Net Detective
Jetpack Challenge Proposal

Joe Denton is one of the best gumshoes on the force, but he can't solve these cases without you and your Internet detective skills.

Target: Boys and girls, 9-11 years old

Features

- Players learn how to find information on the Internet by solving detective cases in this Firefox game
- Game structure provides motivation and scaffolding for learning Internet Literacy
- Subject matter spans from fine art to football to science to appeal to every child's interests
- Encourages children to take control of their learning using Internet resources
- Core message: "Any question that you have, you can find an answer on the Internet"

Overview

New media luminaries like Professor Henry Jenkins and Ian Bogost have identified the ability to utilize the internet to find information and solve problems as a necessary skill. Many children, however, are only used to navigating the Internet to join online communities, play browser-based games, and access media portals such as YouTube. It is more unusual to see kids use this massive resource to learn about their outside interests, whether that be sports, music, or something entirely different.

This is a two-part problem:

1. Making children realize that any interest they may have has a large web presence.
2. Teaching them the skills to find and access these resources.

Much of the Internet content children are exposed to is given to them via social interaction with their peers or via marketing.

Our goal is to make these children proactive users of the Internet as an information resource.

Net Detective is a game that challenges the player to find information on a variety of subjects using Internet searching skills. Players must help Detective Joe Denton solves cases by navigating the Internet and finding information on a variety of topics, from how to pirouette to the definition of an in-field fly ball.

As players solve cases, they learn new internet skills, beginning with basic search engine usage and moving towards more complex tasks, such as using shortcuts and vetting bad results from search engines.

While many children learn these skills in elementary school (using quotation marks in searches, etc.), Net Detective brings two new perspectives to the process:

A. Speed - Bandwidth is cheap now. It's no longer about efficient single searches, because a single search is cheap. It's about finding as much material is possible, and then going

through it as fast as possible. To that end, <u>Net Detective is the "Mavis Beacon" of Internet Literacy</u>.

Speed and physical tasks are core to the game. While there's strategy, the focus is on the embodied act of net surfing. Sweeping through tabs, opening and closing pages rapidly, keying in on the nuggets of information you're chasing. We're making research fun.
B. <u>Encouraging proactive learning</u> - First and foremost, Net Detective encourages children that whatever they could possibly want to know, they can and should track down.

Play Experience

After players install and activate Net Detective, there will be a small icon located to the right of the address bar (this icon can always be removed using the View menu).

Players click the Net Detective icon to toggle the game on and off. The icon is colored when Net Detective is on, and black and white when off.

<u>Beginning the game</u>

Upon first activating the game, a window resembling a folder opens over the browser welcoming the player to the game. This initial window notifies users that the game can be toggled on/off with the icon in the upper right.
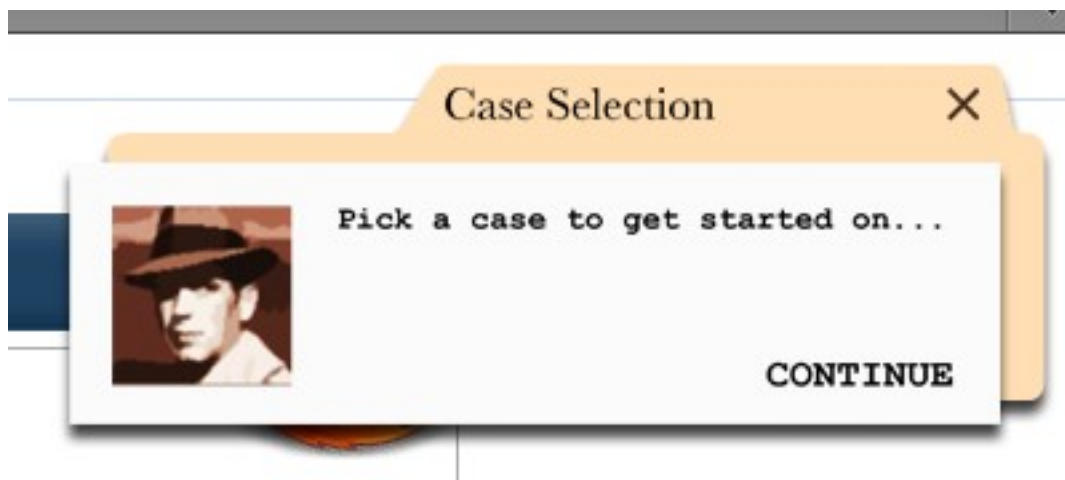

