

# Metaphorical Thinking

## What is it?

A tool that uses metaphors and similes to help students build a deep understanding of key concepts

## What are the benefits of using this tool?

Metaphors and similes help students understand abstract ideas through the lens of familiarity. (How is a chemical reaction like a recipe? How is a revolution like a volcano?) Yet, too often, teachers think of metaphorical thinking activities as “fluff”—exercises to be used only after “real learning” has already taken place. *Metaphorical Thinking* (adapted from Silver, Strong, & Perini, 2007) does more than give students a creative way to compare ideas; it uses the clarifying power of metaphors and similes to engage students in serious, analytical thinking about important concepts and their critical attributes. Its use in the classroom can lead to breakthroughs of insight on the part of students.

## What are the basic steps?

1. Explain that metaphors and similes help build deep understanding by challenging us to make connections between items that are not literally alike—and that students will be using metaphorical thinking to deepen their understanding of important and abstract concepts.
2. Pick a concept you want students to understand deeply. Pair it with a concrete item that shares critical attributes or conceptual similarities with the original concept, not literal similarities. See Teacher Talk for more on selecting your items.  
*Example:* You might pair *democracy* (concept) with *diamond* (concrete item) because both can have flaws, both are desired by many people, and both can take a long time to create.
3. Present the pair of items to students. Explain that their immediate task is to identify ways the items are similar—and that the ultimate goal is for them to use those similarities to help them get a better, deeper understanding of the original concept.
4. Have students begin by listing everything they know about each item, starting with the concrete one. Provide readings or other source material that they can use to supplement their existing knowledge about the two items, and have them update their lists accordingly.
5. Ask students to think about ways the two items are similar. Challenge them to identify as many similarities/connections as they can, using the information on their lists to help them. Encourage them to strive for unusual and original connections; see Teacher Talk for more on how to do this.
6. Invite students to share and explain the similarities they found / connections they made. Record their ideas. Ask them which similarities/connections they think are the most informative and why.
7. Conclude by helping students define or summarize what they learned about the original concept and reflect on the value of the metaphorical thinking process. (“How did this exercise help you deepen your understanding of the original concept and its key attributes?”)

## How is this tool used in the classroom?

- ✓ To make abstract concepts easier for students to grasp through metaphorical comparison
- ✓ To enhance students' understanding of critical concepts and their attributes
- ✓ To encourage divergent thinking and facilitate breakthroughs of insight

Teachers from all grade levels and content areas use this tool to help students develop a deep understanding of important concepts. A list of sample questions that reflects this diversity is provided below, along with three fleshed-out classroom examples.

*Note:* The sample questions on the list are written as similes rather than metaphors, but they could just as easily be expressed as metaphors (e.g., “How is the Earth’s atmosphere a blanket?” instead of “How is the Earth’s atmosphere like a blanket?”).

- How is the Earth’s atmosphere like a blanket?
- How is democracy like a diamond?
- How is friendship like a raft?
- How is a habitat like a classroom?
- How is prejudice like an iceberg?
- How is the nervous system like a computer?
- How is a function like a person?
- How is the solar system like a musical composition?
- How is a community like an orchestra?
- How is a revolution like a volcano?
- How is factoring like panning for gold?
- How is courage like a suit of armor?
- How is a writer’s revision process like dentistry?

**EXAMPLE 1:** Before beginning a unit on the American colonies, a fifth-grade teacher wants students to build their understanding of the relatively unfamiliar concept of a colony by comparing it to a concept they know well—a child. To prepare students to make rich comparisons, the teacher asks them to jot down everything they know about children. She also provides them with a short reading on colonies and asks them to jot down important facts and details as they read. The teacher then challenges students to find as many connections as they can between colonies and children. As students share their ideas, the teacher captures them on the board. Some of the connections students make include the following:

- A colony is like a child because both a colony and a child need support and protection from their parent country / parents.
- The younger the children and colonies are, the more support and protection they need.
- Colonies and children are not independent. They are under the control of their parent country / parents.
- Children don’t always agree with their parents. Colonies don’t always agree with their parent country.
- Sometimes colonies and children rebel as they get older.
- Parents and parent countries are always responsible for their children/colonies no matter where they are.

**EXAMPLE 2:** A middle school teacher used Metaphorical Thinking to help his students review and solidify their understanding of basic principles about the periodic table. He challenged them to review their notes about the periodic table, think through everything they knew about jigsaw puzzles, and then generate ways the periodic table is like a jigsaw puzzle. The responses that one student generated are shown below. Notice how this student's responses reflect some of the core understandings about the periodic table that the teacher had designed this activity to reinforce.

The periodic table of the elements	A jigsaw puzzle
Each element in the periodic table is unique.	Each piece in a traditional jigsaw puzzle is unique.
Elements are organized into groups based on their properties.	Puzzle pieces can be organized into groups based on their properties.
Organizing elements into groups is useful because it can help you predict how those elements will react.	Organizing puzzle pieces into groups (blue pieces, edge pieces, corner pieces, etc.) is useful because it can help you predict where the pieces will go.
You can predict the properties of a missing element based on where it falls in the table.	You can predict the properties of a missing piece based on where it is in the puzzle. (You could tell if it was an end piece, what colors it would have in it, etc.)
The periodic table is easier to use and understand the more you work with it.	Jigsaw puzzles are easier to put together the more you play with them.

**EXAMPLE 3:** A fourth-grade teacher doesn't just use metaphors to deepen her students' understanding of abstract concepts; she uses them to deepen students' understanding of characters from literature. Here, she attempted to help students get a better understanding of Fudge, a key character in Judy Blume's *Tales of a Fourth Grade Nothing*, by having them compare Fudge to a thunderstorm. The responses that one group of students developed, along with the students' reflections about what they learned by making this comparison, are shown below.

<u>Thunderstorms</u>		<u>Fudge</u>
Thunderstorms can ruin your plans.	→	Fudge ruins people's plans. For example, he ruins the Hatcher family's plans to have normal dinners.
Thunderstorms do damage. They can cause floods and knock down trees.	→	Fudge does damage. For example, he ruins Peter's school project, and he even eats Peter's pet turtle, Dribble.
No one can control a thunderstorm.	→	No one can control Fudge. He throws tantrums to get his way. For example, he throws a tantrum in the shoe store to try and get the shoes he wants.
We have to deal with thunderstorms. They are part of life.	→	Peter has to deal with Fudge because he has no choice. Fudge is part of the family.
We need thunderstorms. They bring water and help things grow.	→	The novel needs Fudge because he makes it funny and interesting.
<p><u>Reflection:</u> Comparing Fudge to a thunderstorm helped change our opinion of Fudge. Before, most of us saw Fudge as bad and annoying. But thunderstorms are not all bad because we need them. Now, we can see that Fudge is also needed because he is family and because he makes the book more interesting.</p>		