

# So you want to be a...

*Curriculum Guide*



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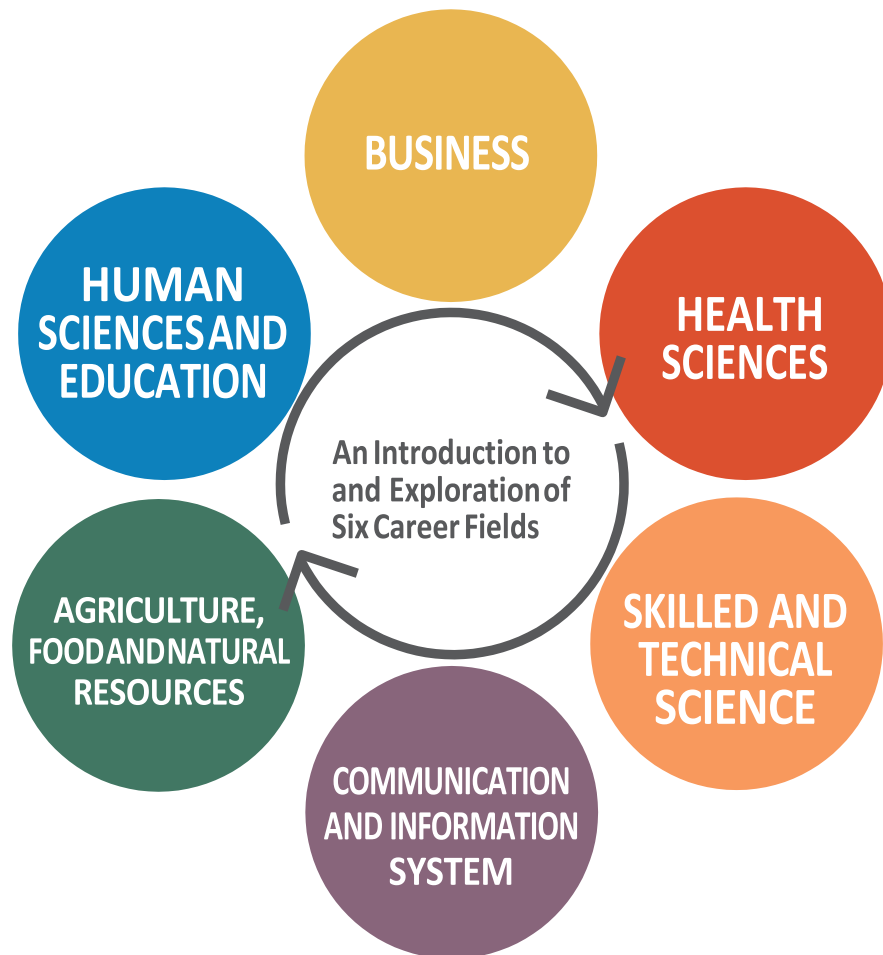
## Completion of the 18 lesson Career Education Curriculum:

There may be some projects that have not been completed yet due to their extensive nature.

It is highly recommended that programs try and continue with the completion of each of these projects due to the high level of engagement they hopefully have elicited.

# So you want to be a...

## *Career Education Curriculum for Afterschool Programs*



The Career Education After School Curriculum is an introduction and exploration of the six career fields and is designed to be 18 lessons in length. Each of the six career fields will cover three lessons, intended to:

- Engage students in an in depth look into the career fields and pathways.
- Explore what career possibilities exist within each of the fields for each student
- Encounter real life problems—students will be asked to seek a solution for these problems as if they were already employed in the career field.

Each of the six fields is broken into three lessons: **Introduction, Exploration and Demonstration.**

At the end of the six units, after school programs are encouraged to add a fourth component: **Connection.**

The Connection time is an opportunity for students to showcase their unit projects and connect with the community—specifically individuals within the career field they have studied as well as local business, school and government leaders.

## UNIT PROJECTS

Each unit is centered on a project—students will work on their unit project during each of the three lessons.

