Beginning Game Design

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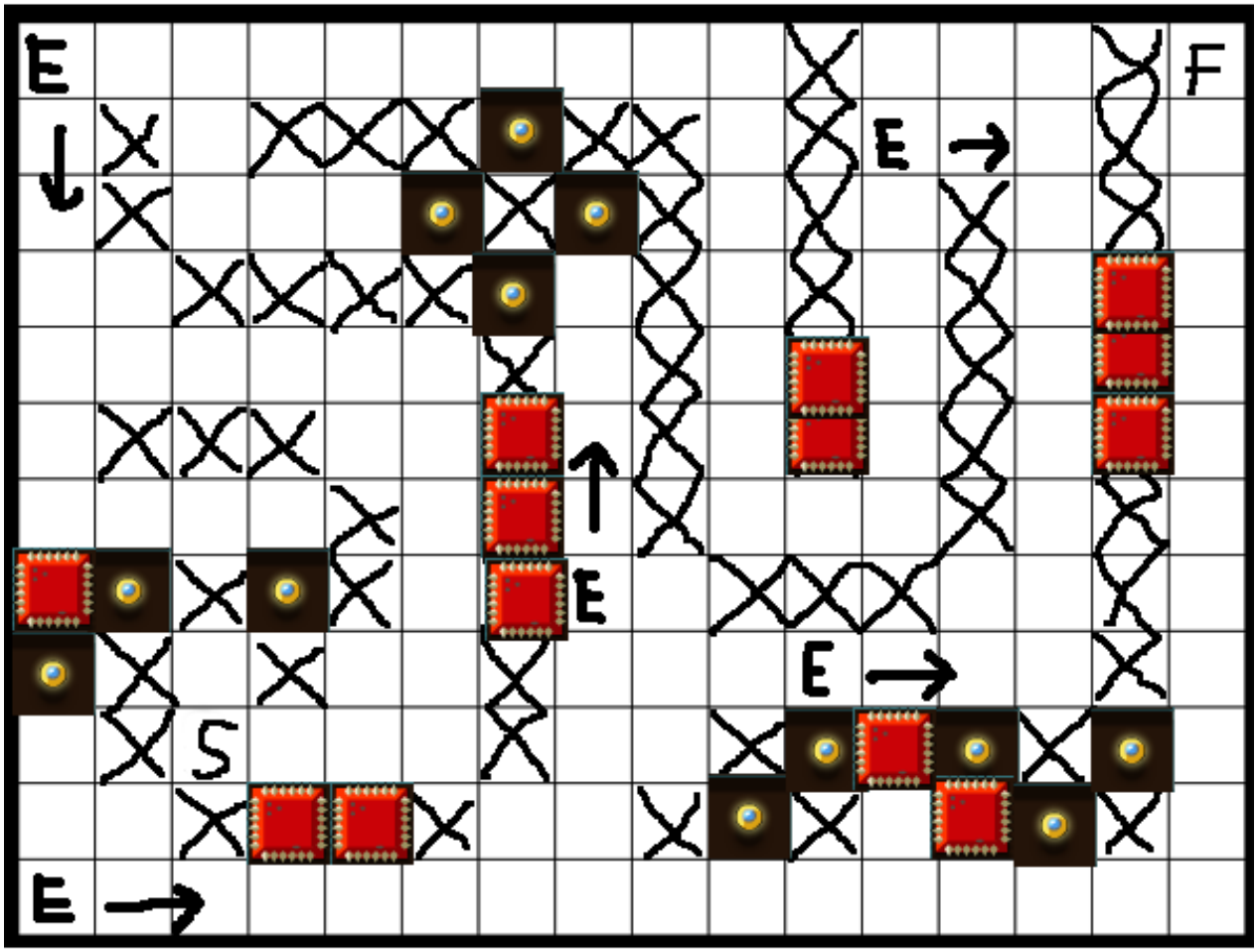

Prototype Student Manual
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Table of Contents

Let the Games Begin!

This is an introduction to some fundamental game design concepts. Game design is the art of making games, which includes everything from board games and card games to video games—and practically any other type of game. The game design techniques that you'll be learning today can be used for many types of games—including video games.

Many people think that game designers are computer programmers. This isn't true. Game designers can have a background in many different areas. The most important thing that a game designer can have is a deep sense of curiosity, and game designers must be willing to give up their egos and listen to criticism. Game design only works when you design for someone else. Game designers who only design for themselves cannot be successful, and game designers must be willing to remake designs over and over—throwing out their work—until their games play well.

There's much to think about when designing games. We're going to make some assumptions about what we're going to design, so we can focus on specific design concepts. First, you'll make a board game that you can turn into a video game. Second, we're going to limit the size of the board. We're going to use a 16 by 12 grid for the game. This may seem small, but it will be easy to see the entire design at a glance. Nothing will be hidden. There will be plenty of design problems for you to solve with a board this size. Third, you'll be making a paper prototype for a video game, but the prototype can stand alone as a board game. In other words, you're going to make a board game version of the video game and test it before making the video game. This is a common thing to do. Making games professionally is an expensive process. Professional video game designers usually design a game in paper form (like a card game or board game). If the paper game is fun, then it will be turned into a video game. Finally, the game that you'll design can be made in GamestarMechanic, which is a video game designed to teach game design. When you're finished, you'll be able to input your game into GamestarMechanic and play it as a video game.

Here's what you'll learn today:
1. How to create a game space.
2. How to put objects in the game to influence the player.
3. How to add and place traps in the game.
4. How to add and place enemies in the game. (Optional)

Making games is an art just like painting, music, dance, or theater. It takes practice, and there will be more to learn after this introduction if you are interested. Game design also makes use of many forms of knowledge. Game designers can use mathematics, natural science, social science, history, languages—everything that you are learning now. Games are a great way to use what you are learning!

So let's get started!

Summary of Objectives

Objective 1: Game Space Design

You will create a playable game design based on the following criteria:

1. There is a path from start to finish, so the player can complete the game.
2. All available space is used.
3. The path from goal to finish has at least four bends and is at least 10 squares long.
4. There are at least three dead ends, loops, or both.

Objective 2: Collection Mechanics and Indirect Control

You will implement a collection mechanic that makes full use of the game space and demonstrates indirect control using the following criteria:

1. There must be at least four points.
2. Four points must be at least 10 squares (along a path) from each other.
3. Indirect control must be used to influence strategy.
4. The player must visit almost every square.

Objective 3: Using Traps

You will place traps in the game to provide challenge for the player using the following criteria:

1. No more than 25 red blocks (traps) can be used.
2. No more than 3 red blocks can be put in a "danger zone."
3. No more than 5 separate danger zones can be next to each other.

(Optional) Objective 4: Using Enemies

You will place enemies in the game to provide challenge for the player using the following criteria:

1. No more than 10 enemies may be used.
2. Enemies must be spaced at least three squares apart initially.

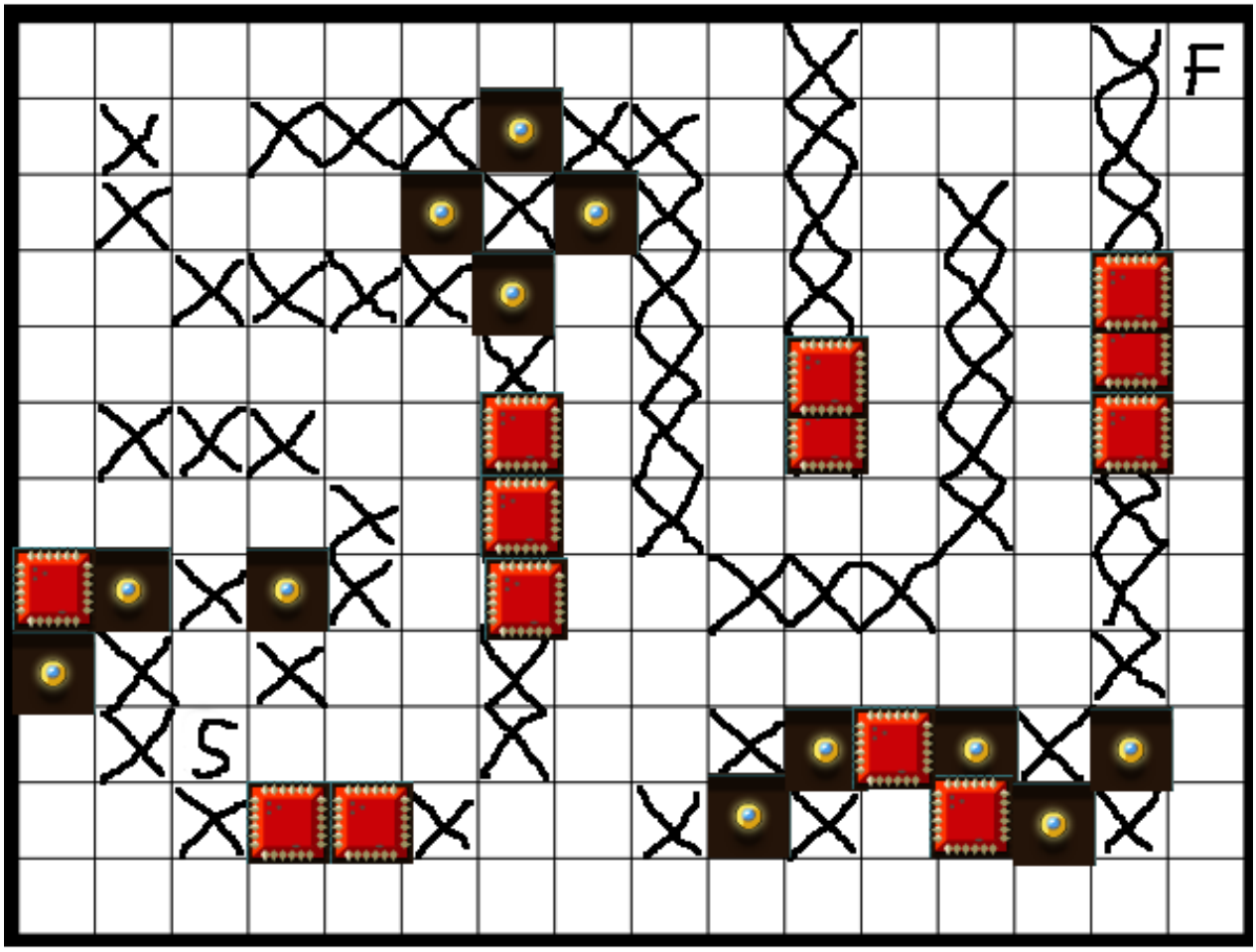
Introduction

During this lesson, you're going to make a board game that you can implement in GamestarMechanic later. The board game will be a complete game in itself, but it is also an example of a paper prototype.

Paper prototype: A preliminary design done in paper form to see if a design works.

Here's a "before and after" example to show you how the design process will work. Your game will be made in steps, and each step will be described in detail. Your finished board game (with some paper tokens) will look something like this at the end of step three.

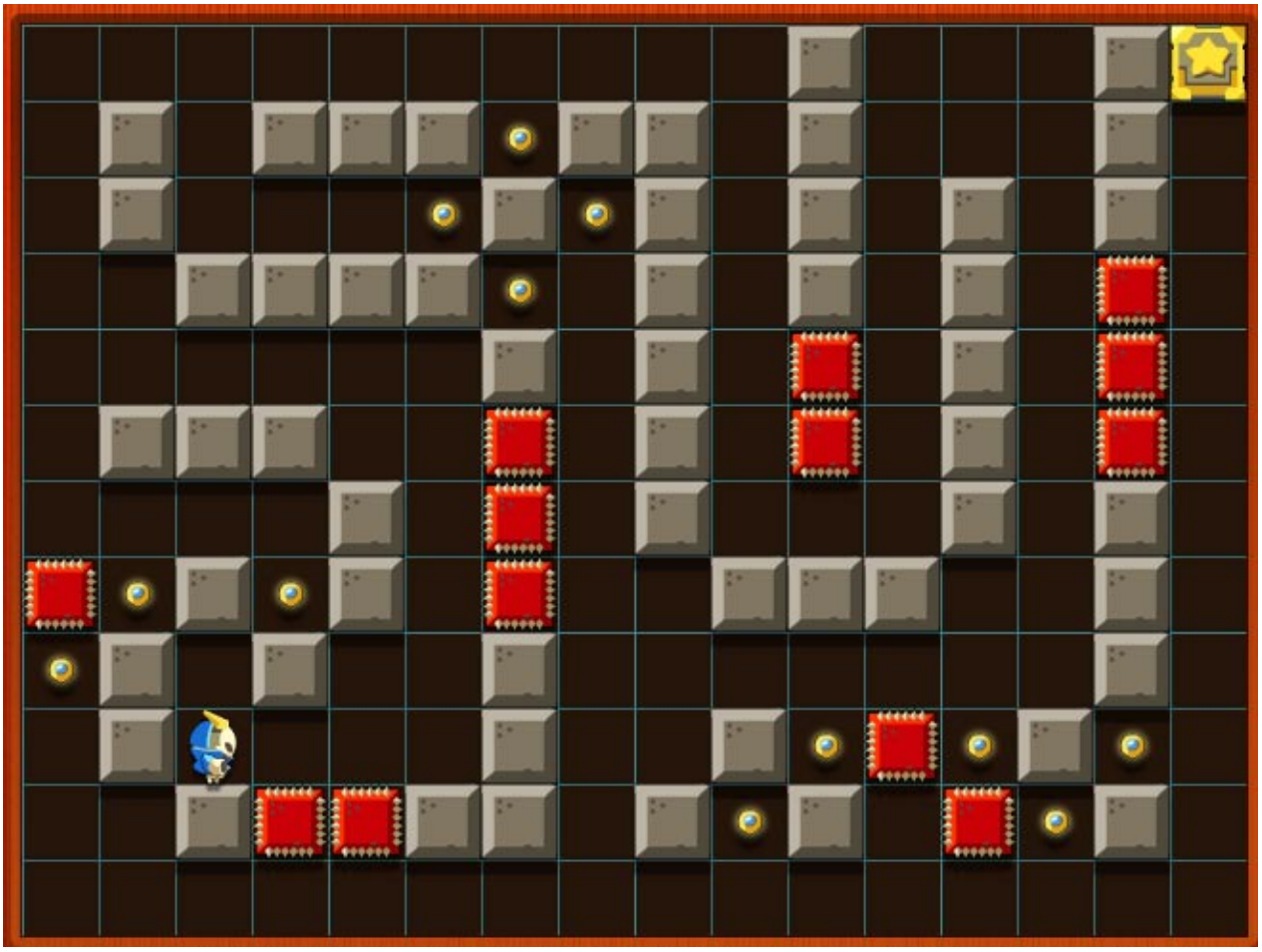
Example 1. A Prototype Board Game



The "S" is where the player starts, and the "F" is where the player finishes.

This is what the game would look like in GamestarMechanic.

Example 2. The Board Game Made in GamestarMechanic



Now that you've seen an example, we're going to begin by learning how to make a game space.

Step 1: Making a Game Space

All games take place in a space. Sports like baseball and football are played on a marked field. Video games take place in spaces, too. Some video games take place in elaborate 3D (three dimensional) worlds, but games can also take place in a 2D (two dimensional) world like a board. The choice depends on the type of game that the designer wants to make. For this lesson, you will be making a game in a 2D space. The space you design will be the foundation for your game.

Game Space: The physical or virtual game space in which someone plays a game.

Creating the game space is very important. A well-designed space can give a player a sense of freedom although there may be many rules. Here are four rules to help you design a good space.

