

# Creek Geek Knowledgey

**Adapted from:** An original Creek Connections activity.  
Creek Connections, Box 10, Allegheny College, Meadville, Pennsylvania, 16335

**Grade Level:** Basic to Advanced

**Duration:** 35-45 minutes

**Setting:** Classroom

**Summary:** Students play a Creek Connections version of Jeopardy to review the main concepts presented in the Water Pollution module.

**Objectives:**

Students will review what they have learned in other Water Pollution module activities by answering a series of game show questions.

**Vocabulary:**

*Note: These terms are covered in other module activities and are reviewed in Creek Geek Knowledgey.* Water pollution, thermal pollution, eutrophication, Pollution Tolerance Index (PTI), bioindicators, point source pollution, nonpoint source pollution, parts per million, Maximum Contaminant Level (MCL), riparian buffer, AMD (acid/abandoned mine drainage), alkalinity, pathogen, epidemiologist

**Related Module Resources:**

- Other Module activities
- See the “Additional Module Resources” section for fact sheets and articles relevant to your review needs

**Materials (Included in Module):**

- Paper version of Creek Geek Knowledgey [Water Pollution Creek Geek Knowledgey Module Activity Envelope]
- Creek Geek Knowledgey Rules overhead transparency
- Creek Geek Knowledgey Answer and Question Charts

**Additional Materials (NOT Included in Module):**

- computer with Internet access
- projection unit
- tape

**ACADEMIC STANDARDS: (ENVIRONMENT & ECOLOGY)**

7<sup>th</sup> Grade

- 4.2.7.C. Explain natural resource distribution.
- Analyze the effects of management practices on air, land and water in forestry, agriculture, fisheries, wildlife, mining and food and fiber production
- 4.3.7.A. Identify environmental health issues.
- Identify diseases that have been associated with poor environmental quality.
- 4.3.7.B Describe how human actions affect the health of the environment.
- Identify land use practices and their relation to environmental health.
  - Identify residential and industrial sources of pollution and their effects on environmental health.
  - Explain the difference between point and nonpoint source pollution.
  - Explain how nonpoint source pollution can affect the water supply and air quality.
- 4.9.7.A. Explain the role of environmental laws and regulations.
- Identify and explain environmental laws and regulations (e. g., Clean Air Act, Clean Water Act, Recycling and Waste Reduction Act, Act 26 on Agricultural Education).
  - Explain the role of local and state agencies in enforcing environmental laws and regulations (e. g., Department of Environmental Protection, Department of Agriculture, Game Commission).

10<sup>th</sup> Grade

- 4.3.10.A. Describe environmental health issues.
- Identify the effects on human health of air, water and soil pollution and the possible economic costs to society.
- 4.3.10.B Explain how multiple variables determine the effects of pollution on environmental health, natural processes and human practices
- Explain how human practices affect the quality of the water and soil.
- 4.8.10.C. Analyze how human activities may cause changes in an ecosystem.
- Analyze and evaluate changes in the environment that are the result of human activities.
- Compare and contrast the environmental effects of different industrial strategies (e. g., energy generation, transportation, logging, mining, agriculture).
- 4.9.10.B. Explain why environmental laws and regulations are developed and enacted.
- Analyze the roles that local, state and federal governments play in the development and enforcement of environmental laws.
  - Identify local and state environmental regulations and their impact on environmental health.

12<sup>th</sup> Grade

- 4.1.12.E. Evaluate the trade-offs, costs and benefits of conserving watersheds and wetlands.
- Evaluate the effects of human activities on watersheds and wetlands.

**BACKGROUND:**

The other activities in this module have revealed the complex and pressing issues associated with water pollution, including water pollution basics, sources of pollution, water quality standards, land use and water pollution, acid/abandoned mine drainage, and waterborne illnesses. A fun, interactive, and educational way to review and wrap up this module is to play Creek Geek Knowledgey, the Creek Connections version of Jeopardy. In Creek Geek Knowledgey, as with the TV show Jeopardy, student teams try to guess the question that corresponds to a given statement about a water pollution related topic.

## **OVERVIEW:**

Students work in pairs or teams to play Creek Geek Knowledgey, the Creek Connections version of Jeopardy. During the game, the students review what they've learned in other module activities about water pollution.

## **PROCEDURE:**

*There are two versions of Creek Geek Knowledgey: a computer-based version that requires that you have access to a computer with Internet capabilities and a projection unit, and a paper-based version that you need only have a wall or chalkboard and tape to play. The computer-based version is more reminiscent of the real Jeopardy TV game show and is a bit more exciting. If you have access to a computer with Internet capabilities and a projection unit, proceed to "Computer-Based Creek Geek Knowledgey" below. If you don't have this equipment or simply prefer to play the paper-based version, go to "Paper-Based Creek Geek Knowledgey" below.*

### ***Computer-Based Creek Geek Knowledgey***

#### **Teacher Preparation:**

1. Procure and set up a computer with Internet access and projection unit.
2. Go to the Creek Geek Knowledgey website by typing in <http://creekconnections.allegheny.edu/JeopardyWP/indexWP.html> or by going to <http://creekconnections.allegheny.edu> → Classroom Resources → Scroll down to "Contests/Games" and click on Creek Geek Knowledgey (Water Pollution version). Have the computer at this point when you proceed to the student activity.
3. Locate the Answer and Question Charts in the module.

