# A Questioning Toolkit

Each district should create a Questioning Toolkit which contains several dozen kinds of questions and questioning tools. This Questioning Toolkit should be printed in large type on posters which reside on classroom walls close by networked, information-rich computers.

Portions of the Questioning Toolkit should be introduced as early as Kindergarten so that students can bring powerful questioning technologies and techniques with them as they arrive in high school.

Essential Questions                    Elaborating Questions
Subsidiary Questions                   Unanswerable Questions
Hypothetical Questions                 Inventive Questions
Telling Questions                      Provocative Questions
Planning Questions                     Irrelevant Questions

Organizing Questions                   Divergent Questions
Probing Questions                      Irreverent Questions
Sorting & Sifting Questions
Clarification Questions
Strategic Questions

Essential Questions

These are questions which touch our hearts and souls. They are central to our lives. They help to define what it means to be human.

Most important thought during our lives will center on such essential questions.
```
What does it mean to be a good friend?
What kind of friend shall I be?
Who will I include in my circle of friends?
How shall I treat my friends?
How do I cope with the loss of a friend?
What can I learn about friends and friendships from the novels
we read in school?
How can I be a better friend?
```

If we were to draw a cluster diagram of the Questioning Toolkit ,Essential Questions would be at the center of all the other types of questions. All the other questions and questioning skills serve the purpose of "casting light upon" or illuminating Essential Questions .



Most Essential Questions are interdisciplinary in nature. They cut across the lines created by schools and scholars to mark the terrain of departments and disciplines.

Essential Questions probe the deepest issues confronting us . . . complex and baffling matters which elude simple answers: Life - Death - Marriage - Identity - Purpose - Betrayal - Honor - Integrity - Courage - Temptation - Faith - Leadership - Addiction - Invention - Inspiration.

The greatest novels, the greatest plays, the greatest songs and the greatest paintings all explore Essential Questions in some manner.

**Essential Questions** are at the heart of the search for Truth.

Many of us believe that schools should devote more time to Essential Questions and less time to Trivial Pursuit .

**Essential Questions** offer the organizing focus for a unit. If the U.S. History class will spend a month on a topic such as the Civil War, students explore the events and the experience with a mind toward casting light upon one of the following questions, or they develop Essential Questions of their own . . .

```
Why do we have to fight wars?
Do we have to fight wars?
How could political issues or ideas ever become more important
than family loyalties?
Some say our country remains wounded by the slavery experience
and the Civil War. In what ways might this claim be true and in
what ways untrue? What evidence can you supply to substantiate
your case?
Military officers often complain that the effective conduct of
modern war is impeded by political interference and popular
pressures on the home front. To what extent did this also prove
true during the Civil War?
How can countries avoid the kind of bloodshed and devastation we
experienced during our Civil War?
How much diversity can any nation tolerate?
Who showed greater bravery and courage, the front line soldiers
and the nurses who tended to the wounded and dying or the
leaders of the war effort?
Should there be a law against war profiteering?
```

**Subsidiary Questions**

These are questions which combine to help us build answers to our Essential Questions . Big questions spawn families of smaller questions which lead to insight. The more skillful we and our students become at formulating and then categorizing Subsidiary Questions , the more success we will have constructing new knowledge. All of the question categories listed and explained below are types of Subsidiary Questions.

We have several strategies from which to choose when developing a comprehensive list of **Subsidiary Questions** for our project:

We can brainstorm and list every question which comes to mind, utilizing a huge sheet of paper or a word processing program or a graphical organizing program such as Inspiration, putting down the questions as they "come to mind." Later we can move these around until they end up along side of related questions. This movement is one advantage of software. This approach has the benefit of spontaneity.

We can take a list of question categories like the one outlined in this article and generate questions for each category. This approach helps provoke thought and questions in categories which we might not otherwise consider.