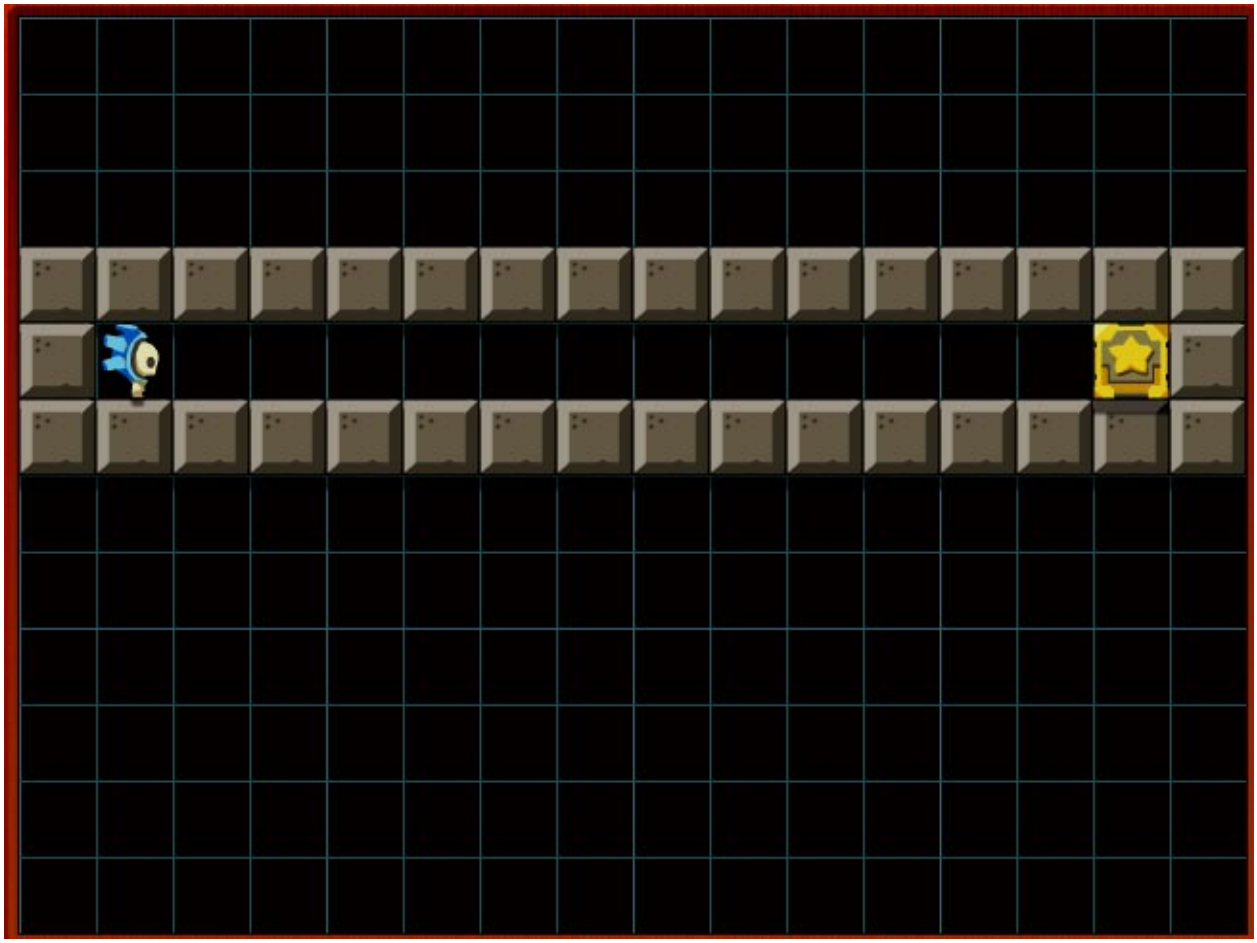
<u>Rule 1: Make a Path from Start to Finish. (Design a Space the Player Can Complete.)</u>

This may seem obvious, but no one wants to play a game that can't be won. Since you are working with a relatively small board, it's easy to check if the game can be completed. As you gain experience, you may want to make games with larger boards, and you should check to make sure that the game can be completed before making it in GamestarMechanic.

Rule 2: Use All the Available Space

What is wrong with this design?

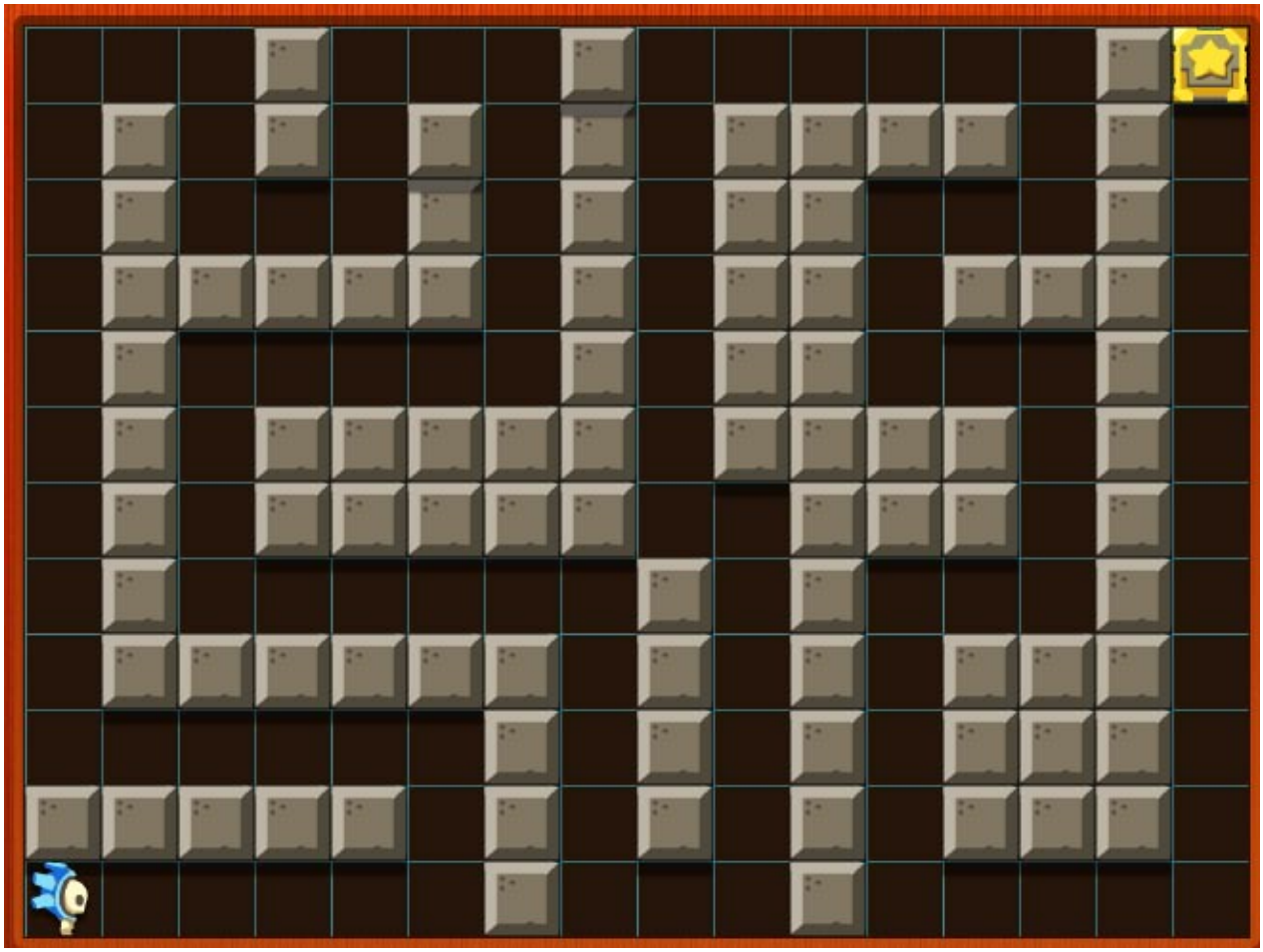
Example 3. A Bad Design



Although this game can be completed (Rule 1), it's not going to be very interesting. This design does not make full use of the available space. It's just too easy and boring. The player has no choices to make, and there is no challenge.

Let's look at another example:

Example 4. A Better Design.



This is definitely better than the previous design. The entire space is being used, and it even looks better because it looks fuller, but it still isn't as interesting as it could be. Here's a rule that will help you use all the available space.

Rule 3: The path from goal to finish should have at least four bends and be at least 10 squares long

The player should have to move at least 10 squares from goal to finish. This helps to make use of the available space. The bends add challenge to the game. Since the board is small, it will be easy for the player to see how to go to the goal. The game won't be very exploratory, but the bends will force the player to think ahead and consider strategies.

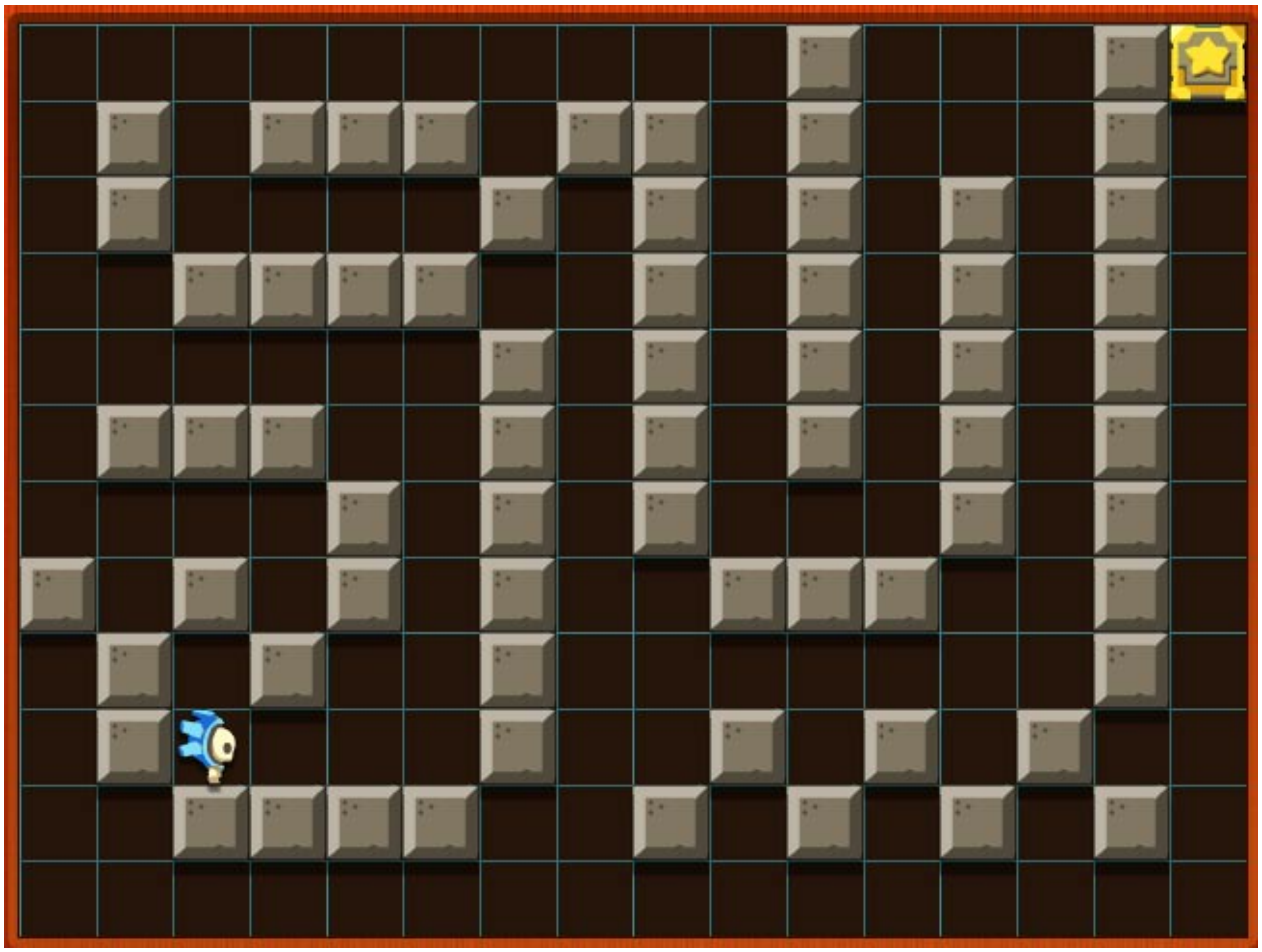
Although the previous example might make a good game, the player still doesn't have any choices to make. Here is the final rule for designing spaces.

Rule 4: Include At Least Three Dead Ends, Loops, or Both

Dead ends are useful because they force the player to make strategic decisions. As a designer, you can require the player to go down a dead end to get something the player needs to win. There is a risk for the player to take. The player could be trapped and lose. This can be exciting or frustrating. The only way to know if your design is too easy or too hard is to play your game many times and to watch other people play your game.

Here's an example with dead ends.

Example 5. A Good Design with Dead Ends.

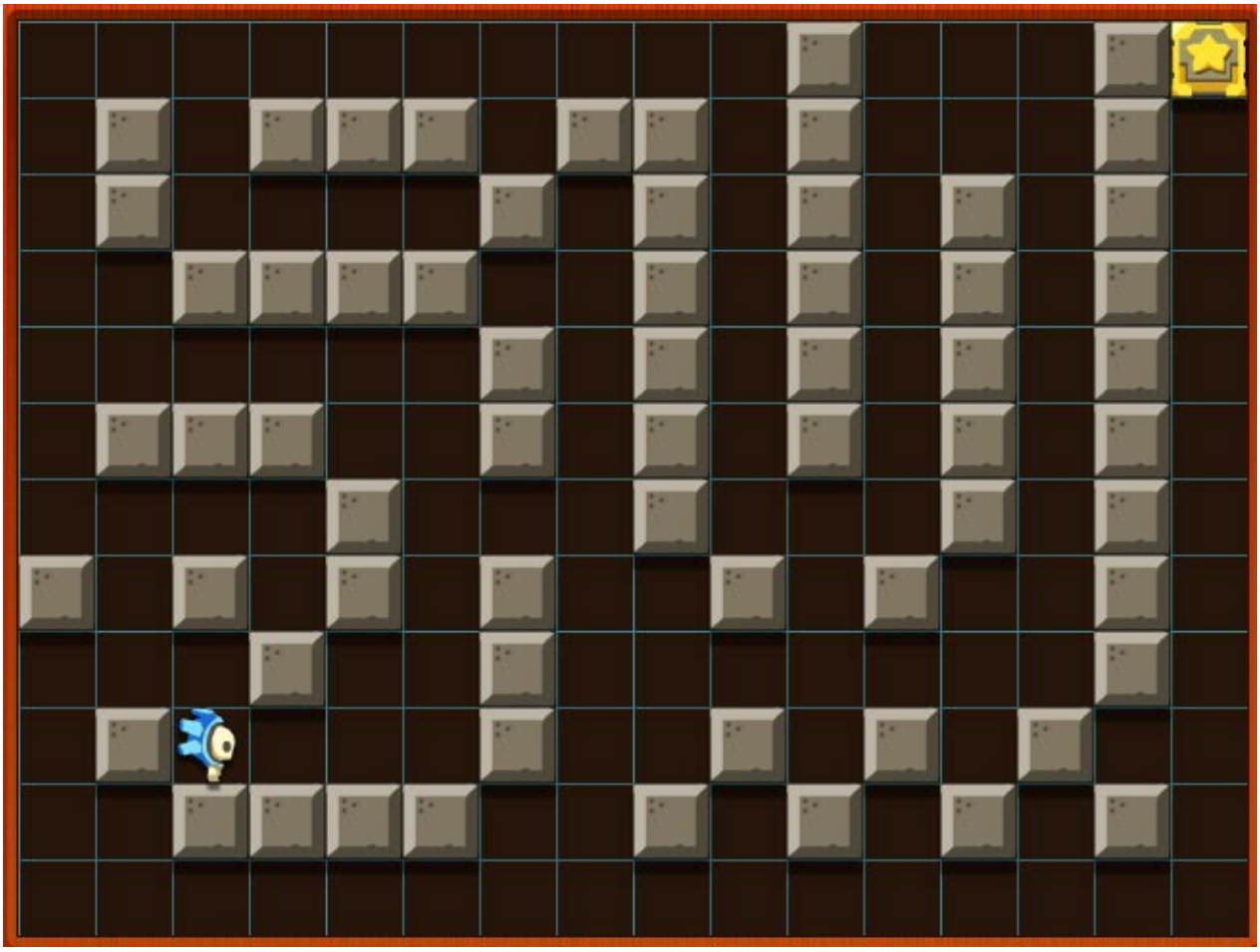


In this design, the player has places to explore, to take risks—and maybe hide.

