

Careers in Architecture and Construction Curriculum



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Curriculum Structure

The *Careers in Architecture and Construction Curriculum* is composed of the following lessons. Approximate lesson times are included.

Lesson	Title	Approximate Time
One	Career Opportunities in Architecture and Construction	60-75 minutes
Two	Careers in Design/Pre-Construction	65-85 minutes
Three	Careers in Construction	55-75 minutes
Four	Careers in Maintenance/Operations	70-85 minutes
	Total	4–5.5 hours

Lesson Structure

Each lesson begins with a Lesson Overview, Lesson Objectives, and a Lesson at a Glance table, which lists the lesson activities, materials required, suggested preparation steps, and approximate class time.

Lesson Sections

The actual lesson follows the overview, which will contain some of the sections described below.

FOCUS

Every lesson begins with a FOCUS activity intended to capture participants' attention. This may be in the form of a small or large class discussion, a game, a review of previous lesson information, or a demonstration. During this activity, participants are introduced to the topic of the lesson.

LEARN

The LEARN activity in each lesson varies in its presentation mode. It may be a slide presentation, group activity, or demonstration.

REVIEW

The majority of lessons end with a REVIEW activity intended to briefly review the lesson's key messages or main points.

Lesson One – Career Opportunities in Construction and Architecture

Lesson Overview

In this lesson, participants will be introduced to careers related to construction and architecture. Participants will research and explore a variety of related careers in this pathway.

Lesson Objectives

After completing this lesson, participants will be able to:

- Identify several professions in the construction and architecture pathway
- Consider if any of the occupations covered in class are appropriate for them to pursue

Lesson at a Glance

Activity	Materials	Preparation	Approximate class time
FOCUS	• <i>Construction and Architecture Careers Note Sheet</i>	1. Print/photocopy the <i>Construction and Architecture Careers Note Sheet</i> (one per participant).	10-15 minutes
LEARN	• Library and internet resources • <i>Career Exploration Research Summary</i>	2. Print/photocopy the <i>Career Exploration Research Summary</i> (one per participant).	30-90 minutes
REVIEW	• Questions for panel (optional)	1. Contact 3-5 local construction and architecture related professionals and invite them to participate in a panel discussion. 2. Set up the room with panel seating in the front and audience facing the panel.	45-60 minutes

Lesson One – Career Opportunities in Construction and Architecture

FOCUS: Defining the Available Career Paths

10-15 minutes

Purpose:

Participants will learn the variety of occupational areas that fall within the construction and architecture pathway classification and how this translates into career opportunities.

Materials:

- *Construction and Architecture Careers Note Sheet*

Facilitation Steps:

1. Give each student the *Construction and Architecture Careers Note Sheet*. Have them take notes while you share the following definitions of the architecture and construction pathways.

This Career Cluster® is focused on careers in designing, planning, managing, building, and maintaining the built environment. Here are three types of career classifications within the construction and architecture cluster:

Design/Pre-construction Career Path

People in this area take the idea for a structure and turn it into a set of detailed plans. Once a construction project gets underway, other workers use these plans as the basis for their work.

Most states require people in this area to pass certain tests and obtain a license. Careers in design/pre-construction include architects, city planners, civil engineers, computer-aided design technicians, cost estimators, and surveyors.

Construction Career Path

People in this area turn plans into reality. Depending on the area in which they work, they build, renovate, and restore houses, office buildings, factories, bridges, highways, and just about any other structure.

Many of the jobs in this area require a training or apprenticeship period, and some require a two- or four-year degree. Examples of careers in construction include construction inspectors, construction laborers, landscape architects, plumbers, and sheet metal workers.

Maintenance/Operations Career Path

People who work in this area keep buildings and other structures running smoothly. They ensure that a structure meets all government codes and that it is safe and comfortable for those who use it.

Some of the jobs in this field overlap with those in construction, but people in maintenance/operations work on structures that have already been completed.

Examples of careers in this area are electricians, elevator installers and repairers, floor covering installers, heating and cooling technicians, and janitors and cleaners.

Architecture & Construction Careers

Note Sheet

Pathway – What Is.....?	Types of Occupations
Design/Pre-Construction	
Construction	
Maintenance/Operations	

Lesson One – Career Opportunities in Architecture and Construction

LEARN: Research Project

30-90 minutes

Purpose:

The purpose of this activity is to have participants take a closer look at related architecture and construction career options. Participants will research an occupation of their choice. Information learned from the research will be shared with the group via a brief presentation.

