

Wrap-Up

Implementing Your Action Plan

1. Determine the probability of winning your game. If the game is simple enough, you can present both a theoretical and an empirical probability. For complex games, you may have to rely on empirical probability alone. If practical, use technology to simulate your game, and run enough trials to have confidence in your results.
2. Develop a winning strategy for your game. If no winning strategy is possible, explain why.
3. Prepare all the components for the game, such as a board, tokens, instruction sheets, or score cards.
4. Have other students, and perhaps your teacher, try your game. Note their comments and any difficulties they had with the game.
5. Keep track of the outcomes and analyse them using technology, where appropriate. Determine whether you need to make any adjustments to the rules or physical design of your game.
6. Record any problems that arise as you implement the plan, and outline how you deal with them.

Suggested Resources

- Toy stores
- Web sites for manufacturers and players' groups
- CD-ROM games
- Books on games of chance
- Statistical software
- Spreadsheets
- Graphing calculators

Evaluating Your Project

1. Assess your game in terms of
 - clarity of the rules
 - enjoyment by the players
 - originality
 - physical design, including attractiveness and ease of use
2. Consider the quality and extent of your mathematical analysis. Have you included all appropriate theoretical and empirical probabilities? Have you properly analysed the effectiveness of possible strategies for winning? Are there other mathematical investigations that you could apply to your game? Have you made appropriate use of technology? Have you documented all of your analysis?
3. If you were to do this project again, what would you do differently? Why?
4. Are there questions that arose from your game that warrant further investigation? How could you address these issues in a future project?

Presentation

1. Explain and demonstrate the game you have created.
2. Discuss comments made by the players who tested your game.
3. Outline the probabilities that apply to your game.
4. Present the outcomes as analysed and organized data.
5. Outline possible winning strategies and comment on their effectiveness.
6. Discuss the positive aspects of your project, its limitations, and how it could be extended or improved.
7. Listen to presentations by your classmates and ask for clarification or suggest improvements, where appropriate. Consider how you might be able to apply both the strengths and weaknesses of other presentations to improve your project.

Preparing for the Culminating Project

Applying Project Skills

In the course of this probability project, you will have developed skills that could be essential for your culminating project:

- developing and carrying out an action plan
- applying techniques for determining probabilities
- working with others to test your ideas
- evaluating your own work
- presenting results
- critiquing the work of other students

Keeping on Track

At this point, you should have implemented enough of the action plan for your culminating project to determine what data you need and how to analyse these data. You should have considered whether you need to refine or redefine your project. For example, you may have found that the data you require are not readily available or your method of analysis is not practical. In such cases, you should discuss your revised action plan with your teacher. Section 9.3 provides suggestions for developing and implementing your action plan.

