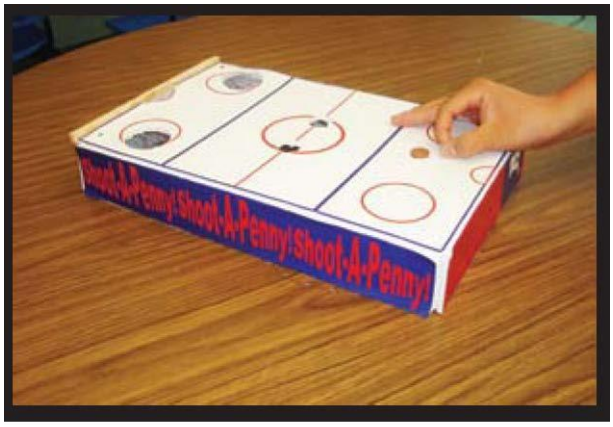
TIJ1O0 Exploring Technology **Glenforest Secondary School**

Teachers: Mr. G. Snider & Mr. C. Tarasco

ELECTRONIC GAME PROJECT

The Challenge:

The Game Company has requested proposals for a new line of electronic games aimed at children ages four to twelve. The games should be original, engaging, fun and easy to play, yet simple and inexpensive to manufacture. Your proposal must include a fully functional prototype of the game, an electronic schematic , a technical drawing and an explanation of the rules of the game.



Wires act as a switch when the penny lands in a hole.

Criteria:

1. The game should be built around a box made of foamcore. The box should be covered with attractive printed graphics that provide the playing surface, and include the name of the game and the game logo. The footprint of the game should be no larger than 10" x 16" (25cm x 40cm).

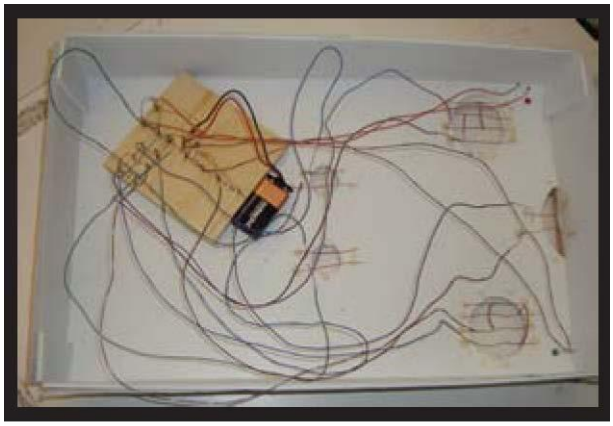
2. The game player will need to perform an action, such as inserting pennies, in order to complete an electronic circuit that will illuminate one or more LEDs to indicate success or failure.

3. You must develop a name and logo for your game that provides the consumer with a good idea of what the game is about.

4. You must write a brief description of the game, its objective, rules and instructions.

5. You must make a technical drawing of the case design and an electronic schematic to be sent to the manufacturer.

6. At the end of the project, each student must write an individual report on the process, explaining what they learned.



Build an electronic circuit to control the LEDs.

Materials:

- 1 x 9V battery,
- 1 sheet of foamcore (1/8" x 20" x 30"
- glue
- colour printing: 2 pages (11" x 17")
- LEDs, Resistors, Transistors,
- Wire and solder
- Maple doweling, 30 cm in length
- 1/8" masonite 400cm^2
- Additional materials may be brought from home *with the approval of the teacher*

The Process:

Students are to work in small groups collaboratively to complete this task. All students must contribute to the game project. *The project must be built in school, during class or after school.* Each student should keep a record of their daily activities – including problems encountered & solutions found - which they can refer to when writing their report at the end of the process.

Evaluation & Deadlines:

GAME PROJECT = 30% of final grade
DUE on Friday, January 16, 2015
SEE RUBRICS for evaluation details

Glenforest Secondary School Department of Technology and the Arts

TIJ1O0 -- Exploring Technologies

Culminating Activity: Electronic Game Project

Team Members: _____

Electronic Game Project Evaluation						
Criteria	**Level 0** (0% - 49%)	**Level 1** (50% -59%)	**Level 2** (60% - 69%)	**Level 3** (70% - 79%)	**Level 4** (80% - 100%)	**Mark**
Creativity (Thinking & Inquiry)	Unable to come up with any original ideas.	The game is only a slight modification of someone else's concept.	Showed some originality, but didn't fully realize the concept.	Considered a number of ideas and developed one well.	Generated several original ideas, picked the best one, and carried it through.	**/10**
Planning (Communication)	Tried to build the game without a plan.	Minimal research or preparation, plan not evident.	Attempted to develop a plan, but lacked research, or didn't divide work well.	Researched adequately, made drawings, divided the work fairly,	Researched the ideas fully, made full set of drawings, divided the work fairly,	**/10**
Construction & Electronics (Application)	Project never got off the ground or was only partially completed	Game not quite complete, and sloppy construction methods are evident.	Game not quite complete, or sloppy construction methods are evident.	The game is complete, and appropriate construction techniques were used.	The game is complete, parts fit very well, appropriate construction techniques used.	**/20**
Computer Graphics (Application)	Graphics are hand-drawn or incomplete.	Uses Illustrator or Photoshop, but demonstrates only minimal skill.	Uses few of the tools available in Illustrator or Photoshop.	Successfully applies a variety of tools in Illustrator or Photoshop.	Successfully and precisely applies a variety of tools in Illustrator or Photoshop.	**/20**
Functionality (Knowledge)	Game does not work.	Game functions but only with constant tweaking	Project functions but still needs some minor tweaking	Project functions at an acceptable level	Project functions with a high degree of reliability	**/10**
Troubleshooting (Thinking & Inquiry)	Students never got far enough with the project to troubleshoot it	Teacher was constantly consulted for solutions	Teacher was sometimes consulted for solutions	Teacher was consulted for guidance but not for solutions	Student completed troubleshooting without teacher guidance	**/10**
Aesthetics (Communication)	Project was never started or only partially started and has very little appeal	Only the basics were addressed and project lacks visual appeal	The project is fabricated with some attention to visual appeal	The game has visual appeal with understanding of design principles	The game's visual appeal reflects a high calibre design sense and use of principles	**/10**
Technical Report (Knowledge)	The report was not submitted, or was not taken seriously	The report is incomplete, poorly written, and lacking in detail.	The report is incomplete, or poorly written or lacking in detail.	The report answers all the questions and shows understanding of the process.	The report shows depth of understanding and growth in abilities.	**/10**
Evaluation is based on the steps of the Design Process					**Total:**	**/100**

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Report on the Electronic Game Project

To be completed in class on Monday, January 19.

Answer the following questions on foolscap. Each answer should be a paragraph with at least three sentences.

1. Explain what you learned about teamwork.
2. Explain *how* your design evolved or changed as you worked on it.
3. Explain *why* you changed the design.
4. Was your final design successful? Explain your answer.
5. How would you improve your design if you had the opportunity to do it over.
6. Include a schematic drawing of the electronic circuit you used in your game.
7. Include a drawing of your final design.