THE DETECTIVE BAVARIA

INSTRUCTOR'S GUIDE

GEAR UP FOR THE PROMISE

K20CENTER ↔ OKCPS

The K20 Center for Educational and Community Renewal is a statewide education research and development center which promotes innovative learning though school-university-community collaboration. Our mission is to cultivate a collaborative network, engaged in research and outreach, which creates and sustains innovation and transformation through leadership development, shared learning, and authentic technology integration.

The Gaining Early Awareness and Readiness for Undergraduate Programs (GEAR UP) is a federal grant provided by the U.S. Department of Education to help students prepare for and pursue a college education. In 2012, the program started its work with 6th and 7th graders and will continue working with these students as they move through middle school, high school, and into higher education.

GEAR UP for the PROMISE (Promotion of Readiness through Opportunities that Motivate and Increase Student Expectation) is the K20 Center's GEAR UP partnership with Oklahoma City Public Schools. PROMISE specifically seeks to:

- Increase the percentage of PROMISE students who are academically prepared for higher education and future careers upon graduating from participating schools
- Increase high school graduation rates and higher education enrollment rates of participating PROMISE schools, and
- Increase PROMISE students' and families' knowledge of higher education options, preparation, and financing.

The purpose of this guide is to support the effective integration of "The Detective: Bavaria" into your classroom teaching. This Teacher's Guide is designed to help you in the following ways:

- Gain familiarity with the game: Gain an overview of all the scenarios, which should help you tether the scenarios to lesson content.
- Prepare lessons: Get an idea of the estimated play time for each scenario. The guide also suggests pre-game warm-up topics and post-game discussion questions.
- Extend lessons: Access additional activities and links that will help you pre-teach, extend, or consolidate the scenario objectives.

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WHAT IS THE GAME ABOUT?

SHORT DESCRIPTION

Welcome to "The Detective: Bavaria", an engaging and fun way for students to build skills in data interpretation. In "The Detective: Bavaria", students encounter real-world data interpretation tasks such as identifying qualitative and quantitative data, identifying primary and secondary sources, and discerning the implications of data and how it affects a hypothesis.

Designed for students grade 10, "The Detective: Bavaria" is aligned with the Priority Academic Student Skills (PASS) standards in use by the state of Oklahoma:

Grade 10 Reading/Literature

Standard 4: Research and Information: The student will conduct research and organize information.

- **Accessing Information :** Select the best source for a given purpose.

  - Access information from a variety of primary and secondary sources.

  - Skim text for an overall impression and scan text for particular information.

  - Use organizational strategies as an aid to comprehend increasingly difficult content material (e.g., compare/contrast, cause/effect, problem/solution, sequential order).

- **Interpreting Information :** Analyze and evaluate information from a variety of sources.

  - Summarize, paraphrase, and/or quote relevant information.

  - Determine the author's viewpoint to evaluate source credibility and reliability

  - Synthesize information from multiple sources to draw conclusions that go beyond those found in any of the individual studies.

  - Identify complexities and inconsistencies in the information and the different perspectives found in each medium, including almanacs, microfiche, news sources, in-depth field studies, speeches, journals, technical documents, or Internet sources.

GOALS/LEARNING OBJECTIVES

The purpose of "The Detective: Bavaria" is to teach students how to interpret information in real-world situations and come to informed conclusions. Students must learn to discriminate between types of data, understand the different types of sources, and develop the ability to determine the implications of information. Being able to analyze data in this way gives them the ability to combine information from multiple sources to draw conclusions to succeed in the game and in the classroom.