Materials:

- Library and internet resources
- *Career Exploration Research Summary*

Facilitation Steps:

1. Have students choose one of the careers to explore further. Give students the *Career Exploration Research Summary*. Tell them that they can use the internet or other sources in the library for their research. Here are a few helpful websites:

- www.bls.gov
- <http://www.bls.gov/ooh/>
- www.careerinfonet.org

2. Give students one or two class periods to complete their research. You can also assign this as homework. Students should prepare a short five-minute presentation about this career including the information on the summary sheet.
3. Have each student present their chosen career to the group.
4. Here is a suggested grading rubric for the class presentation:

30 points – Completed all information on the *Career Exploration Research Summary*

20 points – Prepared for the presentation

20 points – Presentation content was clear, concise, and gave a good understanding of the chosen career

20 points – Demonstrated the ability to think critically, taking information from other sources to create something new

10 points – Demonstrated time management skills by delivering a well-planned, five-minute presentation

Name: _____ Date: _____

Career Exploration Research Summary

Instructions: Identify and research one career relating to the architecture and construction cluster. Complete this worksheet for your career choice. Possible sources for information include your school library, public library, Bureau of Labor Statistics website, Occupational Outlook Handbook website, and other career-related websites on the internet.

Career name: _____

Degree or licenses required: _____

Length of time to complete training or earn degrees: _____

Average starting salary: _____

Job outlook: _____

Short job description:

Skills a person should have to be successful in this career:

Sources used for this project:

Lesson One – Career Opportunities in Architecture and Construction

REVIEW: Career Panel Discussion

45-60 minutes

Purpose:

To hear from professionals who work in a variety of careers that fall within the pathways of architecture and construction.

Materials:

- Panel of 3-5 local professionals who work in architecture, design, construction, operations, maintenance, and related areas.

Facilitation Steps:

1. Contact local construction-related businesses and invite them to attend a panel discussion in your class. Local professionals from a variety of related businesses would provide additional and interesting perspectives.
2. The day of the panel discussion, set up your space so that there is a table with seating for all panel members at the front of the room. If sound is an issue, have a microphone available.
3. Invite participants in the audience to ask questions to panel members. Remind participants ahead of time to keep questions relevant to work. You may ask participants to submit questions in advance if desired.

Lesson Two – Career in Design/Pre Construction

Lesson Overview

People in this area take the idea for a structure and turn it into a set of detailed plans. Once a construction project gets underway, other workers use these plans as the basis for their work. Students will participate in a variety of activities to better understand what a design/pre-construction career looks like.

Lesson Objectives

After completing this lesson, participants will be able to:

- Define what a design/pre-construction professional is
- Describe what a design/pre-construction professional does on a typical workday
- Discuss the impact of design and pre-constructional professionals on their clients

Lesson at a Glance

Activity	Materials	Preparation	Approximate class time
FOCUS	• Design/pre-construction videos • <i>Occupation Profile – Design/Pre-construction</i> • Internet access	1. Print/photocopy the <i>Occupation Profile – Design/Pre-construction</i> worksheet (one per participant).	15 - 20 minutes
LEARN	• <i>A Day in the Life of a Design/Pre-Construction Professional</i> • Markers	1. Print/photocopy the <i>A Day in the Life of a Design/Pre-Construction Professional</i> worksheet (one per participant).	45 minutes
REVIEW	• <i>Why Do They Matter?</i>	1. Print/photocopy the <i>Why Do They Matter?</i> (one per participant).	10 - 20 minutes

Lesson Two – A Design/Pre-Construction Career

FOCUS: Occupation Profile

15-20 minutes

Purpose:

Most of us will hire a design or pre-construction professional during our lives. However, to better understand what it is like to be a one of these, let's complete the *Occupation Profile*.

Materials:

- Design/Pre-Construction videos
- *Occupation Profile – Design/Pre-Construction*

Facilitation Steps:

1. Share these statistics with the participants:
Employment of architects is projected to grow 3 percent from 2021 to 2031, slower than the average for all occupations.

As of June 20, 2023, the average annual pay for a Preconstruction in the United States is \$120,279 a year.

2. Play a design or pre-construction video. Here are a few to choose from.

[Pre-construction Service: What is It? - YouTube](#)

[Construction Careers – Brett, Pre-Construction Engineer - YouTube](#)

[What Are Pre-construction Stages Of A Construction Project? - YouTube](#)

[Is Architecture A Good Career? - YouTube](#)

3. After participants complete the *Occupation Profile* worksheet, have them share their answers. Explain to participants that they will use their *Occupation Profile* worksheet in the LEARN portion of the lesson.

