

Board Game Algorithms Student Instructions

Part 1: One class period

Select a group (3 – 4 students) and a game to play. Play for 20 - 25 minutes. Then make a first draft of a flow chart that illustrates the algorithm for playing the game you selected. Never made a flow chart? Learn about them from these resources

- [Guide to flowchart symbols](#)
- [Ultimate flowchart tutorial](#)
- Or, go to youtube and search for Flowchart Basics.

Part 2: Two class periods

Your team needs to create two illustrations of the flow chart.

1. One will be a large poster that we will display in the classroom and the hall.
2. The other illustration will be a digital flow chart. You can do this in Word, PowerPoint or you can find an online flow chart generator. A PDF of this flow chart will be turned in to me by _____. **Your group only needs to submit one PDF but it should have the names of all of the group members.**
3. The flow chart on the poster and the flow chart on the pdf should match.

Part 3: Individual written portion

Each student will submit a PDF that thoroughly answers the following:

1. Identify one point during the process in which YOU encountered a problem or a challenge. Describe the problem and your solution. Note: Writing “I fixed it” is not sufficient. I want details on how you solved it.
2. Identify and describe one algorithm that exists within your flow chart. Your description should include the purpose of the algorithm (why is it important to the game) and the function of the algorithm (how does it work).

Due _____ .

Samples of written responses:

Poor response: I didn't know how to create a flowchart in word so I just played around with it until I got it.

AP Level response: One problem that I've encountered was the way how there were separate ways to view the gameplay of Jenga. Instead of knowing a particular way to play, we all had different ways to experience the game mode. Due to this, it would cause mass confusion for the four of us. However, we came up with a solution by making a “person take a turn to remove one block from anywhere but the top layer,” afterwards, “Placing the removed block on top of the tower.” This simple solution allowed us to play smoothly, also making the game entertaining.

Scoring rubric:

Task	Possible Points	Earned Points
Group poster	15	
Group digital flowchart	15	
Individual written		
• Written response 1	30	
• Written response 2	30	
Submission requirements (pdf, matching flow charts, names of group members, etc.)	10	
Total	100	