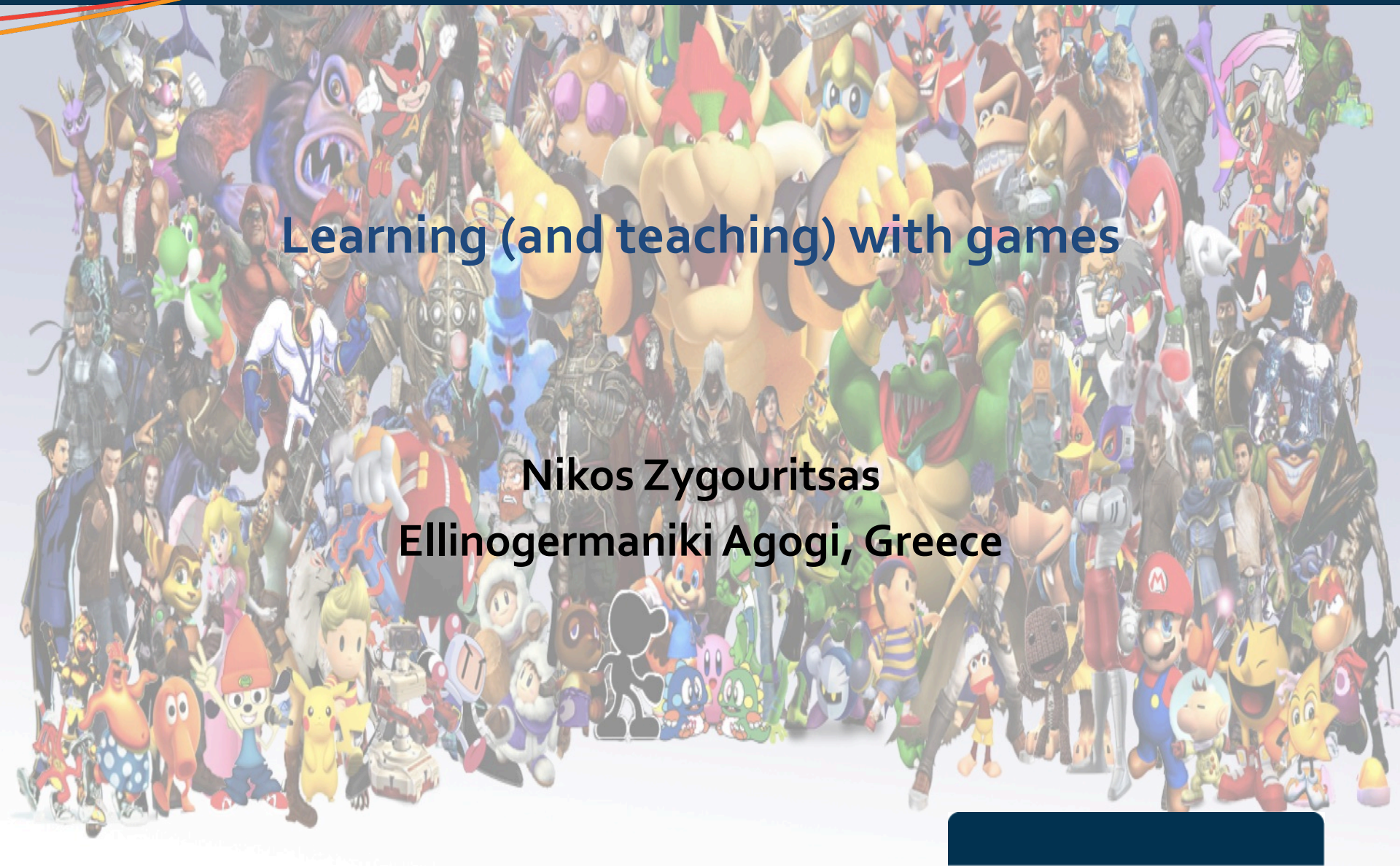
OPEN DISCOVERY SPACE



Learning (and