Loops make game spaces more interesting, too. Loops give the player alternative choices to make. They increase the number of possibilities to win and allow more strategies. If there are multiple strategies to choose, the game will be a richer experience for the player.

Here's an example of a design with loops.

Example 6. A Good Design with Loops and a Few Dead Ends.



The loops in this example give the player more possibilities for moving through the game.

Now that you've looked at some f game spaces, it's time to make one.

Practice 1: Designing Your Game Space

Use a blank game board sheet to design a game space. Use the following rules:

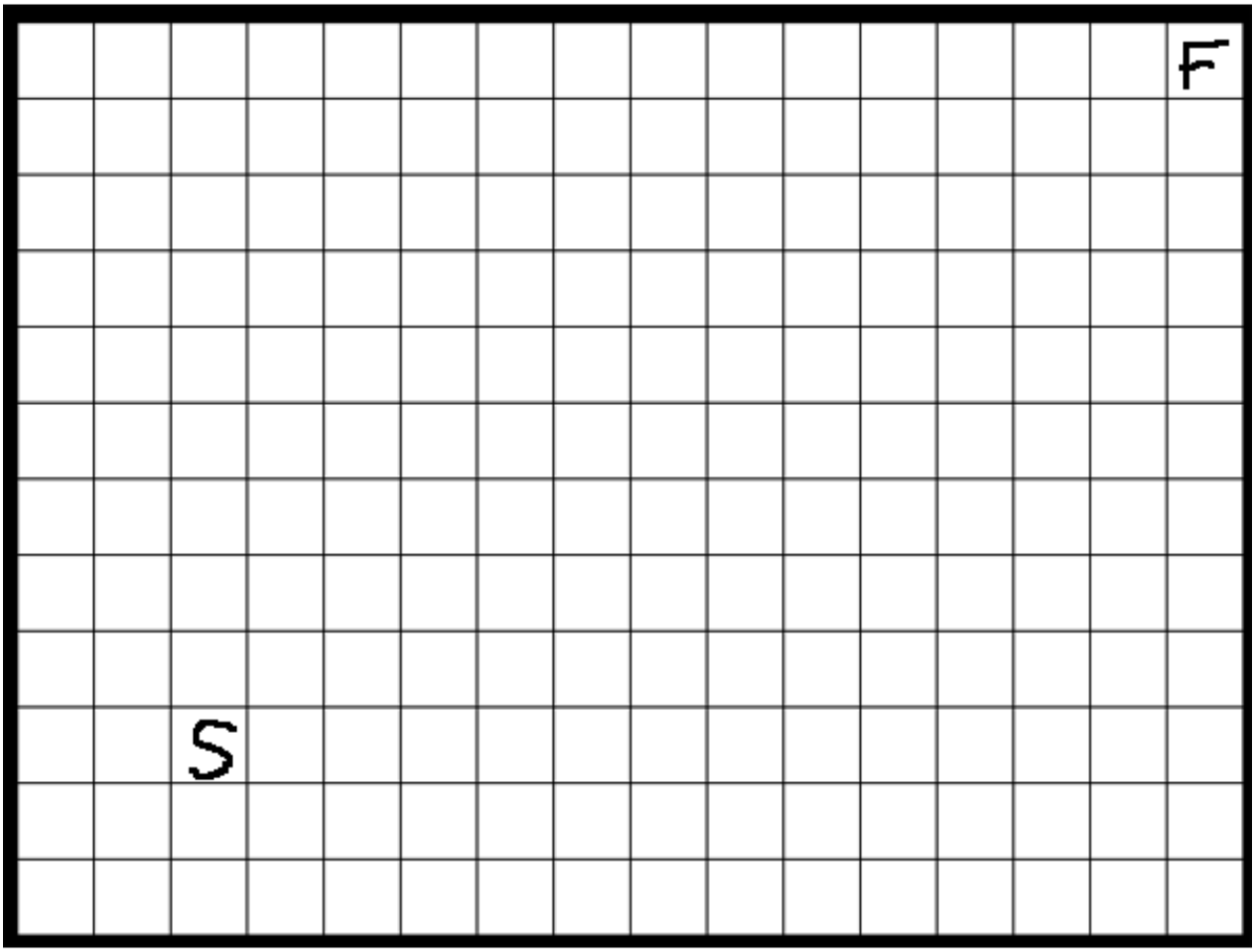
1. There is a path from start to finish, so the player can complete the game.
2. All available space is used.
3. The path from goal to finish has at least four bends and is at least 10 squares long.
4. There are at least three dead ends, loops, or both.

Here are some design tips to help you build your game space.

Design Tips

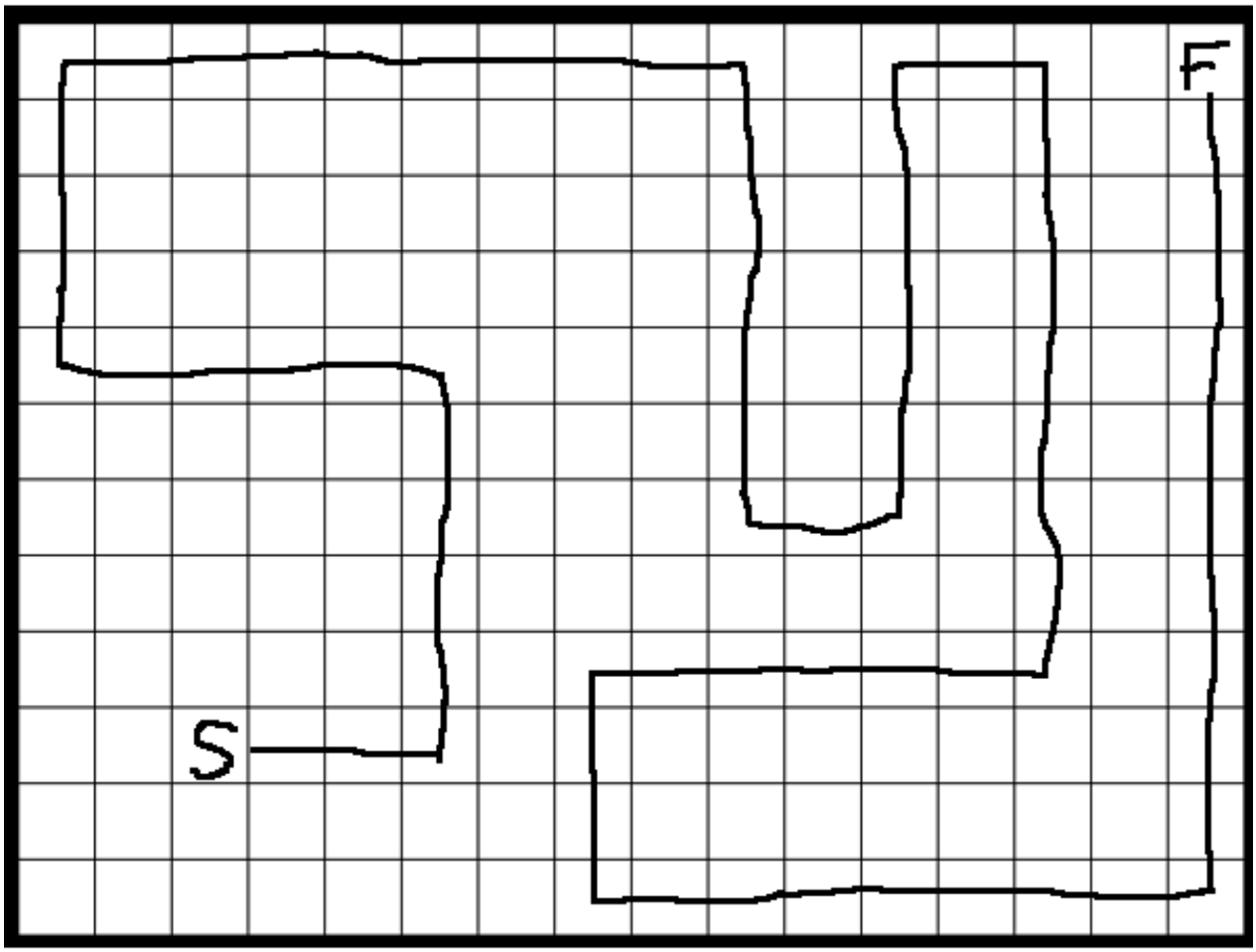
1. Starting with a blank game board, put an "S" where you want the player to start and an "F" where you want the player to finish. **Do not put the "S" and the "F" next to each other.** Here's an example:

   Example 7. Choosing Start and Finish Squares.



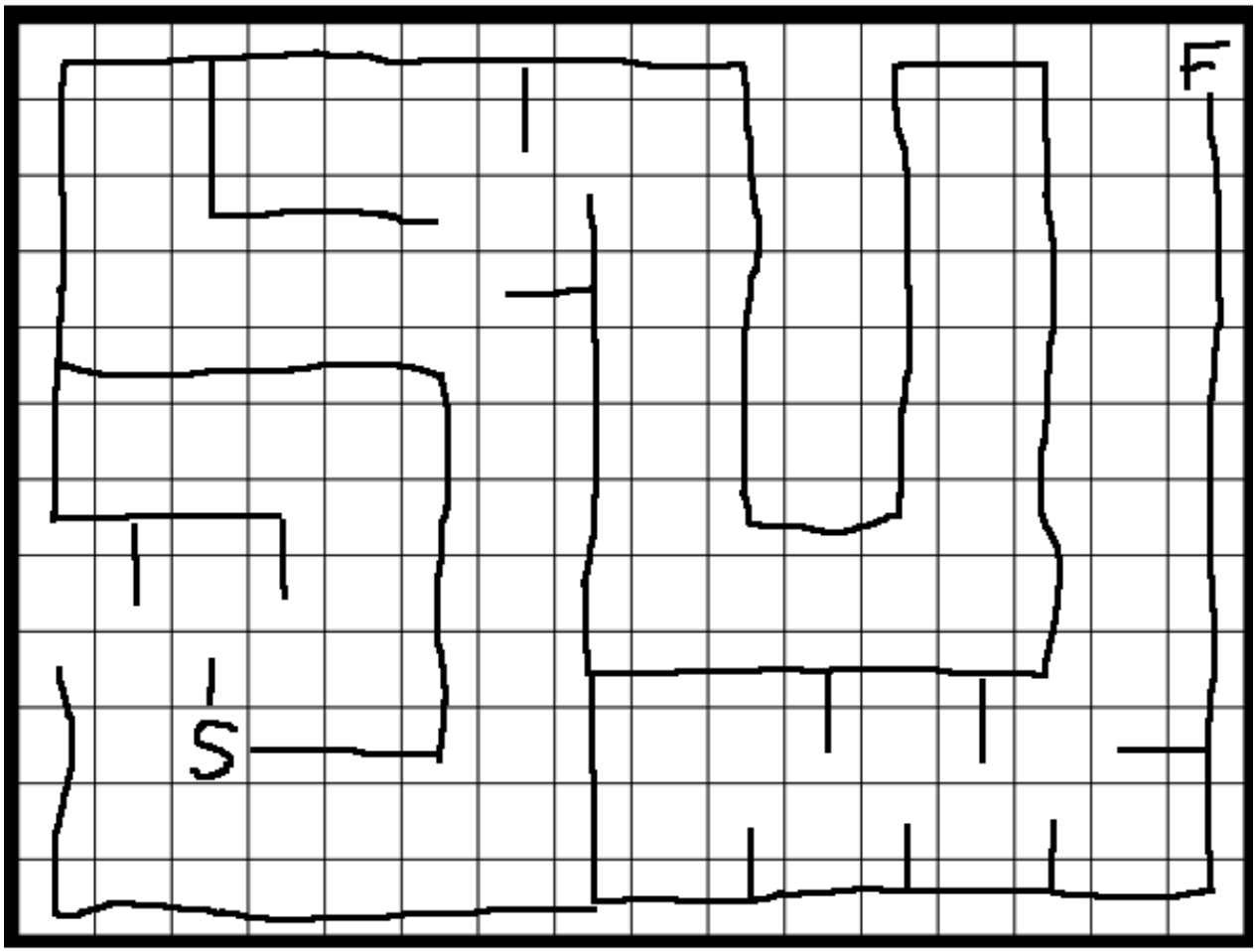
2. Draw a path from “S” to “F” using the rules. Here’s an example:

Example 8. Drawing a Path.



3. Add dead ends, loops, or both. Here's an example with dead ends:

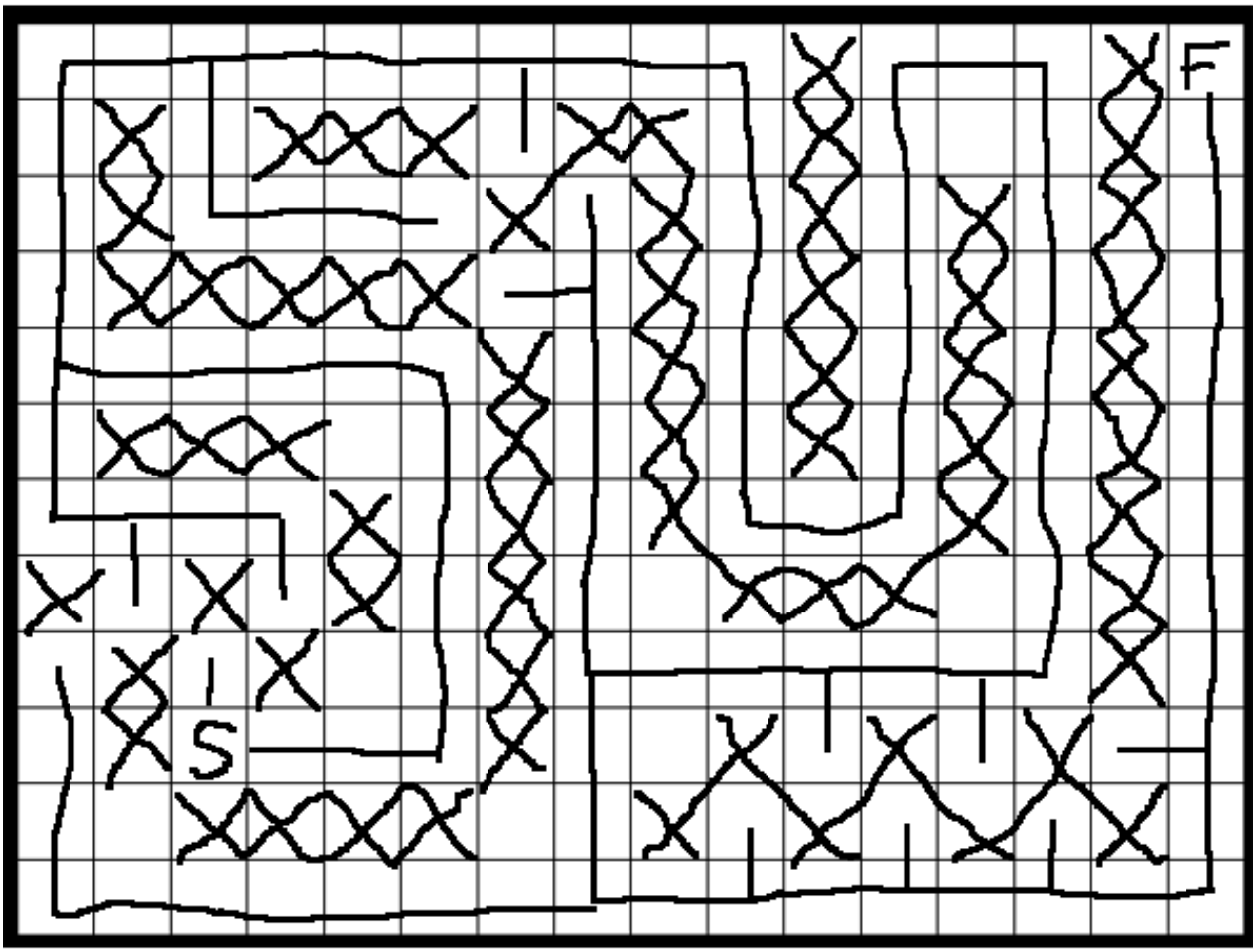
Example 9. Adding Dead Ends.