Player progress through these notification windows with the "Continue" link. They may close the window by clicking the "X" in the upper right.
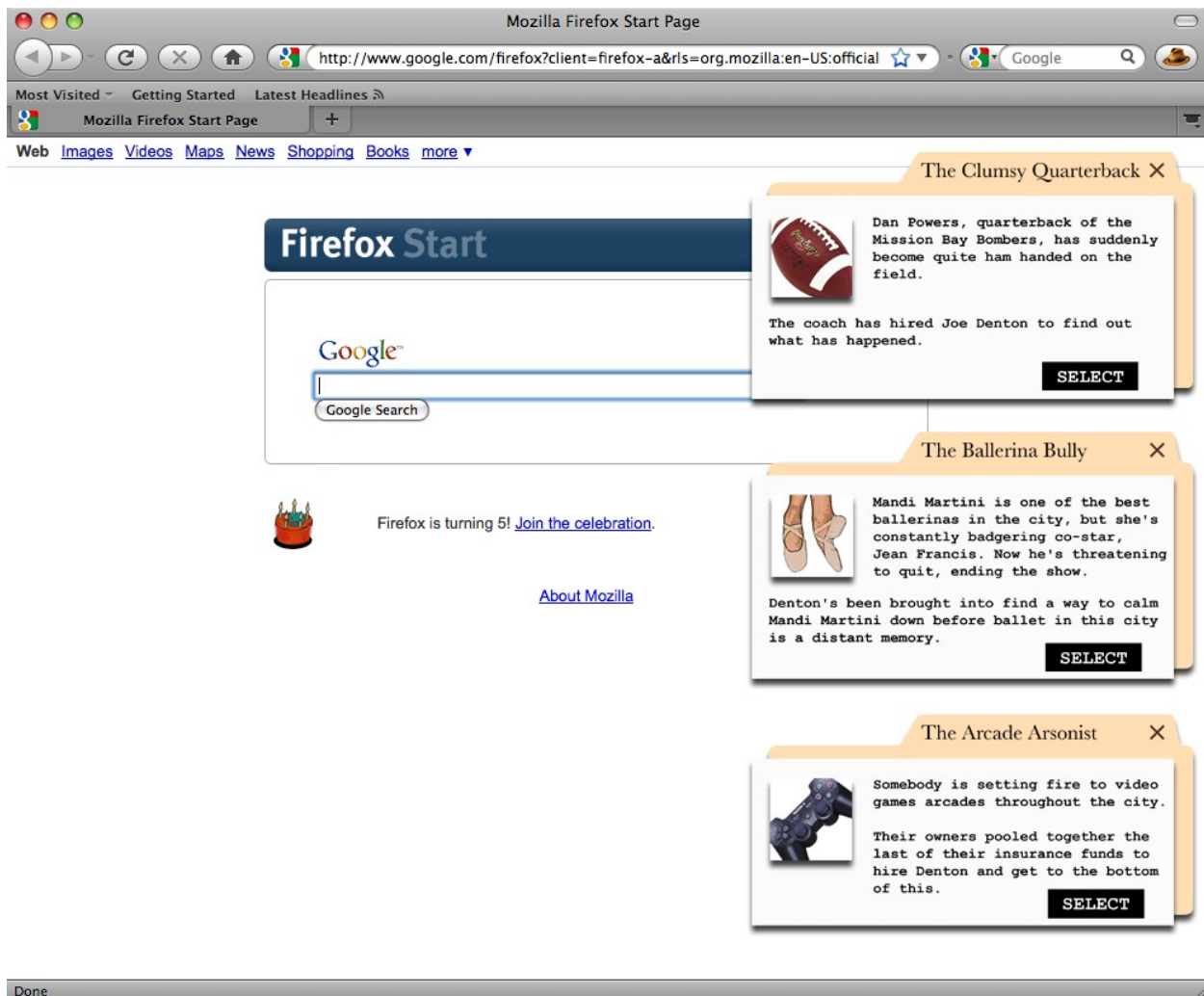
After hitting "Continue," the introductory window is replaced by a new one containing an image of the Detective Joe Denton.
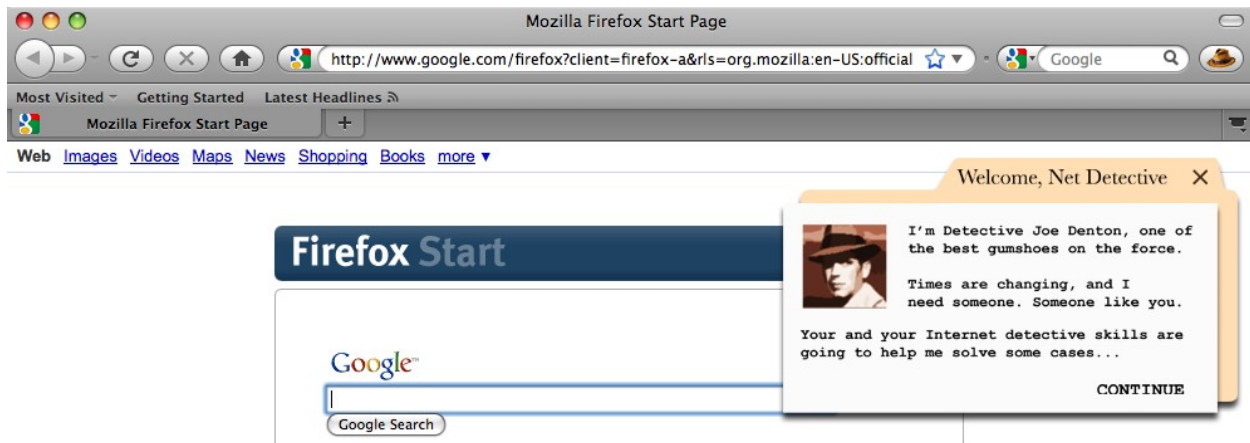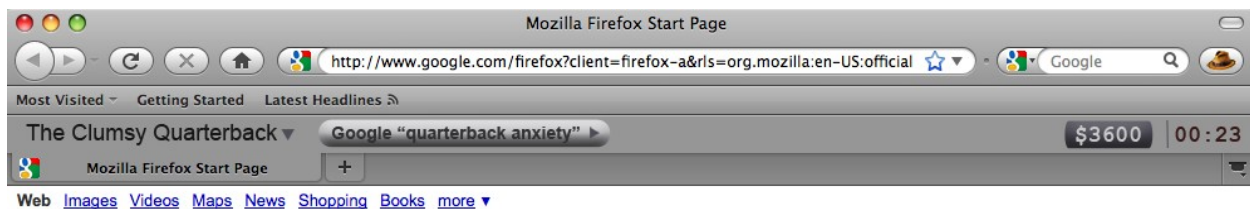