#### **Student Activity:**

1. Explain to students that they will be playing a Jeopardy-like game called Creek Geek Knowledgey to review some of the major concepts they learned in other module activities. Quickly brainstorm some of these concepts.
2. Select one person to be the official score keeper and divide the rest of the class into teams of two or more students. Have the scorekeeper draw a score table on the board.
3. Click on the Creek Connections symbol to proceed.
3. Click on "Read Rules" and quickly go over the rules with your students. You must find a way to have full groups "buzz in" rather than just individuals. The best way is to have an entire group raise their hands. When all hands are up in a group, they have successfully buzzed in first. Call on them. If they are incorrect, say incorrect and other groups who know should raise their hands immediately. Pick on the next group to have all hands raised.
5. Scroll down to the bottom of the screen and click on "Play Knowledgey" to begin the game.

6. Have the scorekeeper read the categories of the Creek Geek Knowledgey game.
7. You, the teacher, will be the game show host and should select the first “answer” to start the game. Click on this square and read the text to the class. To return to the category page, you simply click the “Back” button on your computer.
8. Play the game according to the rules until all the “answers” have been used or time is running out. Allow for 2 minutes to play “Final Knowledgey.”
9. The team with the most points at the end of the game wins.

***Paper-Based Creek Geek Knowledgey***

**Teacher Preparation:**

1. Locate the paper-based version of Creek Geek Knowledgey in the module.
2. Determine where you will set up the game. (The chalkboard or a wall will work well.)
4. Find some tape (scotch or masking) in *your* office supplies. (Tape is *not* included in the module.)
4. The game consists of 6 color-coded categories and final knowledgey. Each category has one category title card and five envelopes with removable dollar amount papers with the “answers” underneath. Use the diagram below to help you set up the game on the board or wall. Simply tape the envelopes to the board using masking or scotch tape. Please only apply tape to the strip of tape on the backs of the envelopes and category cards in order to minimize the wear and tear on the materials.

Water Pollution Basics	Pollution Sources	Water Quality Standards	Land Use and Water Pollution	AMD	Waterborne Illnesses
\$100	\$100	\$100	\$100	\$100	\$100
\$200	\$200	\$200	\$200	\$200	\$200
\$300	\$300	\$300	\$300	\$300	\$300
\$400	\$400	\$400	\$400	\$400	\$400
\$500	\$500	\$500	\$500	\$500	\$500

**Student Activity:**

1. Explain to students that they will be playing a Jeopardy-like game called Creek Geek Knowledgey to review some of the major concepts they learned in other module activities. Quickly brainstorm some of these concepts.
2. Select one person to be the official score keeper and divide the rest of the class into teams of two or more students. Have the scorekeeper draw a score table on the board.
3. Go over the rules at the end of this activity write-up. An overhead transparency of the rules is also included for your use. You must find a way to have full groups “buzz in” rather than just individuals. The best way is to have an entire group raise their hands. When all hands are up in a group, they have successfully buzzed in first. Call on them. If they are incorrect, say incorrect and other groups who know should raise their hands immediately. Pick on the next group to have all hands raised.
4. Have the scorekeeper read the categories of the Creek Geek Knowledgey game.
5. You, the teacher, will be the game show host and you should select the first “answer” to start the game. Pull the tab on the dollar amount to reveal the “answer” underneath. Read the “answer” to the class. Once a given “answer” has been used, remove it from the chalkboard.
6. Play the game according to the rules until all the “answers” have been used or time is running out. Allow for 2 minutes to play “Final Knowledgey.”
7. The team with the most points at the end of the game wins.

**DISCUSSION:**

Discuss students concerns and questions as they arise during the course of the game.

**EVALUATION:**

- Students have accurately answered most of the Creek Geek Knowledgey questions.

**EXTENSIONS AND MODIFICATIONS:**

- Have students create even more Creek Geek Knowledgey categories and questions.
- Use Creek Geek Knowledgey as a quiz or exam and have students work individually and right down their answers on pieces of paper.

**NOTES (PLEASE WRITE ANY SUGGESTIONS YOU HAVE FOR TEACHERS USING THIS ACTIVITY IN THE FUTURE):**





# OVERHEAD : CREEK GEEK KNOWLEDGY RULES

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## Knowledgey Rules

- All answers must be in the form of questions (optional).
- The teacher will not be reading the questions like Alex does on the show, so teams can “buzz in” as soon as they want.
- There will be a time limit for a team to “buzz in”.
- To “buzz in” will be defined as follows: ALL team members must raise their hand. The first team with all members with hands raised will be picked to answer the question. Judgment of who is first is at the discretion of the teacher.
- Once a team buzzes in, they will only have 10 seconds to respond to the question. You can talk it over with your team before responding, but once a response has been “shouted out,” that response will be considered the team’s answer.
- If a response is incorrect, the teacher will say “incorrect” and another group can buzz in (first group to have ALL team members hands raised). Your team can only "buzz in" once per every answer screen.
- Correct responses are awarded the amount of points that the screen shows. The scorekeeper will add this amount to your score.
- Incorrect responses will result in the amount shown on the screen being subtracted from your score. The scorekeeper will do this.
- If nobody buzzes in or if nobody responds correctly, selection of the next category and amount goes to the team that responded correctly to the previous question.
- There are two daily doubles. Any amount a team has can be wagered. A maximum of \$500.00 can be wagered for teams with insufficient funds (< \$500.00). If the answer is incorrect, no other team can buzz in. The team that participated in the daily double picks the next category/amount.

## Final Knowledgey

- Only those teams with positive amounts of money can play.
- A category for the question will be revealed and based on their feelings about this category, teams can wager any amount of money, but only of what money amount they actually have. Write this amount on a piece of paper.
- You will have roughly 30 seconds (until the song stops playing) to come up with a correct response written on paper, in the form of a question. You will not be able to change your answer after the 30 seconds has elapsed.
- Incorrect responses lose the amount wagered.
- Correct responses are awarded the amount wagered.

## **WINNER:**

The team with the most money/points at the end of the game wins.