If you want, you can just use loops or a combination of dead ends and loops.

4. Put X's where the blocks will be. Here's an example:

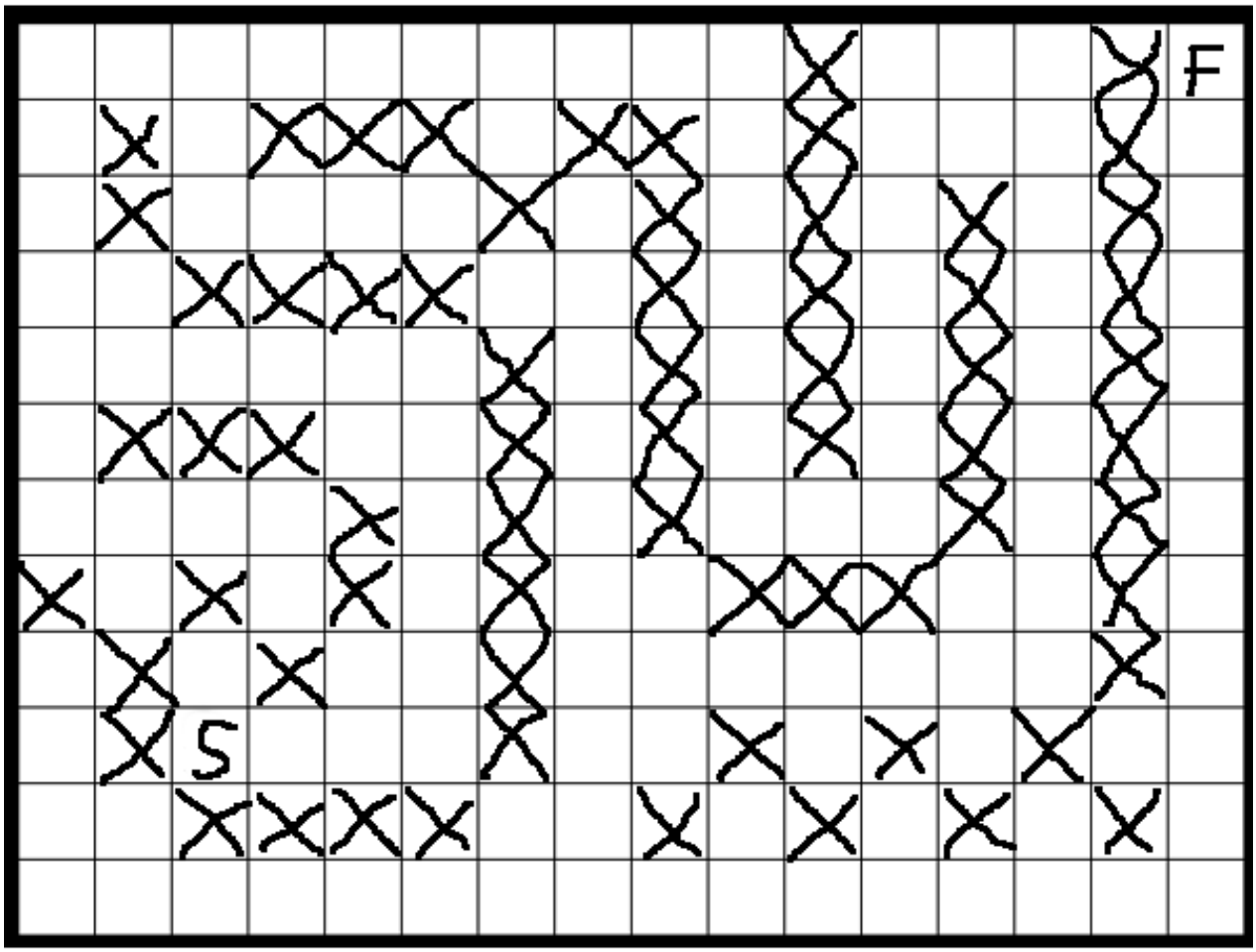
Example 10. Sketching the Blocks.



If you prefer, you could shade the block squares with pencil. Making an X is faster, though.

5. Redraw without the lines going along the path. Here's an example:

Example 11. A Clean Copy of the Design.



Checklist for Practice 1

This is a checklist to help you check your work. As you make your design, ask yourself the following questions. When you can say "yes" to each of these questions, you will know the rules for Step 1 and will be ready for Step 2:

1. Is there a path from start to finish that can be completed?	Yes ___	No ___
2. Is all available space used?	Yes ___	No ___
3. Does the path from start to finish have at least four bends?	Yes ___	No ___
4. Is the path from start to finish at least ten squares long?	Yes ___	No ___
5. Are there at least three dead ends, loops, or both?	Yes ___	No ___

Step Two: Using a Collection Mechanic and Indirect Control

The key to a good game is creating something fun for the player to do. The game action has to be fun because the player is going to do the game action over and over again. There may be some variation, but there's usually a lot of repetition in what the player does. This game action is a game mechanic.

Game Mechanic: An action that a player does over and over again during a game.

The first thing a game designer must do is create a good game mechanic. A game can have more than one game mechanic, but usually one mechanic is more important than the others. In this step, you'll be using a collection mechanic. The player must collect points (dots) to win.

Collection Mechanic: A game mechanic in which the player must collect objects.

The following rules will help you learn how to use a collection mechanic.

Rule 1: Use at least four points (dots)

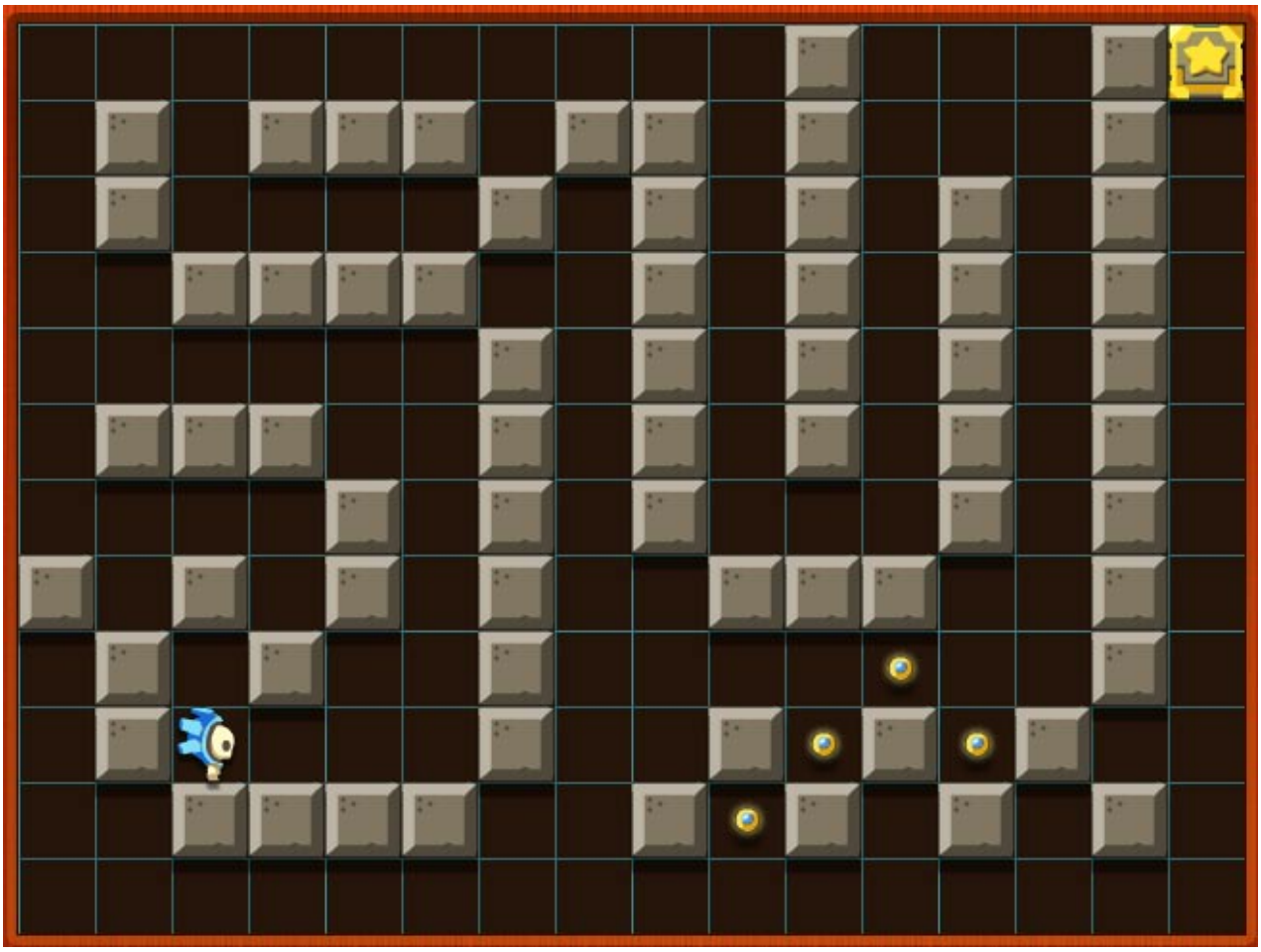
In your design, the player will be collecting points (dots) like in old classic arcade games. The player can go to the goal to win only after all the points are collected. The reason why we're going to use four points is to make the player move through as much of the game as possible. As you gain more experience, this rule can be flexible. You might want to make a game in which the player must collect one object. A game like this is a like a quest, and there are times when this is fine. For now, we're going to practice learning how to make the player move in the game, and to make this happen you will need a few points. You can use as many points as you want. Four points is just the minimum amount.

Rule 2: Four points must be at least 10 squares (along a path) from each other.

Ten squares means that the player has to move ten squares to go from one point to another. This does not mean that every point must be ten squares apart. It just means that AT LEAST four points must be 10 squares apart. The reason for this rule is to encourage the player to explore the game space.

Here is an example that violates the rule. All of the points are within 10 squares of each other. (Remember that a player can move diagonally through empty squares.)

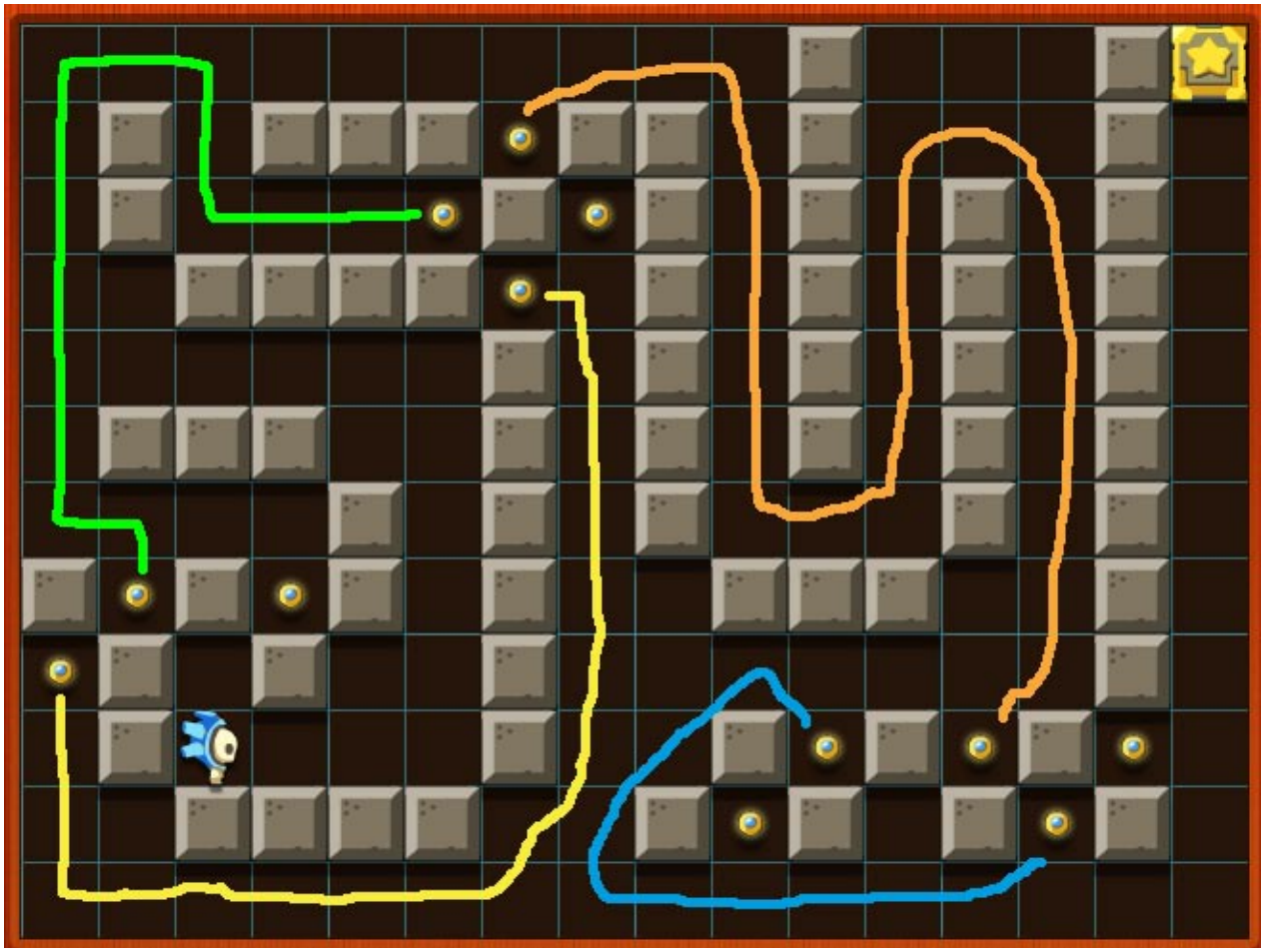
Example 12. The points are too close, and the points are not used in an interesting way.



Where would you place the points to make this design more interesting? Would you use more points?

The example below is fine. There are many points that are at least 10 squares apart. The lines show points that are at least 10 squares apart. These aren't the only pairs of points that are at least 10 squares apart, but, since there are four examples, the first two rules are fulfilled.

Example 13. A good placement of points and good use of indirect control. The player must explore the entire game space.



