"Geography as a Thinking Tool"
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Grades: 5-9
Lesson Overview: The focus or purpose of this lesson is to show teachers different ways to interject "thinking" activities into their daily lesson plans, whether it is Geography or any subject. Thinking is a way of learning. We want our students to be able to think for themselves, to be self-directed, to work and think through a problem and arrive at solutions. In today's world it is even more important than ever for teachers to design critical thinking lesson plans that challenge students to think for themselves.

Sometimes teachers and students are overwhelmed with amount of information out there. In most state mandated tests, students will not be asked to just recall information; rather they will need to know how to use their thinking and reasoning skills to draw conclusions, make connections, evaluate solutions, explain phenomena, use evidence, solve problems and make conjectures. Geography is an excellent subject for this type of activities because at the center of all geographic issues is the question of "why?"

A list of "thinking" activities is provided in this session. Most of them will use authentic and inquiry methodology. Teachers may change and adapt these activities and ideas to their particular classroom environment.

Activity 1: What is thinking?

Hand out half sheets of paper to everyone in the group. Have them write on their paper a brief definition of thinking and an activity that reflects or requires thinking. Collect the papers and begin reading their answers one by one. Write answers on the board or on a large tablet or poster board. Make two columns, one for definitions and one for activities. Discuss each definition and activity and decide as a class if it is a good answer or not. The goal is to arrive at a consensus definition of "thinking" and on a list of activities that reflect the ability to think.

POSSIBLE ANSWERS:

Definitions: *capable of using the mind to reason or reflect; to use the mind to arrive at opinions or conclusions; to make decisions; to make judgments; to draw inferences; to perform any mental operation to reason; to muse; to meditate; to weigh something mentally; to intend as, I thought to help him; to hold a belief; to have ideas or views;*
and accepted wisdom.

Activities: reflecting, comparing, summarizing, observing and taking notes, classifying, interpreting, criticizing, looking for assumptions, imagining, collecting and organizing data, hypothesizing, applying facts in new situations, decision-making, investigating and drawing conclusion.

Activity 2: Four Corner Debate

In this critical thinking activity, students organize their point of view on a particular controversial statement into one of four categories: strongly agree, slightly agree, slightly disagree, or strongly disagree. 1) Post signs in the corners of the classroom designating each corner into one of the four categories. 2) Present a controversial statement such as: *President Truman was justified in using the atomic bomb to end World War II.* (A group of students could help you develop a list of controversial statements that would be more relevant to their world.) 3) Allow a few minutes for students to write down their position on a piece of paper. 4) Students are to move to the corner that most closely corresponds with their opinion. 5) Once everyone is in their corner, allow time for everyone to discuss their positions and the reasons for their responses. Encourage debate, disagreement and discussion. 6) At the end of the discussion time, have one student from each group present their group's position.

At the end of the discussion, students could make charts or graphic organizers explaining each position.

This critical thinking activity challenges students to think for themselves and to form and voice opinions.

Activity 3: "What's the difference?"

One of the simplest ways for a teacher to stimulate thinking is to ask students to compare things, to discern likenesses and differences. It is worthy to note that the activity of comparing does not involve the addition of a new course to the curriculum nor changes in the existing content. Each subject area provides rich and meaningful materials for the use of this operation. It will up to each individual teacher to ascertain the best possible scenario in which to use the comparison activity. Here is a fun and versatile list of items to compare. Remember, students are to list ways in which they are alike and ways in which they are different.

1. Fog and dew
2. Snow and hail
3. Heart and lungs
4. Earthquake and volcano
5. Weight and height
5. Solar year and lunar year
6. Flower and vegetable
7. Continent and island
8. Geometry and arithmetic
9. Chemical and biological
10. A mountain and a hill
11. An ocean and a sea
12. River and stream
13. Latitude and longitude
14. Ranching and herding
15. Economic and social
16. Urban and Suburban
17. Imports and Exports
18. Climate and weather
19. Urban and Rural
20. Mesa and plateau
21. Autumn and Winter
22. Consumption and production

Activity 4: The Blind Men and the Elephant

LOOKING FOR ASSUMPTIONS By definition an assumption is something that is taken for granted. An assumption may be true, or probably true, false or probably false. We don't know for sure, therefore, there is a need "to assume something" in the absence of factual support. Students are required to think in order to determine if the statement is factual or an assumption. In situations where a conclusion is drawn, one or more assumptions are usually made. It is important for students to learn the difference between information that is factual or when an assumption is made. Read the poem below and make a list of assumptions made by the six blind men.