Joe Denton introduces himself and the premise of the game, and asks the player to choose a case.

The player then chooses from three cases with title and synopsis.

Upon selecting the first case, the 'Net Detective' toolbar opens within Firefox. This toolbar is present for the rest of the experience.


The toolbar has the following fields from left to right:

1. Current Case
2. Active Clue
3. Current Score (in dollars)
4. Time Remaining

Your First Case!

For sake of example, the player selects The Case of the Clumsy Quarterback.

The case windows close and the selected case appears in the tool bar; the full case can always be reopened by clicking the case in the toolbar and selecting "More info" from the sub-menu.
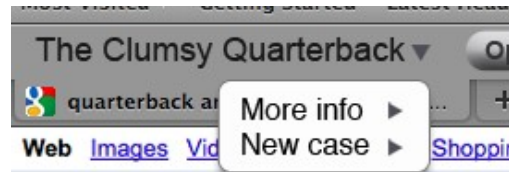
Players may also select "New case" to start a separate case with its own set of clues.

Look, a Clue!

After the case appears in the toolbar, the first "Clue" appears in a pop-up window. Clues are the meat of the game - they are what the player must do to earn points and complete cases.
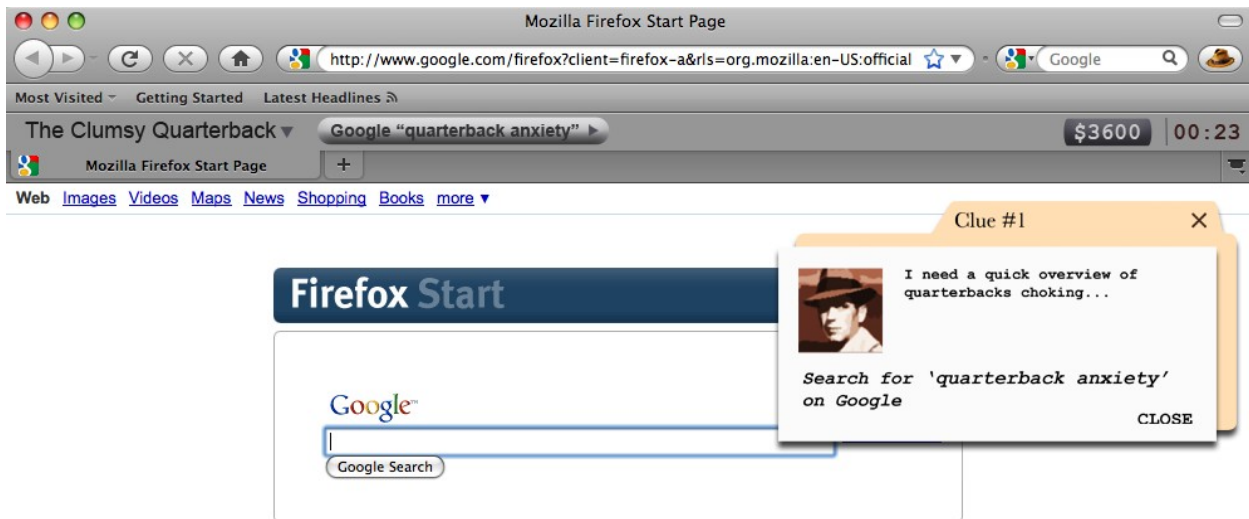
The clue also appears in the tool bar in abbreviated form.