teaching) with games

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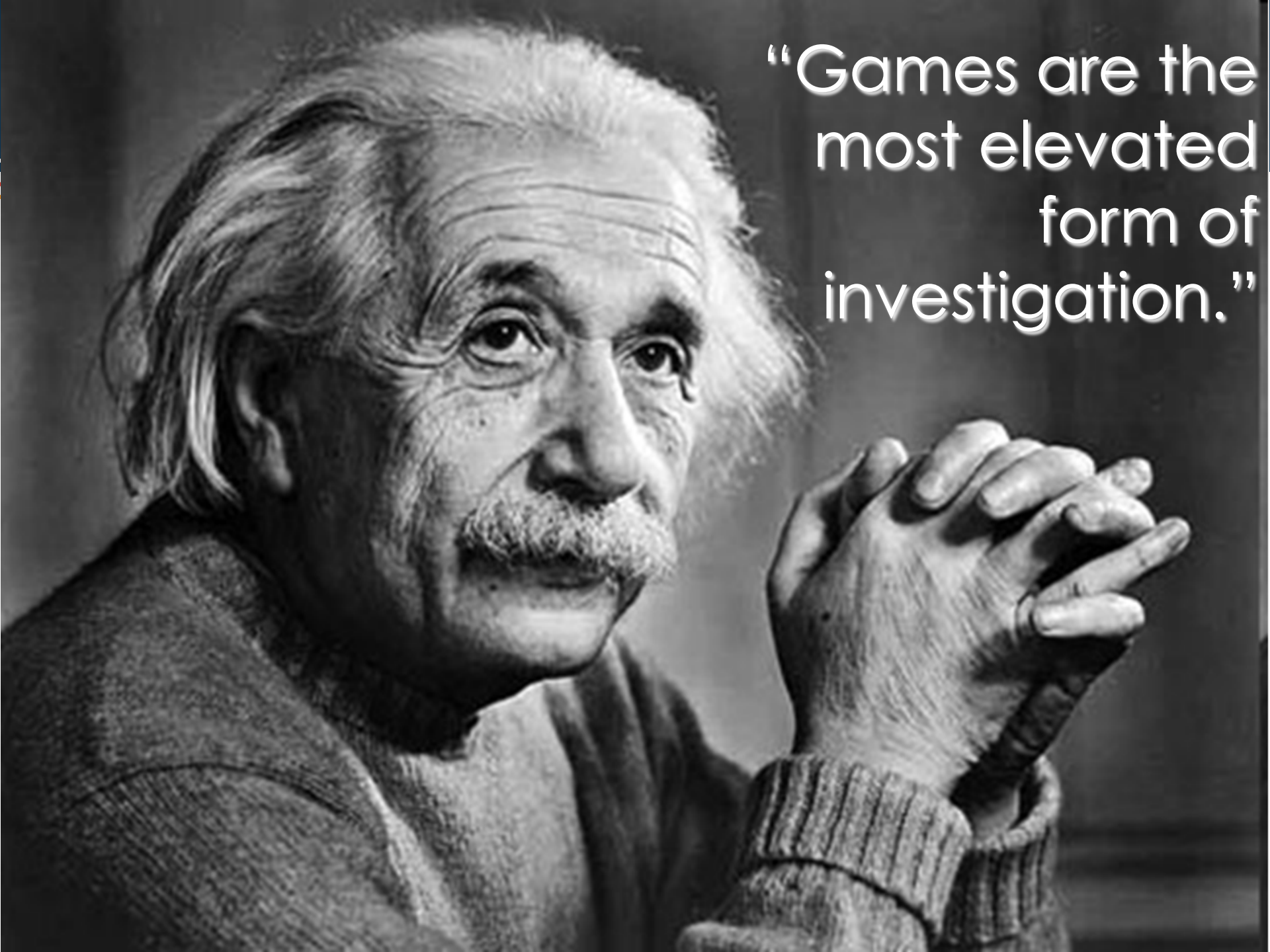
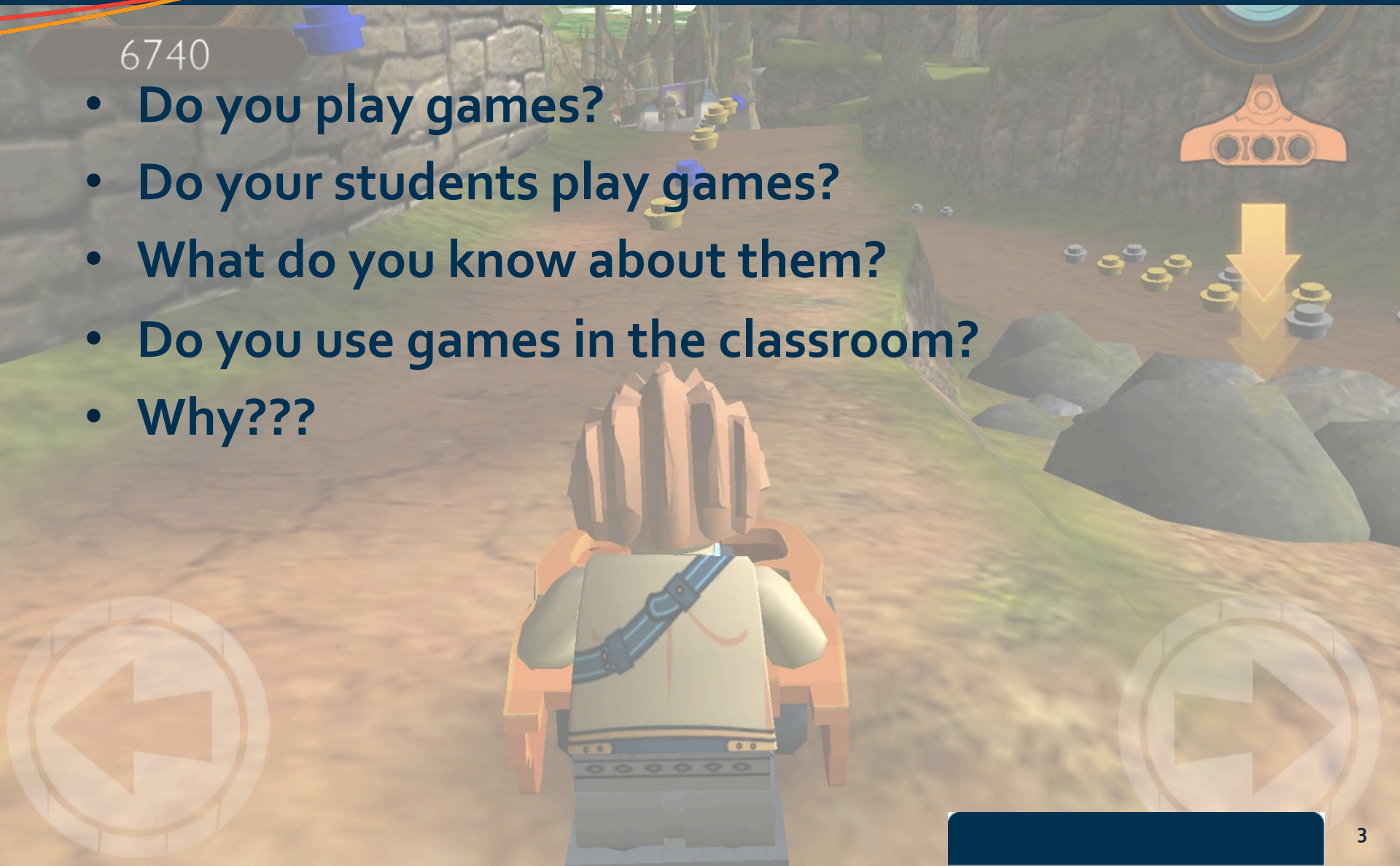

