

Career

MAZE

Grade: 6, 7, 8
Time: 15-20 minutes

Background Information:

This is a career exploration activity. Students will complete two different mazes. At the end of the activity students will be matched with a career based on the choices they made in each maze.

Helpful Vocabulary:

- Apprenticeship
- Associate Degree
- Bachelor's Degree
- Portfolio

Material:

- Copies of the following handouts for each student:
 - Maze 1
 - Maze 2
 - My Choices Page
 - Worksheet 1
 - Results Pages
 - Discussion Questions
- Die, Dice App or slips of paper (optional)
- Paper and pencils for students to use

Procedure:

Step 1: Explain that today you are going to learn about different career options available to you by completing two different mazes and then answering questions.

Step 2: Maze 1

- Hand out a copy of Maze 1 to each student, instruct them to start at the top of the page where it says "start here".
- Students will progress through the maze working towards the bottom of the page.
- To complete this section of the maze students will need to select one of the three listed activities (Take a shop class, Be a mathlete, Join a robotics club). Students may only select one of these options.
- Students should backtrack as little as possible.

Procedure Continue:

Step 3: Maze 2

- Hand out a copy of Maze 2 to each student, instruct them to begin the maze at the start location that matches their selected activity from Maze 1.
 - *For example if my activity in Maze 1 was Join a Robotics Team then I would start Maze 2 using the Start Robotics section in the middle of the page.*
- During Maze 2 students may need to learn a new skill. Students may only learn 1 skill. Students learn a skill by following the pathway to skill area on the maze and circling the skill they want to learn. It is possible to complete the maze without learning a skill.
- During Maze 2 students may be asked to complete a portfolio. To complete a portfolio students must roll a die (or roll a die using a dice app). If they roll a odd number that means they have successfully completed the portfolio and they should continue the maze following the Y or Yes pathway. If they roll an even number then they didn't complete the portfolio and should continue the maze following the N pathway. Students can also just pick a pathway if they want. It is possible to complete the maze without completing the portfolio.
- To complete the maze students must enter the space "Go to College" or "Get a Job" and circle their choice.
- Students should backtrack as little as possible.

Step 4: Results Instructions

- Using the results from the mazes complete the "My Choices" Table. When complete the My Choices Table should include which activity in Maze 1 the student participated in, which skill they may have learned, if they completed a portfolio, and if they went to college or got a job directly out of high school.
- Students can then use the results from the My Choices Table to find the career that matches their results.
 - *For example if I selected "Shop Class" as my activity in Maze 1, and didn't learn a skill or complete a portfolio, and got a job directly out of high school then the career that matches my results would Spot Welder.*
- Once students have found the career that matches their results they can complete the questions on Worksheet 1.
 - Optional: If using this as a group activity you can use the worksheet questions as discussion questions instead.