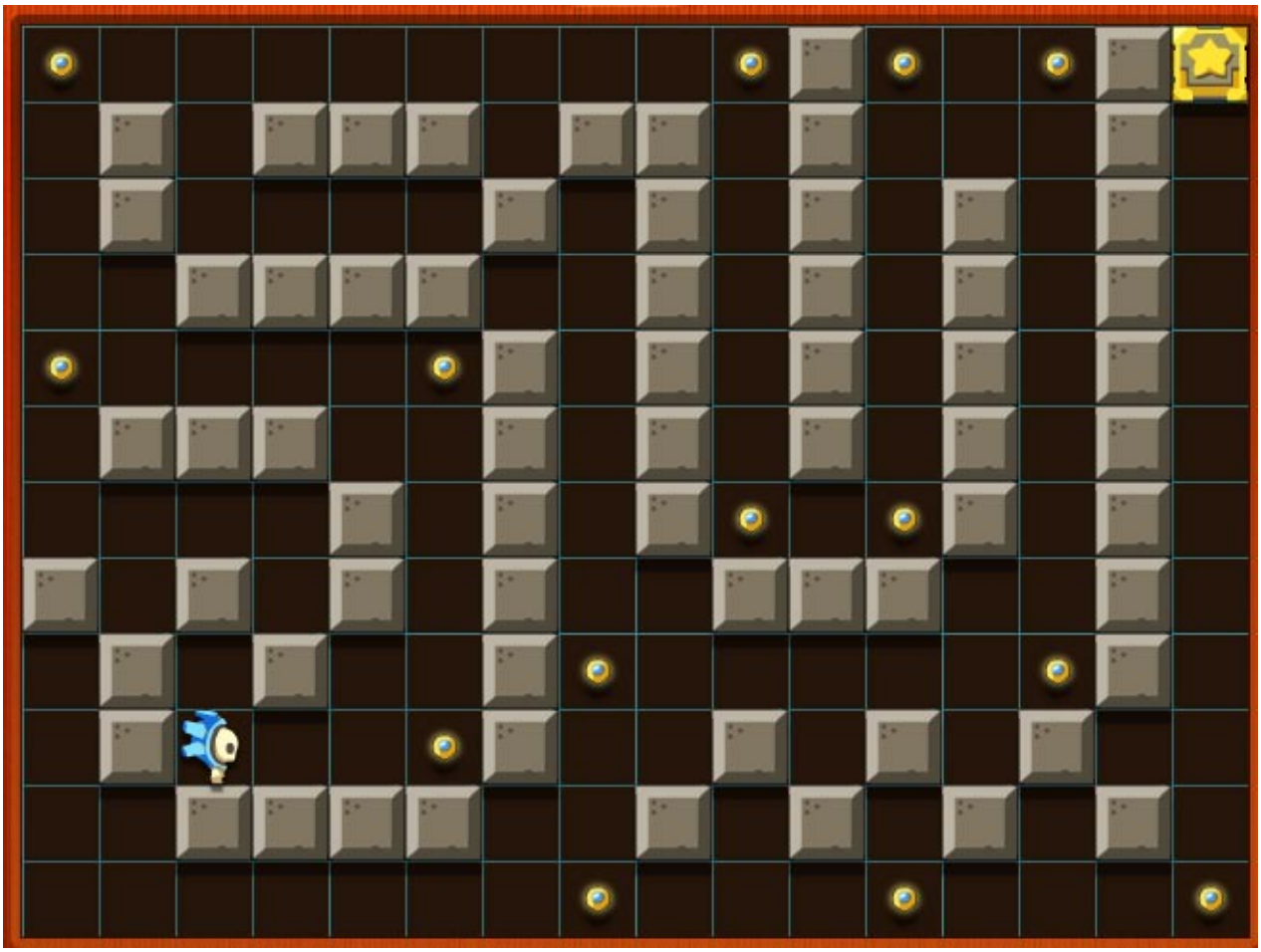
Rule 3: Use indirect control to influence strategy.

Indirect control is what a game designer uses to control a player without the player knowing it. Complete freedom in a game is impossible. As a designer, you want to give the player the illusion of freedom. The player's choices will be limited, but the player should feel as free as possible to make choices. Here's a definition of indirect control:

Indirect Control: When the game designer controls the player's choices without the player knowing it. This is usually done by setting goals for the player and using visual cues. (See Jesse Schell's book, *The Art of Game Design: A Book of Lenses*, which is listed in the References section, for more details about indirect control.)

Since you are using a collection mechanic, you can place the points to influence how the player moves through your game. The main goal will be collecting all the points. Collecting each point is a sub goal, and the player will probably move toward the closest point unless there is a trap to avoid. Look at the next example. Do you think it uses indirect control well?

Example 14. Is this a good use of indirect control?

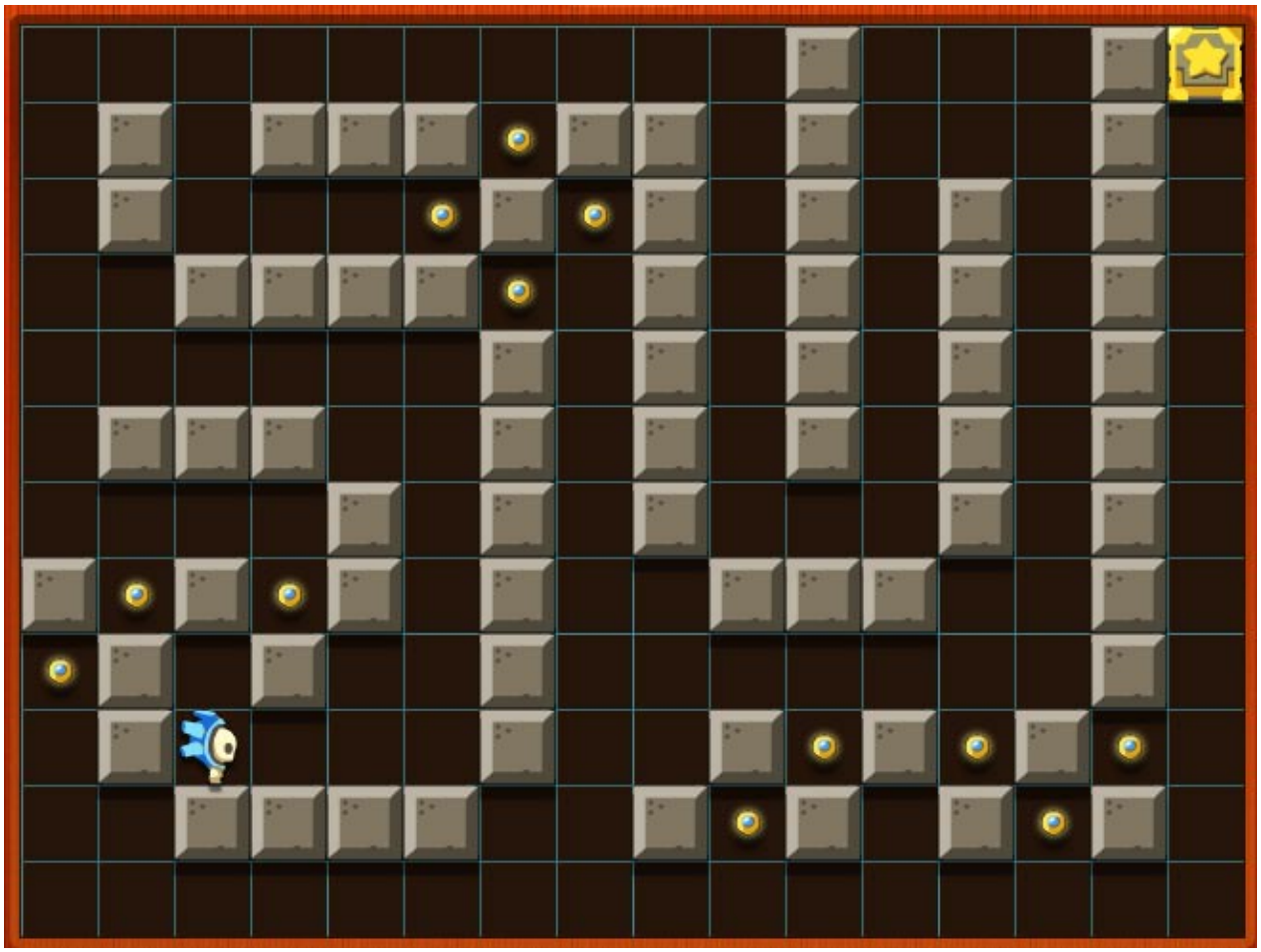


Although this example follows the first two rules, this is a bad use of indirect control because all of the points are along a direct path to the finish. The player has no reason to take any of the dead ends. This design is similar to the bad previous designs. The dead ends might as well not exist.

Can you make this example better?

Here is a good example of indirect control based on the previous example.

Example 15. A good use of indirect control.



The player must take some risks to win because the player might get trapped while getting a point. The points are placed to make the player explore almost every square. This is important enough to be a rule.

Rule 4: Make the player visit almost every square.

You want the player to get as much out of the game as possible. This rule helps to accomplish that. This rule will also help prevent the game from being too short.

Now it's time to practice indirect control and using a collection mechanic.

Practice 2: Using a Collection Mechanic and Indirect Control

Using your previous design, put points in your game for the player to collect. Use the following rules:

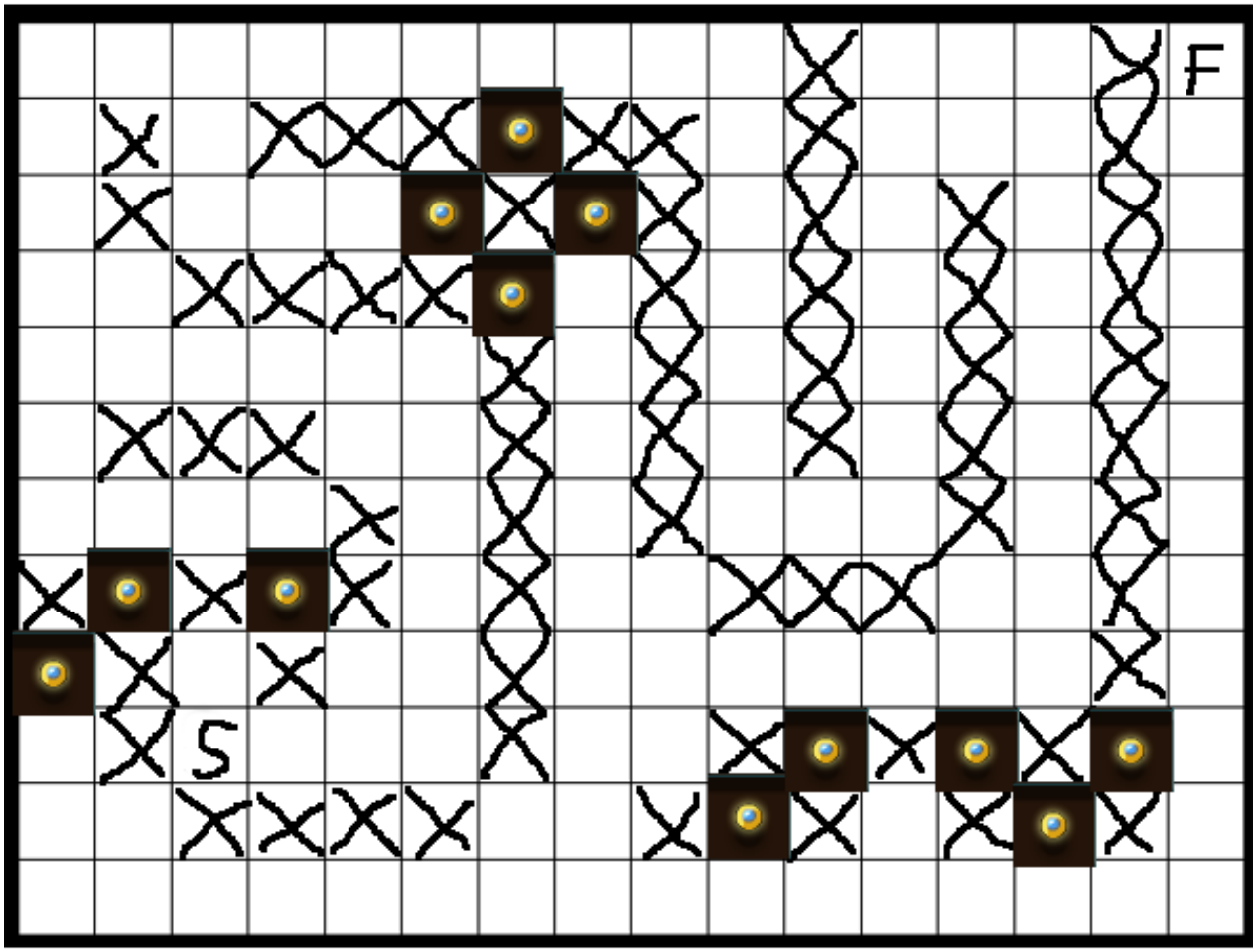
1. Use at least four points.
2. Four points must be at least 10 squares (along a path) from each other.
3. Use indirect control to influence strategy.
4. Make the player visit almost every square.

You may change your previous design to improve the game. Just make sure you follow all the previous rules.

Tips

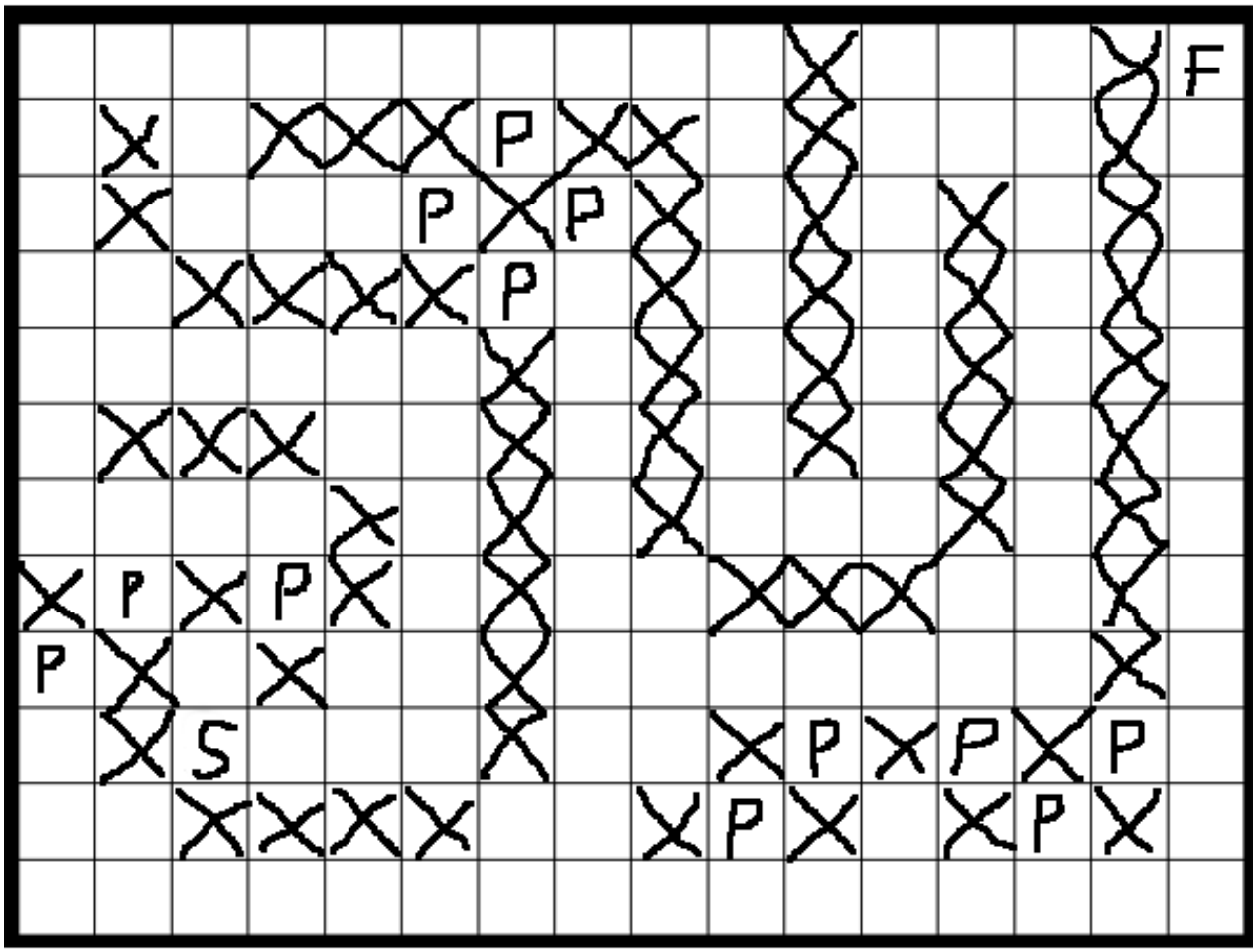
1. Put points in the game using paper tokens. Here's an example:

Example 16. Adding points to the design.