The player closes the clue window by closing it with the "X" or hitting "Continue." It can always be reopened by clicking the abbreviated clue in the toolbar.

The game monitors the actions of the player. If Google isn't opened or the phrase is not being typed in after a few seconds, a help window pops up with an interactive tutorial with 1-2 slides max.
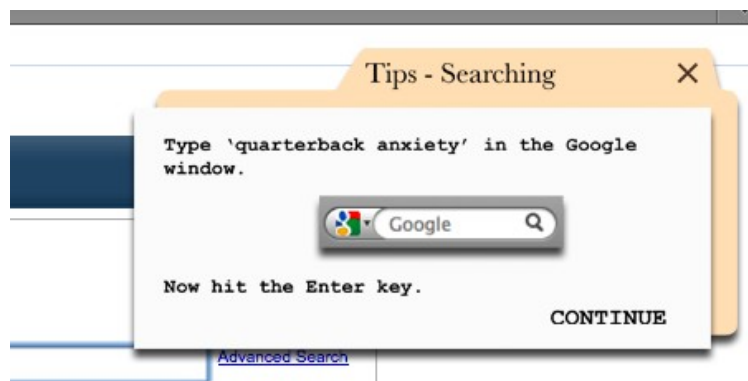
These tutorials will give way to a single tip snippet accessed by clicking on the clue in the toolbar.

Completing a Clue

In the case of this clue, the player scores $100 for successfully searching that phrase. When the player completes a clue, the score appears on screen above the mouse cursor or text field (depending on where the completed task took place) with a positive sound effect. The text rises up and fades away, similar to the numerical scores in an MMO or role-playing game.
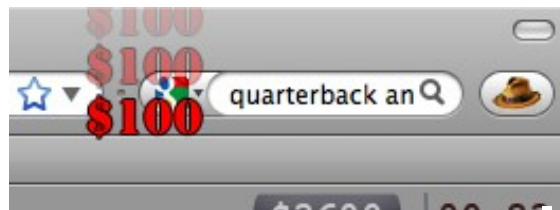
Scores rises and fades away over several seconds

The next clue is presented.
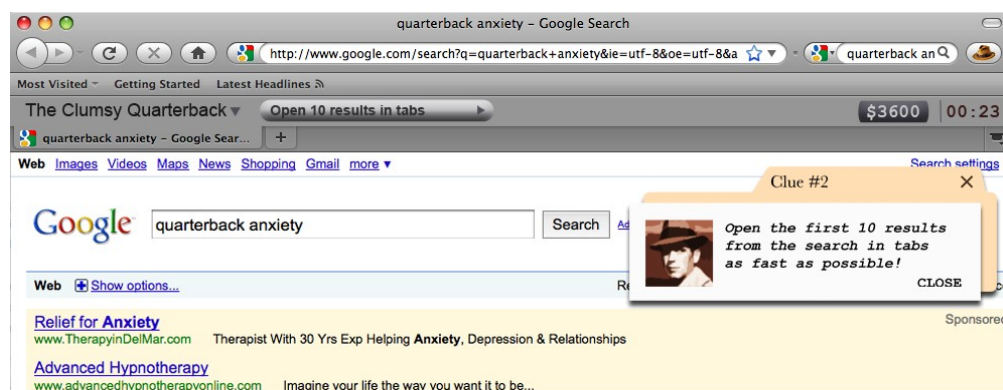
Again the game monitors the user's actions - if they are incorrect the short tutorial for this action pops up:

> Hold down ctrl or apple and click the first search result to open a tab.
> Click the tabs at the top to switch between the tabs you've opened.

As this clue is time-based ('as fast as possible'), the timer on the toolbar starts counting down from 10.00 seconds. Every time the user clicks a tab, a sound effect and a large $100 appear on screen.

It's like the combos exploding on-screen in a fighting game, but we are web surfing.

The timer hits 0 seconds and begins counting up in red. Time is now penalizing the player.

The player finally finishes opening all ten tabs.