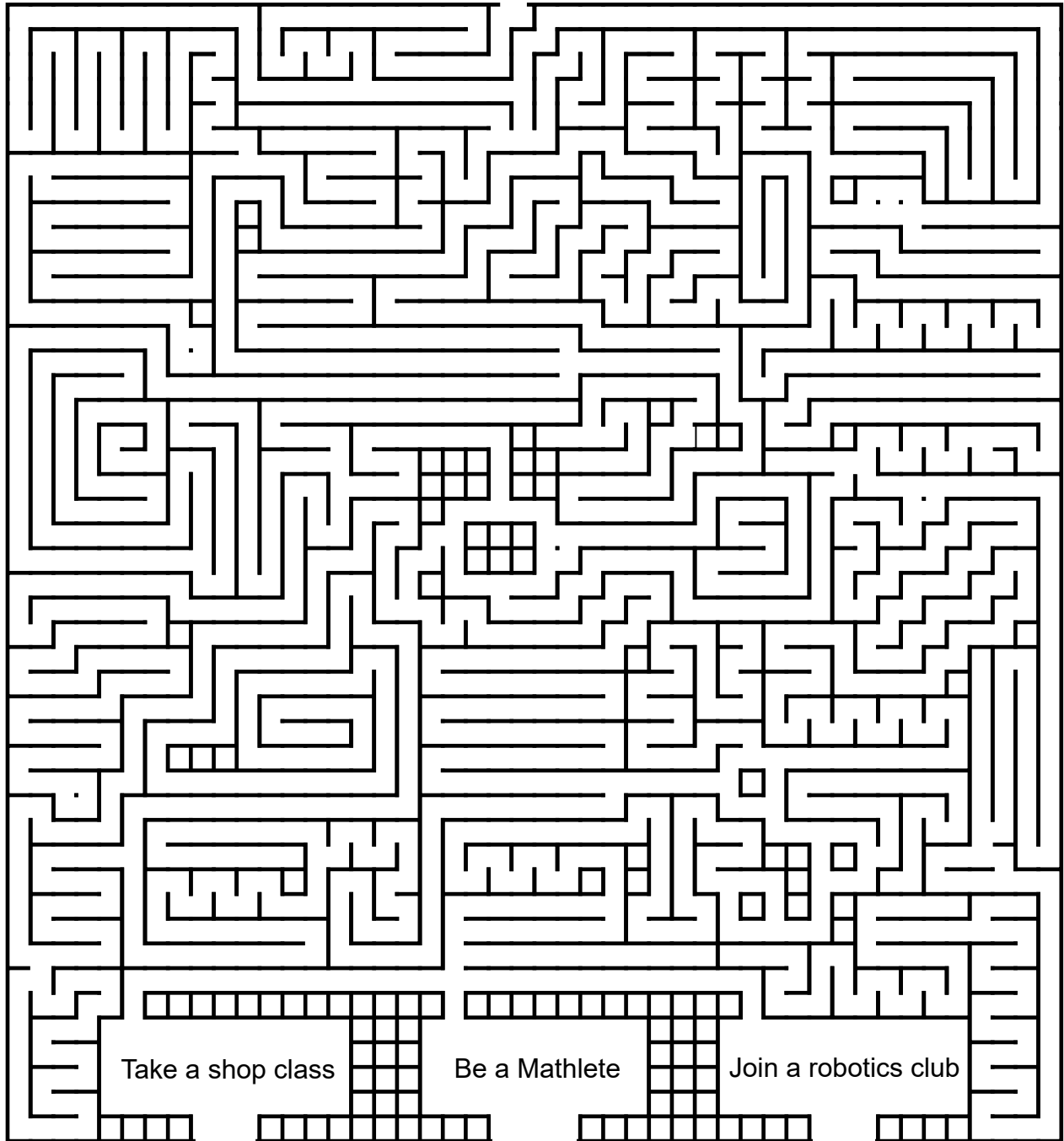
Optional:

- The Facilitator Notes Page includes additional tips for modifying this activity to meet the needs of your students.

Maze 1

Instructions: Work your way through the maze. Complete this section of the maze by ending at one of the following activities: take a shop class, become a mathlete, or join a robotics club. Select carefully, these activities will impact your future career. Once you have completed this maze proceed to Maze #2.

Start Here



Maze 2

Instructions: In Maze 2, start in the location that matches your activity from Maze 1. During the maze you may learn a skill, you may only learn 1 skill. You may also complete a portfolio. End the maze by entering the Get a Job or Go to College space.

Start Shop ←
Start Robotics ←
Start Math →

The maze contains the following rooms and text:

- Top Right:** LEARN, To Read Blueprints, To Read Spreadsheets
- Middle Right:** PORTFOLIO, Repair a car, Roll die, if you roll odd # go Y if even # go N
- Middle:** LEARN, Computer Coding, Electrical Wiring
- Middle Left:** LEARN, Carpentry, Welding
- Bottom Right:** PORTFOLIO, Design a Roller coaster, Roll die, if you roll odd # go Y if even # go N
- Bottom Middle:** Go to College
- Bottom Left:** PORTFOLIO, Build a birdhouse, Roll die, if you roll odd # go Y if even # go N
- Bottom:** Get a Job, Go to College (multiple instances)

Directional arrows labeled 'Y' and 'N' are placed at various points in the maze.

