HealthCare Game

Mike, Simon, James and Ben
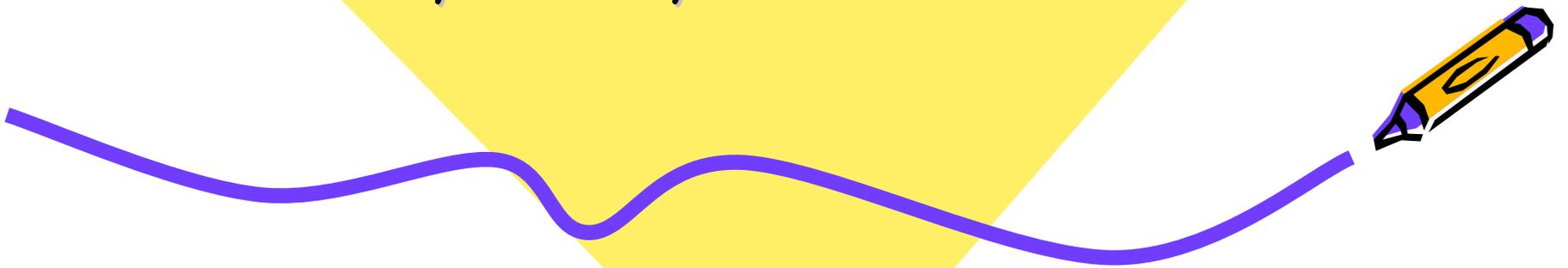
Goal

- To teach and introduce users to facts and knowledge about the human body via small games and interaction with our software.

- Target audience: under 12 years old
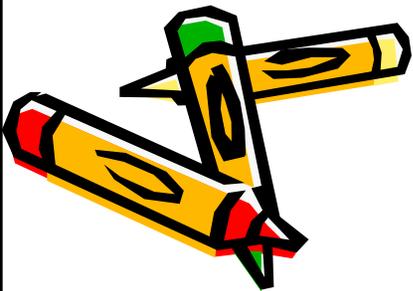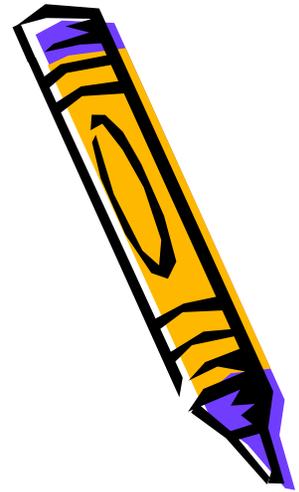
Why Healthcare?
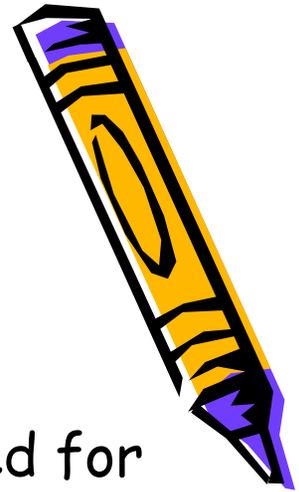
- New Zealand alone has budgeted $10.6 billion to be used for healthcare this year

- Educate the population as to the dangers of certain unhealthy lifestyle choices

- Hope this education will lead to the prevention of illness and disease

- Prevention rather than operations and courses of drugs should save money and resources
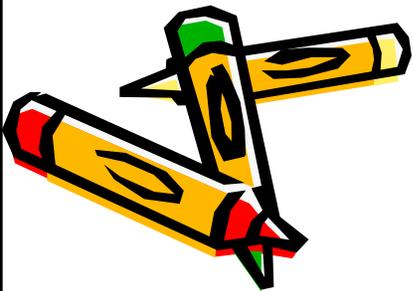
Why Use a Game?
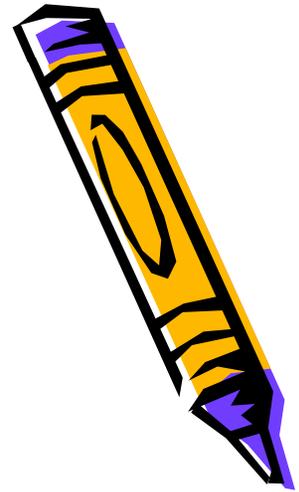
- According to a survey performed on Primary school children:

  - Students preferred learning by themselves and practicing the tasks by doing them

