Powerful Questions

The best learning situations are those that foster active participation, which can be encouraged by:

(1) Asking the right questions; and

(2) Utilizing skills that promote participation.

#  1. Skills for Asking Questions

# Things to Consider:

* Try to set up situations so that you can avoid telling teens what to do. Let them have the experience that inspires and motivates them.
* Actively participate with the teen. This will model appropriate behavior. The teen can learn a lot about how to think critically and problem-solve by watching you and working with you.
* It’s OK if you don’t know the answer!
* Ask open-ended questions, rather than those that have a “yes” or “no” answer.
* Ask questions that inspire the teen to thoughtfully analyze a situation and consider consequences – “What do you think will happen if you do *this*?”
* Give the teen time to answer the question: ask the question, then wait. A while. Trust us: thoughtful answers take time.
* When a teen tells you what they think, respond by repeating and paraphrasing what they have said without criticism.
* Don’t give too much praise, or reject ideas. Telling a teen they are right or wrong can discourage them from generating additional ideas or pursuing deeper exploration.

# Question Types and Examples

Opening Questions

Opening questions work great for teens that are just getting involved with an activity, or seem unsure of themselves. Opening questions provoke curiosity and invite involvement. They are completely free of the element of: “Guess what’s on my mind.”

* *What happens when you try this?*
* *What does this remind you of?*
* *Have you ever seen this before? Tell me about it.*

Exploration Questions

For those that seem to be really interested, Exploration Questions can help focus attention and encourage active play, experimentation, discovery, and thoughtfulness.

* *Tell me what happened?*
* *What did you notice?*
* *What does it look like?*
* *What is it made of?*
* *What would happen if…..?*
* *What difference did you notice?*
* *What might you try instead?*
* *What can you tell me about your experiment?*
* *How did you do that?*
* *What does this make you think of?*
* *In what ways are these the same?*
* *In what ways are these different?*
* *What materials did you use?*
* *What can you do instead?*
* *What do you feel, see, hear, taste, and/or smell?*
* *What are some different things you could try?*

Making-Meaning Questions

Making-Meaning Questions can help solidify their experience into a true learning event. These questions help support reflection, learning, and understanding.

* *Why do you think that happened?*
* *What evidence makes you think that?*
* *What would happen if we changed . . . ?*
* *What do you think this tells us about . . . ?*
* *Do you have any idea how we could test this out?*
* *What would you need to find out more?*

# 2. Skills for Increasing Participation in a Teen Science Café

Your objective here is to:

* Get teens to participate without calling on them directly (thus putting them on the spot);
* Manage the talking time so each individual has a chance to share;
* Help participants to clarify the meaning of their response;
* Remain neutral so that participants can’t tell what your own personal opinion is; and
* Establish a non-threatening climate for discussion.

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|  Skills for Increasing Participation |  Skills for Obtaining Meaning |  Skills which Hinder Participation |
| AcceptingSupportingEncouragingHandling errorsNon-verbalGroup Arrangement | FocusRefocusClarifying meaningExtendingLiftingTime to Think | Unequal rewardsUnclear instructionsNo wait timeImposing valuesYes/No Questions |

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| Discussion Skill | Purpose | Example |
| Accepting | Accept response with similar frequency from all participants. Promotes participation regardless of gender, etc.Makes people feel all responses are acceptable.All responses accepted in non-judge-mental manner. | “Alright, Sue.” Nod head in acceptance of response.“Thank you”“OK”“Good” |
| Supporting | Helps support persons having problems expressing themselves.Assists persons to feel a worthwhile member of group.Supports people whose every comment is attacked by someone.Supports people who offer irrelevant information on first attempt.Helps to redirect group’s attention to persons normally overlooked by the group.  | “Let John tell it his way.”“Take a minute to think about it.”“Your comment relates to what John said.”“Go ahead, express it anyway you can.”“Did everyone hear Sally’s suggestion?” |
| Encouraging | Encourages those people who are reluctant to say anything to contribute to the discussion.Assists persons to feel a worthwhile member of group.Develops feeling or climate that each person can contribute thoughts and ideas. | “Does anyone have anything to add?”“We’d like to hear from some of you who haven’t said anything yet.”“Has everyone had a chance to say what they think?” |
| Handling Errors | This is a delicate and important skill. If used properly, this skill can help the group grow in understanding without embarrassment to anyone.Avoids humiliation or awkwardness to that participation does not dry up. Supports the participation, but not the incorrect answer.The idea is to get wrong responses out in the open in a positive way – so they can be corrected. | “Thank you, John – what kind of information would we need to check out your theory?”“Would you explain what you just said?”“How do the rest of you feel about that?”“Maybe we can find out about that later.”“Are there any other points of view?” |