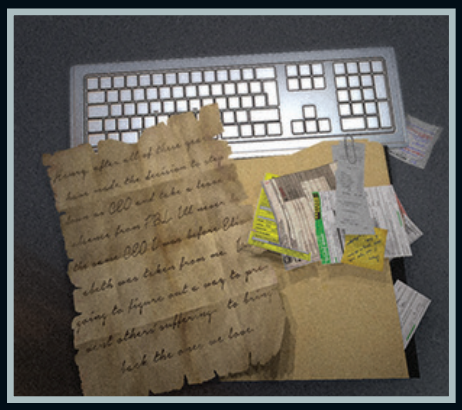
- **Collect Information:** Students need to seek out and evaluate information from multiple sources to become better informed about a problem.
- **Evaluate Information:** Students will need to discern the implications of qualitative and quantitative data and differentiate between primary and secondary sources. By determining these attributes, they can decide if a clue is relevant to their investigation and rate its impact on supporting or opposing the given hypothesis.

  - **Qualitative Data:** Anything that can't be measured. Colors, pictures, smells, descriptions, and opinions are all examples of Qualitative data.

  - **Quantitative Data:** Anything that can be measured or expressed in numbers. Length, height, area, speed, and cost are all examples of Quantitative data.

  - **Primary Sources:** Direct observations and measurements taken by someone who was there.

  - **Secondary Sources:** Secondhand information. Whenever someone writes about someone else's work or writes down someone else's story in their own words.
- **Use Information:** Students will need to analyze the information they collect and organize it to select the information most relevant to the hypothesis. This will be done by rating clues based on their relevance and how strongly they affect the scenario's hypothesis. The game will graph these ratings to give students a visual representation of the trends in their collected data. At the end of each scenario, students will be required to answer the final assessment question by drawing conclusions from their gathered information.