  - Children look upon school and other traditional learning techniques as an interruption in their computer usage time; time they used for playing games
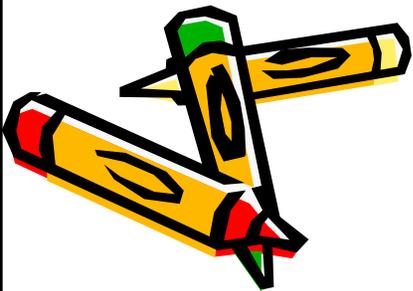
Why Use a Game? (cont.)
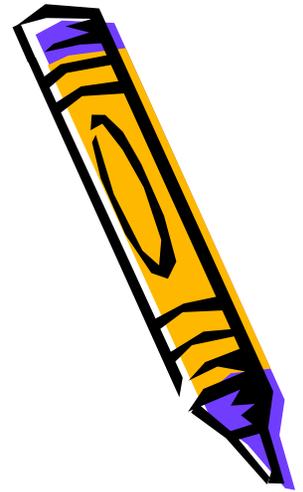
- "Games provide greater potential than traditional methods by creating an immersive and performance based environment." Oblinger (2004)

- We hope to use electronic media to repackage the traditional messages and educational content
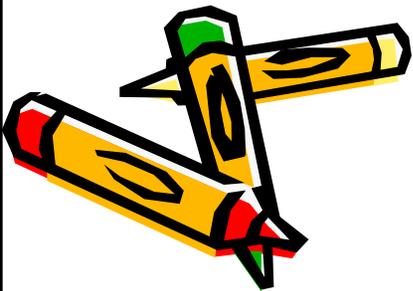
Concept

- Our idea is based on a cartoon series we watched when we were little kids – "Once upon a time - Life" produced by Procidis.

