Architecture in Education Guidelines

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FLORIDA FOUNDATION FOR ARCHITECTURE

Architecture in Education Program

S T E [A] M Curriculum

Science Technology Engineering Architecture Mathematics

What is Architecture in Education?

Architecture in Education (AIE) is a STE[A]M-focused, Florida Standards-based educational program jointly presented by the Florida Foundation for Architecture. AIE is a dynamic eight-week, curriculum-enrichment program that matches professional architects with classroom teachers in Florida. AIE sharpens a student's math, social studies, art, and other core academics with real-life, project-based learning.

Florida school children in fourth and fifth grade learn about architecture, design concepts, sustainability, ecosystems, volume & measurements, structure and more. Volunteer architects from the community share their experience and present tailored lesson plans that satisfy Florida Standards for math, science and social studies. The hands-on lessons also provide ample experience in social, presentation and team participation skills.

Interested in Volunteering to Teach?

The AIE program is currently in six schools, located in major metropolitan areas. We need volunteer architects and associates to devote a minimal amount of time to present the AIE curriculum to fourth and fifth grade students.

Be Yourself

You are a designer. Your medium is visual, tactile and kinesthetic.

- Use these frameworks with the students just as you use them in your work.
- Draw pictures to explain your ideas; let them touch things; have them choose from samples.
- You are not training the students to be architects, but you are giving them experiences and tools so that they can investigate, describe and evaluate their immediate environments and more clearly imagine those far flung in space and time.

Think of these kids as your clients.

How can you make them "feel" the grandeur or intimacy of a space, or assess the appropriateness of a detail or ornament? Unlike your adult clients, these students can be drawn into your professional world because they will replicate what you do based on their own perceptions and desires.

Along these lines, we encourage you to honestly share your own development, training, work experiences, and--- yes---frustrations with your class. Tell them stories about your work.

Role-play with your team members the challenges of the client who keeps changing the game plan or who complains about the final product after agreeing to all your choices.

Tell them about the moment you knew you were going to be an architect, how you prepared or are preparing yourself, what you

love about the field, what you hope to accomplish one day, how much you have to interact with other people in other trades and professions and how hard you have to work.
Kids recognize stories and anecdotes as "real" and often retain those images long after the information has faded.

Don't Just Stand There; Do Something!

You'll often see and hear the words "hands-on," "experiential," and "interactive." Simply put, we want you to involve the students, no matter what the age group, through stories, drawings, color, charts, PowerPoints, maps, plans, and physical activities.

Don't Lecture

As you well know from your own experiences sitting painfully through classes and meetings, you need to keep it lively and engaging. It may take a while to get the hang of hands-on teaching, but it's right up your alley as designers.

Think back through your own life and education. What made some concepts stick while so many hundreds of others went in one ear and directly out the other? Probably, they were the ideas that came to you as compelling images, as funny or surprising thoughts, as the answers to riddles, as insights that leaped from something you were making.

Kids are always learning, regardless of and often despite our efforts to teach them.

They are constantly studying adults and each other, reacting to the environments they're in without necessarily realizing it, daydreaming and fantasizing, puzzling over something the teacher said yesterday...

In short, they're mentally busy all the time and may not want to be interrupted.

If you start out by showing them a picture, cutting up a piece of paper, drawing a map, or putting something into their hands, you have invoked their perceptions, and their attention will follow.

This sort of tactic is not just for the sake of novelty or "entertainment" (although neither one hurts). It is a 100% valid and an increasingly recognized teaching method that opens information up to the variety of learning styles represented in all classrooms.

Each person has a unique combination of conduits to the mind.

We learn through seeing, touching, acting things out, talking (to ourselves as well as to each other), arranging, choosing, and sticking things together. If you vary your activities so that the students look, talk, draw, look again, move around, build, and talk some more, you will not only keep them awake, but you will also be spreading out different perceptual and physical experiences so that everybody can be involved.

Learn Their Names and Use Them

Names connect you to these young people. Study the class list before you go in, so that you're used to what may be unusual or hard-to pronounce names and can match the kids up as quickly as possible. Make name tags in advance, use ribbons as lanyards. Or make name tags for their desks.

Pictures are worth you-know-what

Fill the classroom with images, a vocabulary chart or make your own or have the kids make one that will stay in the room for the whole eight weeks (and longer, we hope).

- Draw pictures on big paper pads (the blackboard will get erased).
- Label the elements in the classroom.
- Give the students magazines to put up for their own pictorial dictionaries.