The Blind Men and the Elephant

It was six men of Indostan
To learning much inclined
Who went to see the elephant
Though each of them was blind,
That each by observation
Might satisfy his mind.

The first approached the elephant
And happening to fall
Against his broad and study side,
At once began to bawl:
"God bless me, but the elephant
Is very much like a wall."

The second feeling of the tusk,
Cried: "Ho, what have we here
So round and smooth and sharp?
To me, 'tis very clear
This wonder of an elephant
Is very like a spear."

The third approached the animal
And happening to take
The squirming trunk with his hands,
Thus boldly up he spake:
"I see," quoth he, "the elephant
Is very much like a snake."

The fourth reach out his eager hand,
And fell upon the knee:
"What most this wondrous beast is like,
Is very plain," quoth he;
" 'Tis clear enough, the elephant
Is very like a tree."

The fifth who chance to touch the ear,
Said: "Even the blindest man
Can tell what this resembles most.
Deny the fact who can,
This marvel of an elephant
Is very like a fan."

The sixth no sooner had begun
About the beast to grope
Then seizing on the swinging tail
That fell within his scope,
"I see," quoth he, "the elephant
Is very like a rope."

And so the men of Indostan
Disputed loud and long,
Each in his own opinion
Exceeding stiff and strong
Though each was partly in the right
And all were in the wrong.

In this poem, imaginative teachers may see possibilities for a variety of uses. To us, who know what the elephant looks like, the conclusions of the blind men appear to imply certain assumptions. How can this help us to understand how assumptions are made? Discuss the assumptions made by the blind men.

Remind students that we make assumptions every day. When we purchase things, we assume the integrity of seller, advertiser, or manufacturer. When we make judgments, we assume certain standards are in place. When we compare, we assume that they should be compared in terms of the qualities we have chosen. Learning the difference between assumptions and facts is an excellent way to promote critical thinking.

Activity 5: Imagine that!

To imagine is to form some kind of idea about that which is not actually present; it is to perceive in the mind what has not been wholly experienced. It is a form of creativeness. But is it thinking? Yes, I believe it is. It can be used as a different approach to problem solving which certainly requires thinking skills. Instead of repeating tried and true remedies, it calls for imagination and invention. A teacher invites students to ideate, to create, to change old ways, to invent new ways. Sticking to the old formulas, doing it "the way we have always done it," is a prescription for routine and for dullness. Students are released from the world of fact and reality and are free to roam where; perhaps, no one has ever been or will be. They are free to make mental pictures and create images.

When we ask for the release of the imagination, we then cannot ask for supporting data. The imagination goes beyond data, beyond our experience. It takes flight from reality. Whatever is imagined needs to be accepted as "imagined" and not as reality. There needs to be a certain amount of freedom and acceptance.

We need to remember that we do not need a steady diet of imagining, but it certainly has a place in an environment where thinking is encouraged.

Here is a list of ideas for releasing the imagination:

1. Write an account of life in outer space describing the physical landscape.
2. Draw an example of a weather condition.
3. Imagine history if some event had NOT taken place.
4. Imagine happiness. How would you express it musically, artistically, or in an essay?
5. Change the beginning or ending of a story.
6. Who would you most like to be? Why?
7. Respond to: If I had three wishes….."
8. Imagine that you are a famous person (choose someone you admire.) Write a diary account of one day in your life.
9. Imagine that you have absolute power over a country for twenty hours. What country would you choose? What would you do?
10. Imagine life without computers, cell phones, or iPods. What would a day be like?
11. You just won the lottery of one million dollars, but there is a condition attached to the winning. Half of the money must be spend helping others. How would you spend the money designated to help others.
12. Imagine a day in your life, one thousand years from now.