- Procidis website: www.procidis.com
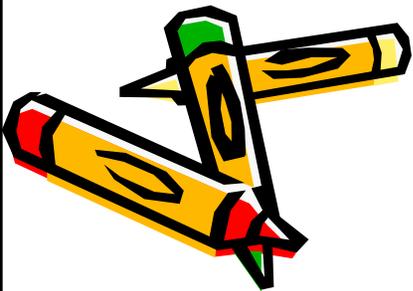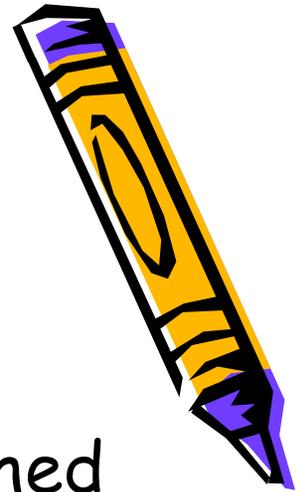
Concept (cont.)
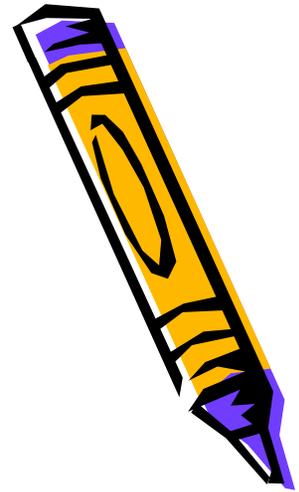
- Giving out message with cartoon
- Story telling
- Avoiding unsuitable themes and languages from children
- Characters can be recognised easily
  - Bad guy: ugly and looks like bugs
 - Good guy: looks better, friendly, human form
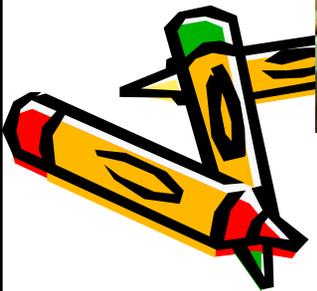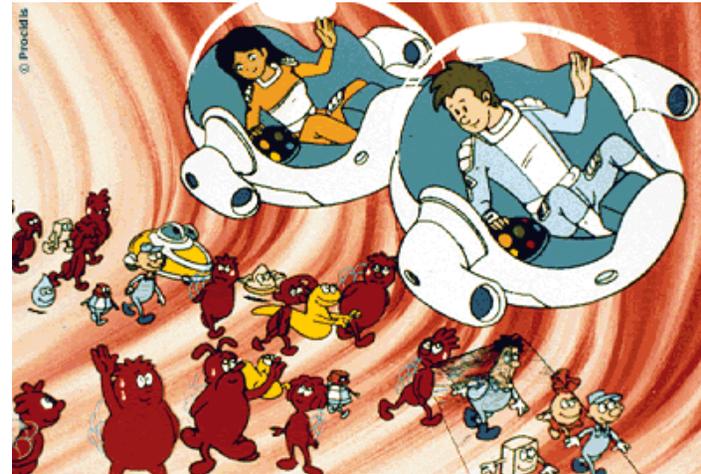
Previous Similar Products
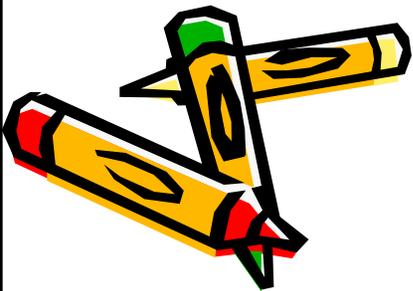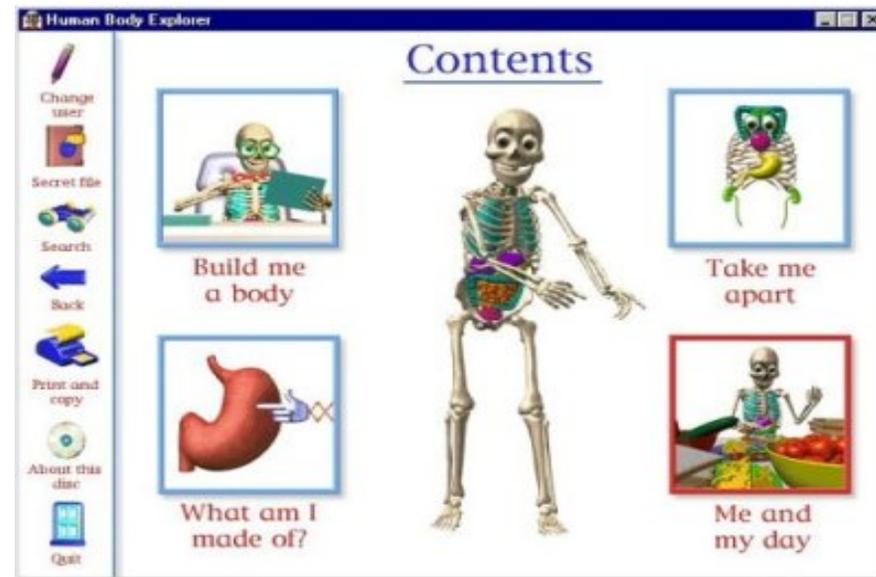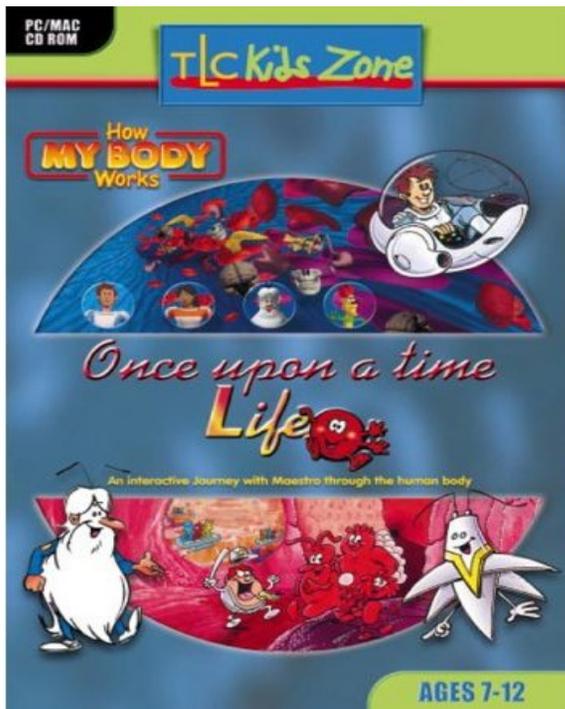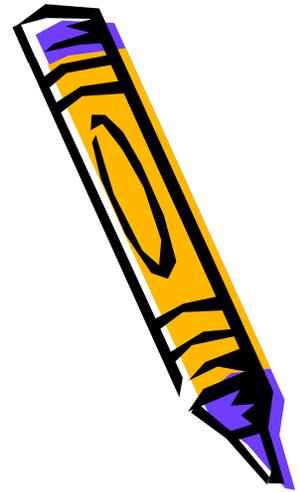
Possible Content