<b>BUSINESS</b>	<b>HEALTH SCIENCES</b>	<b>SKILLED AND TECHNICAL SCIENCE</b>
<b>UNIT PROJECT:</b> <b>“WHAT MAKES OUR COMMUNITY GREAT”</b> As a class, students create an information brochure, detailing the variety of local businesses in their city. Brochure will be likened to a “What Makes our Community Great” concept.	<b>UNIT PROJECT:</b> <b>“HOW DO WE KEEP EVERYONE HEALTHY”</b> As a class, students will look at the top 10 health problems plaguing the city. Students will work as partners to develop a plan of attack to try and keep everyone in their community healthy by preventing the top 10 health problems.	<b>UNIT PROJECT:</b> <b>“WHAT DOES OUR IDEAL COMMUNITY LOOK LIKE?”</b> As a class, students will design their ideal community 2-dimensionally as well as 3-dimensionally.
<b>COMMUNICATION AND INFORMATION SYSTEMS</b>	<b>AGRICULTURE, FOOD AND NATURAL RESOURCES</b>	<b>HUMAN SCIENCES AND EDUCATION</b>
<b>UNIT PROJECT:</b> <b>“HOW DO PEOPLE KNOW WHAT’S GOING ON IN THE WORLD”</b> As a class, students will look at issues facing the community/world around them. Students will then create a newspaper using school computers as well as a news program, which will be recorded.	<b>UNIT PROJECT:</b> <b>“AGRICULTURE &amp; ENTREPRENEURSHIP” AND “IMPACT OF POLLUTION ON OUR NATURAL RESOURCES”</b> (1) organize a plant sale, where students will work with a local florist/nursery to cultivate and eventually sell selected plants, (2) organize a city wide clean up of a specific area in need of cleaning.	<b>UNIT PROJECT:</b> <b>“WHAT WOULD MAKE MY COMMUNITY GREAT?”</b> As a class, students will discuss problems in their town or school. After deciding on a “fixable” problem, the class will work together to identify how they will go about solving and fixing the problem.

*Six units, total of 18 lessons: Each unit is designed to have three lessons. (1) Introduction, (2) Exploration and (3) Demonstration. Each lesson is approximately 40 minutes in length. Units do not have to be taught in a specific order.*

Upon completion of the six career units, programs will participate in the “connection” component of the curriculum. A **“Showcase Event”** will be held in which the unit projects will be presented/showcased. This is an opportunity for students to invite and connect with the community—specifically individuals within the career pathway they have studied, school personnel, community leaders and families.

## DELIVERY OF CURRICULUM

There are six units (one for each career field), with three lessons in each unit. Thus, a total of 18 individual lessons. Each lesson is approximately 40 minutes in length, the time frame of one afterschool club.

Career Field/Unit	Lesson (each lesson is approximately 40-45 minutes in length) 1 Lesson = 1 afterschool club time frame
Unit 1: Business	Lesson 1- Introduction
	Lesson 2- Exploration
	Lesson 3- Demonstration
Unit 2: Health Science	Lesson 4- Introduction
	Lesson 5- Exploration
	Lesson 6- Demonstration
Unit 3: Skilled and Technical Science	Lesson 7- Introduction
	Lesson 8- Exploration
	Lesson 9- Demonstration
Unit 4: Communication and Information Systems	Lesson 10- Introduction
	Lesson 11- Exploration
	Lesson 12- Demonstration
Unit 5: Agriculture, Food and Natural Resources	Lesson 13- Introduction
	Lesson 14- Exploration
	Lesson 15- Demonstration
Unit 6: Human Sciences and Education	Lesson 16- Introduction
	Lesson 17- Exploration
	Lesson 18- Demonstration
At the end of the six units, a “showcase event” will be held. This is a special hour-long event to be held afterschool or evening.	

\*\*The six units do not have to be delivered in this sequence, they can be delivered in any order\*\*

The curriculum is a total of 18 lessons. Additionally, a “Showcase Event” will be held upon the culmination of the six units. This could be done during the programming hours or on an evening—it is a way for students to showcase their projects and the work they did in each of the units. We recommend that it be held at a time when community members, city council, school board, school staff and families can attend.

The curriculum can be implemented as a club to best match your programming calendar. To keep the momentum of the lessons, it is recommended that the curriculum be implemented over a maximum of a quarter (9 weeks). *The club needs to meet a minimum of twice per week.* Additionally, a unit (three lessons) could be implemented over the course of a district in-service day. Additional programming, such as a field trip or on-site activity could occur on this day as well.

Curriculum Materials Include:

- (1) Curriculum Guide
- (2) Facilitator Guide will be available on a mobile app
- (3) Student Field Journal
- (4) Career Education Posters (set of 5) that can be displayed around school/program sites

*\*Professional Development will also be provided to staff teaching the curriculum.*



# SKILLED AND TECHNICAL SCIENCES

**Unit Objective:** Students will be able to discuss skilled and technical sciences in relation to their community and how they might one day fit into that career field.

**Unit Project: “What does our ideal community look like?”** As a class, students will design their ideal community 2-dimensionally as well as 3-dimensionally.

## UNIT 1: INTRODUCTION

**Lesson Objective:** Students will be able to describe what a career in the skilled and technical sciences is, as well as why it is vital to have different people filling a variety of needs to keep a community operating effectively and efficiently.

