



**Secondary  
Mathematics**

EDITION 1

# **Algebra I**

**Problem-Solving Model  
Graphic Organizer**

## **Acknowledgment**

Thank you to all the Texas educators and stakeholders who supported the review process and provided feedback. These materials are the result of the work of numerous individuals, and we are deeply grateful for their contributions.

## **Notice**

These learning resources have been built for Texas students, aligned to the Texas Essential Knowledge and Skills, and are made available pursuant to Chapter 31, Subchapter B-1 of the Texas Education Code.

If you have further product questions or to report an error, please email [openducationresources@tea.texas.gov](mailto:openducationresources@tea.texas.gov).

# Understanding the Problem-Solving Model



## Notice | Wonder

Understand the situation by asking these questions.

- What do I notice?
- What do I wonder?
- How do I analyze the given information to identify what is important?
- Do I have enough information to formulate a plan and determine a solution?



## Organize | Mathematize

Devise a plan for your mathematical approach by asking these questions.

- What mathematical relationships exist between this problem and similar problems I have solved?
- What plan or strategy can I use to solve this problem?
- How can I efficiently solve this problem?
- How can I organize, record, and communicate my mathematics?



## Predict | Analyze

Carry out the plan to determine a solution. Then, ask yourself the following questions.

- Did I display my work using multiple representations?
- Did I explain my reasoning in terms of the problem situation?
- Did I communicate the strategy used to determine the solution?

- Did I justify my mathematical argument clearly using precise mathematical language?
- Can I use my mathematical reasoning to make any predictions?



## Test | Interpret

Look back at your work and ask these questions.

- Does my solution clearly and completely answer the original question/problem?
- Is my solution reasonable?
- Does my solution make sense in terms of the problem situation?
- Can I solve the problem using a different strategy?  
Would another strategy be more efficient?
- Can I justify my solution?

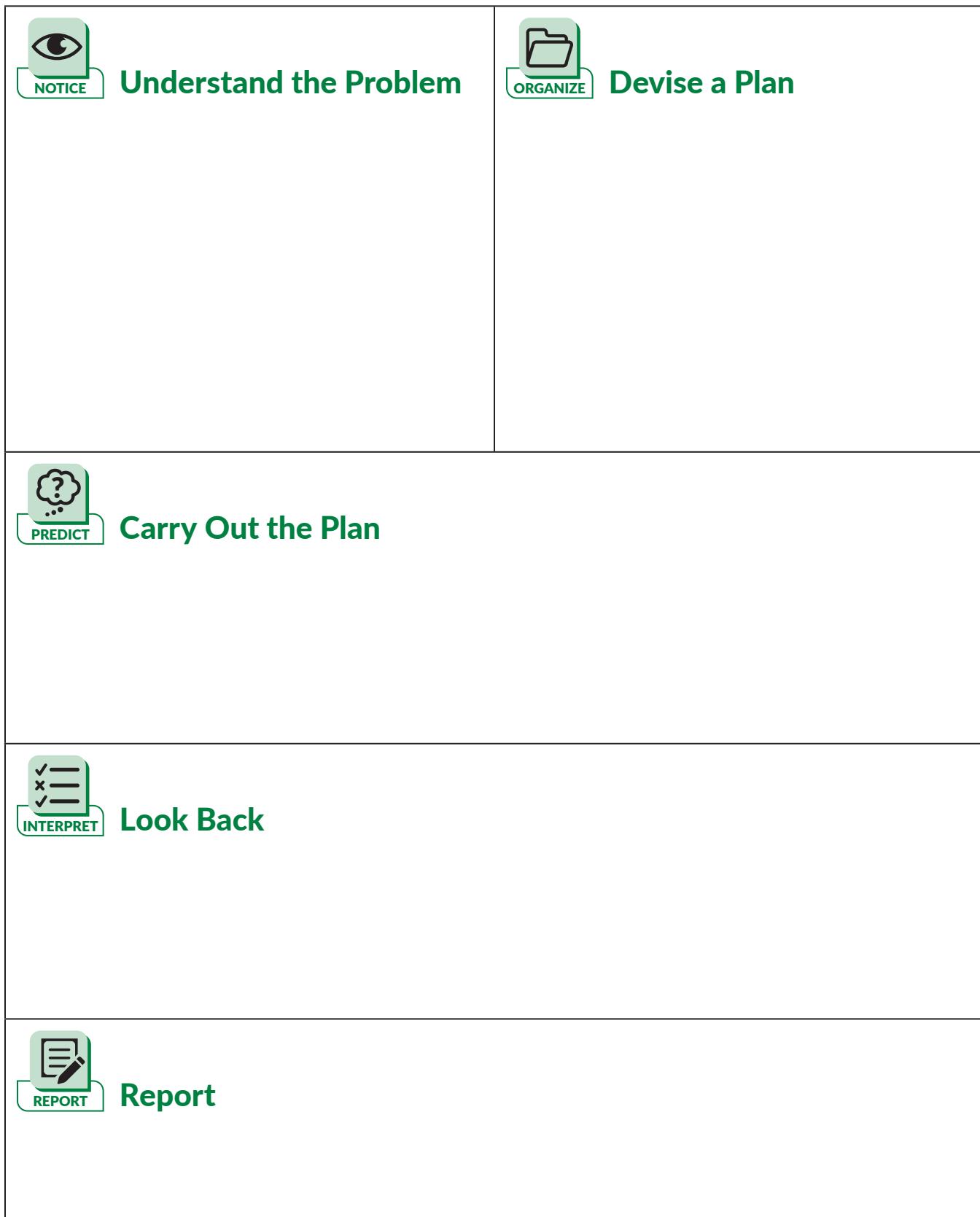


## Report

As you share your mathematical reasoning with others, ask these questions.

- Did you use multiple representations to represent your mathematics?
- Did you justify your mathematical reasoning?
- Can others understand my process and solution?

# The Problem-Solving Model Graphic Organizer



## **ISBN: 197-8-31614-785-4**

© 2024 Texas Education Agency. Portions of this work are adapted, with permission, from the originals created by and copyright  
© 2021 Carnegie Learning, Inc.

This work is licensed under a Creative Commons Attribution-Non-Commercial-4.0 International License.

You are free:

**to Share**—to copy, distribute, and transmit the work  
**to Remix**—to adapt the work

Under the following conditions:

**Attribution**—You must attribute any adaptations of the work in the following manner:

This work is based on original works of the Texas Education Agency and Carnegie Learning, Inc. This work is made available under a Creative Commons Attribution-Non-Commercial-4.0 International License. This does not in any way imply endorsement by those authors of this work.

**NonCommercial**—You may not use this work for commercial purposes.

With the understanding that:

For any reuse or distribution, you must make clear to others the license terms of this work. The best way to do this is with a link to this web page:

<https://creativecommons.org/licenses/by-nc/4.0/>

Trademarks and trade names are shown in this book strictly for illustrative and educational purposes and are the property of their respective owners. References herein should not be regarded as affecting the validity of said trademarks and trade names.

Printed in the USA

### **Images**

[www.pixabay.com](http://www.pixabay.com)