2. Put a “P” in the square of each point. Here’s an example:

Example 17. Recording the location of the points.



Checklist for Practice 2

This is a checklist to help you check your work. As you make your design, ask yourself the following questions. When you can say “yes” to each of these questions, you will know the rules for Step 2 and will be ready for Step 3:

1. Are there at least four points?	Yes ___	No ___
2. Are there four points that are at least 10 squares apart?	Yes ___	No ___
3. Is indirect control being used to guide the player?	Yes ___	No ___
4. Will the player have to visit almost every square?	Yes ___	No ___

Step 3: Using Traps

You've designed a space and some points to collect. All that's missing is something to challenge the player. One way to challenge the player is to set traps. In GamestarMechanic, there are spiky red blocks that can harm the player if the player touches them.

We now need a group of rules to play the game. These rules determine how far a player can move in a turn, how a player receives damage, and how a player can lose or win. For the paper design, we will use dice to decide whether a player "accidentally" touches a red block in a danger zone. Any square that has a red block next to it (even diagonally) will be called a "danger zone." Here are the rules.

Rules for Player Motion and Damage

1. The player rolls one die and moves the number of squares on top of the die.
2. The player can't go backwards during a turn unless the player reaches a dead end.
3. If the player lands in a danger zone (next to a red square), the player must roll for damage.
4. If the player is in more than one danger zone, the player only rolls for damage once.
5. If the damage roll is equal to or less than the number of red blocks in the danger zone, the player takes 1 point of damage.
6. If the player receives 3 damage points, the player loses.
7. The player wins by collecting the points and reaching the finish (gold star).
8. (Optional) Timer: You may limit the number of rolls that the player can make. For example, if the player does not collect all the points and reach the finish by twenty rolls, the player loses.

Now that the player can lose, you have to think about balance.

Balance: The sense of fairness in a game.

It is important for a game to be neither too easy (boring) nor too hard (frustrating). Players who become too bored or frustrated won't play your game for very long. The number and placement of the red blocks will determine whether the game is balanced or not. Here are some rules for traps. The purpose of these rules is to help you add challenge to the game but maintain a good balance.

Rule 1: Use no more than 25 red blocks.

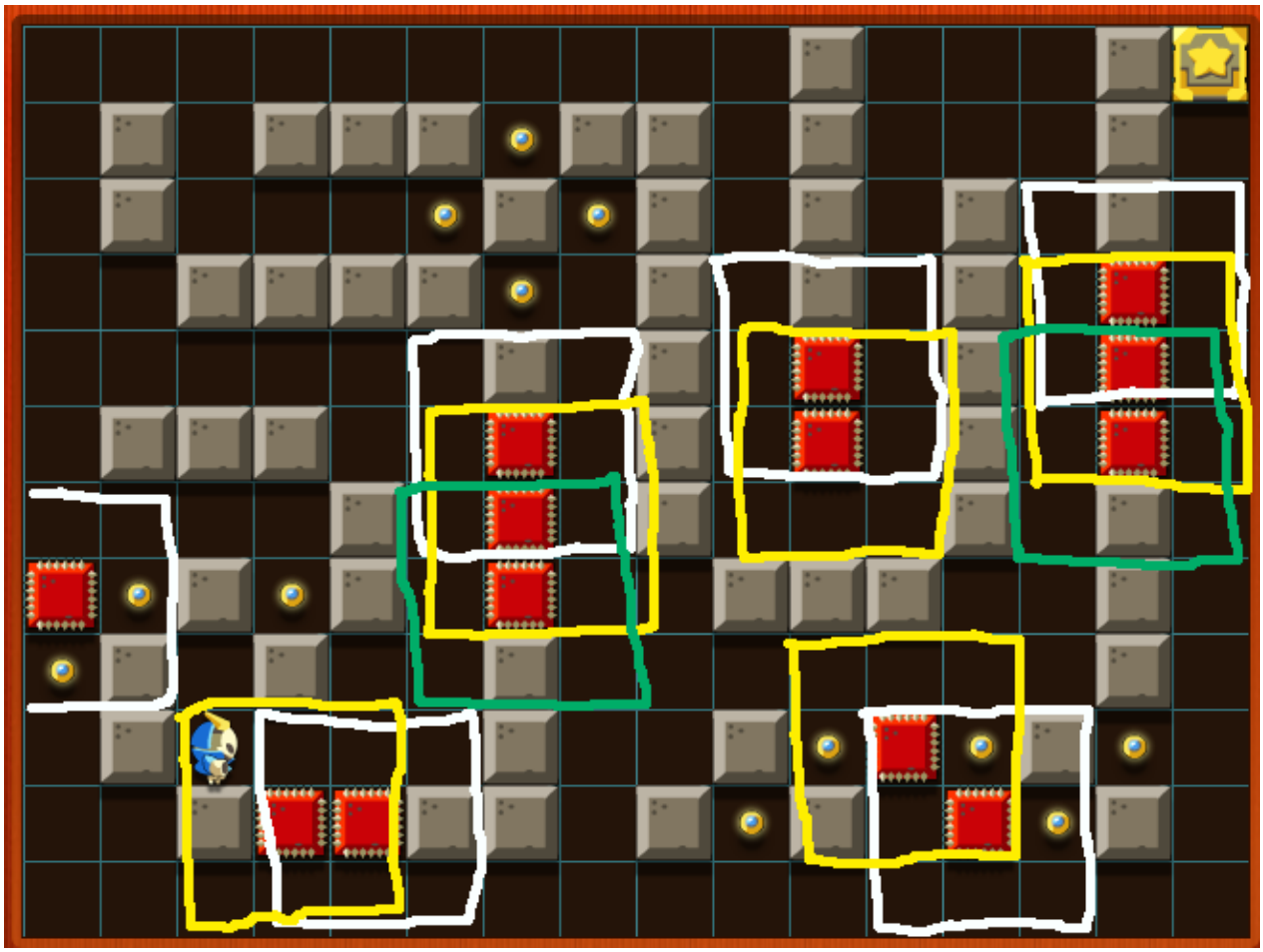
Red blocks will provide some risk and excitement, but do not use too much of a good thing! If there are too many red blocks, the player will lose every time. This would not be a fun game.

Rule 2: Do not put more than 3 red blocks in a danger zone.

An empty square is in a danger zone if it has at least one red block next to it. The red block can be diagonal to the square. If there are more than 3 red blocks in a danger zone, then the chance of the player receiving damage is greater than 50%. That's a high percentage, and it would be likely that the player would receive damage.

The following example has danger zones with no more than three red blocks each. The area within each color square is a danger zone. Many danger zones overlap.

Example 18. Adding danger zones.



Rule 3: Do not have more than 5 separate danger zones next to each other.

If you have many danger zones next to each other, the chances that the player will receive damage increases. To balance the game, you will have to find a combination of danger zones and safe squares that work well. You can only find a good combination by testing your game and having others you're your game, too.

If you've added red blocks and the game is still too easy, you may implement a "timer." You can limit the maximum number of times that the player can roll the dice. It is difficult to give a limit because the structure of the game space and the danger zones will affect this decision. You may want to start with 20 and adjust after playing the game.

As you become a more experienced designer, you will see that these rules are flexible. If you want to design a game with many danger zones with many red blocks, you can balance the game by allowing the player to receive more damage before losing. Another possibility is using health packs that give the

player an extra life when the player obtains them. No matter what you decide, you must test your game to see if it is balanced. You must play the game several times. It is better to have someone else play your game a few times to see where the player has difficulty. Game design is about creating for OTHER people—not yourself.

Practice 3: Using Traps to Add Excitement and Balance

Using your design from the previous step, add some red blocks or change some of the blocks to red blocks. Use the following new rules for adding red blocks:

1. Use no more than 25 red blocks.
2. Do not put more than 3 red blocks in a danger zone.
3. Do not have more than 5 separate danger zones next to each other.

As you test your design, you may find that something in your previous design doesn't work as well as you expected. You may change your previous design to improve it. Just make sure you follow all the previous rules. If you use a timer, be sure to note the total amount of rolls that the player may use. **Play your design at least two times.** If there is time, have at least one other person play your design. Where does the player have problems? Does the player lose all the time? If the player loses, is it close?

The rules for player motion, damage, and win conditions are here for your reference.

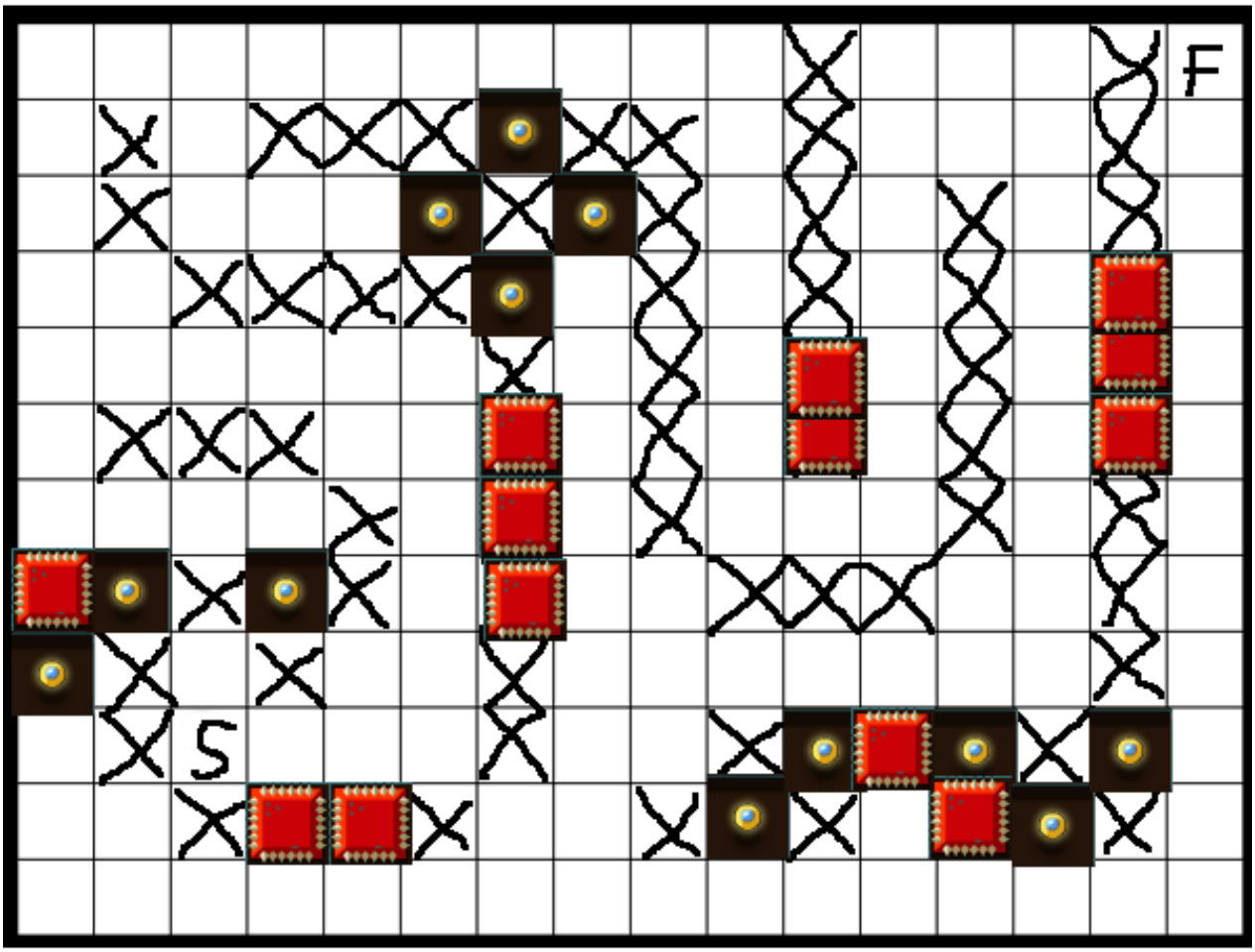
Rules for Player Motion and Damage

1. The player rolls one die and moves the number of squares on top of the die.
2. The player can't go backwards during a turn unless the player reaches a dead end.
3. If the player lands in a danger zone (next to a red square), the player must roll for damage.
4. If the player is in more than one danger zone, the player only rolls for damage once.
5. If the damage roll is equal to or less than the number of red blocks in the danger zone, the player takes 1 point of damage.
6. If the player receives 3 damage points, the player loses.
7. The player wins by collecting the points and reaching the finish (gold star).
8. (Optional) Timer: You may limit the number of rolls that the player can make. For example, if the player does not collect all the points and reach the finish by twenty rolls, the player loses.

Tips

1. Add red blocks using paper tokens. Here's an example:

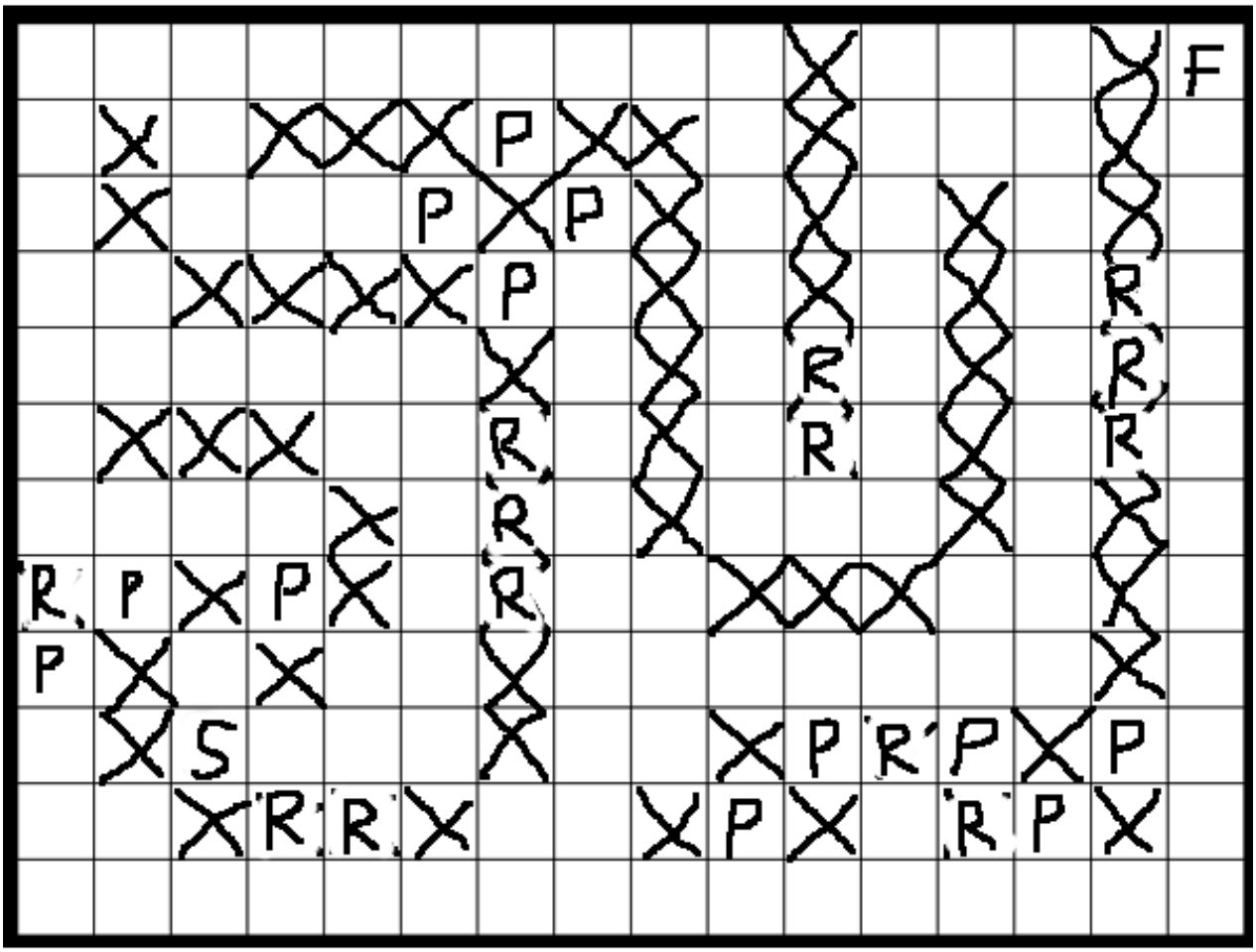
Example 19. Adding red blocks.