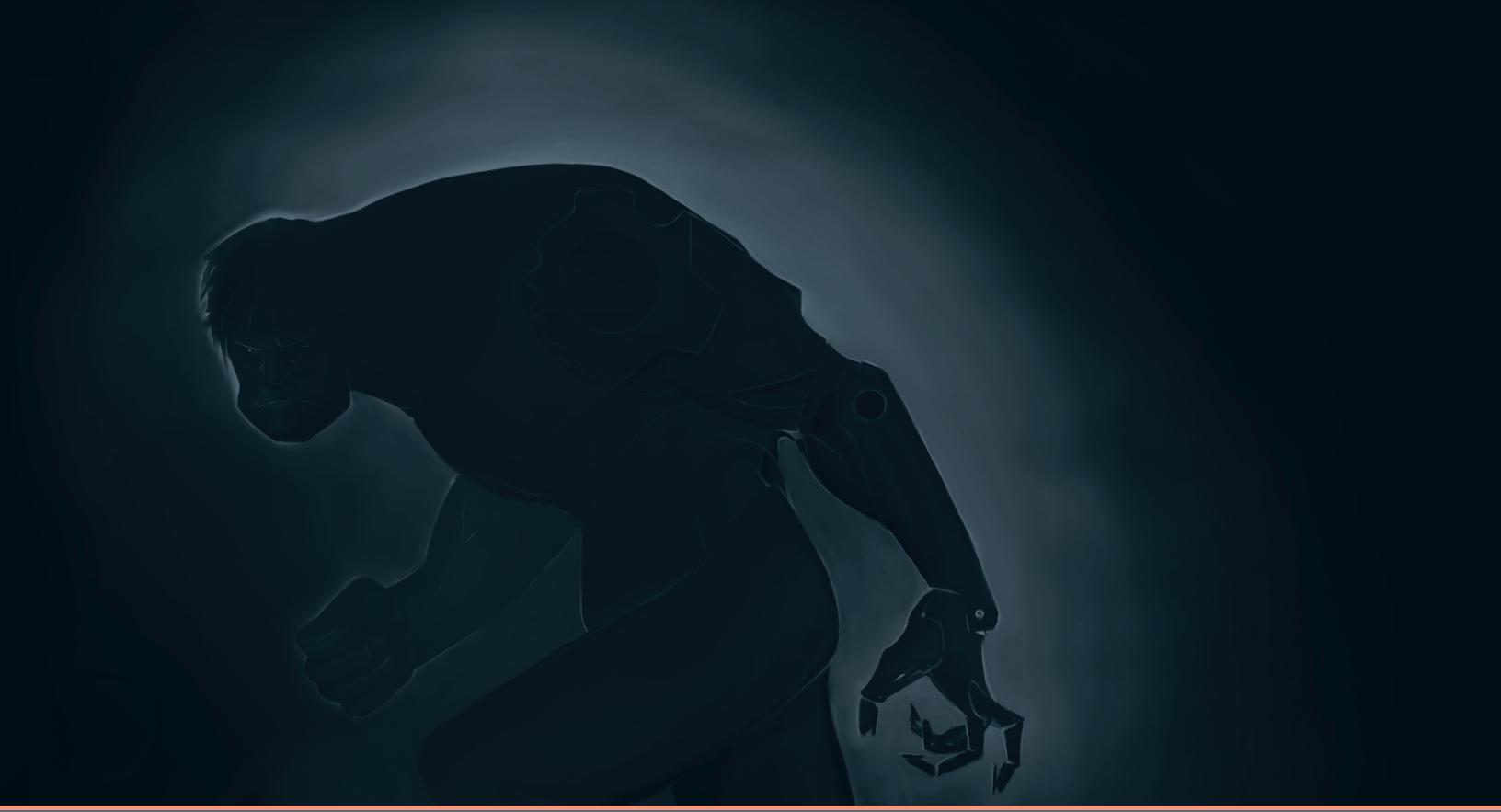
GAME STRUCTURE

The student will be placed in a modern version of the world of Mary Shelley's "Frankenstein". As a rookie FBI agent, it is their job to solve the mysteries surrounding Frankenstein Biomedical Lab in the village of Ingolstadt.

In each of the four scenarios, the student must focus on collecting, evaluating, and using information. Information will come in many forms and from many sources. Students will need to correctly evaluate these clues to determine their relevance to the hypothesis, as well as the weight of their implications.

A graph will be provided to show the students' rating of each evaluated clue so that they visualize how their information affects the hypothesis. This graph will aid the student in drawing an informed final conclusion at the end of each scenario, allowing them to demonstrate an in-depth understanding of information interpretation.

In order to win the game, the student must collect, evaluate, and rate clues to guide them towards a conclusion about the proposed hypothesis. If they fail to correctly evaluate the clues, misinterpret them, or come to a false conclusion, they will fail the level and must repeat it in order to proceed to the next. At the end of each scenario, win or lose, the student will see an assessment of their performance on a result screen and receive individual feedback.



