Essential Questions: Opening Doors to Student Understanding

Workshop Content

- EQs and “Backward Design”
- Essential Questions - Key Features
- Different Types of EQs
- Designing Essential Questions
- Tips for Using Essential Questions
- Web Site Resources

Three-Minute Pause

Meet in groups of 3 - 5 to...
✓ summarize key points.
✓ add your own thoughts.
✓ pose clarifying questions.
Types of Questions

Leading
What are the names of the four food groups?

Guiding
What do we mean by a “balanced” diet?

Hook
Can what you eat help prevent zits?

Essential
What should we eat?

UbD Unit Design Template

* embodies the three stages of backward design
* offers a mental template for effective design

Understanding must be earned!

Coming to an understanding requires active meaning-making by the learner.
Essential Questions

What makes a question ESSENTIAL?

Essential Questions from the “leading edge”

Edge

To arrive at the edge of the world’s knowledge, seek out the most complex and sophisticated minds, put them in a room together, and have them ask each other the questions they are asking themselves.

www.edge.org

From the leading edge...

“What do collapses of past societies teach us about our own future?”

Jared Diamond
Bioligist, UCLA Medical School
Author of The Third Chimpanzee and Guns, Germs, and Steel

edge.org

©2016 Jay McTighe
My question: “Is there a happiness gene and (if so) is it dominant?”
Louis Rossetto
Co-founder and publisher of Wired

“It is now possible for functional parts of one animal’s brain to be transplanted into another’s. Can the memories and goals and desires of an animal be transplanted as well?”
Marc Hauser
Evolutionary Psychologist, Harvard University
Author of The Evolution of Communication

My questions is, “Why is music such a pleasure?”
Nicholas Humphrey
Psychologist, New School for Social Research
Author of Consciousness Regained and A History of the Mind
“Can we measure the onset of consciousness in an infant?”
David Gross
Kavli Institute for Theoretical Physics

My question is, “What goes on in the head of a baby?”
Freeman Dyson
Physicist, Institute for Advanced Study
Author of Disturbing the Universe and From Eros to Gaia

Questions about questions:
1. What questions were once popular but have now been answered?
2. What questions should never have been asked in the first place?
3. What questions have disappeared although they never received a satisfactory answer?
Richard Dawkins, Evolutionary biologist, Oxford University
Sample Essential Questions:

- How does art reflect, as well as shape, culture?
- What should we eat?
- In what way do effective writers hook and hold their readers?
- How do I know what to believe about a scientific claim?

Concept Attainment

1. Compare examples (+) and non-examples (−) of a concept.
2. Identify the distinguishing characteristics of each.
3. Test your theory against new examples.
4. Refine your concept definition.

<table>
<thead>
<tr>
<th>Essential Questions</th>
<th>Not Essential Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>What do effective problem solvers do when they get stuck?</td>
<td>What steps did you follow to get your answer?</td>
</tr>
<tr>
<td>Is there ever a “just” war?</td>
<td>What key event sparked World War I?</td>
</tr>
<tr>
<td>How can I sound more like a native speaker?</td>
<td>What are some common Spanish colloquialisms?</td>
</tr>
</tbody>
</table>
### Essential Questions

<table>
<thead>
<tr>
<th>Essential Questions</th>
<th>Not Essential Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>What should we eat?</td>
<td>What foods are in the DAIRY food group?</td>
</tr>
<tr>
<td>Should it be an axiom if it is not obvious?</td>
<td>By what axioms are we able to prove the Pythagorean theorem?</td>
</tr>
<tr>
<td>Who is a true friend?</td>
<td>Who is Maggie’s best friend in the story?</td>
</tr>
</tbody>
</table>

### What is the relationship between popularity and greatness in literature? YES NO

### When was the Magna Carta signed? YES NO

### Crustaceans - what’s up with that? YES NO

### To what extent are science and common sense related? YES NO

### Which modern U.S. President will have the most disappointing legacy? YES NO

### What’s the pattern? YES NO
Essential Questions

A finer grained look

How do we develop ESSENTIAL QUESTIONS?

©2016 Jay McTighe
Essential Questions

“Unpacking” – Inside Out Method

- **standards**
- **nouns and adjectives**
- **verbs**
- **big ideas and essential questions**

E/LA Standards

**Write arguments to support claims** in an **analysis** of substantive topics or texts, using valid **reasoning** and relevant and sufficient evidence.

Essential Questions

- **What makes an argument persuasive?**
- **How do you support a claim?**
- **What (and how much) evidence do we need?**
Mathematical modeling

‘Big Idea’ Understandings:

- Mathematicians create models to interpret and predict the behavior of real world phenomena.
- Mathematical models have limits and sometimes they distort or misrepresent.

Big Idea Understandings:

- How can we best model this (real world phenomena)?
- What are the limits of this model?
- How reliable are its predictions?

Three-Minute Pause

Meet in groups of 3 - 5 to...

☑ summarize key points.
☑ add your own thoughts.
☑ pose clarifying questions.
**Connect Essential Questions with Desired Understandings**

<table>
<thead>
<tr>
<th>Stage 1 – Desired Results</th>
<th>Stage 2 – Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Established Goals</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Understanding</strong></td>
<td><strong>Essential Questions</strong></td>
</tr>
<tr>
<td></td>
<td><strong>EQ</strong></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**adaptation**

*Big Idea* Understanding:
Living organisms have developed adaptive mechanisms to enable them to survive in harsh environments.