Occupation Profile

Design/Pre-Construction

Job Title:
Job Outlook:
Typical Duties:
Salary:
Required Education:

Lesson Two – Design/Pre-Construction Career

LEARN: A Day in the Life of...

45 minutes

Purpose:

The purpose of this activity is to have participants better understand what a typical day is like for a design/pre-construction professional.

Materials:

- *A Day in the Life of an Design/Pre-Construction Professional*
- Markers

Facilitation Steps:

1. To help students understand what a typical day on the job is like for architects, city planners, civil engineers, computer-aided design technicians, cost estimators, and surveyors, share one or more of the following day in the life videos:

[What does an Architect Do? - YouTube](#)

[How to Become a City Planner - YouTube](#)

[Career Spotlight: Civil Engineer - YouTube](#)

[Drafter Career Video - YouTube](#)

[Cost Estimators Career Video - YouTube](#)

[Who Would Enjoy A Career As A Land Surveyor? - YouTube](#)

2. Distribute the *A Day in the Life of a Design/Pre-Construction Professional* worksheet.
3. Have participants use their completed *Occupation Outlook* worksheets to create a comic strip that typifies a day in the life of one of these careers.
4. Have participants share their finished comic strips aloud. Then have them post their comic strips in a public place in the room.

A Day in the Life of a _____

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Lesson Two – A Design/Pre-Construction Career

REVIEW: Reflection

10-20 minutes

Purpose:

Participants will reflect on a design/pre-construction career

Materials:

- *Why Do They Matter?*

Facilitation Steps:

1. Explain to participants that they are going to reflect on their learning throughout this lesson.
2. Have participants access the *Why Do They Matter?* worksheet. Discuss the instructions and allow participants to ask any questions.
3. Allow participants to complete the *Reflection* part of the lesson.
4. Take time to review the participants' answers. Allow participants to share what they learned about a career in this pathway.

Why Do They Matter?



Directions: In the space provided, write at least five sentences about the benefits or impact that a specific design or pre-construction occupation can have on the construction process.

Lesson Three – Careers in Construction

Lesson Overview

In this lesson, participants will explore a construction career. Participants will learn about typical job duties, pay, job outlook, and potential for several positions relating to being a construction professional.

Lesson Objectives

After completing this lesson, participants will be able to:

- Identify what a construction professional is and does
- Describe what a typical day is like for a construction worker
- Determine if this is a career path that could be a good choice for them

Lesson at a Glance

Activity	Materials	Preparation	Approximate class time
FOCUS	• A day in the life of a construction professional videos • <i>A Day in the Life of a Construction Professional Notes Page</i>	1. Print/photocopy the <i>A Day in the Life of Construction Professional Notes Page</i> .	10-15 minutes
LEARN	• <i>Creating an Infographic: What's the Construction Career Buzz?</i> • <i>Careers Relating to Construction</i> • Internet access	1. Print/photocopy the <i>Creating an Infographic: What's the Constructoin Career Buzz?</i> 2. Model infographic sample websites.	45 minutes
REVIEW	• <i>Construction Is/Is Not the Career Field for Me</i>	1. Print/photocopy the <i>Constructoin Is/Is Not the Career Field for Me</i> worksheet (one per participant).	20 minutes

Lesson Three – Careers in Construction

FOCUS: What Is Construction?

10-15 minutes

Purpose:

Construction work is work performed on a structure or part of a structure, including its erection, construction, extension, or structural alteration.

Construction work includes building, renovating, site preparation, plumbing, and electrical work. Students will receive an overview of just how crucial the role is in construction.

Materials:

- A day in the life of a construction professional videos
- *A Day in the Life of a Construction Professional Notes Page*

Facilitation Steps:

1. Share these statistics with the participants:

Overall employment of construction laborers and helpers is projected to grow 4 percent from 2021 to 2031, about as fast as the average for all occupations.

About 168,500 openings for construction laborers and helpers are projected each year, on average, over the decade. Many of those openings are expected to result from the need to replace workers who transfer to different occupations or exit the labor force, such as to retire.

2. Ask participants what they think a typical day is like in the life of a construction professional. Give participants the *A Day in the Life of a Construction Professional Notes Page* worksheet.
3. Have participants complete the column about what they already know and what they would like to know about a career as a construction professional.

4. Play one or more of the day in the life of a construction worker videow. Here are four to chose from, but there are many more.