In the (condensed) illustration below, a team is pondering the following Essential Question :

```
What is the best way for our school to involve students in the
use of e-mail?
```

They begin by listing every question they can think up. They have one member type the list into the outlining part of Inspiration . They could use a word processor instead, but Inspiration will automatically convert their outline into a variety of diagrams and will allow them to move questions around later.

*Best way to involve students in the use of e-mail?*

*Worst that can happen?*
*Potential benefits?*

*Obstacles which must be overcome?*

*Available resources?*
*Sufficient resources?*
*Additional resources?*
*Good models?*

*How prepare students?*
*How prepare parents?*
*Who does what?*
*Assessing progress?*

This outline is transformed in seconds by a simple mouse-click into the cluster diagram above. . .

The lack of order and logic should be immediately visible. This diagram needs to be re-drawn. No problem. Point. Click. Drag!

In just 4-5 minutes, we have a cluster diagram which groups (and colors) questions.

**Hypothetical Questions** - These are questions designed to explore possibilities and test relationships. They usually project a theory or an option out into the future, wondering what might happen if . . .

```
Suppose the earth had no moon.
What if the South had won the Civil War?
```

**Hypothetical Questions** are especially helpful when trying to decide between a number of choices or when trying to solve a problem.

When we began to generate questions which would help us decide whether or not to offer e-mail accounts to our students, we asked . .

```
What's the worst that might happen?
What are the potential benefits?
```

**Hypothetical Questions** are useful when we want to see if our hunches, our suppositions and our hypotheses have any merit.

**Telling Questions** lead us (like a smart bomb) right to the target. They are built with such precision that they provide sorting and sifting during the gathering or discovery process. They focus the investigation so that we gather only the very specific evidence and information we require, only those facts which "cast light upon" or illuminate the main question at hand.

```
In schools which give students e-mail accounts, what is the rate
of suspension for abusing the privilege?
In schools which give students e-mail accounts, what percentage
of students lose their privilege during each of the first ten
months? second ten months?
```

The better the list of telling questions generated by the researcher, the more efficient and pointed the subsequent searching and gathering process. A search strategy may be profoundly shifted by the development of telling questions.

As you can see below . . . students trying to rank the relative safety of ten cities in the Heartland will have greater success with their search if they translate their general question about crime ( `Which city is safest?` ) into a Telling Question (`What is the violent crime rate for cities in New England as reported by the Federal Bureau of Justice and how has it changed over the past ten years?` ).

This would tend to be true whether they were searching on the free Internet or using an electronic encyclopedia or a pay-for-service collection of new articles. The addition of precise elements to a search can radically reduce wasteful wandering.

*Search for General Question*
```
crime AND cities AND "Midwest"
```

*Search for Telling Question*
```
"violent crime rate" AND cities AND "Midwest" AND "Federal
Bureau of Justice"
```

**Planning Questions** lift us above the action of the moment and require that we think about how we will structure our search, where we will look and what resources we might use such as time and information . If we were sailing West on a square masted ship, we would pass off the wheel and the lines to team-mates in order to climb to the "crow's nest" - a lofty perch from which we could look "over the horizon."

Too many researchers, be they student or adult, make the mistake of burying their noses in their studies and their sources. They have trouble seeing the forest, so close do they stand to the pine needles. They are easily lost in a thicket of possibilities.

The effective researcher develops a plan of action in response to Planning Questions like these:

*Sources*
Who has done the best work on this subject?
Which group may have gathered the best information?
Which medium (Internet, CD-ROM, electronic periodical collection, scholarly book, etc.) is likely to provide the most reliable and relevant information with optimal efficiency?
Which search tool or index will speed the discovery process?

*Sequence*
What are all of the tasks which need completing in order to generate a credible product which offers fresh thought backed by solid evidence and sound thinking?
What is the best way to organize these tasks over time? How much time is available? Which tasks come first, and then . . .?
Which tasks depend upon others or cannot be completed until others are finished?