**Essential Question:**
*In what ways do organisms adapt to survive?*

---

**verbal & non-verbal communication**

*Big Idea* Understanding:
- Humans process both verbal and non-verbal messages simultaneously.
- Your communication becomes more effective when verbal and non-verbal messages are aligned.

**Essential Question:**
*What makes a great speaker great?*
**world literature**

‘Big Idea’ Understanding: Great literature from various cultures explores enduring themes and reveals recurrent aspects of the human condition.

**Essential Question:** How can stories from other places and times be about me?

**friendship**

‘Big Idea’ Understanding: True friendship is revealed during hard times, not happy times.

**Essential Question:** Who is a ‘true friend’ and how will you know?

**Critical Thinking**

‘Big Idea’ Understandings:

- A critical thinker does not simply believe whatever they read, hear or view. They remain skeptical, ask critical questions, and seek alternative points of view.
Critical Thinking

Essential Questions:
• How do I know what to believe in what I read, hear and see?
• Is this a credible and unbiased source?
• What other perspectives should I consider?

“Group”
Boyer’s Basic School

‘Big Idea’ Understanding:
Everyone holds membership in a variety of groups.

Essential Questions:
Which groups did I join at birth?
Why do people join groups?
What groups do I belong to?
Can I leave a group?

Three-Minute Pause

Meet in groups of 3 - 5 to...
✓ summarize key points.
✓ add your own thoughts.
✓ pose clarifying questions.
How are structure and function related:
...in living things?
...in non-living things?
Includes eight Practices for K-12 Classrooms.

Example:

7. Engaging in argument from evidence

What makes a credible argument?
What constitutes effective evidence?

---

### EQs in Two Tracks - Social Studies

<table>
<thead>
<tr>
<th>Content EQs</th>
<th>Process EQs</th>
</tr>
</thead>
<tbody>
<tr>
<td>• How should we balance individual rights with the common good?</td>
<td>• How do we know what to believe about historical claims?</td>
</tr>
<tr>
<td>• Does capitalism insure economic inequality?</td>
<td>• Whose “story” is this?</td>
</tr>
</tbody>
</table>

---

### EQs in Two Tracks - E/LA

<table>
<thead>
<tr>
<th>Content EQs</th>
<th>Process EQs</th>
</tr>
</thead>
<tbody>
<tr>
<td>• What “truths” can we learn from fiction?</td>
<td>• How does what I read influence how I should read it?</td>
</tr>
<tr>
<td>• Can anyone be a hero?</td>
<td>• How do you read “between the lines”?</td>
</tr>
</tbody>
</table>

---
**EQs in Two Tracks – Math**

<table>
<thead>
<tr>
<th>Content EQs</th>
<th>Process EQs</th>
</tr>
</thead>
<tbody>
<tr>
<td>• What do numbers show?</td>
<td>• What do good problem solvers do?</td>
</tr>
<tr>
<td>• What are the limits of this mathematical model (e.g., a linear equation)?</td>
<td>• What makes an answer reasonable?</td>
</tr>
</tbody>
</table>

**EQs in Two Tracks – Arts**

<table>
<thead>
<tr>
<th>Content EQs</th>
<th>Process EQs</th>
</tr>
</thead>
<tbody>
<tr>
<td>• How do the arts reflect and shape culture?</td>
<td>• How do tools and materials influence artistic expression?</td>
</tr>
<tr>
<td>• How and why do artists break with tradition?</td>
<td>• How can/should we “read” a work of art?</td>
</tr>
</tbody>
</table>

**EQs in Two Tracks – P.E./Sports**

<table>
<thead>
<tr>
<th>Content EQs</th>
<th>Process EQs</th>
</tr>
</thead>
<tbody>
<tr>
<td>• When and why should we change the rules?</td>
<td>• No pain, no gain – agree?</td>
</tr>
<tr>
<td>• Why and how do we “create space” when on offense?</td>
<td>• If practice makes perfect, what makes “perfect” practice?</td>
</tr>
</tbody>
</table>
### Tips for Using Essential Questions:

✔ use E.Q.s to organize programs, courses, and units of study
✔ “less is more”
✔ edit to make them “kid friendly”
✔ post the questions
✔ invite student questions

### U.S. History: WW II to Present

Everything we do in this course addresses one or more of the following questions:

- **What is the story of American history?**
- **How do historians construct and evaluate the stories they tell?**
- **Why study history?**

### Example - “Kid Friendly” Edit

**Initial teacher question** -
◆ How are adolescent beliefs and actions influenced by peer pressure?

**Student-suggested revision** -
◆ Why do kids sometimes act stupid when they’re in groups?
Essential Questions

**Overarching Essential Question - Science Department (IMSA)**

How Do We Come To Know The Natural World And Our Place In It?

Ben Yeo – High School History, ASD

**Teacher Generated Questions**

1. What is a law?
2. Why do we have laws?
3. Are laws natural or man made?
4. What do laws tell us about a society?

**Student Generated Questions**

- Do certain laws contradict each other?
- Why do people follow laws?
- Why do some crimes have more severe consequences than other crimes?
- How do people come up with the consequences for a certain crime?
- Why do laws change?
Sample EQ’s for Educators

- How would people know that we are a “standards-based” school?
- Are we assessing everything we value (or just that which is easiest to test and grade)?
- How can our assessments promote learning, not just measure it?

www.essentialquestions.org