Positive noise and the bonus score comes up.
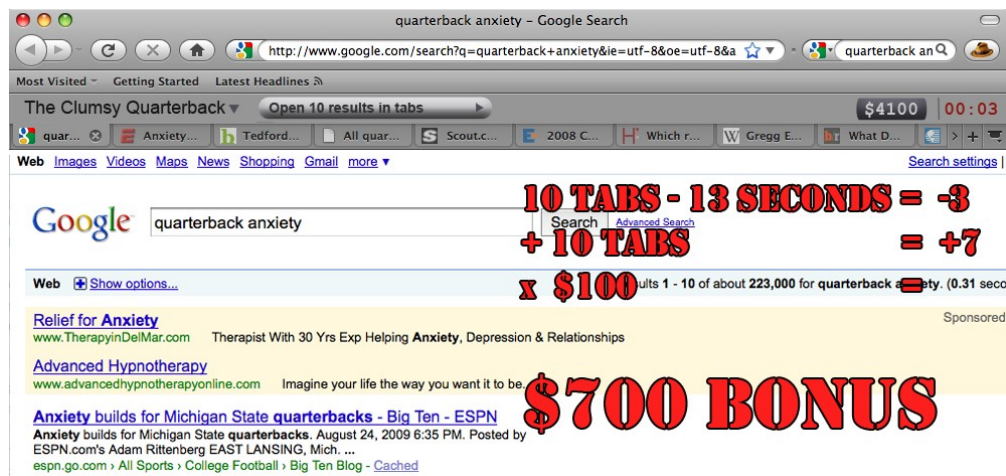
As soon as the score is calculated, the next clue pops up and encourages the player to complete another search-related task.

Completing a Set

Each case consists of 25 clues, which are divided into four or five sets with a common subject. After completing a set, the player is shown a brief interstitial that progresses the plot of Denton's case, and transitions him to the next subject.

In the example of The Case of the Clumsy Quarterback, the first set of clues relate to cases of anxiety in sports history.

After completing this set, a window opens with narrative information - Denton receives a tip that Dan recently obtained a new car.
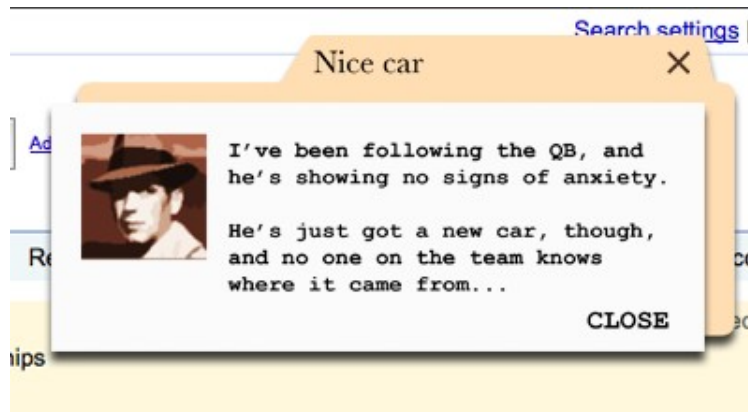
The second set of clues deal with the type of car, leading Denton to discover that it is extremely expensive and wonder how Dan was able to afford it.

On a hunch, he decides to research "match fixing" and look for connections to the case. The third set of clues all deal with this subject.

Soon after, he goes to the football team's locker room. On the floor near Dan's locker, he finds a business card with a number written on the back. He's unfamiliar with the area code of the number, and the fourth set of clues deals with finding and researching the town with that area code.

This is the last set of clues. When the player completes the 25th and final clue, the case is solved.

Solving the Case

Upon completing the case, a window pops up congratulating the player and wrapping up the case story.
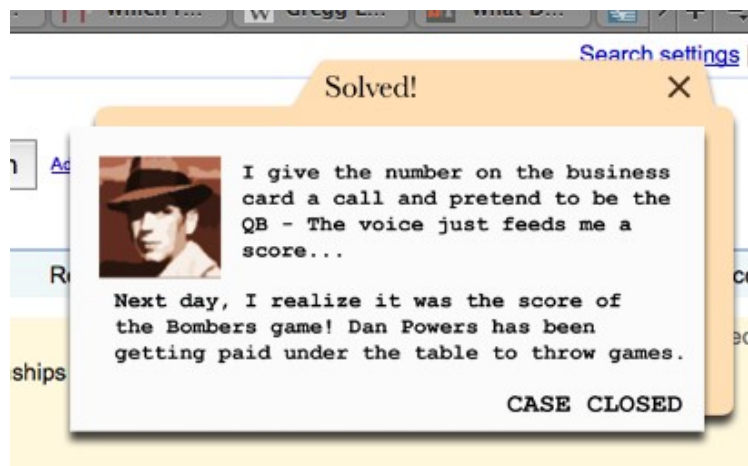
The player receives an end of case bonus ($5000 for the quarterback case). Their total score is tallied.