*Pacing*
How much time is available for this project?
How long does it take to complete each of the tasks required?
How much time can be applied to each task?
Do some tasks require more care and attention than others?
Can some tasks be rushed?
Is it possible to complete the project in the time available?
How should the plan be changed to match the time resources?

**Organizing Questions** make it possible to structure our findings into categories which will allow us to construct meaning. Without these structures we suffer from hodge podge and mish mash - information collections akin to trash heaps and landfills, large in mass, lacking in meaning. The less structure we create in the beginning, the harder it becomes later to find patterns and relationships in the fragments or the collection of bits and pieces.

If we are trying to compare and contrast three cities (or three products or three bills or three artists) we might use our criteria and our telling questions as the basis for the fields and the entries in our database. Or we may develop a word processing file around these criteria and questions which becomes the collecting mechanism for our findings.

Each time we come upon valuable findings, we extract the relevant data and place them where they belong. If we find facts about the violent crime rate in Hartford, for example, we enter them along with their source as a record in the database which might look something like this . . .

| Cities Database | |
|---|---|
| **Source** | Money Online: Best Places: Money ranks the 300 biggest places - URL: http://www.pathfinder.com/@@iFqq1wUAqSqkqVmZ/money/best-cities-96/monlist.htm |
| **Subject** | Portland Crime |
| **Keywords** | violent crime rate |
| **Abstract** | 270.5 per 100,000 people vs. 716 National average |

Our challenge is teaching students to paraphrase, condense and then place their findings thoughtfully rather than cutting and pasting huge blocks of text which have been unread, undigested and undistilled.

**Probing Questions** take us below the surface to the "heart of the matter." They operate somewhat like the archeologist's tools - the brushes which clear away the surface dust and the knives which cut through the accumulated grime and debris to reveal the outlines and ridges of some treasure. Another appropriate metaphor might be exploratory surgery. The good doctor spends little time on the surface, knowing full well that the vital organs reside at a deeper level.

```
We never stop investigating. We are never satisfied that we know
enough to get by. Every question we answer leads on to another
question. This has become the greatest survival trick of our
species.         Desmond Morris, The Naked Ape, ch. 5 (1967).
```

The search for insight involves some of the same exploratory elements. In an earlier issue of *From Now On* (January, 1997 ), I wrote at some length about the search for "convergence" which guides oil prospecting. The geologist knows that the odds of finding oil are greatly increased when three or four elements are all present in the same location.

When it comes to information-seeking, the convergence is established by creating a logical intersection of search words and key concepts, the combination of which is most likely to identify relevant sites and articles. Probing Questions allow us to push search strategies well beyond the broad topical search to something far more pointed and powerful.
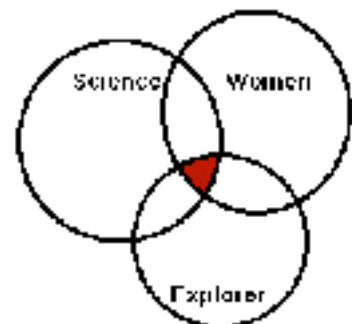


And when we first encounter an information "site," we rarely find the treasures lying out in the open within easy reach. We may need to "feel for the vein" much as the lab technician tests before drawing blood. This "feeling" is part logic , part prior knowledge , part intuition and part trial-and-error .

Logic - We check to see if there is any structure to the way the information is organized and displayed, if there are any sign posts or clues pointing to where the best information resides. We assume the author had some plan or design to guide placement of information and we try to identify its outlines.

Prior Knowledge - We apply what we have seen and known in the past to guide our search. We consider information about the topic and prior experience with information sites. This prior knowledge helps us to avoid dead ends and blind alleys. It helps us to make wise choices when browsing through lists of "hits." Prior knowledge also makes it easier to interpret new

findings, to place them into a context and distinguish between "fool's gold" and the real thing.

Intuition - We explore our hunches, follow our instincts, look for patterns and connections, and make those leaps our minds can manage. Especially when we are hoping to create new knowledge and carve out new insights, this non-rational, non-logical form of information harvesting is critically important.

