

# Ownership of your learning

## Invent to Learn ---Gary Stager

Learning promotes starting with a question rather than looking for answers

When learning about a new subject as a team, we ask questions around

### Looking for info about the subject

Who...

What...

Where...

When...

### Divergent questions to gather lots of facts

Imagine...

Suppose...

Predict...

If..., then...

How might...

Can you create...

### Convergent questions to narrow the choices

Why

How

In what ways...



## Evaluation questions to find the right one

Defend...

Judge...

Justify...

What do you think about...

What is your opinion about...

### Question Types: Level 1— Memory



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 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 usually begin with these words:**

Who...

What...

Where...

When...

#### **Examples of memory questions:**


When did Richard III reign?

What games were played during the ancient Greek Olympics?

Who developed the planetary model of the atom?


Where is \_\_\_\_ on a map?



	<p>Based on: Ciardiello, Angelo. (1998). "Did you ask a good question today? Alternative cognitive and metacognitive strategies." <i>Journal of Adolescent &amp; Adult Literacy</i>. 42, 210-219. Used and modified with permission, 2003.</p>
<p><b>Question Types: Level 2— Convergent Thinking</b></p> 	<p>Convergent thinking questions are those which represent the analysis and integration of given or remembered information. They lead you to an expected end result or answer.</p> <p>Thought processes involved while asking and answering these questions are <i>explaining, stating relationships, and comparing and contrasting</i>.</p> <p><b>Convergent thinking questions usually begin with these words or phrases:</b></p> <p>Why How In what ways...</p> <p><b>Examples of convergent thinking questions:</b></p> <p>How does gravity differ from electrostatic attraction?</p> <p>How was the invasion of Grenada a modern day example of the Monroe Doctrine in action?</p> <p>Why was Richard III considered an evil king?</p> <p>In what ways does Roman drama compare to the heroic epics of Indian literature?</p> <p>Based on: Ciardiello, Angelo. (1998). "Did you ask a good question today? Alternative cognitive and metacognitive strategies." <i>Journal of Adolescent &amp; Adult Literacy</i>. 42, 210-219. Used and modified with permission, 2003.</p>
<p><b>Question Types: Level 3— Divergent Thinking</b></p>	<p>Divergent thinking questions are those which represent intellectual operations wherein you are free to generate independently your own ideas, or to take a new direction or perspective on a given topic.</p> <p>Thought processes involved while asking and answering these questions are <i>predicting, hypothesizing, inferring, or reconstructing</i>.</p>





	<p><b>Divergent thinking questions usually begin with these words or phrases:</b></p> <p>Imagine...</p> <p>Suppose...</p> <p>Predict...</p> <p>If..., then...</p> <p>How might...</p> <p>Can you create...</p> <p>What are some possible consequences...</p> <p><b>Examples of divergent thinking questions:</b></p> <p>Can you imagine ways that soccer typifies Mexican culture?</p> <p>Suppose that Caesar never returned to Rome from Gaul. Would the Empire have existed?</p> <p>What predictions can you make regarding the voting process in Florida?</p> <p>How might life in the year 2100 differ from today?</p> <p>The computer corrects spelling. Is it then unnecessary for third graders to take spelling tests?</p> <p>Based on: Ciardiello, Angelo. (1998). "Did you ask a good question today? Alternative cognitive and metacognitive strategies." <i>Journal of Adolescent &amp; Adult Literacy</i>. 42, 210-219. Used and modified with permission, 2003.</p>
<p><b>Asking Good Questions: Evaluative Questions</b></p> 	<p><b>Question Types: Level 4—Evaluative Thinking</b></p> <p>Evaluative thinking questions are those which deal with matters of judgement, value, and choice. They are characterized by their judgemental quality.</p> <p>Thought processes involved while asking and answering these questions are <i>valuing, judging, defending, or justifying choices</i>.</p> <p><b>Evaluative thinking questions usually begin with these words or phrases:</b></p> <p>Defend...</p> <p>Judge...</p> <p>Justify...</p>





	<p>What do you think about...</p> <p>What is your opinion about...</p> <p><b>Examples of evaluative thinking questions:</b></p> <p>What do you think are the advantages of solar power over coal-fired electric plants?</p> <p>Is it fair that Title IX requires colleges to fund sports for women as well as for men?</p> <p>How do you feel about raising the driving age to 18? Why?</p> <p>Justify Pilate's decision to execute Jesus.</p> <p>Why would you vote for____?</p> <p>What do you think of capital punishment for drug dealers?</p> <p>Based on: Ciardiello, Angelo. (1998). "Did you ask a good question today? Alternative cognitive and metacognitive strategies." <i>Journal of Adolescent &amp; Adult Literacy</i>. 42, 210-219. Used and modified with permission, 2003.</p>
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