

# Big6 #1: Task Definition

Written by Barbara A. Jansen

“Questions and questioning may be the most powerful technologies of all.”

—Jamie McKenzie in *Beyond Technology*

## Big6 #1: Activity 1

### 1.1 Define the task

Elementary social studies example (intermediate example):

Present the problem/essential question to the class (see Information Problem-solving in previous section). Example: Students new to Texas do not understand that it is a vast and geographically varied state due to its many different physical regions. How can we help new students understand about Texas’s unique physical regions?

1. In groups, the students should brainstorm solutions to the problem.
2. On the overhead or board, list the students’ solutions. The first few times you do this, the students will most likely list products as the solution to the problem (such as—make a booklet about the state to send home with new students, make a PowerPoint slide show for the library computer, make a video news show that new students can view, etc.).
3. Summarize their solutions by saying something like this:  
“What you are saying is this... to solve this problem, we first need to learn about the state of Texas in order to find out why it is so varied in its regions. We could present the information in one of the ways you suggested.” The summary will involve the content of the unit, not the product.
4. Then tell students that they will use the Big6 to solve the problem and have already completed the first part of the process.
5. For Big6 #1.1, write “Learn about \_\_\_\_\_.” In this case it would be: “Learn about the varied regions in Texas.”

## Big6 #1: Activity 2

### 1.1 Define the task

Showing the importance of the task (for intermediate grades 3-6)

Students need to understand that comprehension of the task is critical for success. This quick activity can do the trick! Do this the day after you introduce the task. It can even be done after the class completes Big6 1.2—identifying the information needed to do the task (in the next section).

1. Each student writes the task in his or her own words.
2. Read aloud and compare to others in the class (without commenting on others' interpretations).
3. The teacher and librarian check for understanding by restating and displaying the task as summarized the day before.
4. Tell students to compare their interpretation to that which is displayed. Could they do this successfully as an independent assignment?
5. Have each student record the correct task. Tell them that knowing what to do is the first assurance of success.

## **1.2 Identify information needed to do the task**

### **Background information on questioning**

No matter the approach, much student behavior can be predicted from the question itself—whether students will be able to just copy and paste information they find to satisfy the assignment, how much students will have to “think” about the information they find, and what type of product they are likely to prepare. Good questions are more likely to produce better learning (Loertscher & Woolls 8).

Consider research suggesting that the learning of technical information can be achieved by learning to ask good questions (Allison & Shrigley 79). Knowing how to ask good questions enhances students' comprehension by focusing on main ideas and making connections among ideas. Very few students ask thought-provoking or higher-level questions about content they are learning in class or through independent projects. Asking questions will increase their comprehension of the subject matter.

The following categories of questions are easy to implement. Begin by asking these of your students so that the research process is not merely a game of Trivial Pursuit™. As your students increase in sophistication, require that they ask the last three categories of questions (convergent, divergent, evaluative) on the subjects they are researching.

Asking questions from these four types, categorized by Angelo Ciardiello, will aid in increasing students' comprehension of the subject matter:

**1. Memory** level questions are those to which you will most likely find answers in sources such as books, web sites, and other reference materials. Asking this type of question provides background for the subject. These are the questions that students will “look up” in the library or elsewhere. These questions bring forth simple reproduction of facts, formulae, or other items of remembered content.

Thought processes involved while asking and answering these questions are naming, defining, identifying, designating, or giving yes/no responses.

Memory questions begin with these words:

Who...

What...

Where...

When...

*Examples of memory questions:*

When do we celebrate Christmas?

What traditions does your family have during Easter?

Who are important European explorers?

When were most fossils formed in this area?

When did Texas become a state?

What are the elements of design?

Who are community helpers in our school?

**2. Convergent** thinking questions are those representing the analysis and integration of given or remembered information. They lead you to an expected end result or answer.

Thought processes involved while asking and answering these questions are explaining, stating relationships, and comparing and contrasting .

Convergent thinking questions begin with these words or phrases:

Why

How

In what ways...

*Examples of convergent thinking questions:*

How do insects differ from reptiles?

How do plants use the sun?

