ACTIVITY: Questions about Rivers

Benjamin Bloom theorized that learning could be divided into six levels. These six levels are: knowledge, comprehension, application, analysis, synthesis and evaluation. Students will be given the opportunity in this activity to formulate questions in each domain. Using a list of verbs (Page 100) which are associated with each of the levels, ask students to develop questions about the Tangipahoa River.

Materials:

- Newspaper articles about rivers in the Lake Pontchartrain Basin
- Library resources, Internet, and materials on rivers
- Bloom’s Taxonomy of Questions, (Page 100).

Process:

1. Present information about rivers in general and then specifically about the Tangipahoa River.
2. Ask students to form cooperative groups to read and discuss the articles about rivers they have collected in other activities.
3. Model how to formulate questions at each level of Bloom’s Taxonomy using the Bloom’s Taxonomy of Questions Worksheet (Page 100).

Examples include:

Knowledge: ............... What is a streambed, channel and floodplain?

Comprehension: ...... Describe the problems a homeowner would face living in the Tangipahoa floodplain?

Application: ............. Illustrate an “ecologically safe” method which could be designed for building a bridge over the Tangipahoa River.

Analysis: ................. What information would you present to the local historical committee to nominate the Tangipahoa River as a national scenic river?

Synthesis: ............... Design a waste flow model to demonstrate how sand, silt, cobbles, gravel and mud fall out.

Evaluation: ............... What criteria would you use to allow building along the Tangipahoa River?

4. Using “verbs” from the Bloom’s Taxonomy of Questions Worksheet, compile a list of knowledge questions from the class. Put knowledge questions on index cards.
5. Using the worksheet provided, create questions for each of the other levels of Bloom’s Taxonomy.

6. As questions are formulated, write them on index cards. Add all questions to the stack.

7. After all the questions have been formulated, shuffle the index cards and play a Tangipahoa River Trivia game. Have cooperative groups compete against each other. Score points for correct answers. Set aside questions which are not easily answered and have students look up the answers or design the projects. Share responses and products with the class.

EXTENSION:

Using a standard calendar, write a Tangipahoa River Trivia fact or question on each of several days of the week for a selected period of time. Fill in with similar information about other rivers in the Lake Pontchartrain Basin. Share the calendar with another class.
Examples of verbs used in each of Bloom’s levels

Knowledge:
Recall information.
- define
- list
- recognize
- name
- match
- label

Sample:
Define stream bank, floodplain and substrate.
Draw and label a diagram of a typical stream.

Comprehension:
Interpret information in your own words.
- classify
- report
- describe
- select
- discuss
- translate

Sample:
Describe in your own words what happens when a stream’s velocity slows.

Application:
Apply knowledge or generalize to a new situation.
- apply
- interpret
- use
- demonstrate
- sketch
- dramatize
- illustrate
- solve
- prepare

Sample:
Dramatize some of the problems a homeowner might encounter by building in a floodplain.

Analysis:
Break down knowledge into parts and show relationship among parts.
- categorize
- criticize
- examine
- compare
- differentiate
- question
- contrast
- discriminate
- test

Sample:
Contrast building in the coastal zone with building in a river floodplain.

Synthesis:
Bring together parts of knowledge to form a whole and build relationships for new situations.
- arrange
- create
- prepare
- compare
- design
- propose
- construct
- organize
- write

Sample:
Design an environmentally responsible subdivision to be built near the Tangipahoa River.

Evaluation:
Make judgement on the basis of established criteria.
- assess
- estimate
- select
- attack
- evaluate
- support
- defend
- score
- value

Sample:
Decide whether you are in favor of building on a floodplain; defend your position in a debate.