These images - labeled, of course - will be permanent reference points for your course of study. They will reinforce the concepts you're dealing with and build vocabulary. They will show the

students that there are many good answers to design problems as they display different versions of "turret," "castle," "garden," "neighborhood" or "post and lintel."

You can add to these images over the eight weeks and get the students to add to them, too. These images will be crucial to drawing and construction projects because they give the kids a pictorial menu of ideas to choose from.

Many kids can speak better than they can do things with their hands

Although you may encounter some remarkably smart students, don't be fooled by fancy words and apparently sophisticated ideas. Kids can often talk a good game, but equally as often are quite naive about actual working mechanisms, systems and relationships in the world.

They may make insightful statements and plan elaborate projects and not know how to use scissors effectively. They may be "very bright" and fall to pieces when you ask them to measure a line six inches long. They may spout off on a topic and go comatose when you ask them something about it that is not in their verbal drawer.

This is as it should be they may be smart, but they are not experienced. That's what makes them kids and you are grown-up.

Reward what they do know and don't start getting the idea that they can't benefit from more investigation.

There are certain topics that bring just about any group of students to their knees:

- Scale: This extremely important and valuable subject area is also extremely difficult for students to grasp. There are plenty of great ways to approach it.
- Measurement:
- Estimating:
- Perspective: Do not try to explain vanishing points or one- and two-point perspectives, unless you have come up with some brilliant method that nobody else has figured out.

Show them PowerPoint images, but not too many

Ask them questions: What is this building? Where does it seem to be? What is it made of? How is it stuck into the ground? Who uses it? What for? How can you tell? How do you like it?

They'll think that this is another guessing game, and it gives them a chance to tell you what they know or can figure out from the image itself. It is also a great way for you to gauge how sophisticated or naive they are about architectural form.

You will, obviously, eventually tell them what the building or space "really" is, but the difference is that they've already invested their own curiosity and imagination into the process. They will be gratified that they know that the building is used so differently from what they expected.

Assure them that they're not wrong, because they're not

In fact, this issue here is that you have quietly engaged them in "reading" architecture and evaluating it in a meaningful way: "Everybody recognized what this building is used for and some of you liked it. But this building had many of you confused, and lots of you thought it was creepy looking. Is there any good reason for making a building look creepy on purpose?"

These are not yes/no answers. They are lead-ins to a meaningful exchange about the effects of design choices, which is one of the objectives of the program.

Repeat yourself, repeat yourself

In general, they've never heard or talked about these things before, so you need to repeat and reinforce a coherent body of information rather than jump all over the place with new concepts.

Remember too, that there are six whole days of other school subjects' basketball, time with friends, visits to relatives and zillions of other experiences between your visits. The same goes for you. You'll need ways to link your sessions so that you can keep track of what's going on!

Use the classroom .... Label the elements.

Label the materials...

- Show them ways to estimate the dimensions using paces or lying on the floor as human rulers.
- Talk about the features of natural and artificial light.
- Look out the window and look for building types, interesting parts of the skyline, energy systems and patterns.
- Show them how their view is represented on a map of the city.
- Help them figure out just how far they can see.
- Have them trace images right onto the window with erasable markers or onto acetate sheets.

Get them to draw, but jazz it up

Some kids will happily draw pictures all day, but many are shockingly inhibited, especially after about the third grade.

Many children are so naive about architectural possibilities that they "just can't think of anything- and they really can't. Many children are so inexperienced with art materials (this will break your heart that they balk when given opportunities to draw and color and seem to have no imagination at all.)

These students are finished with their drawings in about 44 seconds, having put on their papers a box with a triangle on the top and a chimney sticking out to the side and two

symmetrically placed windows with curtains and flower boxes- a house that no one in the universe has ever seen.

Tell them that it's perfectly all right to copy

If they want you to draw some part of the picture for them, go ahead, but on another piece of paper that they can then transfer. Talk them through these crises:" Well, you'll need a door, right? How about a really fancy one or a real big one like in this photograph? You can't overcome all the obstacles that may be inhibiting some of the students, but by giving them choices, you can pull many of them into a realm that they can handle.

If drawing just bombs out, drop it and switch it to collage the next week. Just plain drawing can get boring.

You can breathe life into drawing projects in lots of ways, using trace paper, cut-outs, applique and plastic overlays. You can string their pictures together into a long streetscape and have them add details and color in this new and more unusual format (plus then the other kids will get mad at them if they don't help). You can have them do share drawings, or draw an image to dictate to them and so on.