Total cash earned throughout the game determine the player's rank per this window:

Players are then presented with new cases to choose from.

Clues

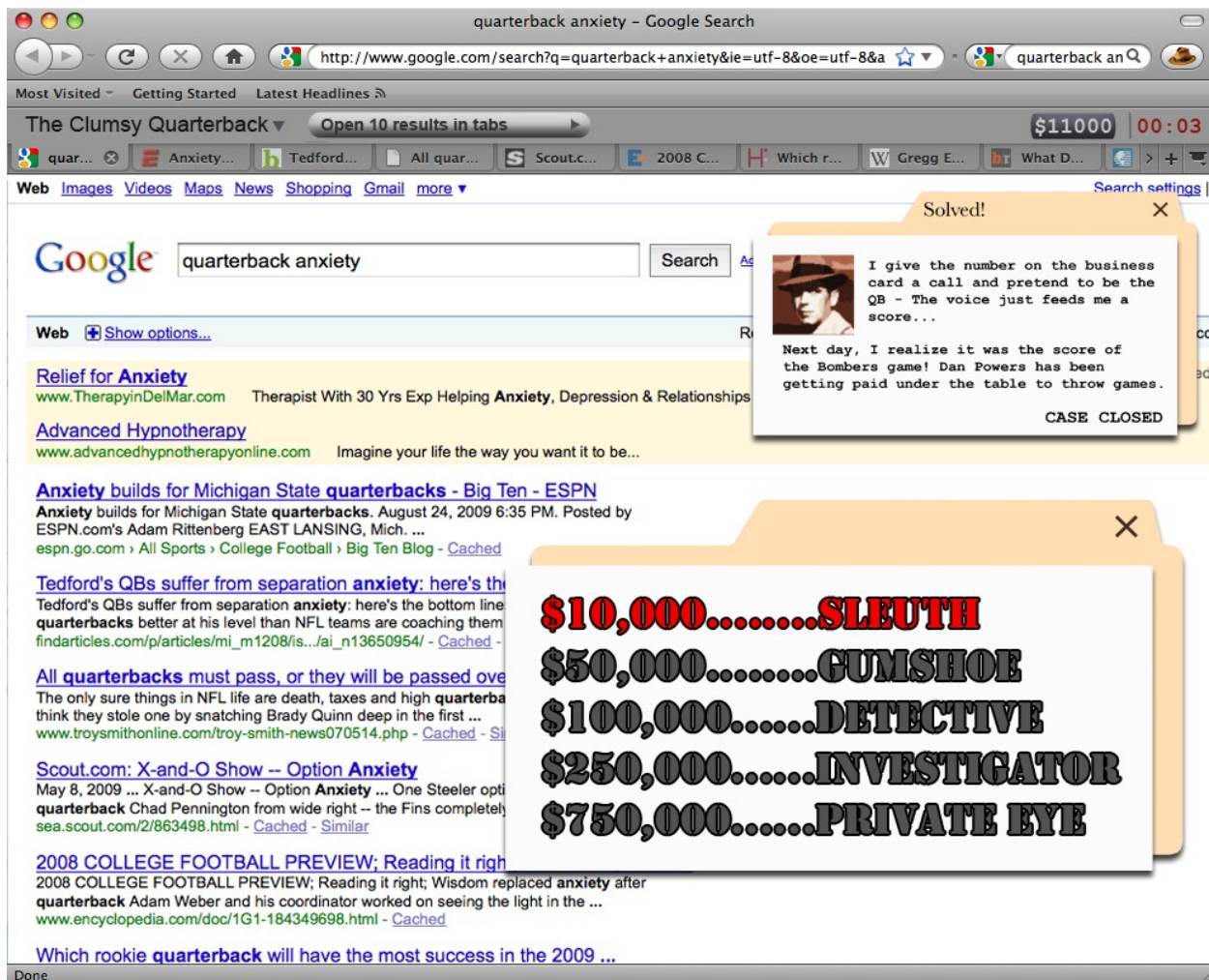As outlined in the play experience, the player is presented with clues that must be completed to progress to the end of a case. Every clue earns the player cash that determine score and rank (as previously mentioned in the player experience). Cases have up to 25 clues in the following categories:

- **Basic Searches** - The player must conduct a basic Google search to find a particular page or piece of information. The player earns $100 for completing the task, plus bonuses based on whether they identified the search terms themselves, or for resolving potential ambiguity in the search terms.
- **Spotting Red Herrings** - The player must quickly scan through the page excerpts displayed on the results page of a basic search to find those that contain all of the key words in a relevant context. The player earns $100 for identifying irrelevant results, plus a bonus based on how quickly they complete the task.

