



Board games are a fun way of passing the time with friends and family, but did you ever wish you could create your own? In this activity, you will use **computational thinking** to design your own board game!



▶ [Watch: Getting Started](#)

Design Challenge

You are a board game designer and your task is to brainstorm and develop an idea for a new board game.

Materials

- Paper
- Something to write with
- *Optional:* Other board games to get familiar with common pieces or board setups



START



Computational thinking is a thought process that helps us problem-solve and approach larger tasks.

1 Object of the Game

▶ Watch: Abstraction

Use **abstraction** to think of some general ideas for your board game. What is the end goal? Do you want the players to work together or compete against each other? Does your board game have a theme?



Abstraction involves looking at the bigger picture and focusing on the important parts.

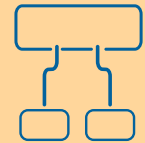
When might you use abstraction?

- Looking for landmarks on a map
- Planning the events for your day

2 Game Contents

▶ Watch: Decomposition

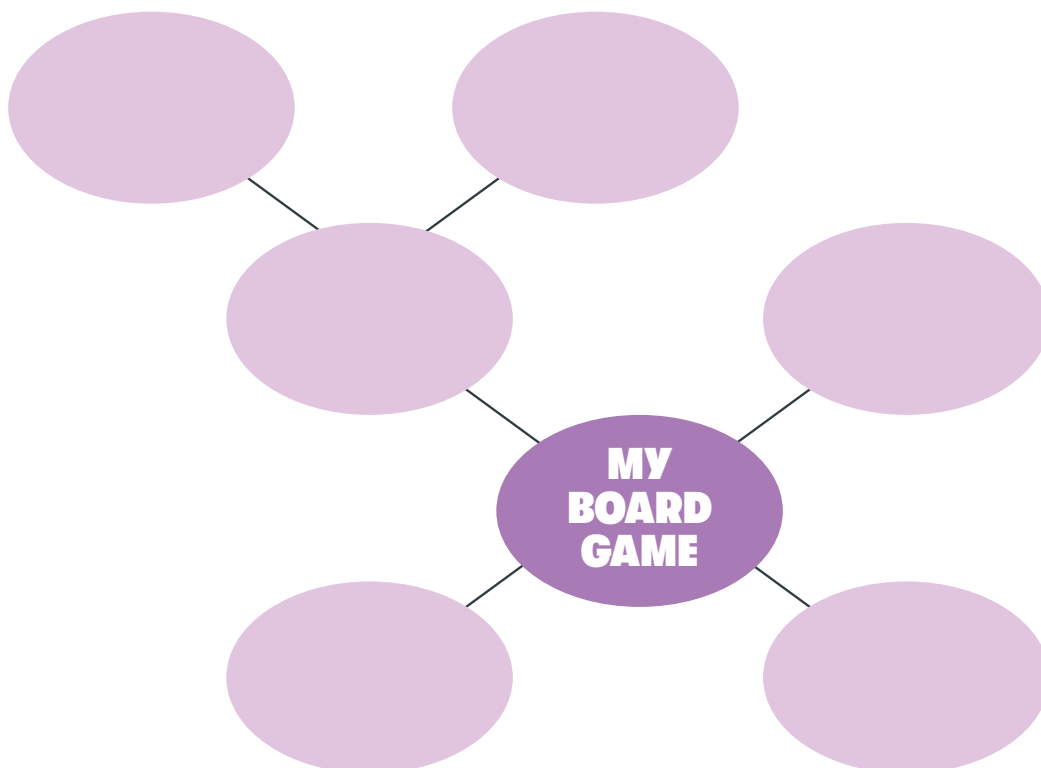
Decompose your game into smaller parts. What information and materials will people need to play your game?



Decomposition involves breaking a problem down into smaller parts or tasks.

Where might you use decomposition?

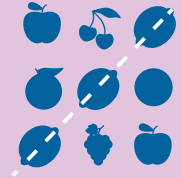
- Breaking up tasks in a group project
- Organizing music into categories



3 Game Details

▶ Watch: Pattern Recognition

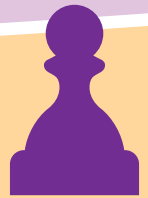
Use this space to jot down any **patterns** you want to use in your board game. Are there repeating events? Do the spaces on the board have a specific pattern? You can also use the space below to lay out your game board.



Pattern recognition involves looking for patterns and similarities.

Where might you recognize patterns?

- In school schedules
- Matching games (Candy Crush, Bejeweled)



4 How to Play

▶ Watch: Algorithms

Create your **algorithm**, or instructions, for your game. What will players do first? What happens during each turn? How will the game end?

- 1.
- 2.
- 3.
- 4.
- 5.

Add more steps if you need them!

Finishing the Game

▶ Watch: Wrap Up

As you put the finishing touches on your board game instructions, take some time to review all the computational thinking skills you used!

Share your board game with others and gather feedback. Some questions you could ask are:

- *Do they understand how to play your game once they've read the instructions?*
- *Can they see a way to cheat?*

Getting other people's thoughts can help you iterate, or improve, on your game!



Bonus: Build your board game out of cardboard and other household items.

Share Your Results! Keep us posted about your board games on social media with **#TheTechatHome**.

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Algorithms are step-by-step instructions that explain how to do a certain task like solving a problem.

Where you might see algorithms?

- Cooking recipes
- LEGO instructions
- Giving directions



FINISH



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