Trial-and-Error - Sometimes, nothing works better than plain old "mucking about." Push here. Tug there. Try this out! We find a site with so much information and so little structure that we have little choice but to plunge in and see what we can find.

**Sorting & Sifting Questions** enable us to manage Info-Glut and Info-Garbage - the hundreds of hits and pages and files which often rise to the surface when we conduct a search - culling and keeping only the information which is pertinent and useful. Relevancy is the primary criterion employed to determine which pieces of information are saved and which are tossed overboard. We create a "net" of questions which allows all but the most important information to slide away. We then place the good information with the questions it illuminates.
Which parts of this data are worth keeping?
Will this information shed light on any of my questions?"
Is this information reliable?
How much of this information do I need to place in my database?
How can I summarize the best information and ideas?
Are there any especially good quotations to paste in the abstract field?

**Clarification Questions** convert fog and smog into meaning. A collection of facts and opinions does not always make sense by itself.

Hits do not equal TRUTH. A mountain of information may do more to block understanding than promote it.

Defining words and concepts is central to this clarification process.
What do they mean by "violent crime rate?" Do they use the same definition and standards as the FBI?
What do they mean by "declining rate of increase?"
How did they gather their data? Was it a reliable and valid process? Do they show the data and evidence they claim to have in support of their conclusions? Was is substantial enough to justify their conclusions?
Did they gather evidence and data?

Examining the coherence and logic of an argument, an article, an essay, an editorial or a presentation is fundamental.
How did they develop the case they are presenting?
What is the sequence of ideas and how do they relate one to another?
Do the ideas logically follow one from the other?

Determining the underlying assumptions is vital.
How did they get to this point?
Are there any questionable assumptions below the surface or at the foundation of the argument?

```
Clever people seem not to feel the natural pleasure of
bewilderment, and are always answering questions when the chief
relish of a life is to go on asking them.   Frank Moore Colby,
The Colby Essays, vol. 1, "Simple Simon" (1926).
```

**Strategic Questions** focus on Ways to Make Meaning .The researcher must switch from tool to tool and strategy to strategy while passing through unfamiliar territory. Close

associated with the Planning Questions formulated early on in this process, Strategic Questions arise during the actual hunting, gathering, inferring, synthesizing and ongoing questioning process.
What do I do next?
How can I best approach this next step?, this next challenge? this next frustration?
What thinking tool is most apt to help me here?
What have I done when I've been here before? What worked or didn't work? What have others tried before me?
What type of question would help me most with this task?
How do I need to change my research plan?

**Elaborating Questions** extend and stretch the import of what we are finding. They take the explicit and see where it might lead. They also help us to plum below surface to implicit (unstated) meanings.
What does this mean?
What might it mean if certain conditions and circumstances changed?
How could I take this farther? What is the logical next step? What is missing? What needs to be filled in?
Reading between the lines, what does this REALLY mean?
What are the implied or suggested meanings?

**Unanswerable Questions** are the ultimate challenge.

They serve like boundary stones, helping us to tell us when we have pushed insight to its outer limits. When exploring essential questions (most of which are unanswerable in the ultimate sense) we may have to settle for "casting light" upon them. When wrestling with these Unanswerable Questions we may never find Truth, but we may illuminate . . . extend the level of understanding and reduce the intensity of the darkness.

```
The real questions are the ones that obtrude upon your
consciousness whether you like it or not, the ones that make
your mind start vibrating like a jackhammer, the ones that you
"come to terms with" only to discover that they are still there.
The real questions refuse to be placated. They barge into your
life at the times when it seems most important for them to stay
away. They are the questions asked most frequently and answered
most inadequately, the ones that reveal their true natures
slowly, reluctantly, most often against your will.

Ingrid Bengis, Combat in the Erogenous Zone, "Man-Hating"
(1973).
```
How will I be remembered?
How much can anyone resist Fate's will?
What is the Good Life?
What is friendship?
How would life be different if . . .