### STARTER ACTIVITY

#### MARSHMALLOW BUILD

Today's starter activity is quite fun, but requires some preparation. Students are going to need the following supplies: a box of toothpicks, large marshmallows and mini marshmallows. Students will have 10 minutes to build the tallest tower in the class. The winning team gets a prize.

The purpose of this starter activity is first and foremost to provide the students with a fun activity that engages them in teamwork. This activity also allows the students the opportunity to see that within this career field there is the potential for creativity, hands-on building, etc. It would also be advised that the instructor have a digital camera so that students can take pictures of their work, which can be printed and pasted in the career field journals.

*\*\*\*Pictures of this activity and more detailed directions can be found in the appendix\*\*\**

### LESSON INTRODUCTION

Instructor will first provide encouragement of the starter activity work that was done.

“At the end of today’s club, we will be able to describe what a career in the skilled and technical sciences is as well as why it is vital to have different people filling the variety of needs to keep our community effectively and efficiently operational.”

“Think about the activity of building a marshmallow tower. What do you think this fun activity could possibly have to do with the career field of skilled and technical sciences?”

Allow wait time and students the opportunity to provide answers.



INSTRUCTOR

### LESSON

“Now let’s explore this pathway in a little more depth. We are going to look at the four specific pathways that make up this career field and determine what they mean. If you look in your field guide, you will find the words “Skilled Science and Technical Science”. The definition is provided for you in your field journal, but there are some missing words. Let’s figure out what those missing words are.”

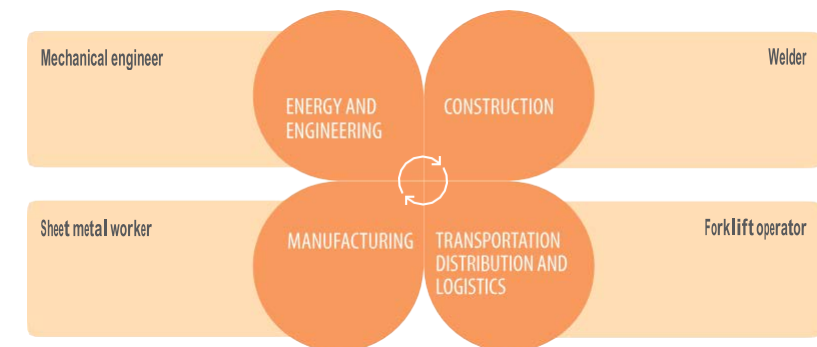
#### UTILIZE FIELD JOURNAL: TASK #1 “KEY TERMS”

Read through and discuss the definitions. Have students write in the missing words in their field journal. If there is a white board in the classroom, write these definitions on the board. Provide students with verbal prompts and ask leading questions as you discuss the definitions/missing words.

- **Skilled Science:** a science specializing in a **craft, trade**, or a job requiring the use of one’s **hands** as well as their **mind**. Jobs require special training and a great deal of **experience**.
- **Technical Science:** jobs skilled in **mechanical** and **practical** skills rather than **theoretical** or **abstract** thinking.

These definitions are very difficult for a students to comprehend and wrap their head around, so the next part of the lesson will be of the utmost importance as students try and grasp what a career in the skilled and technical sciences looks like.

#### UTILIZE FIELD JOURNAL: TASK #2



“These definitions are not the easiest to understand, so lets take an even deeper look into this career field. We will be exploring 4 different pathways you could take if this was an area of interest and specific jobs that make up these pathways. In your career field journal you will see that we have a graphic organizer and we are going to record some jobs.

- You are going to start by taking 2 minutes to quietly write down as many jobs within each category that you can think of.
- At the end of 2 minutes we will take 5 minutes to walk around the room and write the jobs we have written down on the chart paper that you will notice is posted around the room.

INSTRUCTOR

INSTRUCTOR



INSTRUCTOR

- When we are all done, we will look at these jobs as a class and determine if they truly are careers in the skilled and technical sciences field.”

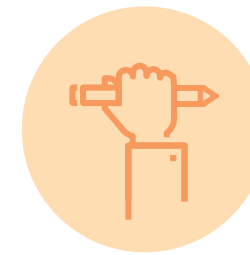
\*\*\*A list of potential jobs can be found in the career chart below.

\*\*\*Prior to the lesson, you will want to have pieces of chart paper located on each wall. One piece for each pathway\*\*\*

- Students will write down any job that they can think of on scrap paper or post-it notes. They will spend 2 minutes writing down as many jobs as possible in the areas of: energy & engineering, manufacturing, architecture & construction, and transportation/distribution/logistics.