- Introduction to vital organs.
- Interactive scene that requires user interaction.
- Mini games
  – White blood cell eating bacteria.
  – Red blood cell dumping CO_2 and receive O_2.
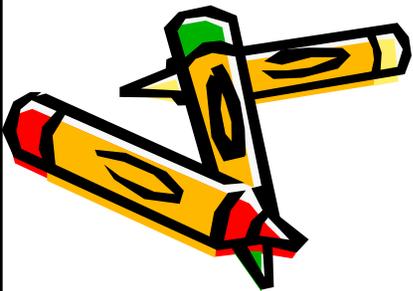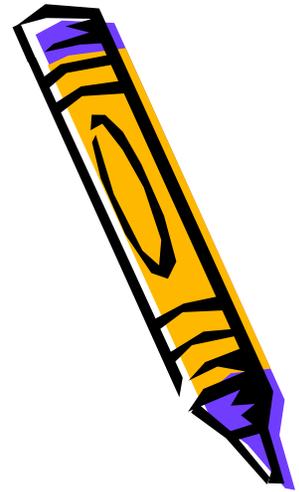
Game Layout
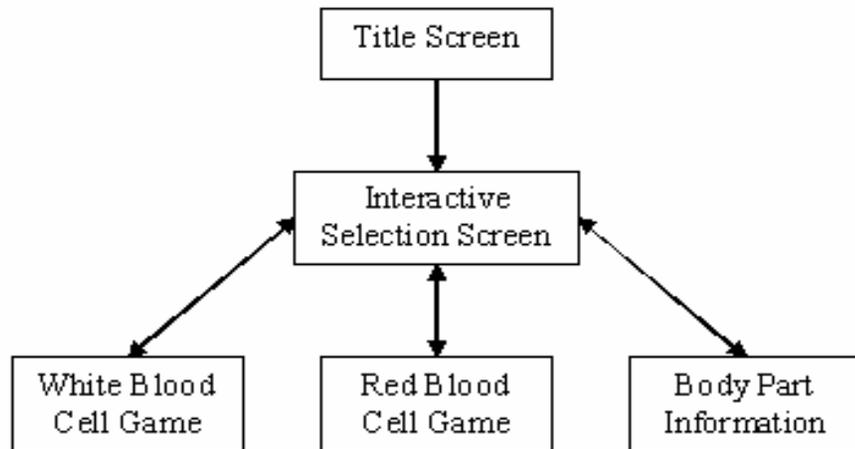
Avoid complex structure so that kids does not get lost of its current state.

Easy to use and does not require the user to have a strong background of computer knowledge.
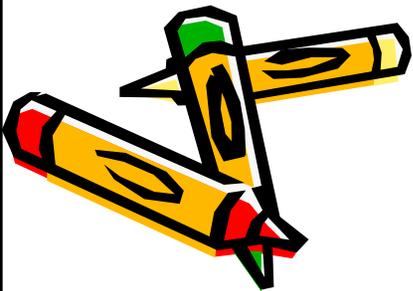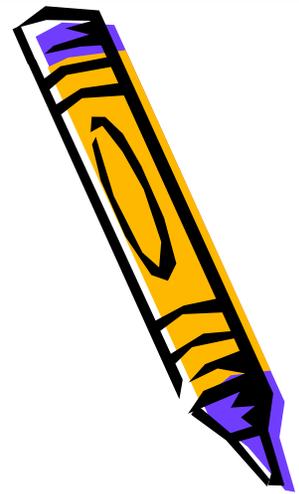
Game Layout (cont.)
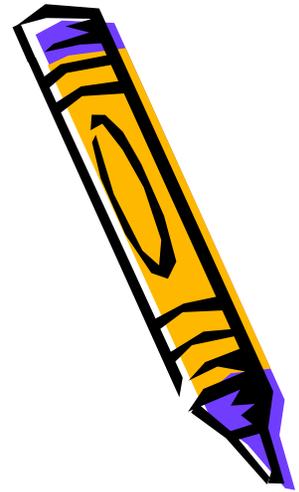
Main menu

-Interactive selection screen

Event based

-Educational purpose game events that helps kids to learn

-Events raised by clicking on corresponding NPC

-Random events will happen!