[Day In The Life of a Construction Worker - YouTube](#)

[A Day In The Life of a Construction Entrepreneur - YouTube](#)

[A Day In The Life Of A Construction Project Manager - YouTube](#)

[Day in the Life - Construction Estimator - YouTube](#)

It may be useful to preview the *Day in the Life of a Construction Professional Notes Page* before watching the video. Have them complete the third column identifying what they have learned in the video clips.

5. After the video is done, go through the *A Day in the Life of a Construction Professional Notes Page* and ask participants to share answers.

A Day in the Life of a Construction Professional Notes Page

Directions: Identify what you already know about being a construction professional, what you want to know, and what you have learned during the lesson.

Know	Want to Know	Learned

Lesson Three – Careers in Construction

LEARN: Construction Deep Dive

30-45 minutes

Purpose:

The purpose of this activity is to have participants better understand what construction professionals do.

Materials:

- *Creating an Infographic: What's the Construction Career Buzz?*
- Internet access

Facilitation Steps:

1. Have participants access the *Creating an Infographic: What's the Construction Career Buzz?* worksheet. Explain to participants that they will make a digital infographic about this career field.
2. Share a sample infographic so they understand the look and feel of a typical infographic.
[construction-careers.jpg \(894×2160\)](http://construction-careers.jpg)
grangerconstruction.com
11-Career-Paths-in-Construction.pdf
workforcecouncil.org
3. Encourage participants to make sure their infographics include the required information. Using color, images, and a unique layout will make the infographic visually appealing for others.
4. Have participants print and post their infographics in a conspicuous location for use during the REVIEW part of the lesson. Allow time for participants to view infographics created by their peers.

Creating an Infographic: What's the Construction Career Buzz?

What is an infographic?

An infographic is a collection of pictures, charts, and text that gives an easy-to-understand overview of this occupation.

As you prepare to make your infographic digitally, use the internet to research the following information:

- ☐ Career as a construction professional
- ☐ Education requirements
- ☐ Primary duties/responsibilities
- ☐ Professional organizations
- ☐ Work environment

Other requirements:

- ☐ At least one image or chart
- ☐ Neatness
- ☐ Use of some color
- ☐ Creative layout
- ☐ Large enough fonts ease of reading information

Lesson Three – Careers in Construction

REVIEW: Reflection

20 minutes

Purpose:

Participants will reflect on what they have learned about being a construction professional and decide if this career is or is not a field for them to consider.

Materials:

- *Construction Is/Is Not the Career Field for Me*
- Infographics created and posted by participants in the LEARN portion of the lesson

Facilitation Steps:

1. Have participants access the *Construction Is/Is Not the Career Field for Me* worksheet.
2. Instruct participants to review *Construction Is/Is Not the Career Field for Me*. As participants walk through the gallery and look at different participants' infographics, they will respond to facts they observe on the infographic.

Based on the number of participants/infographics to review, provide about 15 minutes for this activity.

3. Once participants have completed *Construction Is/Is Not the Career Field for Me*, provide an opportunity for them to discuss what they recorded in each section of the worksheet.
4. Allow participants to share their thoughts about a career in construction before wrapping up this lesson. Specific questions might include: What would you enjoy? What would you find the most challenging?

Construction Is/Is Not the Career Field for Me

Directions: Record information from the infographics in the spaces provided. Circle in the title if this career is or is not for you.

This is interesting!	Shocking Info?!?!?!?	Is this for real?
I want to know more about this:	This sounds like something I would like:	I am not too sure about this:
I have a question:	I want to remember this:	Other (you choose):

Lesson Four – Careers in Maintenance and Operations

Lesson Overview

Operations and maintenance professionals are tasked with inspecting and maintaining buildings, machinery, equipment, and various systems. They are in charge of repairing, replacing, and installing new machinery; doing inventory and ordering the necessary items as needed; developing and improving maintenance operations and procedures; and assisting in creating the maintenance budget. A technician may need to learn on the job, depending on where they work. Understanding what being a maintenance or operations professional is like is the focal point for this lesson.