Students wrestling with Essential Questions must be prepared for the strong likelihood that their questions may be Unanswerable . They must be taught that this reality is perfectly acceptable and is no signal to stop searching and thinking.

**Inventive Questions** turn our findings inside out and upside down. They distort, modify, adjust, rearrange, alter, twist and turn the bits and pieces we have picked up along the way until we can shout "Aha!" and proclaim the discovery of something brand new.
How do I make sense of these bits and bytes and pieces?
What does all this information really mean?
How can I rearrange what I have gathered so that some picture or new insight emerges?
What needs to be eliminated or reversed or modified in order to make better sense of my findings?

What is still missing?
Can any information be regrouped or combined in ways which help meaning to emerge?
Can I display this information or data in a way which will cast more light on my essential question?

**Provocative Questions** are meant to push, to challenge and to throw conventional wisdom off balance. They give free rein to doubt, disbelief and skepticism.

```
The best servants of the people, like the best valets, must
whisper unpleasant truths in the master's ear. It is the court
fool, not the foolish courtier, whom the king can least afford
to lose.

Walter Lippmann, A Preface to Politics, ch. 6 (1914).
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Ancient empires and kingdoms in China often employed a court jester or fool whose job it was to challenge and make fun of policies and ideas and key players surrounding the king or queen. The fool could often get away with a level of questioning which would never have been permitted a "legitimate" member of the council. On the other hand, ( as is pointed out in this extensive online article about jesters ) the fool might also lose his head if the king or queen took offense. A dangerous occupation!

Closely associated with Divergent Questions and Irreverent Questions ,**Provocative Questions** help provide the basis for satire ,parody , and expose whether it be *Gulliver's Travels ,Alice in Wonderland* ,DILBERT or Seymour Hersh's recently released *The Dark Side of Camelot* . These plays and stories poke fun at politicians and leaders in ways which help protect us from excessive deference or what is fondly called "spin" today. ( Visit this Web page for an extensive bibliography on satire and parody.)

In the case of student research, we have probably devoted too little attention to irony, satire and parody as an important element in "open systems," a term which describes responsive (and healthy) political systems as well as organizations of various kinds such as schools and corporations.

When inspired by a desire to understand the Truth, Provocative Questions play a positive role in debunking propaganda, mythologies, hype, bandwagons and the Big Lie. They help us to remove the "bunk" or "claptrap" and determine if there is any substance worth considering. In a time of what Toffler calls "info-tactics" such questions become an essential tool for any citizen in a democratic society.

In an age of info-glut and info-garbage, we must equip students with questions which enable them to separate out meaning from all the competing variants of BLATHER (quoted here from Roget's Thesaurus )...

```
empty talk, idle speeches, sweet nothings, endearments, wind,
gas, hot air, vaporing, verbiage, DIFFUSENESS
rant, ranting and raving, bombast, fustian, rodomontade,
BOASTING
blether, blather, blah-blah-blah, flimflam
guff, hogwash, eyewash, claptrap, poppycock, FABLE
humbug, FALSEHOOD
malarkey, hokum, bunkum, bunk, baloney, hooey
flummery, blarney, FLATTERY
sales talk, patter, sales patter, spiel
talk, chatter, prattle, prating, yammering, babble, gabble,
jabber, jibber jabber, jaw, yackety-yak, yak yak, rhubarb,
CHATTER
```

Where's the beef? content? substance? logic? evidence?

What is the source? Is the source reliable?
What's the point? Is there a point?
Cutting past the noise and the rhetoric, is there any insight, knowledge or worthwhile information here?

**Irrelevant Questions** take us far afield, distract us and threaten to divert us from the task at hand. And that is their beauty!

Truth almost never appears where we might look logically. The creation of new knowledge almost always requires some wandering off course. The more we cling to coastline, the less apt we are to find the New World. As Melville so dramatically pointed out in **Moby Dick** , the search for Truth requires the courage to venture out and away from the familiar and the known . . .

**Divergent Questions** use existing knowledge as a base from which to "kick off" like a swimmer making a turn. They move more logically from the core of conventional knowledge and experience than irrelevant questions . They are more carefully planned to explore territory which is adjacent to that which is known or understood.

Trying to find a way to restore water quality in a lake or stream? If we limit our search to successful attempts, we may miss out on the chance to avoid other people's mistakes. Sometimes we learn more by studying the opposite of our main target.

In the same sense, we may want to check out efforts to restore air quality and other tangentially related efforts. We may even explore efforts to re-introduce endangered species to various habitats. New ideas are rarely sitting waiting for us in obvious places.



The ability to freely associate related topics and questions greatly increases the odds that researchers will make important discoveries.