HUD

-Game buttons to affects the health state

-Health states associated with scene and game play
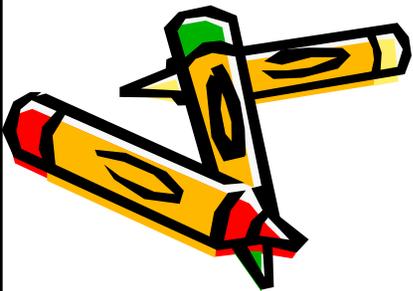
Game Layout (cont.)
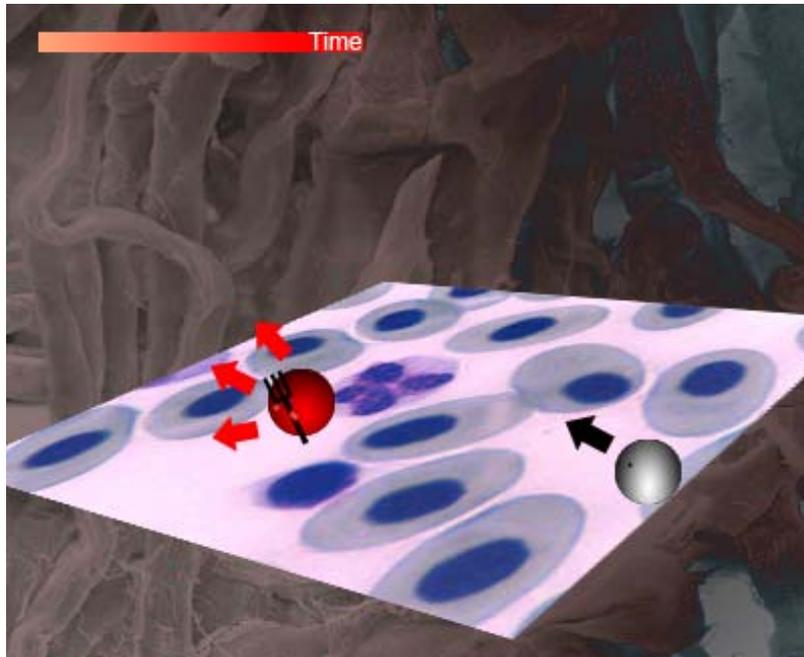
Mini game that simulates white blood cell eating bad bacteria.

Goal

Introduce knowledge about how our immune system works via a fun and interesting way.
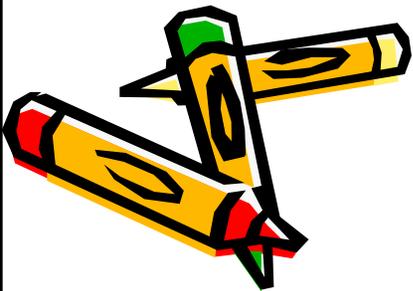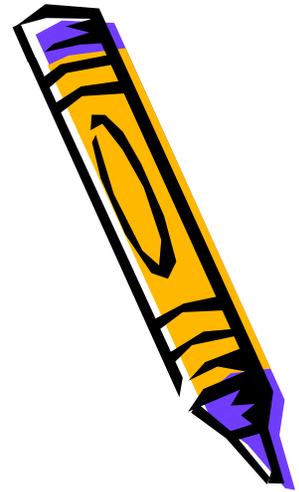
Game Layout (cont.)
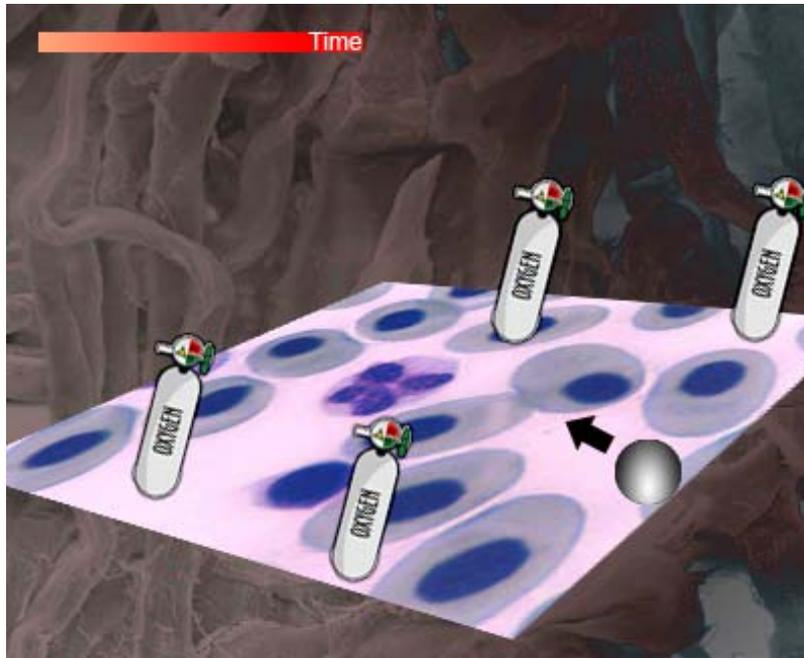
Mini game that simulates red blood cell carrying oxygen.