Lesson Objectives

After completing this lesson, participants will be able to:

- Compare and contrast the roles and requirements of careers in maintenance and operations
- Identify typical job duties performed by maintenance and operations professionals on the job

Lesson at a Glance

Activity	Materials	Preparation	Approximate class time
FOCUS	• Maintenance and operations career videos • <i>Pros and Cons</i>	1. Print/photocopy the <i>Pros and Cons</i> worksheet (one per participant). 2. Prepare to share videos.	15-25 minutes
LEARN	• <i>Maintenance and Operations Professional for a Day</i> • Internet access	1. Print/photocopy the <i>Maintenance/Operations Professional for a Day</i> worksheet (one per participant).	20-30 minutes
REVIEW	• <i>Maintenance and Operations Careers Investigation Station</i>	1. Have participants access the <i>Maintenance and Operations Careers Investigation Station</i> worksheet (one per participant).	20 minutes

Lesson Four – Careers in Operations and Maintenance

FOCUS: Operations or Maintenance – How Different Can They Be?

15-25 minutes

Purpose:

This lesson will take a look at what it is like to work in two related but different areas, operations and maintenance.

Materials:

- Operations and maintenance videos
- *Pros and Cons*

Facilitation Steps:

1. Share these statistics with the participants:

Jobs for operations managers in most industries are expected to increase at a rate of about 9 percent by 2026. This means that analysts at the BLS expect to see approximately 205,900 new operations management jobs become available in the near future.

Employment of general maintenance and repair workers is projected to grow 5 percent from 2021 to 2031, about as fast as the average for all occupations. About 160,100 openings for general maintenance and repair workers are projected each year, on average, over the decade. Many of those openings are expected to result from the need to replace workers who transfer to different occupations or exit the labor force, such as to retire.

2. Ask participants how they think working in operations differs from maintenance. Share the information in this video about the differences.

[Operations and Maintenance Partnership - YouTube](#)

3. Distribute the *Pros & Cons* worksheet.
4. Play one or more of the following videos about operations and maintenance.

It may be helpful to preview the *Pros & Cons* worksheet before watching the videos.

[Maintenance Operations Job Preview - YouTube](#)

[Operations Technician \(Pathway Sponsor\) - YouTube](#)

[What Is My Job? Operations Maintenance Coordinator - YouTube](#)

[Maintenance Technician \(Mechanical\), Career Video from drkit.org - YouTube](#)

[Train To Be: Facilities Maintenance Worker - YouTube](#)

5. After the videos, go through the *Pros & Cons* worksheet and ask participants to share answers.

Pros & Cons:

Operations or Maintenance

Directions: Record pros and cons for each career in the respective spaces.

Operations Careers	
Pros:	Cons:
Maintenance Careers	
Pros:	Cons:

Lesson Four – Careers in Operations and Maintenance

LEARN: Operations or Maintenance for a Day

20-30 minutes

Purpose:

The purpose of this activity is to have participants better understand what it is like to be a operations or maintenance worker on a typical workday.

Materials:

- *Operations or Maintenance Professional for a Day*
- Internet access

Facilitation Steps:

1. Distribute the the *Operations or Maintenance Professional for a Day* worksheet.
2. Explain to participants that, using the internet and their knowledge, they will create a detailed journal for what their day might be like.
3. Encourage participants to make sure their detailed journal entries contain accurate information for working as a maintenance or operations professional.
4. If time allows share the video A Day in the Life
[A Day in the Life: Operations Manager - YouTube](#)
[A day in the life of a lead maintenance technician - YouTube](#)
5. Divide participants into groups of four and have them discuss their detailed journal entries.

Operations or Maintenance Professional for a Day

Use the space provided to record the details of your day as a maintenance or operations professional. Use personal knowledge and the Internet information to make your journal sound as interesting and accurate as possible.

Time	Activity	My Reaction

Lesson Four – Careers in Operations and Maintenance

REVIEW: Reflection

20 minutes

Purpose:

Participants will reflect on the different careers in operations and maintenance. They will complete a short research project to learn more about a specific type of job.

Materials:

- *Maintenance and Operations Career Investigation Station*

Facilitation Steps:

1. Distribute the *Maintenance and Operations Career Investigation Station* worksheet.
2. Instruct participants to complete a short research project to learn more about an operations/maintenance career path.
3. Once participants have completed *Maintenance and Operations Career Investigation Station* worksheet, have them discuss what they recorded in each worksheet section.
4. Allow participants to share their thoughts about a career as an operations or maintenance professional before wrapping up this lesson. Specific questions can be: What would you find most interesting? What would be the most challenging for you?

Operations and Maintenance Career Investigation Station

Directions: Use the internet to research more about a career in this area.

Choose the type of occupation you wish to investigate: • Maintenance technician/worker • Operations manager • Electrician • Heavy equipment operator • Plumber Other:	Job Description (list at least 3 requirements): 1. 2. 3. 4. 5.
Required Training:	Job Outlook: What Does the Future Look Like?