- **Tab Sweeping** - The player must click on links while holding the Apple or Control key to open the page in a new tab. The player earns $100 for each tab they open, plus a bonus based on how quickly they open all the required tabs.
- **Page Finding** - The player is must use a keyboard shortcut to open the Find bar and search for a particular phrase in order to quickly scan the relevant parts of a web page. The player earns $100 for each instance of the phrase that they skip to, plus bonuses based on their speed and for instances of the phrase appearing near pertinent information.
- **Tab Weeding** - The player must quickly identify whether or not a page is likely to contain the information they are looking for, and use keyboard shortcuts to close the tabs that don't. The player earns $100 for each correct evaluation, plus bonuses for completing the task quickly and identifying irrelevant tabs accurately.
- **Crawling** - The player must combine tab sweeping and tab weeding in order to open several potentially informative pages and then quickly eliminate those that do not contain relevant information. The player earns $100 for each tab opened, plus bonuses based on the speed and accuracy of their identification of irrelevant pages, as well as their overall speed.
- **Verification** - The player must find several sources that contain a particular piece of information. The player earns $1000 for each independent source of information, plus a bonus based on how quickly they find them.
- **Identifying Keywords** - The player must use an initial keyword or vague subject search to find more information about the topic and build up a list of additional keywords that can be used to find specific information. The player earns $100 for each appropriate keyword they identify, plus a bonus based on how quickly they compile the list.
- **Wikipedia Rolls** - The player must explore the highly-networked structure of Wikipedia in order to discover connections between different subjects. The player earns $100 for every related link they open within a short time limit.

Potential Cases

The Case of the 80 Year Old Egyptologist

[History]
Garth Rumsfield's grandpa insists he was on the expedition to discover King Tutankhamun, despite not being old enough for that to even be possible. While this may just be the crazy ravings of an old man, Garth hires Joe Denton to get to the root of these delusions.

Resolution: Grandpa Rumsfield wasn't there for King Tut, but he did fight for the British in Egypt during WW II. He did discover an Egyptian tomb, already robbed and barren, during one battle, and over the years his tale became more grandiose. Now he's so old, he believes it!

The Case of the Arcade Arsonist

[Videogames]
Somebody is setting fire to video games arcades throughout the city. Their owners pooled together the last of their insurance funds to hire Denton and get to the bottom of this.

Resolution: It was owner of the local electronics store. No one was buying video game consoles, preferring to hang out with each other in the local arcades. He decided to jump start business by burning down the competition.

The Case of the Bullying Ballerina

[Dance]
Mandi Martini is one of the best ballerinas in the city. She's also one of the meanest. She's constantly badgering co-star, Jean Francis. Now he's threatening to quit, ending the show. Denton's been brought into find a way to calm Mandi Martini down before ballet in this city is a distant memory.

Resolution: Martini and Francis used to be an item, but Jean loved dancing more than his Martini. Mandi was hurt, and the only way she could cope was by treating Jean Francis like trash. After Denton finds out, he buys Jean a time-management book and gets them back together.

The Case of the Half-Wit Hacker

[Computer science]
Every one of Dave Montana's car dealerships is missing cars... according to their computers. Somebody's been hacking in, but why target Montana? And why just the stock list?

Resolution: The hacker was Montana's next door neighbor. He thought he could get the cars by transferring the titles to his name and moving them from the stock lists in Montana's database. He just left out one important part--getting the cars off the lot. Computers can't do everything... Good thing, too. Montana probably would've recognized his own cars across the street.

The Case of the Library's Labyrinth

[Literature]
Visitors keep disappearing at the local library. Some say its a kidnapper, others an old librarian's ghost. Denton's brought in to find the missing clientele.

Resolution: A librarian was so concerned with people mistreating books that she was hoarding them where no one could find them. When people started happening upon it, she couldn't let them escape in case they told everyone. This librarian needs to remember books aren't for decorating shelves, but for people to enjoy.

Game Curriculum

In a white paper written as part of the MacArthur Foundation's $50 million Digital Media and Learning Initiative, Henry Jenkins identifies a set of skills and competencies that are important for participants in today's culture. One of these is Networking, which Jenkins describes as "the ability to search for, synthesize, and disseminate information." Jenkins argues that developing the ability to find information online has become more important than memorizing information first-hand. Net Detective is designed to teach this ability directly, through the introduction of several practical skills related to finding information online.