Goal

Introduce knowledge about pulmonary circulation via a fun and interesting way.
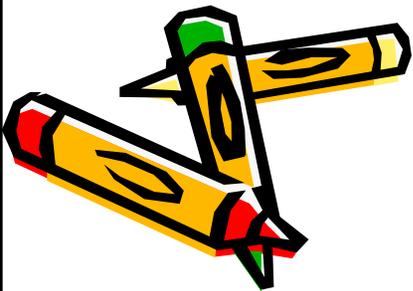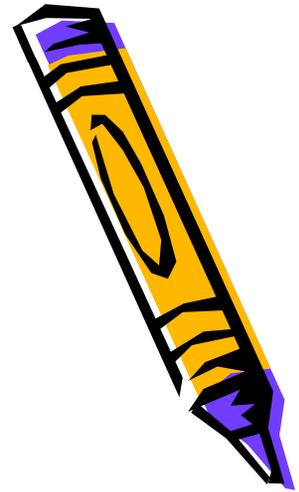
Why these type of games
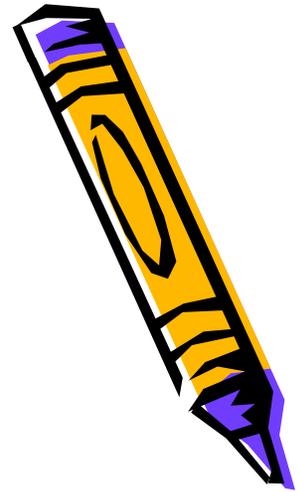
- We want a type of game that is suitable for kids under twelve years old. (Eg. No violence...etc)
- Fun and interesting to play. Simple but challenging.
- Learn knowledge about our body while playing

Why pulmonary circulation and immune system?

- Basic knowledge that is simple to understand and not too boring.
- Easy to come up with a game that is related to the knowledge.
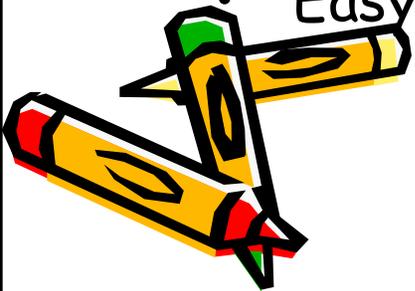
Characters

- Red blood cells (erythrocytes)
- White blood cells (leukocytes)
- Bad bacteria
- Platelets (thrombocytes)
- Electrolyte
- Hormone
- Nutrient
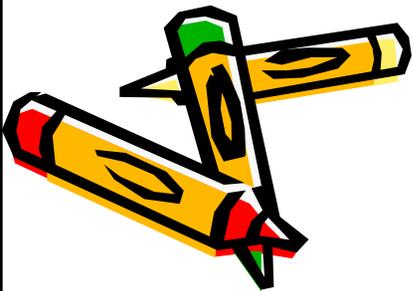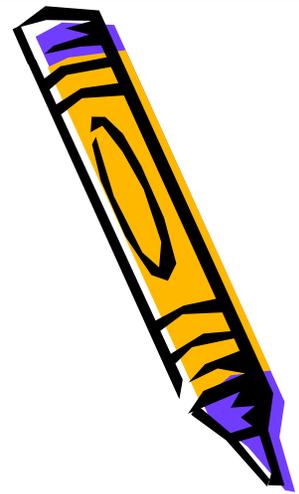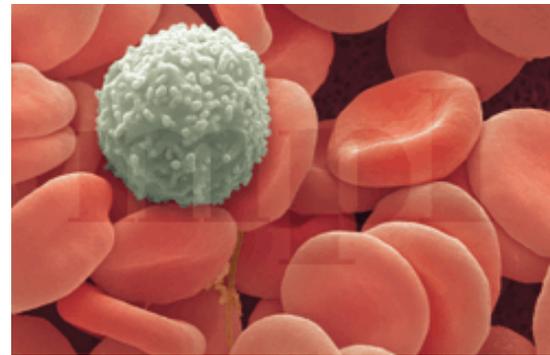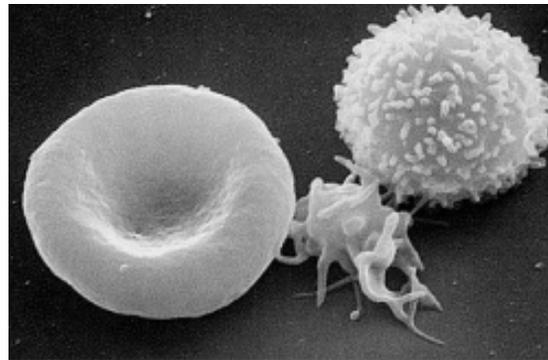
Characters (cont.)

