



Black Holes Explorer's Cards

Activity Description

Visitors use bar code ID cards to create personal web journals by collecting digital artifacts, such as electronic images and audio/video recordings, throughout the exhibition. The museum educator's role is to make sure visitors are comfortable using these Explorer's Cards and to encourage them to visit their Explorer's Journals on the *Black Holes* exhibit website after they leave the exhibition.

Original Source

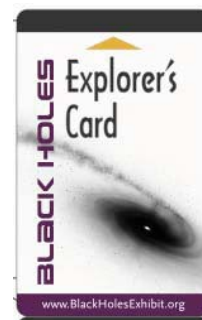
Created for the *Black Holes* exhibition

Materials Needed

- Pre-printed cards (for large groups) or 30-60 seconds for each visitor (or small group of visitors) to create a card at the "Start Here!" station
- Exhibit briefing information for museum educators and teachers
- (Optional) Exhibit floor plan and sample card for visiting teachers

Background

Cards are created at the "Start Here" stations of the exhibition. The "Add To Your Journal" station allows visitors to preview their web journals, and also send themselves an email reminder with their journal information. A demonstration journal can be viewed at <http://www.BlackHolesExhibit.org>. No identifying information is collected about the individual using the card, unless the visitor chooses to provide his or her email address at the "Add to Your Journal" station.



Extensions

Encourage visitors to use the Explorer's Cards to check out the personalized journals on the *Black Holes* website after their visit! (Data may take up to 24 hours to upload.) The website also contains supplementary resources and links for further exploration of black holes.

Exhibit Connections

What Is A Black Hole?; How Do We Find Black Holes?; In Search of Real Black Holes: Take Their Temperature/Explore a Feeding Black Hole/Weigh A Black Hole/Simulate the Universe; Add to Your Journal

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Exhibit Briefing Information for Museums

Overview

Black Holes: Space Warps & Time Twists pulls visitors in to the modern search for real black holes—the most mysterious and powerful objects in the universe. A central feature of the exhibition is the visitor’s “Explorer’s Card” (right) which can be used throughout the gallery to create a personal web journal about black holes. Our research suggests that the personalization provided by these cards can promote more effective usage and learning from the exhibition.



This document provides briefing information about the Explorer’s Cards and the Explorer’s Journal, as well as advice for introducing these resources to large groups.

Black Holes Explorer’s Cards

During their visit, visitors insert their cards into various computer stations and collect digital artifacts, such as telescope images or audio/video recordings, from their activity at that station. Each card creates a personal journal with all the digital artifacts collected by the visitor on that card. After leaving the exhibition, visitors use the unique bar code ID on the back of their cards to log in to the *Black Holes* exhibit website and see the data and discoveries collected on that card.

For Museums

To save time, museum staff can pre-print Explorer’s Cards for large groups. Although these group members will not get to choose personal nicknames or avatar images, they will be able to personalize their journals with the specific images and information collected throughout the exhibit. Smaller groups and individuals can create their own cards at one of the three “Start Here” stations.

All museum staff and volunteers should carry a card with them when they are in the *Black Holes* exhibit. Use it to show visitors the features on the back of the card—the personal nickname, unique ID number—as well as the exhibit website URL on the front. Encourage them to visit the “Start Here” station if they don’t yet have a card, and also to use their card throughout the exhibit. Remind visitors that the card should be used once they leave the gallery to log in to the *Black Holes* website and see the personalized journals that they are creating in the exhibition.

When pre-booking school visits to the *Black Holes* exhibition, museum staff should make sure teachers have access to the Exhibit Briefing Information from the Teacher’s Activity Guide, as well as an example of the Explorer’s Card and/or an exhibit floor plan for the gallery. Be sure to emphasize the importance of the Explorer’s cards and journals for follow-up experiences in the classroom.



Black Holes Explorer's Journal

The personalized web journals created by Black Hole Explorers in the exhibition can be accessed within 24 hours at <http://www.BlackHolesExhibit.org/>. To log in, visitors will need the unique ID number on the back of their Explorer's Cards. When they log in to the journal area of the website, data and discoveries will have been automatically organized into four sections of the journal: My Models, My Evidence, Adventures, and More to Explore. Each section contains a reminder about specific activities in the exhibit, the predictions and artifacts created by the visitor at these stations, and links to related content about black holes. The journal artifacts can be previewed inside the exhibition at the "Add to Your Journal" stations.

Sample Journal Page (My Models, landing page)

The screenshot shows the "My Explorer's Journal" landing page. At the top, there's a navigation bar with the exhibit title "BLACK HOLES Space Warps & Time Twists" and a subtitle "A traveling exhibition about the most extreme objects in the universe". There are also icons for social media and a "Sign Out Change Password" link. Below the navigation bar, there's a main header "My Explorer's Journal" with links for "ABOUT THE EXHIBIT", "LEARN MORE", and "THINGS TO DO". A secondary navigation bar includes "Home", "My Models", "My Evidence", "Adventures", and "More to Explore". The main content area features a large introductory text block about using models and simulations, accompanied by a diagram of a black hole showing the singularity, event horizon, and distortion of space and time. Below this are five interactive activity cards: "Black Holes Modeling Lab", "How Do We Find Black Holes", "Supernova Model", "Simulate the Universe", and "Youth Media Connections". On the right side, there's a user profile for "Space Flash" with a photo and a bio. Below the profile is a "ASK A SCIENTIST" section featuring Saeqa Dil Vrtilek, a Harvard-Smithsonian Center for Astrophysics scientist, who discusses studying hot gas around black holes. At the bottom right, there's a "BLACK HOLE SURVEY" section asking for feedback on the exhibit experience.

Remember to tell visitors: If you lose your card, you also lose your login information!



Journal Walk-Through

A demo journal is available at <http://www.BlackHolesExhibit.org/>. The tour below provides a “site map” and description of what visitors will find in their journals. The more data they collect in the exhibit, the more personalized their journals will be!

My Models

Black Holes in Theory: Models and Simulations – Explore your discoveries about black hole phenomena. Where do they come from? What do they do to objects and space around them? Scientific models help us test theories and explain evidence.

- Black Holes Modeling Lab
- How Do We Find Black Holes?
- Supernova Model
- Simulate the Universe
- Youth Media Connections

My Evidence

Real Black Hole Data: Evidence and Observations – Compare your black hole predictions to the evidence you collected “in search of real black holes.” Are black holes hot or cold? What do they weigh? Do they swallow everything that falls toward them?

- Taking a Black Hole’s Temperature
- Explore a Feeding Black Hole
- Weigh a Black Hole
- Youth Media Connections

My Adventures

Black Holes in Imagination: Galactic Adventures – See what happened on your adventure to the black hole at the center of our Milky Way Galaxy. View your snapshots, video postcard, and souvenirs. If you managed to collect treasure from the deep space dive, that will be here too!

- Your Black Hole Adventure
- Black Holes in Pop Culture
- Youth Media Connections

More to Explore

Interactive features for extending and sharing your *Black Holes* experience – See the artifacts you requested at the “Add to Your Journal” station and collect some more! Send an e-card, ask a scientist a question, or take an image of a black hole target with a real telescope. Features include:

- Observing Black Holes with NASA
- Ask a Scientist a Question
- Greetings from a Black Hole

Remember: Until you log in and register on the *Black Holes* website, your card number is the only way of accessing your journal. Do not lose your card!