"Games are the most elevated form of investigation."

And you?



- Do you play games?
- Do your students play games?
- What do you know about them?
- Do you use games in the classroom?
- Why???

OPEN DISCOVERY SPACE

Why games?

- Games are a form of fun. That gives us enjoyment and pleasure.
- Games are form of play. That gives us intense and passionate involvement.
- Games have rules. That gives us structure.
- Games have goals. That gives us motivation.
- Games are interactive. That gives us doing.
- Games are adaptive. That gives us flow.

Why games?

- Games have outcomes and feedback. That gives us learning.
- Games have win states. That gives us ego gratification.
- Games have conflict/competition/challenge/ opposition. That gives us adrenaline.
- Games have problem solving. That sparks our creativity.
- Games have interaction. That gives us social groups.
- Games have representation and story. That gives us emotion

Marc Prensky

A small reminder

- **Multiple means of representation** to give learners various ways of acquiring information and knowledge
- **Multiple means of expression** to provide learners alternatives for demonstrating what they know, and
- **Multiple means of engagement** to tap into learners' interests, challenge them appropriately, and motivate them to learn.

WORLD OF WARCRAFT

WoW is a massively multiplayer online role-playing game (MMORPG) meaning other players are playing in the same game environment or world at the same time.

Decision making (strategy & problem solving)

Social interaction/ values/ cultures

...the educational possibilities are vast.
... teamwork, collaborative problem solving, group think, brain storming, group information quests etc collaborative problem solving, media literacy, scientific reasoning etc.

SPORE

The player must guide a creature from the cell stage through to the Space Age.

- **Dexterity/ precision/ motor skills**
- **Decision making (strategy & problem solving)**
- **Social interaction/ values/ cultures**
- **Ability to learn/ self assess**

an introduction to the concepts of biology, history, sociology.
While not scientifically, the game can be used to encourage discussion by highlighting these inaccuracies.
students must analyse the effects of their choices.
The game can be used to motivate students to learn by allowing them to be.
Students can share their creations with others as an encouragement for collaboration in group projects.

FARMVILLE

This game creates a social environment that players create his farm and help the neighbors. There are varieties of games apart from farming where the players help each other and grow their own places or properties. Therefore it can be compared with Mafia Wars, FishVille.

- **Applying concepts/ rules**
- **Decision making (strategy & problem solving)**
- **Social interaction/ values/ cultures**

basic math
motivational element.
This game has lots of features to reflect affective skills

IKARIAM

It is similar to "Civilization" starting from the Stone Age and right through to the Space Age. In this case the game is online, multiplayer, and more complete, mostly based on player interaction and real time strategy.

It includes economic, military, city and research development, and the possibility of forming alliances and managing relationships with other alliances or players.

- **Decision making (strategy & problem solving)**
- **Social interaction/ values/ cultures**

The principal uses of the game would be to explore consequences of actions, practice problem solving and complex decision making, and social interaction with other players.

DANCE DANCE REVOLUTION

The game is played on a platform know as a dance pad that has four arrow panels: left, down, up, and right. These panels are pressed using the player's feet, in response to arrows that appear on the screen in front of the player. The arrows are synchronized to the general rhythm or beat of a chosen song.

- **Memory/ repetition/ retention**
- **Dexterity/ precision/ motor skills**
- **Social interaction/ values/ cultures**

DDR and version of the game are used in schools throughout the United States
as exercise routines and to get students active prior to learning being started.
Modified versions of the game use the dance pad to encourage typing, math, and spelling.
Place a high cognitive load on working memory enhance the cognitive abilities that are critical to academic achievement

AGE OF EMPIRES III

This game series are called real time strategy. Real time strategy game composes of "resource gathering, base building, in-game technological development and indirect control of units". In Age of Empires players needs to gather some resource to build some buildings and needs some experience points to create new soldiers.