- We want our characters in the game to look cute and realistic.

- Slimy character figure that is somehow reflected the characteristic of real white blood cells.

- Due to time constraint and ease of development, we decide to use slimy character figure for the red blood cells, white blood cells and the bad bacteria.
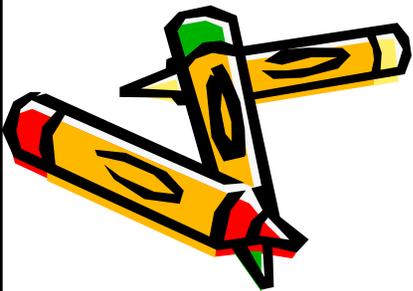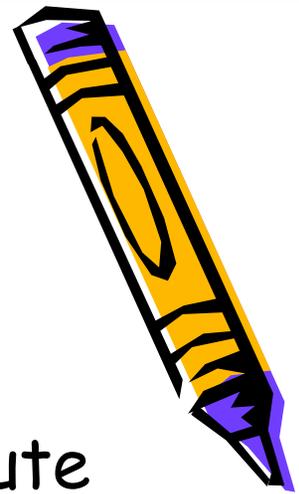
Software

Implementation language

- C# 2.0

3D Libraries

- DirectX SDK

3D Modeling

- Milkshape
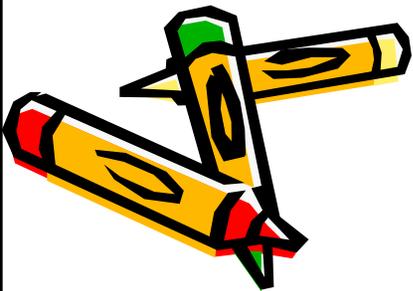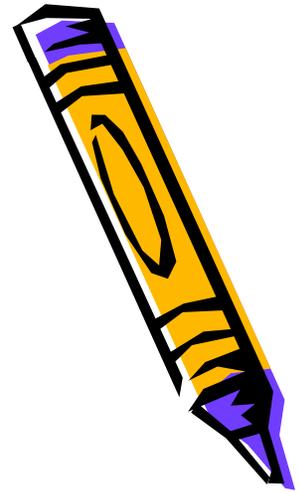
# Grid based
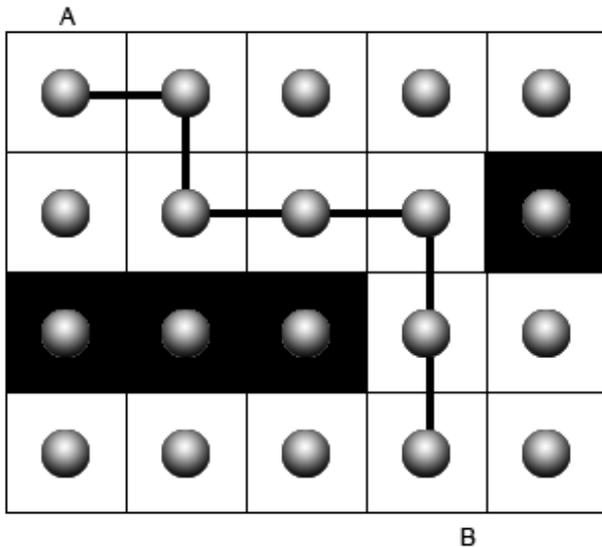
Index mapping

- f(x, y)

search algorithm

- Dijkstra's algorithm

- A* (A star)