My Choices

Complete the table below based on the choices you made in Maze 1 and Maze 2.

Activity:	Yes	No
Take a Shop Class		
Be a Mathlete		
Join a Robotics Club		
Learn a Skill		
Carpentry Skills		
Welding Skills		
Electrical Wiring		
Computer Coding		
Read Blueprints		
Read Spreadsheets		
Portfolio Complete		
Get a Job		
Go to College		

Results

Find the results that match the your activities and skills learned in Maze 1 and Maze 2. Then complete Worksheet 1 when prompted.

Results: Take a Shop Class

Shop Class, Get a Job-

Job Title- Construction Laborer

Description- As a construction laborer you help build houses and other buildings, you clean and prepare job sites, dig trenches, put together scaffolding, and assist other workers. Oftentimes you do the work no one else wants to do. It isn't glamorous but it is a great way to learn the trade.

Pay- \$45,000 a year

Shop Class, Go to College-

Job Title- Maintenance and Repair Worker

Description- Everything would fall about without you. As a maintenance and repair worker you work in factories and test machines making sure they are in good working order. You may also complete minor building repairs and install new equipment.

Degree Earned- Certified Maintenance Technician (Certificate)

Pay- \$44,000 a year

Shop Class, Carpentry, No Portfolio, Get a Job-

Job Title- Cabinetmaker

Description- Cabinetmakers build wood projects like tables, chairs and cabinets using a variety of woodworking machines. While your job can be equal parts math and art it seems like most of your customers just want the same basic thing.

Pay- \$37,000 a year

Shop Class, Carpentry, Portfolio Complete, Get a Job-

Job Title- Carpenter

Description- You build structures made of wood (and comparable material like concrete) such as, building framework, rafters, stairways, and window or door frames. You also install drywall, or insulation. You often work outside in all kinds of weather including rain, wind, and heat.

Pay- \$48,000 a year

Shop Class, Carpentry, No Portfolio, Go to College-

Job Title- Construction Manager

Description- As a construction manager you plan, direct, and coordinate the building of homes, and office buildings. You also help design the construction project and oversee scheduling, budgeting, and implementation. On a construction site you are the person in charge.

Degree Earned- Bachelor's Degree in Construction Management

Pay- \$99,000 a year

Results: Take a Shop Class (Continued)

Shop Class, Carpentry, Portfolio Complete, Go to College- Civil Engineer

Job Title- Civil Engineer

Description- You help plan, design, and build roads, railroads, airports, bridges, harbors, dams, power plants, and water sewage systems. You build all the things a city needs in order to function.

Degree Earned- Bachelor's Degree in Civil Engineering or Construction Engineering

Pay- \$90,000 a year

Shop Class, Welding, No Portfolio, Get a Job

Job Title- Spot Welder

Description- Spot welders weld pieces of metal together using electrical current, pressure, and heat to make things like cars, batteries, and medical equipment. You may also use laser cutters or similar machines.

Pay- \$46,000 a year

Shop Class, Welding, Portfolio Complete, Get a Job

Job Title- Welder

Description- As a welder you use hand-welding, flame cutting, or brazing equipment to join pieces of heavy metal together. To be a successful welder you need to read blueprints, cut metal, and smooth molten metal.

Pay- \$47,000 a year

Shop Class, Welding, No Portfolio, Go to College

Job Title- Plumber

Description- Plumbers assemble, install and repair pipes, medical gas systems and heating, water and drainage systems. Basically plumbers work on things like: sinks, commodes, bathtubs, water heaters, hot water tanks, garbage disposal units, and dishwashers. Plumbers make sure everything is installed according to specifications and plumbing codes.