- **Decision making (strategy & problem solving)**
- **Social interaction/ values/ cultures**
- **Ability to learn/ self assess**

historical issues of different cultures
strategic thinking and decision making
problem solving

THE SIMS III

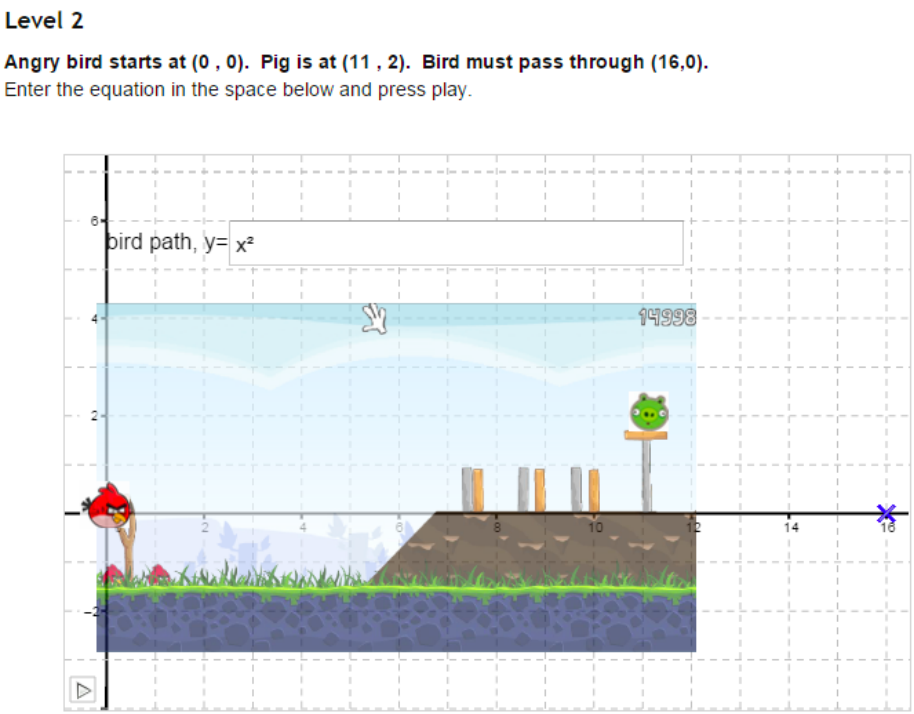
Life simulator. The Sims focuses entirely on the lives of "Sims", placing the player in control of their virtual "world" and their daily activities, such as sleeping, eating, reading, and bathing.

- **Applying concepts/ rules**
- **Decision making (strategy & problem solving)**
- **Social interaction/ values/ cultures**
- **Ability to learn/ self assess**

social aspects, cultural issues
The use of different supports to tell the story
The use of a foreign language version of the game and tell the story in that language
The creation of stories that focus on different social topics.