It's easier for them to draw when they have specific parameters that save them from the hostile glare of the blank paper. (You've maybe felt that panic yourself once or twice? Share that with them, that even professional-type adults have trouble with this stuff because it really is hard and complicated, isn't it?)

Get them to build things and leave your expectations behind.

If you think you've been amazed so far by what the kids come up with, wait until they get into the third dimension. They'll try anything, using whatever you give them in completely inappropriate ways that will charm you silly.

However, as in the case with drawing skills, you must be prepared for students who are inexperienced with craft supplies or who go blank for ideas unless they can choose from a list of options.

Along with the many visual images you've plastered all over the class by now (yes, that is the correct answer) give them lots of junk to use and pretend it's a lesson in cycling: corks, bottle caps, toilet paper and sandpaper.

Be advised, however, of some hard truths:

- Latex glue takes forever to dry. And you are the one who ends standing there holding the pictures together for 25 minutes, unable to move. So, go into build sessions equipped with bobby pins and your own personal dispenser of scotch tape which no one else can borrow so that you can race from desk to desk clamping pieces together and then taping them for temporary support.

- Beware of the tape monster. Students of all ages are extremely naive about structural properties - not only those of concepts and steel but also those of cardboard and pipe cleaners. Their solution to supporting a shoebox with stilts cut (unevenly) from paper straws is to get hold of the only roll of masking tape in the whole school and wind all of it around and around everything until it only tips over a little bit. (This is why you don't let them get near the tape in your pocket.}

- It pays to give them some sort of guidance about support and balance before they get their hands on anything, because once they get going, they won't listen to reason. Basically, they need to be told that big heavy stuff needs to go at the bottom and little things that crush easily should probably be somewhere further up. It may hit you that you can start your eight weeks right here and spend the rest of the time expanding on structure and materials.

- It's hard to get a piece of cardboard to stand up all by itself. But the kids will kill themselves trying to get their first wall up this way and will start looking around or tape. Don't let them get stymied by falling into this trap. Show them beforehand how to avoid it; Show them how to tape two pieces or score a piece and fold it so that the angle will hold up the walls. Or, let them use shoeboxes, or let them make each wall flat to be raised later. Hey, a way to explain what elevation is!

This, again, is a perfect introduction to structural concepts, and it can be used as the first problem if that's the direction you want to take.

Reserve sparkly things for the end. Kids are like magpies. They go for the glitter. Anything that shines, or glistens will be used up immediately and nothing else will do after that.

A very important note: Although many of our eight-week sessions culminate or center around a construction project, there is no "much" about it.

Think of your presentation at the wrap-up as a summary of the process you went through.

Help them make their stuff look nice.

Kids are embarrassed by ratty-looking products, and they may expose their levels of self-esteem by the way they treat their own work. Do whatever you can to help them keep tidy without interfering.

We know it's a fine line, and maybe not always possible, but let them erase their mistakes or cut off the part they *don't* like. Complain to them about crumpled-up drawings or paper ripped out of spiral notebooks with ragged edges. Treat their work with respect and insist that they do too.

Praise their efforts all the time.

As you can no doubt tell by now, there's no way to predict exactly what's going to happen for you over the next two months.

You'll probably have some bumpy times, and you'll probably start to have weird waking dreams as memories of your own education begin to erupt, and you'll probably wish that you'd had somebody like you coming into your classroom when you were a kid.

You'll maybe have the experience that many of our people have described: That by opening yourself up about your work to children and young adults, you find that your ideas crystallize, and your work takes on whole new

dimension of meaning, since, in a sort of dizzying way, these kids really are your clients, aren't they? They're the very creatures you ultimately design for people.

And because they're young and unpolished, they'll ask you blunt questions and tell you when they *can't* make any sense out of your answer. So, tell them when you don't know; tell them when there aren't yes-or-no answers; and encourage them that there is plenty of room in all kinds of trades, professions and avocations where they can take their rightful places in this vast discourse.

And when it all gets to be too much, just relax and enjoy yourself, and bask in the knowledge that many, many people are extremely grateful to you for helping with this amazing venture.