2. Play your game and make adjustments.

3. Put an “R” in the square of each red block. Here’s an example.

Example 20. Recording the red blocks.



4. If you use a timer, be sure to note the maximum number of rolls that a player can have on the design sheet.

<u>Checklist for Practice 3</u>

This is a checklist to help you check your work. As you make your design, ask yourself the following questions. When you can say “yes” to each of these questions, you will know the rules for Step 3 and will be ready for Step 4:

1. Are there no more than 25 red blocks? Yes ___ No ___
2. Do all danger zones have no more than 3 red blocks? Yes ___ No ___
3. If danger zones are next to each other, there are no more than 5 together? Yes ___ No ___
4. Can someone other than you win the game? Yes ___ No ___
5. Can a player lose the game? Yes ___ No ___

Step 4: Using Enemies (Optional)

At this point, you have a complete game and something that you can implement in GamestarMechanic. More action can be added to the game, though. One way to add more action is to add enemies. Enemies can move in different ways. To keep this simple, assume that enemies move back and forth. They go straight until they reach a wall and then go in the reverse direction. If an enemy lands on the player or the player lands on an enemy, then the player receives one point of damage.

We're going to some new rules for using enemies:

Rules for Enemies

1. The player moves and receives damage as before.
2. After the player moves and rolls for damage (if necessary), roll the die for the enemies.
3. Move each enemy the number of squares equal to the number on top of the die.
4. Enemies can only move back and forth. When they reach a wall, they reverse direction.
5. If an enemy comes in contact with another enemy or the player, they pass through each other.
6. If the player lands on an enemy or the enemy lands on a player, the player receives one point of damage.

Now that there are rules for how the enemies move and do damage, here are rules for placing enemies in the game. The purpose of these rules is to help you use enemies while keeping the game balanced.

Rule 1: Use no more than 10 enemies.

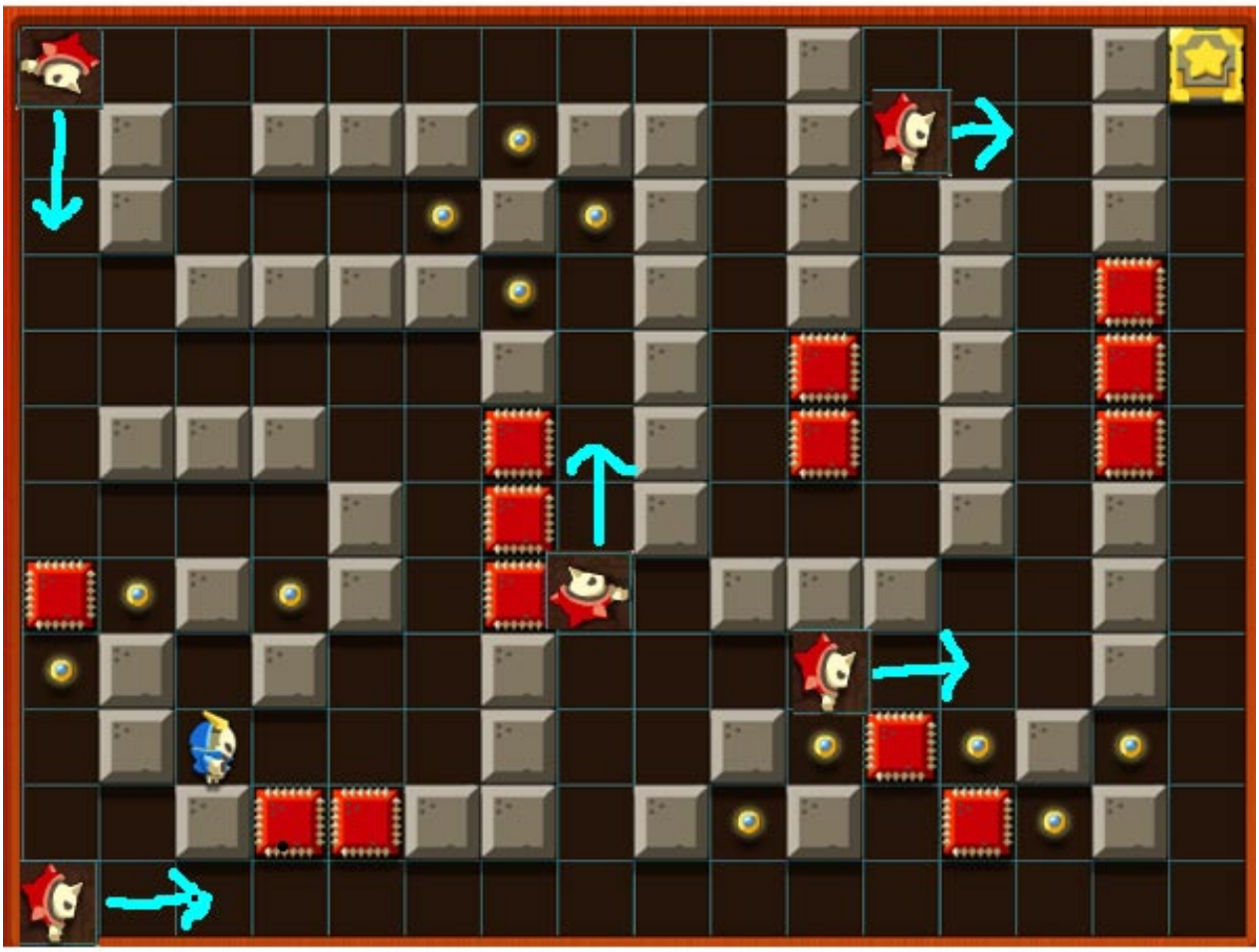
Do not overload the game with enemies. Otherwise, the player will not be able to complete the game.

Rule 2: Enemies should be initially spaced at least three squares apart.

There should be some space for the player to maneuver through. The rules are designed to keep the enemies from "bunching up" too much. Depending on how the enemies move, it is possible for them to cluster into groups and not spread out again. As you design more advanced games, you may find that enemies bunch up too much. You will be able to correct this by changing the spacing between the enemies, changing the enemy start positions, and removing enemies to make more space.

Here's an example. The arrows indicate how the enemies will move at the beginning of the game.

Example 21. Adding enemies.



When an enemy reaches an obstacle, the enemy reverses direction. Remember that if an enemy comes in contact with another enemy or the player, they pass through each other.

Practice 4: Using Enemies

Using your previous design, add enemies to your game. Use the following rules for adding enemies:

1. Use no more than 10 enemies.
2. Enemies should be initially spaced at least three squares apart.

As you test your design, you may find that something in your previous design doesn't work as well as you expected. You may change your previous design to improve it. Just make sure you follow all the previous rules. If you use a timer, be sure to note the total amount of rolls that the player may use. **Play your design at least two times.** If there is time, have at least one other person play your design. Where does the player have problems? Does the player lose all the time? If the player loses, is it close?

The rules for enemies are here for your reference.

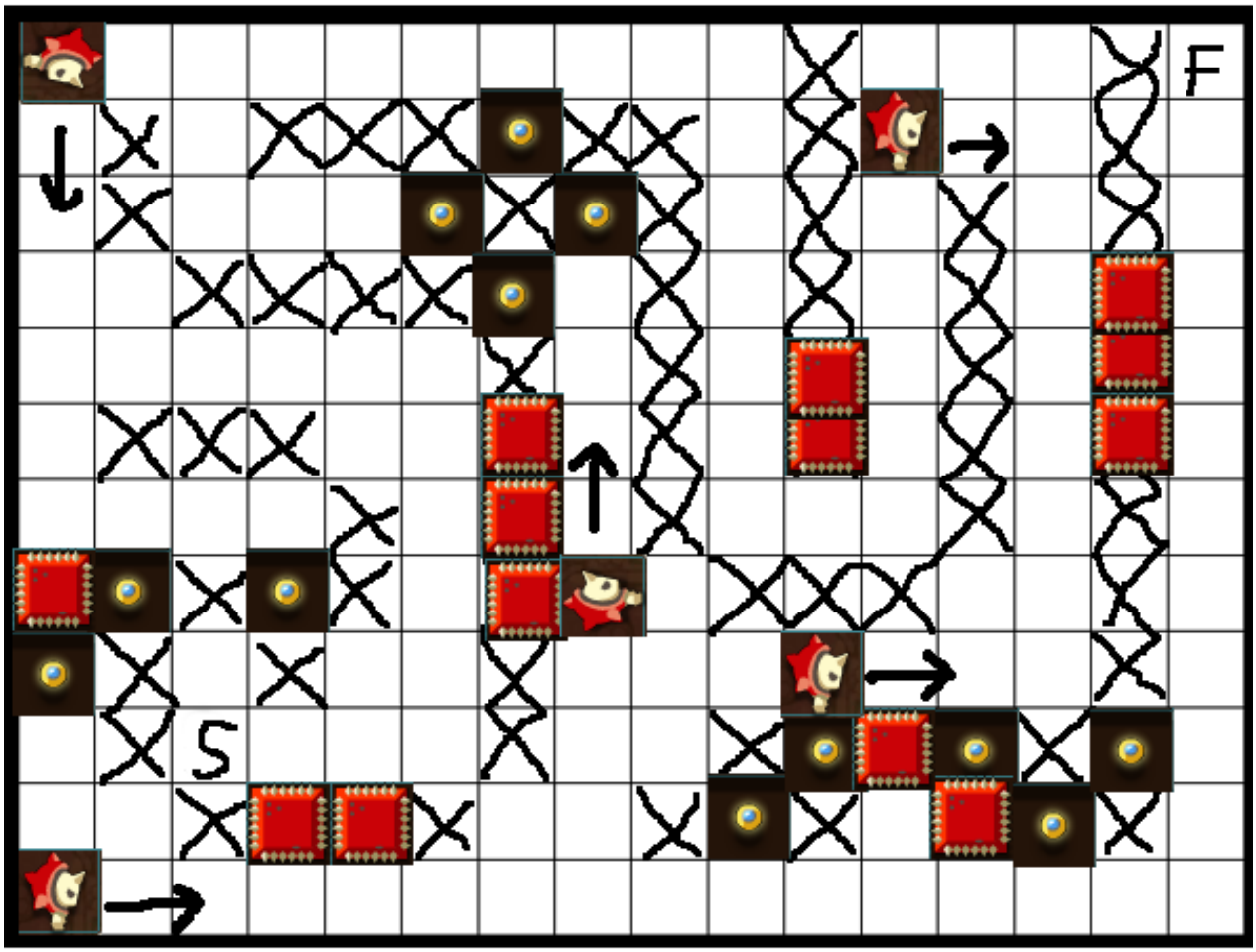
Rules for Enemies

1. The player moves and receives damage as before.
2. After the player moves and rolls for damage (if necessary), roll the die for the enemies.
3. Move each enemy the number of squares equal to the number on top of the die.
4. Enemies can only move back and forth. When they reach a wall, they reverse direction.
5. If an enemy comes in contact with another enemy or the player, they pass through each other.
6. If the player lands on an enemy or the enemy lands on a player, the player receives one point of damage.

Tips

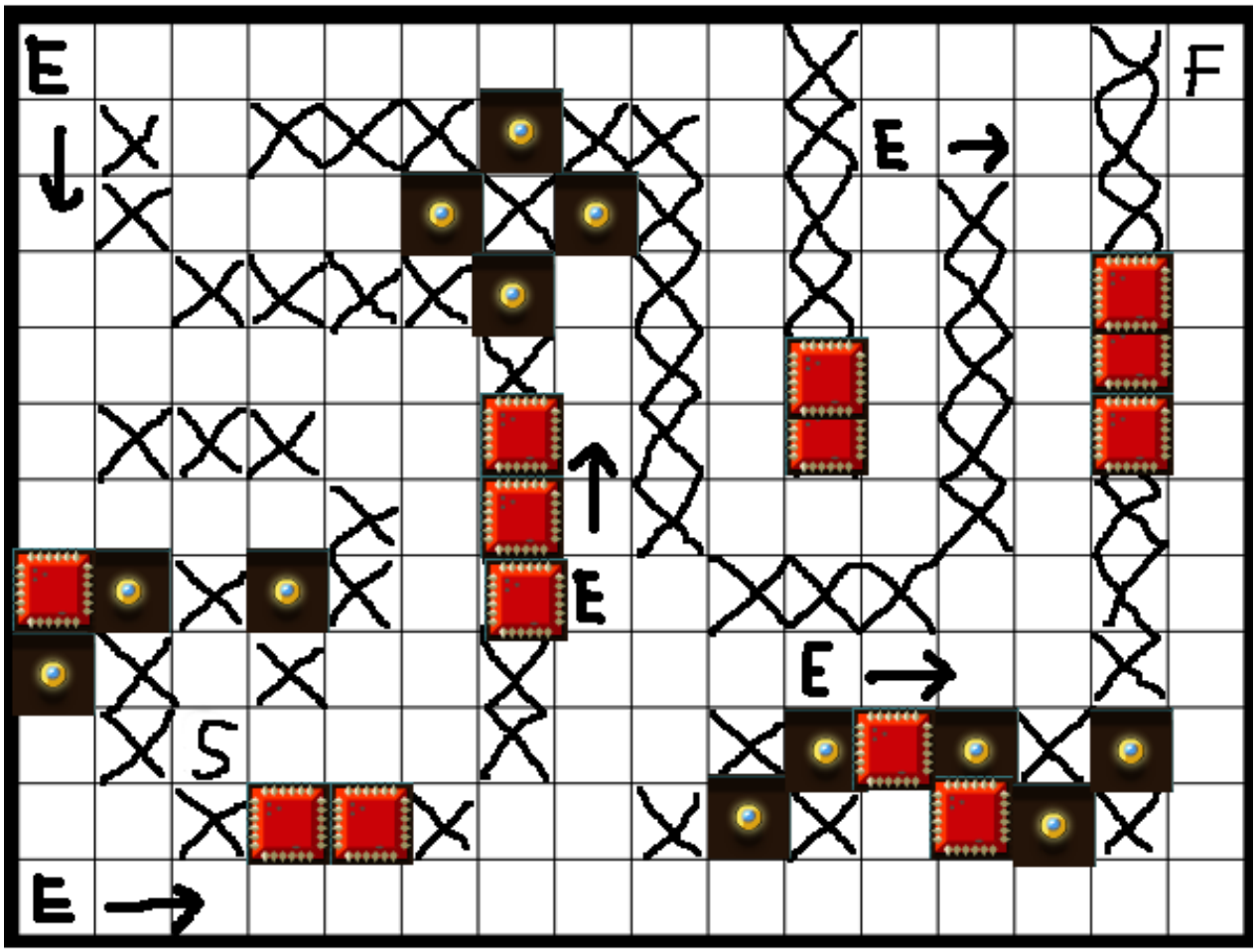
1. Add enemies using paper tokens. Draw an arrow showing their start directions. Here's an example:

Example 22: Adding enemies.