ANGRY BIRDS

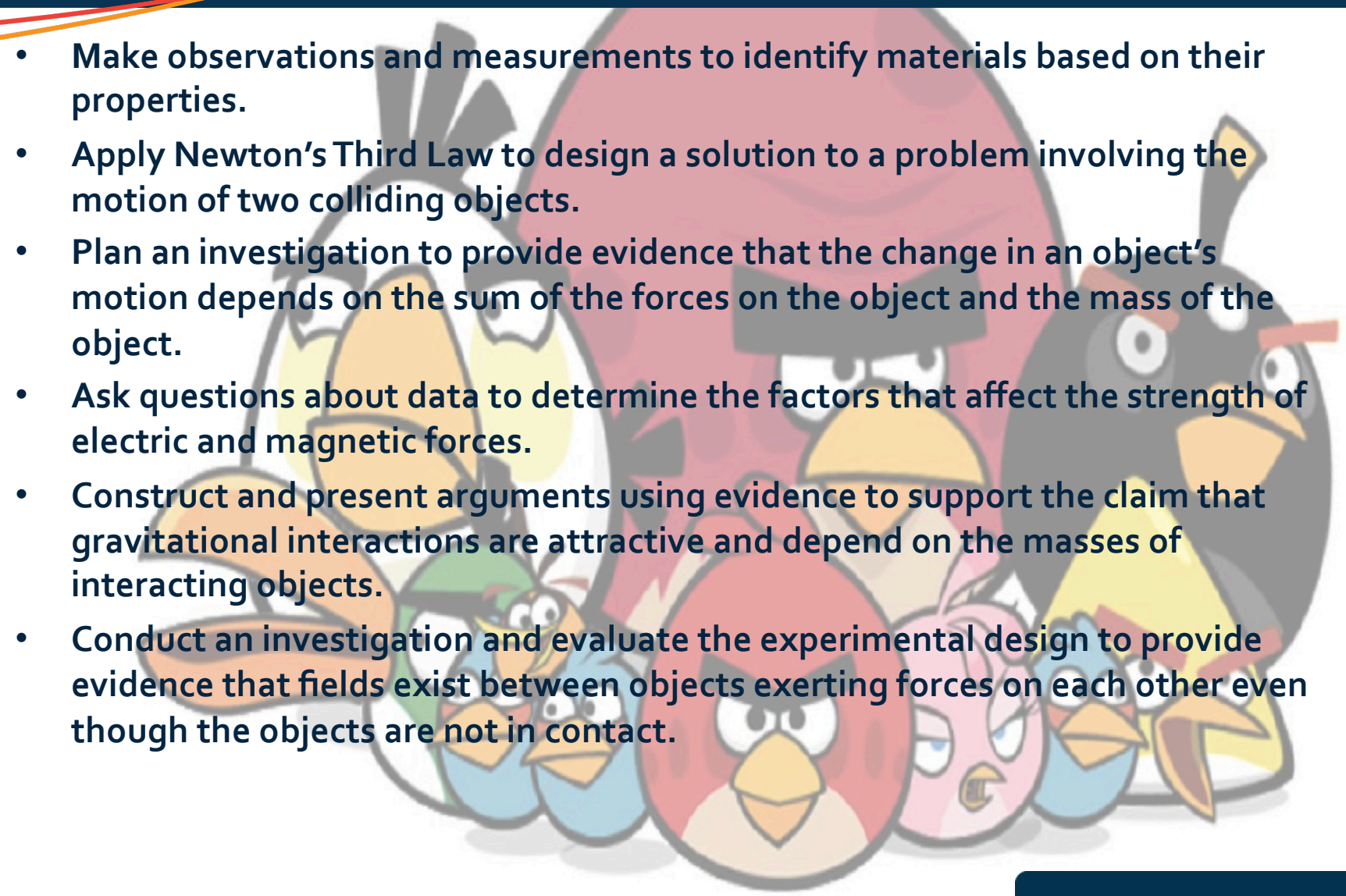
- Angry Birds is a widely-known and played game based on physics principles.
- Players are able to control trajectory and force by "pulling" on a slingshot thus affecting speed, velocity, and other factors pertinent to kinematics.
- Angry Birds is a great game to demonstrate physics principles since it is a game built on OSP-Open Source Physics. Students can experience many different kinematics principles while playing the game.



ANGRY BIRDS

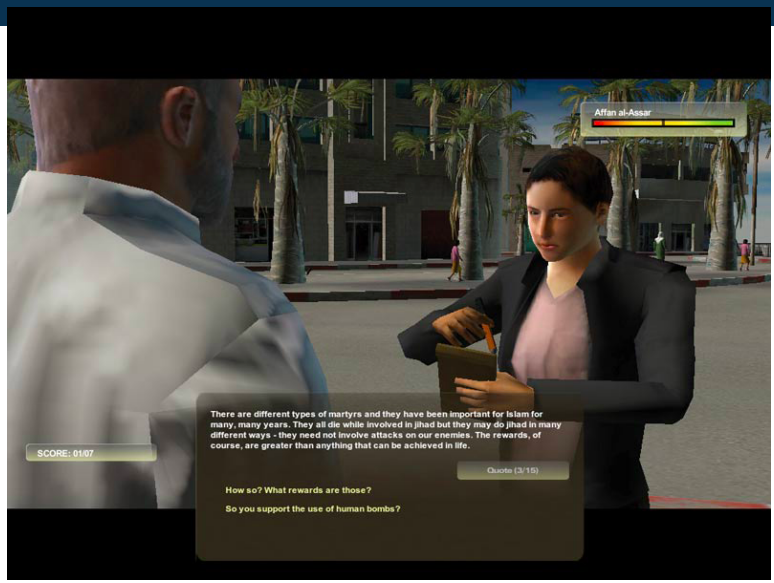
- Primary Math: positional math language (above, below, left, right, bottom, biggest, smallest), measurement (distance), angles, shapes
- Intermediate Math: parabolas, velocity, angels, trajectory, acceleration, quadratic formulas
- Science: simple machines (lever), mechanics, force, energy, velocity/speed
- History: history of the catapult, changes made to catapult technology throughout history, modern-day inventions that use this technology
- Music: Tie in with history, what music was popular in the middle ages when catapults were invented (give students a feel for the culture of the time).
- Art: Tie in with history, what era of art was happening during the middle ages when catapults were invented (give students a feel for the culture of the time).
- Language Arts: reflection writing, reading text for information (non-fiction books and websites)