Degree Earned- Registered Apprenticeship: Plumber

Pay- \$79,000 a year

Shop Class, Welding, Portfolio Complete, Go to College

Job Title- Steamfitter

Description- Steamfitters install piping and tubing made of carbon steel, copper, plastic, glass or other metals using a variety of processes. These processes include brazing, welding, screwing, gluing, bending and mechanical joining. The pipes you install may contain gases or other chemicals.

Degree Earned- Registered Apprenticeship: Steamfitter

Pay- \$79,000 a year

Results: Be a Mathlete

Mathlete, Get a Job-

Job Title- Power Plant Technician

Description- You work in a power plant and make sure that everything is working the way it should. Your office is a control room where you monitor equipment and log your readings into a computer program. If all goes well you things don't blow up.

Pay- \$48,000 a year

Mathlete, Go to College-

Job Title- Financial Advisor

Description- You help private clients build wealth by using math to decide how to invest their money. Your job also requires you to stay on top of laws and political trends. If you like money and math this isn't a bad career but be careful your clients will be angry if you give them bad advice.

Degree Earned- B.S Economics

Pay- \$99,000 a year

Mathlete, Blueprint, No Portfolio, Get a Job-

Job Title- Lab Technician

Description- You work in a science lab conducting scientific tests making sure that the products we use are safe. As part of your job you get to light things on fire and break things which is really cool.

Pay- \$48,000 a year

Mathlete, Blueprint, Portfolio Complete, Get a Job-

Job Title- Machinist

Description- As a machinist you work in a factory running a machine that creates parts and tools out of metal. This means you read blueprints and take precise measurements to make sure you are cutting things correctly. Sometimes your job is like solving a jigsaw puzzle by building the puzzle piece.

Pay- \$49,200 a year

Mathlete, Blueprint, No Portfolio, Go to College-

Job Title- Industrial Engineer

Description- You plan, and design factories, you make sure that the factory runs as effectively as possible. You are constantly testing and redeveloping how people work in the factory to maximize production and profit.

Degree Earned- Bachelor's Degree in Engineering

Pay- \$99,000 a year

Results: Be a Mathlete (Continue)

Mathlete, Blueprint, Portfolio Complete, Go to College-

Job Title- Wind Energy Engineer

Description- As a wind energy engineer you help design and build wind power farms. This means you help identify where these farms should be built to generate the most renewable energy possible. You also get to help design the wind turbines and systems that turn wind into power.

Degree Earned- Bachelor's Degree in Engineering

Pay- \$97,000 a year

Mathlete, Spreadsheet, No Portfolio, Get a Job

Job Title- Office Assistant

Description- You do the jobs that no one else seems to have time for. This includes answering phones, scheduling meetings, paying bills, and keeping everyone organized and on schedule.

Pay- \$37,700 a year

Mathlete, Spreadsheet, Portfolio Complete, Get a Job

Job Title- Accounting Assistant

Description- As an accounting assistant you are in charge of ensuring that everyone gets paid and the company has enough money to keep running. You spend your days adding numbers to spreadsheets, going to meetings, and helping people solve money problems.

Pay- \$46,900 a year

Mathlete, Spreadsheet, No Portfolio, Go to College

Job Title- Financial Investigator

Description- You work with law enforcement and other investigators to investigate financial laws. You review bank records, real estate transactions, and other financial records to ensure that no laws were broken.

Degree Earned- Bachelor's Degree in Accounting

Pay- \$79,000 a year

Mathlete, Spreadsheet, Portfolio Complete, Go to College

Job Title- Certified Public Accountant

Description- Show me the money! As an accountant that is exactly what you do. You review your client's financial records to make sure that money is where it is supposed to be. You also give advice on financial matters to ensure your clients continue have enough money to do what they want.

Degree Earned- Bachelor's Degree in Accounting

Pay- \$75,000 a year

Results: Join A Robotics Club

Robotics, Get a Job-

Job Title- Aircraft Line Assembler

Description- Working on an assembly line you help build and install aircraft parts. You must be able to read blueprints and use basic tools. This job is repetitive but in the end you get to say that you helped build a plane and that's really cool.