2. Mark the location of each enemy with an “E.”

Example 23: Recording enemy start positions.



3. If you use a timer, be sure to note the maximum number of rolls that a player can have.

Checklist for Practice 4

This is a checklist to help you check your work. As you make your design, ask yourself the following questions. When you can say “yes” to each of these questions, you will know the rules for Step 4:

1. Are there no more than 10 enemies?	Yes ___	No ___
2. At the start, are enemies spaced at least three squares apart?	Yes ___	No ___
3. Can someone other than you win the game?	Yes ___	No ___
4. Can a player lose the game?	Yes ___	No ___

Review

You now know enough to design a game. Let's take a moment to review the game design concepts you've been learning.

Rules for Game Spaces

1. The player must be able to complete the game.
2. The game should use all the available space.
3. The game from goal to finish has at least four bends and is at least 10 squares long.
4. The game should have at least three dead ends, loops, or both.

Rules for Collection Mechanics and Indirect Control

1. Use at least four points.
2. Four points must be at least 10 squares (along a path) from each other.
3. Use indirect control to influence strategy.
4. Make the player visit almost every square.

Rules for Traps

1. Use no more than 25 red blocks.
2. Do not put more than 3 red blocks in a danger zone.
3. Do not have more than 5 danger zones next to each other.

Rules for Enemies (Optional)

1. Use no more than 10 enemies.
2. Enemies should be initially spaced at least three squares apart.

Rules for Player Motion and Damage

1. The player rolls one die and moves the number of squares on top of the die.
2. The player can't go backwards during a turn unless the player reaches a dead end.
3. If the player lands in a danger zone (next to a red square), the player must roll for damage.
4. If the player is in more than one danger zone, the player only rolls for damage once.
5. If the damage roll is equal to or less than the number of red blocks in the danger zone, the player takes 1 point of damage.
6. If the player receives 3 damage points, the player loses.
7. The player wins by collecting the points and reaching the finish (gold star).
8. (Optional) Timer: You may limit the number of rolls that the player can make. For example, if the player does not collect all the points and reach the finish by twenty rolls, the player loses.

Rules for Enemies

1. The player moves and receives damage as before.
2. After the player moves and rolls for damage (if necessary), roll the die for the enemies.
3. Move each enemy the number of squares equal to the number on top of the die.
4. Enemies can only move back and forth. When they reach a wall, they reverse direction.
5. If an enemy comes in contact with another enemy or the player, they pass through each other.
6. If the player lands on an enemy or the enemy lands on a player, the player receives one point of damage.

Let's Play Again

Now that you've practiced and built a game, make a new game using what you've just learned. Here's the complete list of tips.

1. Draw a path from "S" to "F" using the rules.
2. Add dead ends, loops, or both.
3. Fill in where the blocks will be. You can use X's or shade them.
4. Redraw without the lines going along the path.
5. Put points in the game using paper tokens.
6. Put a "P" in the square of each point.
7. Put red blocks in using paper tokens.
8. Put an "R" in the square of each red block.
9. (Optional) Add enemies using paper tokens. Draw an arrow showing their start directions.
10. (Optional) Put an "E" in the square of each enemy.
11. (Optional) If you use a timer, be sure to note the maximum number of rolls that a player can have.

A Final Checklist

As you design your final game, use this list to check your work. You should be able to check "Yes" for each item for your new game.

Space Design Checklist

1. Can the player complete the game? Yes _____ No _____
2. Is all the available space used? Yes _____ No _____
3. Are there at least four bends from start to goal? Yes _____ No _____
4. Is the path from start to goal at least 10 squares long? Yes _____ No _____
5. Are there at least three dead ends, loops, or both? Yes _____ No _____

Collection Mechanic Checklist

1. Are there at least four dots? Yes _____ No _____
2. Are there Four dots that are at least 10 squares from each other> Yes _____ No _____
3. Is there indirect control to influence strategy? Yes _____ No _____
4. Does the player have to visit almost every square? Yes _____ No _____

Trap Checklist

1. Is there no more than 20 red blocks? Yes _____ No _____
2. Do all danger zones have 1, 2, or 3 red blocks? Yes _____ No _____
3. If danger zones are in a row, are there no more than 5 in the row? Yes _____ No _____

Enemies Checklist (Optional)

1. Are there no more than 10 enemies? Yes _____ No _____
2. Are enemies at least three squares apart at the beginning? Yes _____ No _____

Balance Checklist

1. Have you played through your game at least twice? Yes _____ No _____
2. Has someone else played through your game at least twice? Yes _____ No _____
3. Can someone other than you win the game? Yes _____ No _____
4. Can someone other than you lose the game? Yes _____ No _____

Level Up!

If you are interested in learning more about game design, there are many ways to practice further. Here are some ideas that you can add to your future game designs:

1. Make new tokens with new effects. For example, use health packs that add "lives" to the player.

2. Adjust and make new rules for player motion.

3. Make new rules for red blocks and player damage. For example, you may want to experiment with allowing up to seven red blocks in a danger zone and a roll of six always being safe. Balancing the game will be a challenge.

4. Adjust and make new rules for how enemies move. For example, instead of going back and forth, an enemy can turn right every time it has the opportunity to turn. Also, enemies could move randomly. You can roll a die to determine how the enemy moves (1 means turn left, 2 means turn right, 3 means forward, 4 means backward, 5 and 6 mean stop).

5. Experiment with time limits. The player can only roll the dice a maximum number of times. If the player hasn't finished by the maximum limit, the player loses.

6. Play the design as a board game with your friends. Each enemy can be played by a different player. There could be teams of players trying to capture as many points as possible. There are many rules for you to consider. Can a player be taken out of a game? Should a player be sent back to a start square if another player lands on his or her token? How can points be captured?

Can you think of more ideas? Remember to test your designs and have other people play your games. Games are about designing for other people—not yourself. The more designs you make and play, the better your game design skills will be.

Appendix

References

Fullerton, T., Swain, C., & Hoffman, S. (2004). *Game Design Workshop: Designing, Prototyping, and Playtesting Games.* New York: CMP Books.

Salen, K., & Zimmerman, E. (2004). *Rules of Play: Game Design Fundamentals.* New York: MIT Press.

Schell, J. (2008). *The Art of Game Design: A Book of Lenses.* Boston: Morgan Kaufmann Publishers.

Video Game

GamestarMechanic. (In development). New York: Gamelab.

You can find *GamestarMechanic* at www.gamestarmechanic.com.

Glossary

Balance: The sense of fairness in a game.

Collection Mechanic: A game mechanic in which the player must collect objects.

Game Mechanic: An action that a player does over and over again during a game.

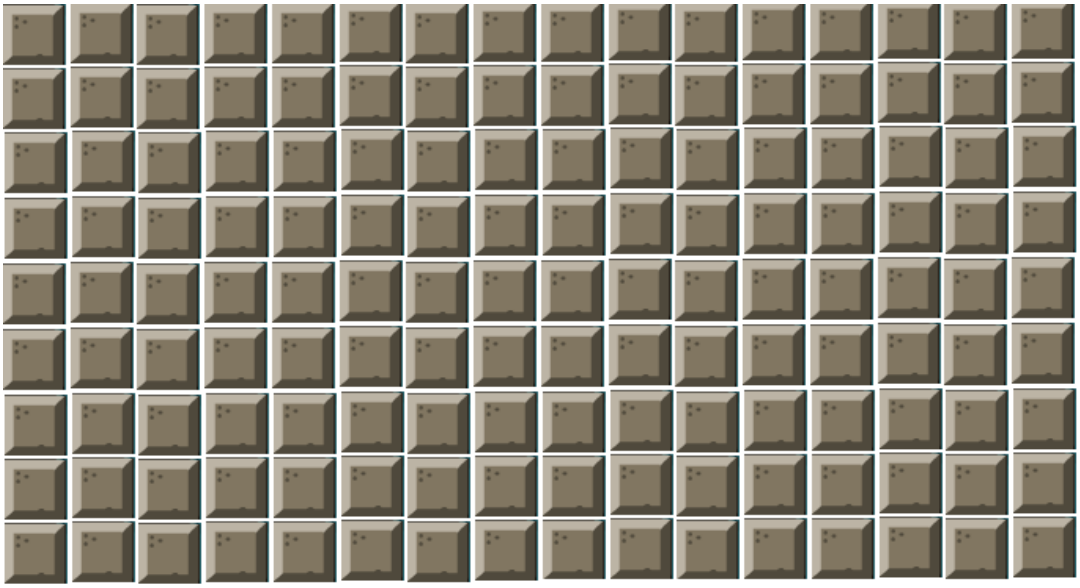
Game Space: The physical or virtual game space in which someone plays a game.

Indirect Control: When the game designer controls the player's choices without the player knowing it. This is usually done by setting goals for the player and using visual cues.

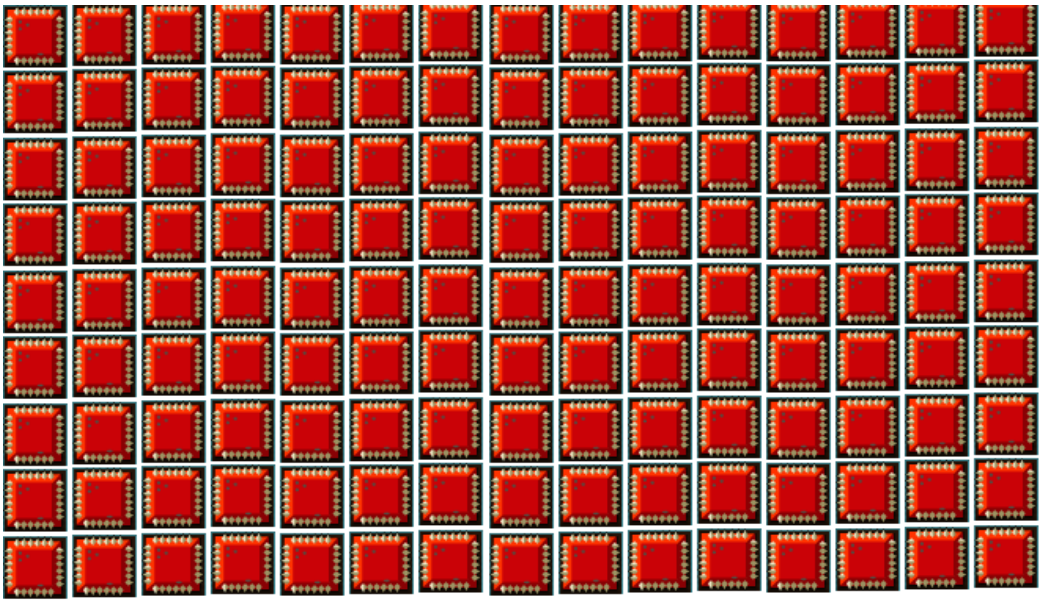
Paper prototype: A preliminary design done in paper form to see if a design works.

Token Sheets

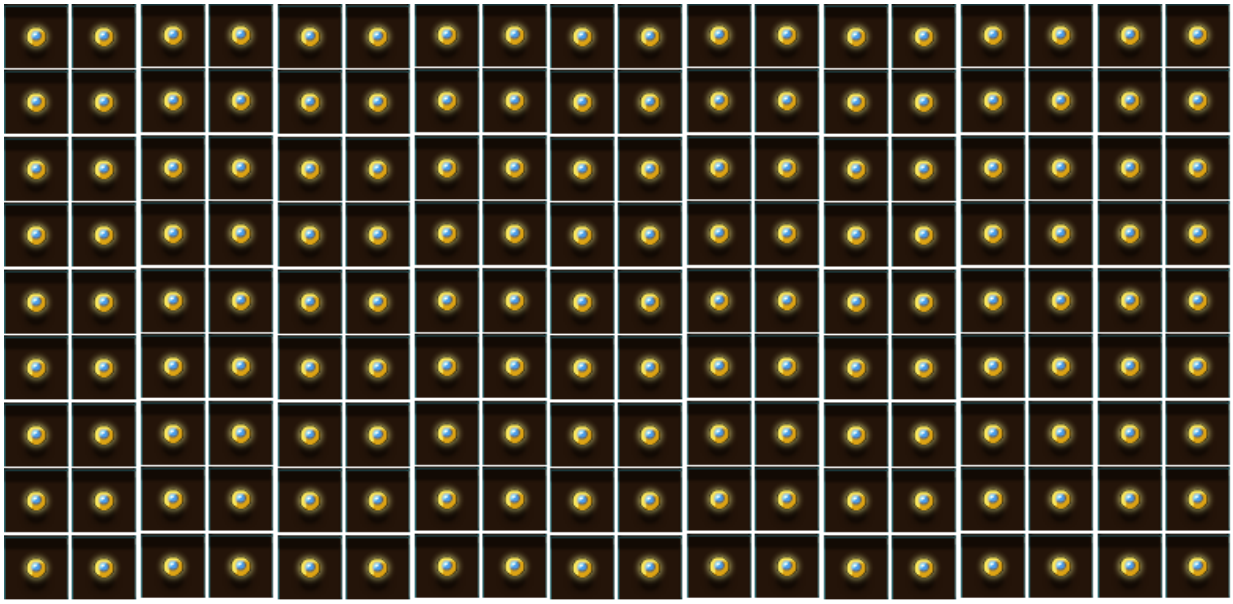
Blocks:



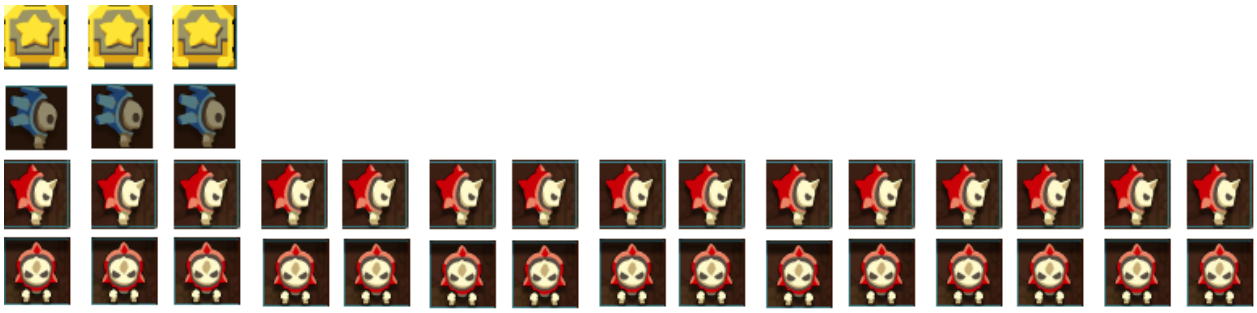
Red Blocks:



Points:



Player, Enemy, and Finish Tokens:



Blank Game Board