Abstraction

Focusing on the information I need while ignoring the unnecessary details
How can I travel by bus from point A to point B?
Abstraction

• How can I simplify this problem?
• What is the most important information?
• What information can I ignore?
• How can I show only the important information?
Decomposition

Breaking something down into smaller, more manageable parts
Q. How do you eat a whole elephant?

A. one bite at a time
Decomposition

- What is the big problem I am trying to solve?
- What are the different ways I could break this down?
- What parts are easy? What parts are difficult?
- What steps can I take to solve this?
Debugging
Finding and fixing errors or mistakes
Can you find the mistake?

1 2 3 4 5 6 7 8 9
Debugging

• How can I tell whether or not my plan, model, or solution worked?
• How can I change something to solve my problem?
• Did the result match what I expected?
• Why didn’t this work?
Patterns

Looking for similarities or patterns between things
What number is missing from the triangle in the middle?
Patterns

• What similarities or patterns do I notice?
• How can I describe the patterns?
• How can I use the pattern to make predictions or draw conclusions?