The Dijkstra and A* algorithm is used to find the shortest path between the source and destination node.
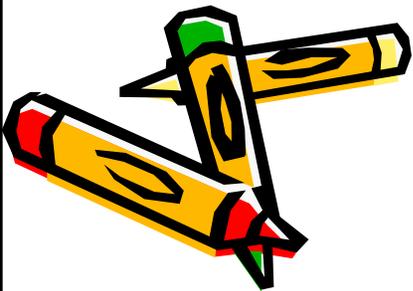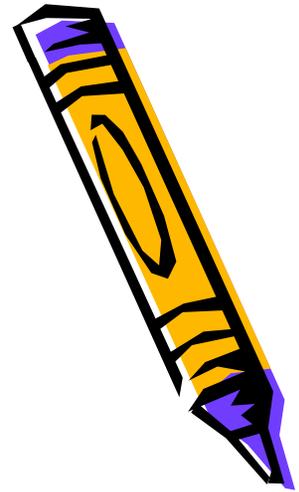
Game Object Behavior
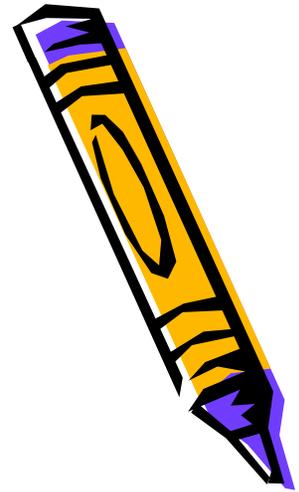
Bacteria running away from the player

- Virtual copy of the actual player in opposite direction, and the bacteria is running toward the virtual copy

- Random direction

O_2 following the player

- The player is the destination node
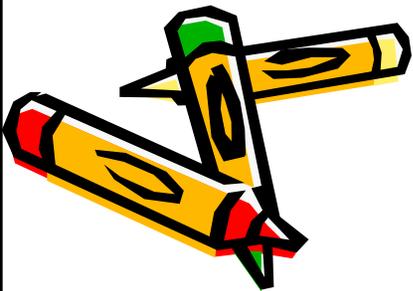
Collision Detection
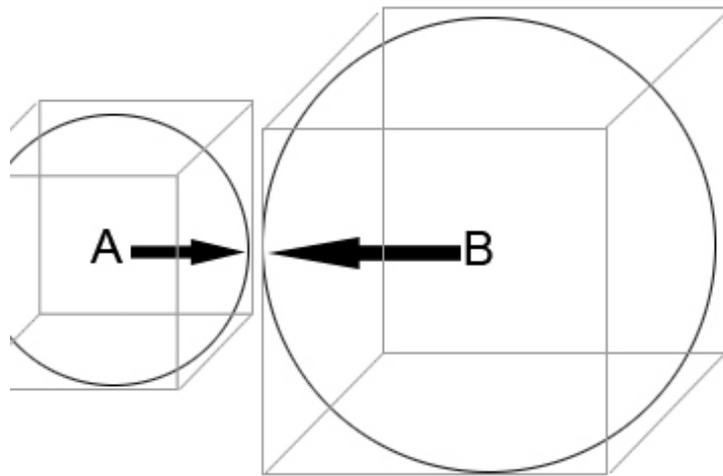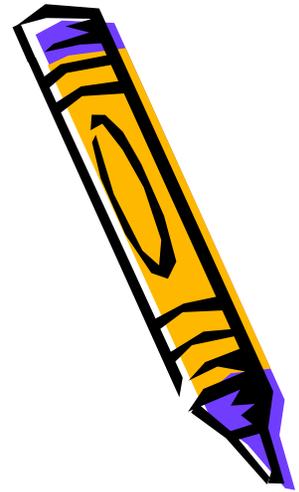
Collision detection using their spherical attribute, by defining a prefixed radius for each game object.

Quantisation of a 3 dimensional cube can further increase the computational efficiency by filtering out the unnecessary checking.
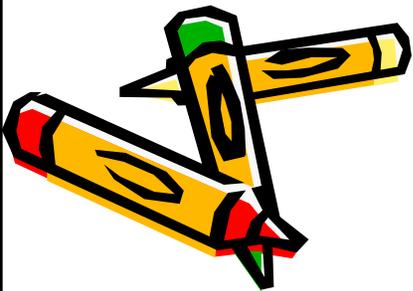
Any Questions ?

Thank you very much.