B. Skills that Contribute to Completeness and Relevancy of the Topic

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| Discussion Skill | Purpose | Example |
| Extending | To obtain as much information as possible about the subject being discussed. This might include looking for explanations, additions, alternatives, etc. | “Is there anything else you would like to add?”“Are there any other ideas?”“What else can we say about \_\_\_” |
| Clarifying Content | To obtain explanations of statementsTo learn meaning of unfamiliar terms or fuzzy statementsTo help the rest of the group understand  | “Can you give an example of what you just said?”“What do you mean by \_\_”“How would you say that in another way?”“Can someone help with a definition?” |
| Focus | Designed to zero in on specific points | “What do you notice about \_\_” |
| Refocus | To bring people back to the topic after getting sidetracked. To keep the discussion on-topic. | “Let’s get back to our topic and come back to that later.”“How does this relate to the topic?” |
| Lifting | To raise the level of the discussion by putting thoughts together into interpretations that may lead to inferences, generalizations, or conclusions. | “Why do you think that \_\_”“How do you account for \_\_”“What are some possible reasons for \_\_”“What would happen if \_\_” |
| Time to Think | Thinking processes are sometimes slow and painful. It takes time to put thoughts together to answer challenging questions.Allows higher level evaluative thinking, more responses. | Wait for a response after asking a question. Support the person while they are thinking. Wait, repeat the same question, and wait again. Don’t ask another question! |
| Summarizing | Having someone restate a lengthy observation into several words.Get synthesis and closure | “Would you restate that into 3-4 words?”“How can we put what you have just said on the board?”“Can you give us the main ideas of what we have been talking about?”Use deliberate questions |

C. Discussion Behaviors which Hinder Participation

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| Discussion Behavior | Description | Example |
| Multiple Questions | Facilitator asks a question, then rewords it to express what he/she wanted to ask in the first place. | “What are some of the values of pine trees? I mean, what could you use pine trees for? Ah, what are the values of a pine forest?” |
| Yes/No Questions | Facilitator uses many questions that can be answered with a simple yes or no.  | “Is soil important to these plants?”“Did the battery power the light bulb?”“Do we need predators?” |
| Unclear Instructions | Facilitator tells the group what they are to do in a variety of confusing ways. May expect some to figure out directions while repeating them for others. | “OK, folks, turn to page 126 in the Resource Planning Guide, and page 205 in the blue, no yellow, field guide book. Read over the third and fifth paragraphs about hawks. I’m also handing out graphs 7 and 27 for interpreting the fifth paragraph that I referred to.” |
| Inappropriate Awards | Facilitator rewards those with responses most similar to his/her own personal opinion or philosophy. Rewards some participants but not others, even though responses are similar. There may be unconscious differences in responses between genders and race. | Q: “OK, from the presentation, which kind of soil was best for growing these plants?”A1: “I think sandy soils were best.”Q:“OK, anyone else?”A2: “I think a mix of clay and sand was best.”Q: “Someone else?”A3: “It was deep soil with sand, silt, and clay.”Q: “Right on! Wow! That’s absolutely right. You see, folks?” |
| Imposing your Values | Facilitator words the question or statement so that it suggests only one acceptable right answer – also called a “binding response.” | “You can all see, then, why the vegetation type is important to animals, can’t you?”“It would be a good idea to pave that street, wouldn’t it?”“Of course, this is the best way to create an electrical circuit, right?”“What important things does the film show us?” |