\*\*\*It may be helpful to use the career chart below and simply make a copy of the chart but delete the jobs so that students can write their thoughts in that area.

- Students will then walk around the room to record on chart paper the jobs they have recorded. Finally, as a class you will review each chart paper and determine which jobs are accurately placed as well as fill in any missing that would be good for students to know and understand. Students should record these jobs in their career field journal.



### LESSON PROJECT

#### “What does our ideal community look like?”

This project has the ability to be extremely fun, very team oriented, and could be a great opportunity to show case your student’s vision for their community to the actual community. Introduce this project by letting students know that the community they live in, the houses they live in, and every building and road that they go in or drive on was carefully designed by skilled and technical scientists. For this unit they will have the opportunity to be these scientists and design their own community.

\*\*\*See the end of unit for a complete Project Description\*\*\*

\*\*\*Pictures of finished products can be found in your appendix\*\*\*



### WRAP UP

Finish the day by telling the students what a productive day it was.

Ask each student to close their eyes and imagine they are 30 years old. Ask them to think about one specific career they wrote down and have them share which career they like the best of all the careers they saw heard about today.

#### UTILIZE FIELD JOURNAL: TASK #4 “COMMUNITY CONNECTION”

In the career journal there is a “community connection” activity. Encourage students to take their career journal home and work with a family member, trusted adult, or friend to complete the activity.

### CAREERS IN SKILLED AND TECHNICAL SCIENCES

AGRICULTURE/ FOOD/ NATURAL RESOURCES	<ul style="list-style-type: none"> <li>Road Planner (civil)</li> <li>Astronomer</li> <li>Aerospace Engineer</li> <li>Chemist</li> </ul>	<ul style="list-style-type: none"> <li>Electrical Engineer</li> <li>Environmental Scientist</li> <li>Robotics Engineer</li> <li>Wind Energy Engineer</li> </ul>
MANUFACTURING	<ul style="list-style-type: none"> <li>Aircraft Assembler</li> <li>Camera repair technician</li> <li>Skilled Carpenter</li> <li>Large Machine Programmer</li> <li>Computer Repair Person</li> </ul>	<ul style="list-style-type: none"> <li>Electrical Engineer</li> <li>Home Entertainment Installment</li> <li>Environmental Equipment Engineer (wind turbines)</li> <li>Bulldozer Operator</li> </ul>
ARCHITECTURE AND CONSTRUCTION	<ul style="list-style-type: none"> <li>Architect</li> <li>Stone Mason</li> <li>Commercial Pilot</li> <li>Construction Manager</li> </ul>	<ul style="list-style-type: none"> <li>Earth Driller</li> <li>Landscape Architect</li> <li>Commercial Painter</li> <li>Railroad Engineer</li> </ul>
TRANSPORTATION/ DISTRIBUTION/ LOGISTICS	<ul style="list-style-type: none"> <li>Air Traffic Controller</li> <li>Ambulance Driver</li> <li>Boat/Jet Ski Repair</li> <li>Ship Captain</li> </ul>	<ul style="list-style-type: none"> <li>Tractor Trailer Driver</li> <li>Train Conductor</li> <li>Chauffeur</li> <li>Bicycle Repair</li> </ul>





## UNIT 4 PROJECT

In regards to the project/s outlined below, please note that these are intended to be project frameworks. The descriptions provide the overall “framework” for the project and an outline of the basic steps involved in accomplishing the goal/s of the project/s. Prior to beginning each project, instructors should take time to further develop and plan these projects, as there are a number of details that are not included in these descriptions. Due to the vast differences between afterschool programs and their programming structures/resources, these details will vary for every program and thus were intentionally not included in the project descriptions below.

### “What does our ideal community look like?”

**Project Description:** As a class, students will design their ideal community 2-dimensionally as well as 3-dimensionally.

#### **Materials:**

1. Poster board
2. Pencils (sharpened)
3. Rulers
4. Markers
5. Glue
6. Toothpicks
7. Popsicle Sticks
8. Any other household building objects.
9. Piece of plywood

#### **Project Directions:**

**Lesson 1:** This project begins with students discussing important components of a community. The instructor should lead a short discussion on what the students see as important places in their community (parks, religious building, houses, stores, movie theatres, roads, etc). The instructor will write these thoughts down.

After students compile a list of essential community structures the next component of the project is to draw/sketch a 2-dimensional drawing on a poster board of their “community plan” . Many students will not have great art skills, but for this project encourage students that artistic ability is not essential. Explain to student that architects use rulers and other instruments to draw their creations first, and the most important thing is the measurements not the beauty. In creating their “community plan” , students should remember to include streets, parks, and spacing in their community. This part of the project should be completed during lesson 1.