List of Thinking Operations

Most educators will agree that thinking is an important aim of education and schools shall do all that they can, to provide opportunities for thinking. How can this be done? Most good teachers have always found ways to include thinking operations into their lessons and activities. Here is a list of suggestions that can be used as a check list for teachers to monitor their own teaching. It is not implied that the listing is complete; nor is it implied that every single day should include any of these activities. The list is suggestive rather than inclusive. It does, however, contain many ideas that are widely used for giving emphasis to thinking. The list also contains operations that are used in many of the state mandated tests.

COMPARING When we ask students to compare, we are helping them to use discriminative judgment and to make decisions. Students need to study, analyze, and observe to discern similarities and differences and this requires critical thinking skills. Comparisons can be made of written materials, music, the arts, feelings, and experiences. The opportunity to use comparisons is limited only by the teacher's imagination.

CLASSIFYING may be conceived as an extension of comparing in which one looks for similarities and differences. When enough similarities are found, a grouping is possible; its characteristics are distinguishable from another grouping which represents a cluster. In pedagogic technique, the teacher permits and encourages students to discover the basis for the groupings. Classifying activities need not be only for science, but teachers may provide opportunities for students to classify in language arts, social studies, math and the arts.

SUMMARIZING is more than putting together a series of steps. It is more than recounting and reporting what has taken place. It is to discern and to evaluate what is significant and what is insignificant. It means a decision has to be made that requires reflection and conciseness without omission of important points. It also means to give a shortened version of something that has been said or written, stating its main points. Summarizing requires thinking skills.

INTERPETING When we interpret, we recognize meaning. It is concerned with the inferences and generalizations which may be drawn. Interpreting is to add meaning, to read between the lines, to fill in gaps, and to extend on given materials. Maps, charts, graphs, and tables lend themselves to interpretation as do works of art, sculpture, dance, literature, poetry and scientific investigations.

LOOKING FOR ASSUMPTIONS An assumption is something that is believed to be true without proof. It is something that is taken for granted without factual support. When students are taught to look at, evaluate and examine information with respectful scrutiny, significant contribution to maturity often takes place.

COLLECTING AND ORGANIZING DATA There are many ways and opportunities to collect and organize data. Before students embark on collecting data, teachers might ask, "What do you want to find out? How will you find the information? How will you use the data? What plan do you have to organize the

data?" Collecting and organizing data presents challenging thinking situation and our students need more opportunities for both.

HYPOTHESIZING An hypothesis is an educated guess or a hunch. It is a possible solution to a perplexing situation. It is a possible explanation of a happening. It is often accompanied with an *if-then* statement. *If* something is done, *then* something will happen. Most people think that forming a hypothesis belongs only in science, but creative and innovative teachers seek for opportunities for their students to hypothesize in all disciplines. Students are required to think and predict outcomes.

OBSERVING When we ask students to make observations, we are, in a sense, asking to obtain information in many different ways. It is suggested that teachers seek out those tasks which are designed to give practice in *noticing* and *describing.* These could be objects, conditions, events, pertinent details or experiences. Students should be encouraged to ascertain the difference between what is *actually* observed and what is assumed. Not all observations need be visual. Some may involve listening, some touching or feeling, some smelling or tasting. Schools offer a rich environment of things to observe such as animals, plants, water, people, clothing, games, and events.

CRITICIZING In criticism, there is judgment and evaluation. There is some kind of standard to compare with that which one is criticizing. When students establish standards for criticizing, they become aware that they are not necessarily finding fault bur rather indicating what is good about something, what is bad, and what can be improved. There are numerous opportunities to use this operation in schools. There are editorials, letters, and news articles, plays, assembly programs, books, TV programs, movies, and many other sources.

DECISION-MAKING involves making choices and selecting among alternatives on the basis of laws, principles, generalizations, and rules. Decisions are made in such a way as to protect values. We ask: "What should be done? Where will it lead? Is it good or bad?" Teachers need to provide opportunities to make real choices which involve comparing, observing, imagining and other operations of thinking.

MAKING INFERENCES When students are asked to make inferences or to infer, they are reaching conclusions on the basis of evidence, prior knowledge, reasoning, conjecture or speculation. Sometimes they have to gather clues and read between the lines. They also need to understand the difference between stated and implied information and recognize the effects of their own point of view on their conclusions. This is an excellent thinking activity that has many applications throughout a student's day.