

SIMPLE INQUIRY BELLRINGER NOTES

ACTIVITY INTRODUCTION

To get better at inquiry, it's important for inquiry to be modeled for students. This inquiry bellringer serves as regular practice for students. In this activity, students keep a question and answer list. The questions are ones that students come up with. These are interesting questions that students are interested in getting the answers to.

At the beginning of the year, students come up with 3 interesting science questions and hand them in. For example, I remember some students asking why the sky was blue or why Michael Jackson's skin was getting whiter. Then, the night before each class, choose one and write the answer on the overhead projector (with the help of Google). At the beginning of the next class, have students record the question and answer on their list. And, collect their lists periodically

TIP 1: ASK FOR GOOGLEABLE AND NONGOOGLABLE QUESTIONS

A Googleable question is something Google can answer. A nonGoogleable answer is something Google cannot. Most questions students come up with will be the Googleable kind (ex. Why is the sky blue? How do we know the universe is expanding?). It's ok if most questions start here because (a) students may genuinely not know and would like to know the answer, and (b) students may not know how to ask good, inquiry questions yet. Good inquiry questions are the nonGoogleable kind. For example, how do I make a living wall that removes the most toxins from the air? Or, what is the best way to cool down my room on a hot day while using the least amount of electricity? Although Google can help in answering these questions, there is no definitive answer because the answers are contextual and require a test or test(s) to find the answer.

TIP 2: UPDATE THE LIST OF QUESTIONS REGULARLY

As you answer more and more questions, students will naturally have more and more questions to ask. And, students also ask better and better questions as they get practice in asking them. Thus, have students submit more questions throughout the year. I suggest having students submit questions at the beginning of each term or earlier (depending on how quickly you run out of questions).

TIP 3: PROVIDE THE PROCESS, NOT JUST THE ANSWER

The only way students are going to get better at doing inquiry is by seeing it in action. Thus, when answering a question-of-the-day for this inquiry bellringer, model the process through which we finally get the answer. Approach the question or problem by first proposing a possible explanation that is testable. In other words, develop a hypothesis.

Then, develop a quick experiment that can be done to test the hypothesis. And, outline what the results could be and what they would mean. Finally, if there is a real answer to the question, provide it. If there isn't a real answer (most nonGoogleable questions won't), having the process of how to approach a question is good enough.

TIP 4: PROVIDE A Q&A FORMAT

The simplest format has a question followed by an answer. However, if it is process we are hoping to highlight, we need to have students document the process too. One suggestion is to include a hypothesis, independent and dependent variables along with an explanation of what the results may mean for each possibility.

TIP 5: ANSWER SOME QUESTIONS, HAVE STUDENTS SOLVE SOME TOO.

After answering some questions yourself, start getting students to come up with their own answers. From time to time, post a question and have students develop a hypothesis, experiment, and possible outcomes and their meanings. This is where students get to practice their inquiry skills. For days like this, highlight the best student solution as the answer for the question-of-the-day. Or, have students merely craft their own solutions as a possible answer.