#### **After Lesson 1:**

Completed 2-dimensional community drawings will be turned in for judging. Instructors should ask building administrators to pick the most realistic “community plan” as the class winner. This “community plan” will be used by the entire class to create a 3-dimensional rendition of a community.

### **Lesson 2 and 3:**

Have the administrator come down to the class to discuss how great the community plans all were and to explain why he/she picked the community plan (drawing) that they did.

Once the class has seen the community plan that was chosen, each student will be responsible for creating a 3-dimensional component of the community (i.e.: one student might design a store, another two houses, and another a community center). The instructor should assign each student a structure/s to be responsible for. To design these structures, students will use popsicle sticks, toothpicks, and other cheap materials on hand. Students can be creative in their design as they are the architect responsible for the building. This part of the project will require time in both lessons 2 and 3.

Lastly, when structures have been built, they will be placed on a piece of plywood to create an entire community. As the class is placing these structures, remind students to leave area for streets, parks, and other open spaces.

It is recommended to take pictures of the final community so that students can have a picture of their community creation.

This project has the ability to bring community exposure to your program. This “community plan” should be included in your showcase event at the end of the curriculum. When the showcase event is complete, it is recommended that the “community plan” be displayed somewhere visible for community members to see. Locations include school district offices, local library, or a government office.



#### UNIT 4: BIOGRAPHY 1

##### MECHANICAL ENGINEER

“My name is Kathy and I have worked very hard to become a Mechanical Engineer. I am going to take a few moments to tell you a bit about my job and why I love it. I get to work all day with my hands and mind designing mechanics and machines that people all over the world use. I start out with a problem that can be solved with a machine. I then sit down with a team of really smart people and we start to think of how we can solve these problems.

Once we come up with an idea, we get to work. We start by drawing out our idea and then we build a prototype. A prototype is the first of its kind and what we will use to see if we have been able to create a successful solution. This is basically what I do. I build things that make peoples lives easier and this goes on and on. Pretty cool, huh. I also make good money. Yesterday I paid my taxes (yuck) and realized I made almost \$84,000 last year.

I did go to college for 6 years and receive both my bachelor’s degree and masters degree. I took a lot of classes in math, science, and engineering. I’ll be honest the classes were really hard and required a lot, I mean A LOT of hard work, but I believe it was worth it. Not only do you have to be incredibly smart and hard working, but I believe I need to be creative since much of my job is about creation. I also need to be a great listener and communicator because I am usually working with a team of people. And guess what? We don’t always get along and many times we have different ideas, so I believe the last major quality that I need to bring to my job is the ability to solve problems.

If this sounds like you, Mechanical Engineering may be the perfect job. Oh, one more thing. Many of my friends in college loved math and science like me but they did not like working with machines and mechanics. There are so many other types of engineers out there, and I bet you would be great in any of those careers.”



#### UNIT 4: BIOGRAPHY 2

##### WELDER (CONSTRUCTION)

“My name is Matt and I am a builder. Well, to be more specific I am a welder and I love my job. Everyday I wake up and get to work with my hands building things. I don’t have to dress up or work at a desk. I get to build stuff. What a cool job. Let me tell you a little bit more about how I became a welder and what I do every day.

As a kid I loved working with my hands and building things. I loved my industrial technology classes in high school and new that I wanted to go on to a life of construction, but I was unsure of what that would be. After I graduated from high school, I applied to a 2-year community college and met with a college advisor (someone who helps college students figure things out). She listened to me, and when I was done talking about my passions she said that I should take some welding classes. I had never heard of welding, but decided to listen to her. I loved it, and 2 years later got my first job as a welder making about \$33,000 a year.

So what exactly do I do? I essentially get to take a blowtorch and use that heat to melt two pieces of metal together to make one connected piece. Not only is this really cool, but it is also really important. Most structures that are made of metal need welders to secure the structures and bind them together. I work as part of a bigger team of construction experts to build buildings, vehicles, and other structures. I help to maintain large machinery when there are problems, and I get to go out to different types of structures to inspect them to make sure there are no problems. It really is a fun job. (Did I mention that I don’t have to work in an office or wear a suit.)?

I am a skilled worker, meaning I have had to learn how to be a great welder by working on jobs, watching others, and being taught constantly. I have to be a person who is focused on details. I need to follow plans really well. I also have to be in shape, since much of my job is physical in nature. I also need to be able to work long hours in tough conditions. There are some days I work for 10-12 hours in really hot weather, but at the end of the day it is worth it because I love my job.”