Pay- \$76,000 a year

Robotics, Go to College-

Job Title- Robotics Technician

Description- Working in a factory your job is to fix and maintain the robotic equipment. You are responsible for fixing everything from robotic arms, to automated welding machines, and robotic painting machines.

Degree Earned- Associate Degree Mechatronics

Pay- \$47,000 a year

Robotics, Computer Coding, No Portfolio, Get a Job-

Job Title- Computer Support Specialist

Description- All day long people call you in a panic because their computer isn't working. Your job is to fix people's computers or help them learn how to use their computer, phones, tablets and other devices effectively.

Pay- \$58,000 a year

Robotics, Computer Coding, Portfolio Complete, Get a Job-

Job Title- Automotive Service Technician

Description- When a car breaks down, you are the one they call. You take things apart, figure out what is broken, use tools and equipment to fix the broken part, and reassemble the machine. You also help complete routine maintenance like changing the oil, rotating tires, and other similar tasks.

Pay- \$47,000 a year

Robotics, Computer Coding, No Portfolio, Go to College-

Job Title- Video Game Designer

Description- You work on a team of computer scientists and artists to design the next great computer game. Your work involves finding and fixing glitches in games and helping write the computer code to make the game function properly.

Degree Earned- Bachelor's Degree in Computer Science

Pay- \$79,000 a year

Results: Robotics (Continue)

Robotics, Computer Coding, Portfolio Complete, Go to College-

Job Title- Robotics Engineer

Description- Your job is to build robots. You build robotic arms for factories that move things from one place to another and robotic machines that can weld metal together.

Degree Earned- Bachelor's Degree in Engineering

Pay- \$97,000 a year

Robotics, Electrical Wiring, No Portfolio, Get a Job

Job Title- Electrician Helper

Description- As an electrician helper you assist electricians. You do everything from holding tools and flashlights, to cleaning the work area and other related tasks. While the work isn't challenging it is a great way to learn more about how to be an electrician.

Pay- \$38,000 a year

Robotics, Electrical Wiring, Portfolio Complete, Get a Job

Job Title- Farm Equipment Mechanic

Description- When a farmer has a broken tractor, harvester or other large equipment they call you to fix it. You take things apart, figure out what is broken, use tools and equipment to fix the broken part, and reassemble the machine. Your job includes a lot of trial and error and no two days are the same.

Pay- \$49,800 a year

Robotics, Electrical Wiring, No Portfolio, Go to College

Job Title- Electrician

Description- You have a highly skilled job. You install electrical wiring, equipment, and fixtures. You are also responsible for ensuring that everything is up to code. When you do your job correctly it is the brightest job around, when you do it poorly you risk setting the job site on fire or worse.

Degree Earned- Electrical Apprentice

Pay- \$80,000 a year

Robotics, Electrical Wiring, Portfolio Complete, Go to College

Job Title- Electrical Engineer

Description- As an Electrical Engineer you help build electrical components that are used in commercial, industrial, and military products. That means you help build electric motors for cars, radar and navigation systems, and power systems.

Degree Earned- Bachelor's Degree in Engineering

Pay- \$100,000 a year

Facilitator Notes

Overview:

Career maze is a career exploration activity that highlights careers in manufacturing, construction trades, financial services, engineering and others. Students must select activities, decide if they want to learn skills, complete a portfolio, or go to college. The choices made during the activity will match with one of 30 different careers across a variety of career clusters.

Each career description was written using information from O*Net including estimated yearly salary for Oregon as published in winter of 2022. The complete list of careers and their O*Net is listed on the career matrix on the following page.

Throughout the activity students make choices about what activities they engage in, what skills they may learn, if they complete a portfolio, or go to college. Based on these choices students will be matched with a career. Generally speaking high earning careers in this activity require more skills and a college degree. It is important to note that a higher income doesn't necessarily mean a better career. This is a career exploration activity and as such you cannot "win" this activity. The goal is to learn more about different careers in a fun way.