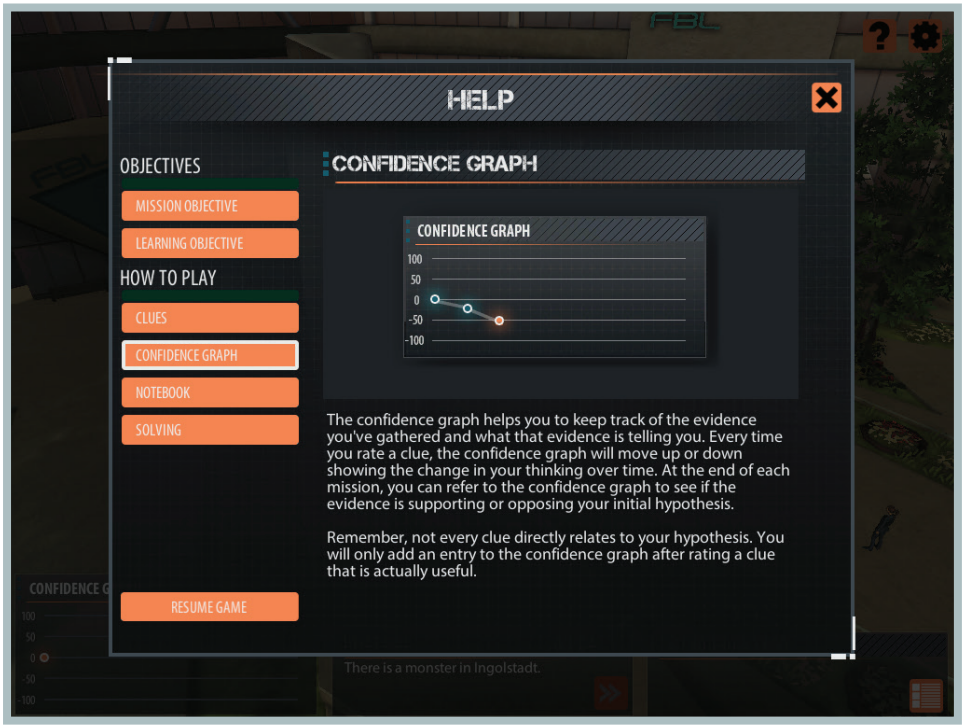
INTERFACE

Clues available in the level will appear highlighted. If the student clicks on a clue, their character will move to the clue and collect it.

Every time the student collects a useful clue, a note will be added to the Notebook. They can look back at these at any time to get a clear idea of what evidence they have collected.

Once a student has collected enough clues, they can either keep searching, or select the solve button that appears at the bottom of the screen.

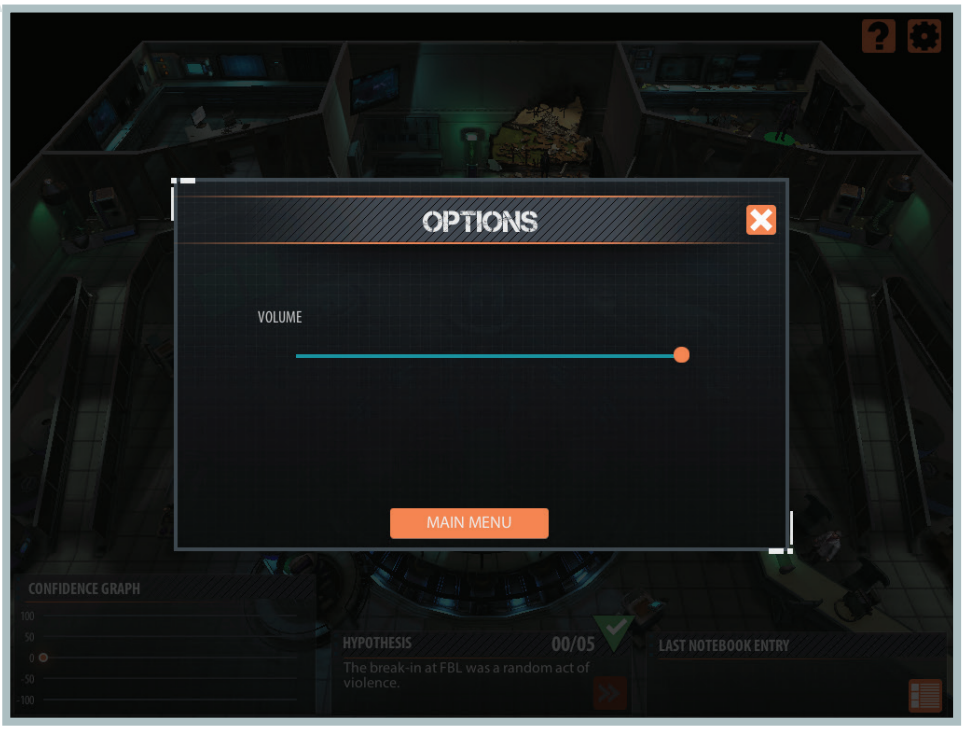
The confidence graph helps the student keep track of the evidence they've gathered and how that evidence affected the hypothesis. Every time they rate a clue, the confidence graph will move up or down showing the change in their thinking over time. At the end of each mission, they can refer to the confidence graph to see if the evidence is supporting or opposing the initial hypothesis.



After solving a case the student is presented with an assessment page that gives them an idea of how well they did on the level.

The Help Menu gives additional information about the levels learning objectives and interface

The Options Menu allows the student to adjust the sound or return to the Main Menu.