ANGRY BIRDS



- Make observations and measurements to identify materials based on their properties.
- Apply Newton's Third Law to design a solution to a problem involving the motion of two colliding objects.
- Plan an investigation to provide evidence that the change in an object's motion depends on the sum of the forces on the object and the mass of the object.
- Ask questions about data to determine the factors that affect the strength of electric and magnetic forces.
- Construct and present arguments using evidence to support the claim that gravitational interactions are attractive and depend on the masses of interacting objects.
- Conduct an investigation and evaluate the experimental design to provide evidence that fields exist between objects exerting forces on each other even though the objects are not in contact.

GLOBAL CONFLICTS: PALESTINE



The game has received great praise as an educational game as it not only teaches people about the Israeli-Palestinian conflict, but also facilitates the teaching of communication skills and other competencies of the journalism profession.

- **Decision making (strategy & problem solving)**
- **Social interaction/ values/ cultures**

to learn about the lives of the people in the middle of the conflict (in an immersive environment)
to learn about the role of the media in modern society used by humanitarian groups as a means of informing people about global issues
to teach the practice of journalism, media literacy, and research skills
to teach about gender and religious issues
to learn about issues linked to peace and conflict studies, such as "political violence, human security, democratisation, human rights, social justice, welfare, development, and producing sustainable forms of peace."

DARFUR IS DYING

Darfur is Dying is a viral video game for change that provides a window into the experience of the 2.5 million refugees in the Darfur region of Sudan. Players must keep their refugee camp functioning in the face of possible attack by Janjaweed militias.

- Dexterity/ precision/ motor skills
- Decision making (strategy & problem solving)
- Social interaction/ values/ cultures

MINECRAFT

a sandbox video game

- enables players to build constructions out of textured cubes in a 3D procedurally generated world
- exploration, resource gathering, crafting, and combat
- an open world game that has no specific goals for the player to accomplish, allowing players a large amount of freedom in choosing how to play the game
- available through player-hosted servers and enables multiple players to interact and communicate with each other on a single world. Players can run their own servers or use a hosting provider

MINECRAFT

- a school in Stockholm made Minecraft compulsory for 13-year-old students. “They learn about city planning, environmental issues, getting things done, and even how to plan for the future,”
- Teachers can set up “quest missions” where students can wander through and explore ancient worlds.
- English-language teacher allows children to play Minecraft collectively in the classroom but with one caveat: they were allowed to communicate both orally and through text only in English.
- Science teacher has set up experiments in Minecraft to teach students about gravity.
- British Museum to be digitally recreated in Minecraft
- The entire country of Denmark has been recreated in Minecraft

MINECRAFT

MinecraftEdu

- bundle of mods and dashboard features gives teachers more control
- teachers can quickly host servers and build custom maps with integrated content as well as create and administer assignments and lessons
- set of classroom management tools that make it easy to define player abilities and items; to freeze, mute, and teleport students; and to create specific building areas with player permissions -- allowing for different lessons or projects on one map

Example?

Think about an example of GBL

- What is the pedagogic benefit?
- How might you implement it?
- People? Organisation? Environment?
- Technology?
- What questions do you have?

OPEN DISCOVERY SPACE

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