Excerpts taken from AIE Program, Philadelphia
By Marcy Abhau, AIE Education Specialist, Architecture in Education Program AIA Philadelphia

Strategic Planning

At least six weeks before you start the program:

- ID potential school
- Meet with School Administrators
- Introduce the program and talk about any specific
- How many classes to be taught?
- How many students?
- One or more architects in class?
- Complete the volunteer/background check process
- Solicit volunteers, architects, associates, students
- Double number of classrooms, allow for schedule conflict
- Same architect in same classroom each week
- Visit the AIE Google Docs website to view other AIE school presentations, guides, timelines, photos of students and their work
- Meet with Administrators AND Teachers

Questions for Teachers:

1. PowerPoint presentations – do we have access to technology in the classroom?
    a. Should architects bring laptops or flash drives with presentations loaded?
2. Can we play videos from presentations?
3. Can we use existing white boards/technology for illustrating to class?
4. Will teachers be in the classroom during lessons?
5. Materials – drop off or volunteer to bring each week?
6. Buy in advance and submit an AIA Florida expense reimbursement form and submit to Crystal Ralys at cralys@aiafla.org or submit an Anstis Fund application.
7. When should volunteers arrive at school, i.e. 30 mins prior, etc.?
8. School dismissal or other patterns– any issues to be aware of?

Program FAQ Sheet

Who: 4th and 5th grade Florida students, Florida school educators & volunteers, AIA Florida members

What: Architecture in Education: a STE[A]M focused, Florida standards based educational program presented by the Florida Foundation for Architecture

When: 1.5 hours per week for 6-8 weeks during regular school day

Where: In school classrooms to leverage existing resources

- educator
- space
- time

Why: Architecture is an ideal framework for project-based and visible learning that helps students draw sophisticated connections between math, science, technology, humanities, and the arts

- greater depth of understanding through hands on investigation and discovery
- improved verbal/written communication and interpersonal/social skills through collaborative learning and critique
- increased creativity and critical thinking by actively engaging and solving physical problems

How: Through an active collaboration between volunteer AIA members and school educators within the space of their classrooms

Sample Curriculum

Tentative Date	Activities	Vocabulary
Session #1		
Session #2		
Session #3		
Session #4		
Session #5		
Session #6		
Session #7		
Session #8		

Student Pre-test

Name: _____

1. What does an architect do?

_____
_____

_____
_____
_____

2. If you could design your own community, what buildings would you want to have?

_____
_____
_____
_____

3. If you were building a school, what are some important things you would need to think about?

_____
_____
_____
_____

4. Draw a picture of your school on the next page.

Photo Release Form

I _____ hereby grant permission to the Florida Foundation for Architecture and AIA Florida to use photographs of me and my family for purposes of education, advertising, public relations (including webpages), or any other lawful use with or without my name.

Name(s): _____

_____

_____

_____

Name of Parent/Guardian (please print)

Signature Date

Florida Foundation for Architecture, 104 East Jefferson Street, Tallahassee, FL 32301

(850) 222-7590 - www.aiafla.org

Metrics [to be gathered]

- Dates of program
- School Name
- Number of children reached
- Teachers involved
- Architect volunteers
- Architect student volunteers (if applicable)
- Children’s level of engagement during AIE
- Attendance on AIE days vs. non-AIE days (subjective but usable)
- Video clips in classroom
- Photos (if applicable)
- Principal/Administrator Testimonials
- Teacher Testimonials
- Parent Testimonials (by survey, post program)

Request for Architecture in Education Form

The Florida Foundation for Architecture's Architecture in Education matches volunteer architects with 4th-6th grade public school teachers to enrich the learning experience of children.

Architecture in Education enriches core academic skills including art and design, mathematics, language arts, science and social studies. AIE teaches children how to exercise their analytical and creative skills through the architectural design process and fosters a heightened civic consciousness, bridging the gap between what is learned in school and everyday life. An architect works with you in the classroom one session a week for eight weeks.

To find out more contact Crystal Ralys at cralys@aiafla.org or call 850-222-7590.

Please take a few minutes to complete this application, which will help us provide you and your students with the best experience possible! This is essential information for our planning purposes. *Thank you!*

Please mark your preference: Fall _____ or Spring _____(year)

School: _____

Address: _____

Telephone: _____

School Principal: _____

Teacher: _____

Home Address: _____

Cell Phone Number: _____

Email:_____

Grade: _____ Subject: _____Class size _____

1. Do you have any broad themes in mind for the program?

2. Would you like to connect to any of the learning standards? Which ones?

3. Are you willing to give the architects guidance on the themes?

4. What are you hoping to achieve by having an architect work with you and your students?

5. How do your students learn best?

6. Is there anything we should know about your students/ school community?

7. Do you have basic supplies in your classroom, like scissors, rulers, glue, markers, construction paper? Or would it be helpful if we provided these materials?

8. Do you have a preferred schedule day & time?

9. How do you measure success?

10. What other enrichment programs have you brought to the classroom?

11. Are you willing to be an active part of the program and remain in the classroom the whole time?

Please email your completed form to: (insert name of AIE Coordinator)