PLAYING THE GAME

GAME SYNOPSIS

There has been a major break-in at the Frankenstein Biomedical Laboratories, (FBL for short), and the people of Ingolstadt have reported sightings of a monster. The lab is responsible for countless cures for diseases, advanced prosthetics, and other medical breakthroughs, but could their experiments have gone in a darker direction?

As a rookie agent the player has been sent to investigate both the break-in and the monster sightings. Using their investigative and interpretative skills, they must discover the truth, find the culprit behind these crimes, and bring peace to the village of Ingolstadt.

SCENARIO SYNOPSIS

Familiarize yourself with each scenario and their learning objectives.

The Monster Mystery (TUTROIAL SCENARIO)

Average play time: 20 min

Keywords: discern, qualitative data, rate, decision making

There's a monster loose in Ingolstadt, Bavaria; or at least the townspeople think so. After a break-in at the local medical research facility, many residents have been reporting sightings some sort of monster running around town. Get on the ground and find out if this break-in was just a coincidence, or the culmination of the local population's worst fears.

The first scenario is relatively simple, and designed to introduce the player to the main game mechanics and the first steps in building their data interpretation skills. Student will be presented with up to 10 qualitative clues in this scenario, which they will analyze to determine if they support or oppose their hypothesis.

HYPOTHESIS: "There is a monster in Ingolstadt."

CORRECT CONCLUSION: "Though some people have seen a monster, most of the evidence leads me to believe that something else is going on."

LEARNING GOAL

- Collect information
- Seek out qualitative clues
- Select useful information from qualitative data
- Evaluate information
- Discern the implications of data
- Rate how different types of data affects a hypothesis
- Use information
- Make a decision based on the information

Investigation Of The Crime Scene

Average play time: 25 min

Keywords: differentiate, qualitative data, quantitative data, objective source, decision making

There's still no concrete evidence of a monster being loose in Ingolstadt, but a further investigation of the crime scene at FBL should provide more information about the supposed fiend. Search the laboratory and interview some of the employees; maybe they'll have some insight about what's happening around town.

With the help of up to 15 clues, the player will investigate the crime scene to determine whether the break-in at FBL was a random act of violence, or something more sinister. This level will add quantitative clues, and the player will to choose the type of data a clue represents before deciding its implications towards the hypothesis.

HYPOTHESIS: "The break-in at FBL was a random act of violence."

CORRECT CONCLUSION: "Whoever broke in knew their way around and had a specific reason to be here. This was not a random act of violence."

LEARNING GOAL

- Collect information
- Seek out a broad mixture of clues
- Select useful information from a broad mixture of data
- Evaluate information
- Differentiate between qualitative and quantitative data
- Discern the implications of data
- Rate how different types of data affects a hypothesis
- Use information
- Make a decision based on the information

Crime Suspect—Dr. Frankenstein

Average play time: 30 min

Keywords: differentiate, qualitative data, quantitative data, objective source, primary source, secondary source, decision making

Your investigation has made Dr. Frankenstein a prime suspect for the disturbances happening around Ingolstadt. We've received a warrant to search his house. Go there and see if you can find anything out of the ordinary, and if need be, Dr. Frankenstein.

This scenario will be a little more complex. With the help of up to 17 clues, the player needs to seek out a broad mixture of quantitative and qualitative data to determine if Dr. Frankenstein has a hidden lab within his mansion. In addition to the qualitative and quantitative data, primary and secondary sources will be added in this level. The player will have to weigh the importance of a clue to their hypothesis based on its type and its source.

HYPOTHESIS: "Dr. Frankenstein has a secret laboratory."

CORRECT CONCLUSION: "Dr. Frankenstein does have a laboratory hidden within his mansion!"

LEARNING GOAL

- Collect information
- Seek out a broad mixture of clues
- Select useful information from a broad mixture of data
- Evaluate information
- Differentiate between qualitative and quantitative data
- Differentiate between primary and secondary sources
- Discern the implications of data
- Rate how different types of data affects a hypothesis
- Use information
- Make a decision based on the information

Lab Investigation

Average play time: 20 min

Keywords: differentiate, qualitative data, quantitative data, objective source, primary source, secondary source, decision making, predict

Victor Frankenstein is definitely connected with the strange events happening around Ingolstadt. Upon investigation of his home, you found a secret lab hidden in the basement. Investigate Frankenstein's lab and see what sort of experiments he was running down there.