We have identified several key skills that Net Detective will teach to players. The progression of tasks is engineered to gradually teach the following skills:

1. Basic Google Searches - Understanding the process and basic syntax of searching for keywords through Google.

2. Opening links rapidly - Understanding the purpose and usage of tabs, and practicing the kinesthetic act of tab sweeping.
3. Determining if a site is relevant - Learning techniques for quickly determining the relevance of a particular search result, and practicing making this judgment quickly
4. Finding on a page - Understanding the purpose and usage of the find bar, and practicing search-oriented scanning of a document.
5. Copying search terms from websites - Understanding the process of finding related searches, and practicing the cognitive task of constructing lists of relevant keywords.
6. Vetting - Learning techniques for investigating the legitimacy of a web source or specific piece of information, and practicing verification of information.
7. Wikipedia - Understanding appropriate ways to use Wikipedia as a resource. Specifically, browsing highly-networked information, and using Wikipedia as a subject reference rather than a sole source.

A key component of achieving the learning goals of the project is the organization of content. The game will introduce key concepts through a graduated learning process, giving the player time to see, understand and practice each step before introducing the next. Each stage of the game will separate a learning objective into multiple tasks that can be completed individually, and which build on one another to help the player form and expand their mental model of the search process.

The first step for each concept is introduction, where the mechanics of the technique are presented to the player. Following introduction is practice, where the player attempts to employ the technique directly, and in relative isolation. Finally, comes mastery, where the player's familiarity with the technique is great enough that they can use it in concert with other techniques.

For example, the first learning objective is "Basic Google Searches." This can be broken out into several distinct skills: using Google to return search results, understanding basic search syntax, and combining search terms to filter results.

- The first task presented to the player is a simple, unambiguous search (for example, *Major League Baseball*).
- Once the player is comfortable with these searches, they are introduced to the idea of quotation syntax, and asked to search for more ambiguous terms. (For example, the out-of-context quote, "Only the king can do that." Searching for this phrase without quotation marks yields results that use the individual words, but not the entire phrase. The player must use quotation syntax to determine the quote's origin.)
- Third, the player is introduced to the idea of using multiple search terms to filter results by domain. The player is then given the task of searching for a term where the domain is ambiguous. (For example, the book "The Golden Compass." Searching for the title yields results related to the 2007 movie; searching *Golden Compass book* yields correct results.

As the player progresses, they will be introduced to more of these learning objectives - first, in relative isolation, and then in conjunction with one another. Later tasks, therefore, are compound tasks that ask the player to bring together a variety of techniques to solve a single problem.

Procedural Information

The internet can not only be used to find reported information about a subject - *who, what,*

where, why - but also procedural information - *how-to*. "How to tie a hitch knot", "how to make a web page," and "how to knit" are all examples of searches about processes.

The techniques used to search for these types of information are similar, but there is a conceptual difference between them. Even a person who understands how to use the internet as a reference may not realize that they can find instruction for almost any task online.

Net Detective does not explicitly distinguish between these types of searches, but it is important to demonstrate the breadth of searchable information. Once the player has become adept at various search techniques, subsequent cases will involve searching for guides, manuals, instructions and other sources of procedural information, as well as reference information on people, places and things.

In this way, the player will come to understand that finding information about tasks is as easy as finding information about anything else.

Potential Directions

Long-term net skills

While this game focuses on the skills necessary to find information on the web quickly, there is a whole other aspect of web-browsing based on long-term information gathering. This includes using RSS feeds, bookmarking and locating quality aggregators.
It would be great to extend this game to teach and encourage these longer-term behaviors.

Separating Fact from Opinion

When using the Internet to research a controversial topic, it is important to be able to differentiate opinions and misinformation from facts about the subject. Sometimes, it can be difficult to find an impartial source, or to confirm that a source is actually impartial. One method of solving this problem is to find multiple sources from opposing sides, in order to classify specific information as commonly-accepted or disputed.

Additional types of clues could be created that explore the difficulties of this situation, and to give pointers and practice at synthesizing multiple viewpoints to construct a model of information about a subject.

Community features

The game should encourage interactions between players. They can help each other solve cases and compare scores. Looking at the performance of your peers is great way to encourage continued play.

Including ranks as seen in Facebook games such as Mafia Wars and perhaps even avatar features could really help build a community around the game.

Power-ups

Cash points could be for more than just bragging rights. This cash could be used for added abilities - time extensions, automatic tab opening, etc. This could make the browser feel even more like a game environment (and ideally encourage this mindset in day-to-day use).

<u>Additional skills</u>

There will always be more skills and cases to learn and play. If a strong community is built, additional experiences could be created by developers, or tools could be provided for teacher/parent-created experiences