



Successful strategies in working with high school students

- Know your audience! Consider their life as a teenager and their typical school day, curriculum, and background. Understand their architectural base of knowledge. (What did you know about buildings at age 15?!)
- Invest a little of your time at the beginning chatting with your group to develop a warm relationship with them. Information gained about the students now will help you gauge their level of pre-knowledge. Bantering with a purpose will also help you know what kind of day they've already had before arriving at your office.
- Learn the students' names and use them often.
- Set very clear expectations at the beginning:
 - how to address you
 - what's going to happen today / throughout the time at your firm
 - timeframe
 - responsibilities of the students
 - do's and don'ts
 - office etiquette
- When at all possible, help them experience architecture in person. These "muscle memories" you've helped them develop will be extremely useful when teaching new ideas.
- Limit the factoids, statistics, and the volume of information; introduce a few big ideas during each session and reinforce through repetition.
- When introducing a new architectural idea, know when to give them the information and when to ask questions get the students thinking and puzzling about something. If a specific fact is needed for understanding, provide that piece of information, don't make them guess. Don't launch into the technical aspects right away.
- Be fair in your questioning strategies. Use more open ended vs. closed questions. ("When was this building built?" could become "What clues does this building give you to help you estimate when it was built?")
- Be precise in your language and focus your questions. ex. "What do you notice?" (vague) versus "What do you notice about the color of the left side of the building?" (clearer)



- Sometimes, take votes with the group rather than singling out an individual student to answer a specific question.
- Be prepared to assign roles to students for each activity. They will not necessarily sort themselves into tasks, and if your group has dominant students, the quieter students may be unwilling to participate at all. Give worthwhile value to each of the tasks assigned, and allow each type of student/role to shine throughout the process and project.
- Keep your radar on. Listen to what are kids saying to each other during down time. Look for signs of feedback and understanding. What things intrigue them and how can you build on that?
- Foreshadow often. Introduce a new idea at the beginning then weave that idea throughout the session.
- Refer often back to other buildings or architectural concepts that you have already covered to compare and contrast. Quiz the students along the way to see if a building fits a certain criteria you have previously explained.
- Despite living in a virtual world, students are still tactile learners. Bring in as many building materials as you can find and encourage students to handle them, as well as touch existing buildings.
- Make analogies.
 - ex. “This cornice along the top of the building weighs about 8,000 pounds... That’s about the weight of 2 large cars.”
 - use number of years, rather than always dates. Example: “This building is 100 years old.” (versus saying it was built in 1910, which means less to a high school student)
- Keep encouraging the kids along the way.
- Always be prepared to have an easy Plan B activity that gets them interacting and moving around and also reinforces basic skills and concepts (kids can never have too much of this).

Our favorites from CAF’s *The Architecture Handbook: A Student Guide to Understanding*, include:

- reading/using an engineering scale and an architectural scale
Teacher edition, pages 66 and 142
- calculate the length of your pace to measure 100 feet
Teacher edition, page 74
- sketch everyday objects in plan, elevation, and section (if possible)
Teacher edition, pages 50 and 346
- sketching bubble diagrams (of students’ own home, your office space, etc.)
Teacher edition, page 239
- sketch a section of your ideal sandwich
Teacher edition, page 468
- Leave time at the end of each session to briefly to review and reinforce the information you’ve presented.

Questioning Strategies / Learning Styles

Ask open ended questions vs. closed questions

Examples of open ended questions:

- “What do you notice about the point where this building meets the next structure (or its two different sides, etc.)?”
- “Why do you think this type of drawing might be useful in the field?”
- “Which of these two buildings is older? What makes you say that?”
- “Which of these two buildings do you like better? Why?”
- “If you could ask this building one question, what would you want to know?”
- “What adjectives could you use to describe this building?”
- “What do you think this part of the building is used for? What clues is the building or space giving you about its function or users?”

Engage students through a variety of learning styles

Consider varying how you present information to students who may have different ways of understanding new information:

<i>Left Brain learners</i>	respond to logic, words, realism, facts, and analytical thinking
<i>Right Brain learners</i>	respond to body language, humor, interaction with peers, whole picture, and mental images
<i>Auditory learners</i>	process new information best when it is spoken
<i>Visual/Spatial learners</i>	visualize plans and objects in their mind’s eye; good at seeing the ‘big picture’; learn best with images, color, emphasis on spatial orientation
<i>Tactile/Kinesthetic learners</i>	prefer to touch, manipulate, or otherwise physically participate in the information

Use fair questioning strategies to frame and gather ideas

Unfair questions can derail a session with students. Unfair questions require responses that you are not certain your group possesses, or the question is too vague.

Unfair questions: *a) What happened in 1871? b) What's a really big event in Chicago's history?*
Fair question: *Who can remember something about the Great Chicago Fire?*

The Frame and Gather technique involves framing questions in a way that allows you to gather a variety of responses from your group. You then use only the responses that fit with your theme or big idea.

You: *Who remembers something about the Great Chicago Fire?*
students: (i) (various responses)

At this point, you acknowledge all of the responses, encourage many students to give feedback but only use and reinforce the responses that further the story you want to tell. For example, Mrs. O'Leary and the cow will invariably come up, but you won't necessarily use this information to further the story you want to tell. However, the mention of the cow does offer you an opportunity to bust the myth.

This response gathering technique accomplishes a few things:

- 1) Engagement / Participation – it allows you to gather information without putting one particular person on the spot for a specific answer
- 2) It allows you to let the overbearing student have their say, while also hearing from everyone else
- 3) Assessment — you know better what your audience knows and understands
- 4) Allows you to debunk myths, misunderstandings, and wrong information

Wait time

Wait time is the time between the end of a question and the answer to that question. It can feel like an eternity if students aren't responding. We want to fill the silence and often we will call on the first person who shoots up their hand. Or, when faced with silence, we might try to revise our initial question or throw in a couple of 'helper' questions or comments. Silence could mean that you've asked a poorly phrased question.

Some people formulate answers by talking them through. Other people formulate answers by thinking them through completely before raising their hands to respond. Both types of response styles can benefit from longer wait times. The first group will have time to refine their initial responses and perhaps fill in with more details. The second group will have enough time to formulate a reasonable response. Longer wait times usually result in longer, more thoughtful, and complex responses.

Gender Bias

Be aware of how often you call on males and how often you call on females in the group and consciously try to distribute your questions evenly.

Compliments

"Good Answer" or "Great Question!" are fine responses if you're the person who has received the compliment. But how do students feel when their question or response is not complimented — especially when others have been complimented? Unless you're willing to give these compliments to every question or response, it's probably better to not begin this practice. Try to praise the entire group when possible.



Characteristics of Teenagers

- they show-off, sulk, and are often irreverent
- although they won't admit it, they work well with structure and boundaries
- ravenous appetites for everything
- they are discovering their own moral code
- they can be introspective
- full of bravado at times and like show off
- each student wants to be unique and an individual, but in the same way as everyone else (conforming non-conformists)
- may not want to put themselves or their ideas on the line, if it could mean failing in front of their peers
- they may want to 'push your buttons' to see how you'll react
- they pay more attention to their peers than their parents or other adults
- still growing and often physically tired
- when they are paying attention, it looks very different than when an adult or younger child is paying attention
- beginning to try on adult roles
- learning to drive
- many are working outside the home
- dealing with pressures of sex, alcohol, cigarettes, and drugs