This final scenario is intended to be the most challenging, with 22 clues total. It also acts as a summative evaluation of the player's skill and lacks the positive feedback messages present in the previous levels. The player needs to determine what kind of experiments Dr. Frankenstein has been preforming in his lab and if they have been successful.

HYPOTHESIS: "Victor Frankenstein was successful in creating an artificial person."

CORRECT CONCLUSION: "Dr. Frankenstein successfully created an artificial person in his secret laboratory."

LEARNING GOAL

This level has no learning goal of its own, but acts a summative evaluation of what the student has learned thus far in the game.

OBJECTIVES-SCENARIO OVERVIEW

STANDARD	SCENARIO
Collect Information	The Monster Mystery Investigation of the Crime Scene Crime Suspect – Dr. Frankenstein Lab Investigation
EVALUATE INFORMATION	
Qualitative	The Monster Mystery Investigation of the Crime Scene Crime Suspect – Dr. Frankenstein Lab Investigation
Quantitative	Investigation of the Crime Scene Crime Suspect – Dr. Frankenstein Lab Investigation
Primary Sources	Crime Suspect – Dr. Frankenstein Lab Investigation
Secondary Sources	Crime Suspect – Dr. Frankenstein Lab Investigation
USE INFORMATION	
Informed decision making	The Monster Mystery Investigation of the Crime Scene Crime Suspect – Dr. Frankenstein Lab Investigation
Organize information	The Monster Mystery Investigation of the Crime Scene Crime Suspect – Dr. Frankenstein Lab Investigation

QUICK STRATEGIES

Students should be encouraged to play through the game at their own pace. In developing a strategy that works for them individually, students gain a deeper understanding of information literacy and take ownership of their learning.

In case a student or teacher gets stuck, we have provided a list of strategies to help students move through the game quickly and successfully.

Collecting information

Collect as much information as possible. Each level has a minimum number of clues required to come to a conclusion, but the more you know the more accurate your conclusion will be as each correctly evaluated clue is tracked on the confidence graph.

Evaluating information

Check out the learning objectives in the help screen of each level. This will help you in evaluating the type and source of information which in turn helps you weigh its implications towards the hypothesis.

Using information

Remember that Primary sources should always be rated higher then Secondary sources.

CLASSROOM ACTIVITIES

PRE-GAME WARM UP

Prior to playing the game, have a class discussion covering the topics that "The Detective: Bavaria" is designed to explore. Some suggested questions to cover:

- What skills and strategies are needed to gather information effectively?
- Why and how do I evaluate the source and type of data that I come across?
- How is information used effectively to form conclusions?

POST-GAME REINFORCEMENT ACTIVITIES

Help students internalize key concepts with some of the activities listed below:

Track your media consumption for a day

Write down all the media sources of information you are exposed to over the course of a day. Then evaluate them and write down if they were Qualitative or Quantitative, and whether they were Primary or Secondary sources. Share and compare these lists with the class.

Class Discussions

Promote discussion! Arouse student interest and help cement their understanding through post-game discussions.

- Encourage students to share approaches and strategies they used to play the game and to evaluate their effectiveness
- If the students were given the opportunity to play the game again, what would they do differently? Why?
- Find examples of poor data interpretation in the past that had serious consequences. Analyze what the problem was and what would have been the correct way to use information in that case.

ADDITIONAL RESOURCES

Learning Standard
http://ok.gov/sde/language-arts

More Teaching Material
S.O.S. for Information Literacy is a dynamic web-based multimedia resource for educators, it promises to make a significant contribution to enhancing the teaching of information literacy skills to students K-16.
http://www.informationliteracy.org/

Research
Journal of Information Literacy
Open access peer reviewed journal
http://ojs.lboro.ac.uk/ojs/index.php/JIL/index

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