```
 But as in landlessness alone resides the highest truth,
shoreless, indefinite as God --so, better is it to perish in
that howling infinite, than be ingloriously dashed upon the lee,
even if that were safety!
```

**Irreverent Questions** explore territory which is "off-limits" or taboo. They challenge far more than conventional wisdom. They hold no respect for authority or institutions or myths. They leap over, under or through walls and rules and regulations.

Socrates found himself in considerable trouble for showing the youth of Athens how to ask Irreverent Questions , and we need to remember that such questions are not universally appreciated. In fact, some folks find such questioning disrespectful and impolite. They question the value of Irreverent Questions .

```
It is the human condition to question one god after another, one
appearance after another, or better, one apparition after
another, always pursuing the truth of the imagination, which is
not the same as the truth of appearance.   Alain [Émile-Auguste
Chartier], The Gods
```

Corporations like IBM have learned that today's heretic - the one with the courage, the tenacity and the brash conviction to question the way things are "spozed to be" - often turns out to be a prophet of sorts. The Emperor's New Clothes is the classic story showing what happens when Irreverent Questions are discouraged and obedience, subservience and compliance are prized. The emperor parades naked. The corporation clings blindly to old beliefs.


## A word about Classroom Climate

The classroom climate is a key variable in the process of learning through questions. When teachers wind up a strained explanation of a difficult new concept just as the class bell is about to ring and they ask, "Does anyone have any questions?" It is not at all clear to students from the tone and body language that student questions are sincerely desired. On the contrary, the message is that no questions should be necessary, particularly ones which require lengthy or involved answers. Indeed, to ask questions at this point is also to risk the wrath of the students as well as teacher for keeping them from playtime.

There are many alternatives to the "Are there any questions?" approach. The classroom climate which promotes student thinking and questioning has students write down questions at the end of the period. Every student is asked to write an anonymous question that will be answered in writing or verbally the next day in class. Every student can write a question, because the teacher who cares about stimulating curiosity, teaches what is not known as well as what is known. The combination has to produce questions in everyone! Another approach is to pause during a lecture or discussion and ask students to formulate a question about the content just discussed. After a moment to jot down questions individually, pairs of students compare questions and answer the questions. Interesting or unusual questions are shared with the whole group. The exercise should take 3 - 5 minutes and will help ensure understanding and involvement in the material.

But the key to climate is the attitude of teacher toward questions. Are they viewed as digressions, annoyances, to be hurried through, to be answered correctly, to show what students do not know? Or are they tools for the job of learning, toys for playful minds, full of puns, answers for other questions, an indication of powerful thinking, a celebration of curiosity? Are they answered with care, given special place in discussions, written without answers, given without requirements, extended with more questions?

If a teacher desires student questions, they must be greeted with enthusiasm, a commitment of time and an unthreatening manner. As students begin to receive the rewards of asking questions, the phenomenon will occur with increased frequency and quality. If out goal is to teach people how to learn through passing on the best of what we already know, then our best hope is through nurturing curiosity and the tools to quench its thirst.


*Ref: Jamie McKenzie*
*http://optin.iserver.net/fromnow/index.html*