Extension Ideas:

This activity is designed to be a short self-contained activity that students can do as a group or independently. Facilitators can extend or modify the activity in several ways to meet the needs of their students, here are some suggestions.

- **Different Choices:** This activity includes 30 different solutions. Have students do the activity multiple times and get different results. Have them compare and contrast the different careers they are matched with.
- **Research:** Students can use the O*Net numbers to complete additional research on the career(s) they are matched with.
- **Cost of Living:** Have students research basic cost of living in your area and calculate what sort of house they can afford based on the estimated yearly salary of the career they were matched with.
- **Playlist/ DJ:** After being matched with a career encourage students to reflect on what it might be like to do that job by making a playlist of 3 or 4 songs that remind the student of that career.
 - Alternatively you can have students create a short video describing the career
- **Reverse Snowball:** Write each career on a slip of paper then crumple the paper into a ball. At the start of the session have a "snow ball fight". At the end of the "snow ball fight" have students select the nearest snowball and that becomes their career. They then have to work the mazes backwards in order match the career requirements. For example: How would a student need to solve the mazes to be an office assistant?

Career Matrix

Take a Shop Class	Learn Carpentry	Learn Welding	Build a Birdhouse	Go to College	Get a Job
Construction Laborer- (O*Net 47-2061.00)					Yes
Maintenance and Repair Worker- (O*Net 49-9071.00)				Yes	
Cabinetmaker- (O*Net 51-7011.00)	Yes				Yes
Carpenter- (O*Net 47-2031.00)	Yes		Yes		Yes
Construction Manager- (O*Net 11-9021.00)	Yes			Yes	
Civil Engineer- (O*Net 17-2051.00)	Yes		Yes	Yes	
Spot Welder- (O*Net 51-4122.00)		Yes			Yes
Welder- (O*Net 51-4121.00)		Yes	Yes		Yes
Plumber- (O*Net 47-2152.00)		Yes		Yes	
Steamfitter- (O*Net 47-2152.00)		Yes	Yes	Yes	
Be a Mathlete	Learn To Read Blueprints	Read Spread-sheets	Design a Roller Coaster	Go to College	Get a Job
Power Plant Technician- (O*Net 49-9099.01)					Yes
Financial Advisor- (O*Net 13-2051.00)				Yes	
Lab Technician- (O*Net 19-4099.01)	Yes				Yes
Machinist- (O*Net 51-4041.00)	Yes		Yes		Yes
Industrial Engineer- (O*Net 17-2112.00)	Yes			Yes	
Wind Energy Engineer- (O*Net 17-2199.10)	Yes		Yes	Yes	
Office Assistant- (O*Net 43-9061.00)		Yes			Yes
Accounting Assistant- (O*Net 43-3031.00)		Yes	Yes		Yes
Financial Investigator- (O*Net 13-2061.00)		Yes		Yes	
Certified Public Accountant- (O*Net 13-2011.00)		Yes	Yes	Yes	
Join Robotics Club	Computer Coding	Electrical Wiring	Repair a Car	Go to College	Get a Job
Aircraft Line Assembler- (O*Net 51-2011.00)					Yes
Robotics Technician- (O*Net 17-3024.01)				Yes	
Computer Support Specialist (O*Net 15-1232.00)	Yes				Yes
Automotive Service Technician (O*Net 49-3023.00)	Yes		Yes		Yes
Video Game Designer - (O*Net 15-1255.01)	Yes			Yes	
Robotics Engineer- (O*Net 17-2199.08)	Yes		Yes	Yes	
Electrician Helper- (O*Net 47-3013.00)		Yes			Yes
Farm Equipment Mechanic- (O*Net 49-3041.00)		Yes	Yes		Yes
Electrician- (O*Net 47-2111.00)		Yes		Yes	
Electrical Engineer- (O*Net 17-2071.00)		Yes	Yes	Yes	