

# Puzzle Game Design

## What is a Puzzle?

- Tetris and Bejeweled
  - Endless fun
- Crosswords and Sudoku
- Game ending solution
- Puzzles can be part of larger games
  - Games – fun, have a goal can be won
  - **Puzzles – fun, have a goal**
  - Toys – fun

## Why Puzzles?

- Wide audience reach
  - Appeal to all types of gamers
- Easy to program
- Hard to invent – good practice

## Creating Great Puzzles

- Affordances
  - Players can discover the rules and controls
- Patterns
  - Players can identify possibilities to solve it
- Ease of Use
  - Well tested UI/UX
- Increasing Skill
  - Players skill improves as they play more

## Types of Puzzles

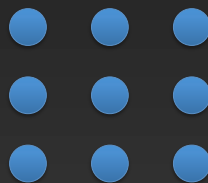
- Riddles
  - Play on words
  - One correct answer
  - No replay value
  - Offer clues to solution

*A mirror for the famous, but informative to all.  
I'll show you the world, but it may be a bit small.*

## Types of Puzzles

- Lateral Thinking
  - Players must question their assumptions

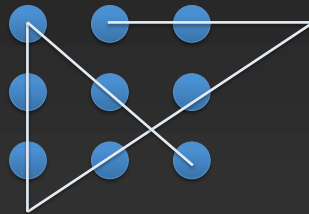
*Draw 4 straight lines so that all nine dots connect  
without lifting your pencil.*



## Types of Puzzles

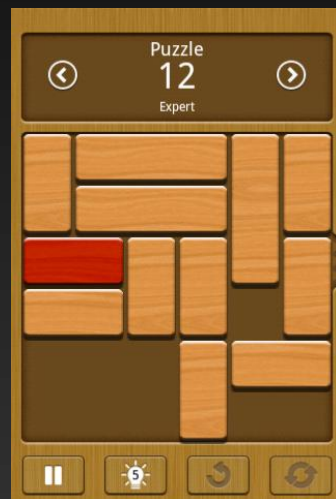
- Lateral Thinking
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*Draw 4 straight lines so that all nine dots connect without lifting your pencil.*



## Types of Puzzles

- Spatial Reasoning
  - Manipulation of objects
    - In mind or physically
  - Tetris (fast-paced spatial game)
  - Sokoban, sliding crate puzzles



## Types of Puzzles

- Pattern Recognition
  - Players look for and identify patterns
  - Code hacking
  - Increase challenge by making recognitions more difficult.



## Types of Puzzles

- Logic
  - Derive additional information from a set
  - Single solution player must solve

*Place colours in correct order: Black on left, red next to blue and green to the right of red.*



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## Types of Puzzles

- Exploration
  - Of an environment (mazes, dungeons, maps)
  - Find a specific object
  - Find a path through a maze
  - One of the 8 kinds of fun
    - Meaning the act itself is rewarding
    - When players get stuck it can remove the fun

## Types of Puzzles

- Riddles
- Lateral Thinking
- Spatial Reasoning
- Pattern Recognition
- Logic
- Exploration

## 1 – 4: Specify Rules

1. Inspiration
  - Previous games; technology; play mechanic
2. Simplification
  - Identify the core essential skills required
  - Eliminate irrelevant details
3. Construction
  - Build something that lets you test different rules
4. Design Spec.
  - Define play area, actors, mechanics, goals

## 5 – 8: Build Puzzles

1. Levels
  - Increase challenge and add variation
2. Testing
  - Play test the prototype for fun and challenge
3. Sequence
  - Order the levels so players learn and recover
4. Presentation
  - Graphics, sound, controls, etc.

## 8 Steps to Puzzle Design

### **Specify Rules**

1. Inspiration
2. Simplification
3. Construction
4. Design Spec.

### **Build Puzzles**

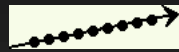
5. Levels
6. Testing
7. Sequence
8. Presentation



## Sequence



Accelerating



Linear



Sawtooth



Semilinear



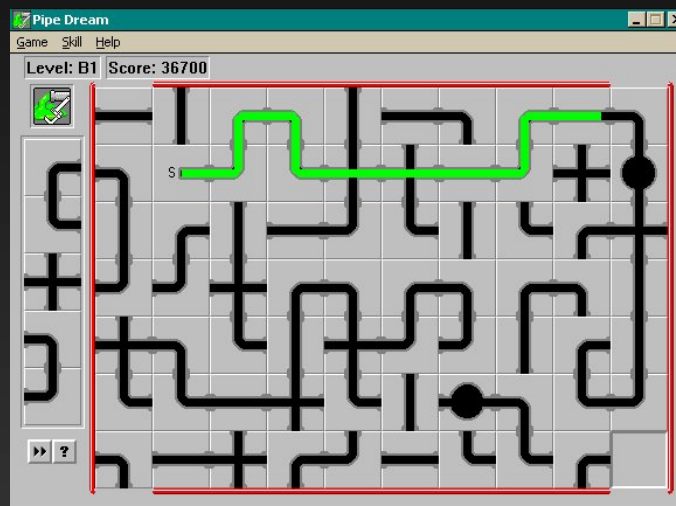
Ordered collection



Metapuzzle

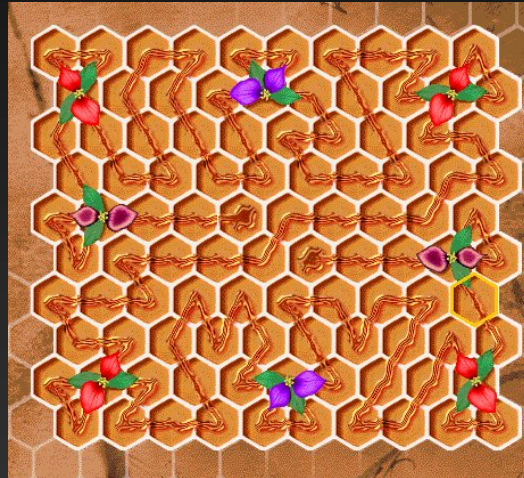
## Inspiration

From



## Inspiration

To: Honey Way



## Inspiration

From: Bejeweled



## Inspiration

To: Candy Crush Saga



## Modifying Difficulty

- Adjust difficulty of puzzles for the players
- Varied difficulty will present an increasing challenge
- Add or remove clues
- Move clues around
- Allow multiple solutions
- Dynamic help
- Dynamic difficulty adjustment
- Remove linearity
- Add a time limit (pressure)
- Add or remove feedback
- Test the game on different players

## Watch and Play

- Puzzle Games
  - <http://www.youtube.com/watch?v=ZKD5eOIXY08>
- Bejeweled 2 Online
  - <http://www.popcap.com/games/bejeweled2/online>