base, including the one where the batter strikes out?

Questions don't always indicate a lack of understanding. Instead, they might allow you to learn even more about a subject that you already understand. Asking questions may also give you an opportunity to ensure that you understand a topic correctly. Finally, questions are extremely important to ask yourself. For example, everyone should be in the habit of asking themselves, "Does that make sense? How would I explain it to a friend?"

#mathmythbusted

Talking Points

Discuss With Your Student

Your student is learning about sequences. You can further support your student's learning by asking questions about the work they do in class or at home.

Questions to Ask

- 1 *How does this problem look like something you did in class?*

- 2 *Can you show me the strategy you used to solve this problem? Do you know another way to solve it?*

- 3 *Does your answer make sense? How do you know?*

- 4 *Is there anything you don't understand? How can you use today's lesson to help?*



KEY TERMS

sequence

A sequence is a pattern involving an ordered arrangement of numbers, geometric figures, letters, or other objects.

arithmetic sequence

An arithmetic sequence is a sequence of numbers in which the difference between any two consecutive terms is a constant.

geometric sequence

A geometric sequence is a sequence of numbers in which you multiply each term by a constant to determine the next term.



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