Why do you learn to use a map?

Why should you eat from the food pyramid?

In what ways do scientists think dinosaurs became extinct?

In what ways are life cycles of the chicken and frog similar?

**3. Divergent** thinking questions are those representing intellectual operations wherein you are free to generate independently your own ideas, or to take a new direction or perspective on a given topic.

Thought processes involved while asking and answering these questions are predicting, hypothesizing, inferring, or reconstructing.

Divergent thinking questions begin with these words or phrases:

Imagine...

Suppose...

Predict...

If..., then...

How might...

Can you create...

What are some possible consequences...

*Examples of divergent thinking questions:*

Imagine that you could travel to another planet. Tell about that planet and why you would like to go.  
Suppose that you lived in Mexico. Tell about which holiday you would enjoy the most.  
If (name a European explorer) came back today, what would he think about the changes?  
How might people from Alaska adapt to life in \_\_\_\_\_?  
What would the cafeteria be like at lunch if children don't follow the rules?

4. **Evaluative** thinking questions are those dealing with matters of judgment, value, and choice. They are characterized by their judgemental quality.

Thought processes involved while asking and answering these questions are valuing, judging, defending, or justifying choices.

Evaluative thinking questions begin with these words or phrases:

Defend...

Judge...

Justify...

What do you think about...

What is your opinion about...

*Examples of evaluative thinking questions:*

What do you think about native people destroying the rain forest so they can farm?  
How do you feel about the different styles of music we have studied?  
Why do you think it is important to be a good sport in physical education?

*Works Cited:*

Allison, A.W. & Shrigley, R.B. (1986). "Teaching children to ask operational questions in science". *Science Education*. 70, 73-80.

Ciardello, Angelo. (1998). Did you ask a good question today? "Alternative cognitive and metacognitive strategies." *Journal of Adolescent & Adult Literacy*. 42, 210-219.

Loertscher, David and Woolls, Blanche. *Information Literacy: A Review of the Research*. San Jose, CA: Hi Willow Research and Publishing, 1999.

## **Big6 #1: Activity 3**

### 1.2 Determine information needed to do the task

Once students understand the task, they will need to determine what information they need to do it. In your planning, you will have already determined what they will need to know in order to do the task successfully. You will have determined the "memory" level questions to which they will need to find answers in sources such as books, encyclopedias, CD-ROMs, and web sites. But instead of telling the students what information they should find, provide them with the opportunity to do it themselves first.

1. Put students in groups of 2-4. I suggest putting students in groups when you are first introducing Big6 to the class so that they can collaborate. Working in groups includes these benefits:
  - a. Students have less work to do and are willing to do it.
  - b. Students depend on each other.
  - c. You can grade individual participation and note taking.
  - d. Several brains are more creative than one.
  - e. They learn to work with others, as most jobs require that skill.
  - f. If one student does not cooperate, that student can do the entire project alone.
2. Each group chooses or is assigned a topic. Students in the group brainstorm questions that they will need to answer in order to get information to help in completing the task. I suggest having the students write the information needed in question form because they are used to “answering” questions in an educational setting. And, it is easy to say, “Where can you find answers to your questions?” The answers to these questions are usually memory level, or recall, information. Only one student should record the questions for the group so that all will listen to each other.
3. When students have finished brainstorming questions, go over them in a class discussion. This will give each group ideas from the others.
4. Display the memory-level questions you have prepared during planning. Ask students to add any to their list that they do not already have. Use a copier to make enough copies of each group’s questions for each group member.
5. Students in each group divide the questions. Suggestions for dividing questions:
  - Categorize and students choose categories. Younger students may need help figuring out the categories.
  - Once categorized, students can highlight or code the questions for which they will be responsible.
  - Students with special learning disabilities can be responsible for those questions that may have easier “recall” answers or can be found in materials that may not be as difficult to read.
6. Each student writes the subset of questions, for which he or she is responsible, on a data chart (or the organizer on which they will be recording their notes).
7. Present the questions from the higher-level categories of convergent, divergent, and evaluative questions for students to think about as they locate the background information that the answers to the memory-level questions will provide.