

TAKE THE

CAREER IDEAS *Challenge*

...with your Middle Grade students!

The middle grades (4–7) are prime time for exploring careers. They are also an age-appropriate time for cultivating problem-solving skills. The **Career Ideas Challenge** lets students do both – explore careers within the context of solving real world problems.

Use these 9 activities in career exploratory classes, CTE courses, in the library, or to build 21st century skills in core classes.

Chef
Crime Scene
Investigator
Electrical
Lineworker

Marine
Biologist
Physician's
Assistant
Rescue Diver

Retail Manger
Robotics
Engineer
Video Game
Designer

*Just in time to expand your middle grade
career exploration programs with Perkins V!*



Chef

Where is your favorite fancy place to eat? Does the person who fixes food at that place wear a tall white hat? That might mean a chef makes the delicious food served there. Chefs are professional cooks. Wherever really good food is found, you'll find chefs. They work in restaurants, on cruise ships, aboard private jets, and at resorts. They also work in specialty food stores, retirement communities, schools, hospitals, and catering companies.



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(Feel free to use the back of this sheet for longer answers)

What's for Dinner?

One thing that all chefs have in common is food. They love eating it. They love preparing it. They even love talking about it! Chefs take pride in preparing meals that people often pay big bucks to enjoy. A chef's job is a mix of cooking skill, creative talent, and lots of hard work. Can you even imagine what it would be like to prepare fancy food all night long in a busy restaurant? Add lots of energy to the job requirements!

One way to find out if you are a foodie is to take a culinary arts class in school. There you'll learn the basics of how to cook and get a taste of what's like to prepare some of your favorite foods.

CHALLENGE #1: *If you had this career...*

What kind of training would you need?

Where could you find a job?

How much money could you earn?

Who would you help and how would you make a difference

Why would (or wouldn't) you like doing a job like this?

CHALLENGE #2: *Think Tank*

Your community is hosting a party to celebrate the different ways that people celebrate the winter holidays. It's Kwanzaa, Hanukkah, Christmas, Las Posadas, and the Chinese New Year all rolled into one rollicking event!

You've been selected to be head chef. Your job is to come up with a menu that represents many different cultures. What kind of foods can you serve to give guests a taste of winter joy?

Plan a menu and include descriptions of which winter holiday the dish is used to celebrate.



Chef Teacher Tips

If shows like *Master Chef Junior* and *Top Chef Junior* are any indication, many students have moved well beyond the "make your own PB&J sandwich" stage of cooking. Programs like these show a glamorous, competitive, and, yes, very stressful view of what it's like to be a chef. They also show the creativity and passion for food that it takes to succeed in this type of work.



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DISCUSS

Ask students to describe the fanciest meal they have ever eaten. Then ask them to share what they know about the place where the food was prepared and the person(s) who prepared it.

READ

Students can read text about chefs out loud as a class or silently on their own.

CHALLENGE #1: If You Had This Career...

Several queries prompt students to get up close and personal with essential information about this career option. As they work through each question, remind students to relate this information to their own attributes, interests, and aspirations. Online research tools include:

- Using Google (or another approved Internet search engine) to make specific queries like “what kind of training does a chef need” or “how do family and consumer studies classes help prepare chefs.”
- Visiting career information websites like www.getmyfuture.org or www.mynextmove.org. Both of these websites are sponsored by the U.S. Department of Labor.
- If available, tapping into your school’s career development software platform (such as Career Cruising) or your state’s career and college information system (such as www.CFNC.org).

CHALLENGE #2: FZ | FS]

Students are asked to plan a creative, culturally-inclusive menu for a community event meant to celebrate major winter holidays. Their ideas should be creative, appropriate to the event, and easily adaptable for a large crowd. Extra bonus points if students can actually make one of their favorite dishes so share with the rest of the class!

EXTEND THE DISCUSSION

Talking about chefs paves the way for further discussion about foods associated with different ethnic groups, nutrition, healthy eating strategies, and other food related topics.

EXPLORE MORE STEAM CAREERS

Students can find out more about careers related to food, agriculture, and nature in the *Food and Natural Resources* title included in the **World of Work** series. The **World of Work** series features titles for each of the 16 nationally recognized career clusters. Go online to www.brightfuturespress.com to find out more about this series as well as 4 other interactive series that are part of the middle grade career exploration collection offered by Bright Futures Press. These titles are appropriate for students in grades 4 - 7 and can be used as part of a career exploratory curriculum, in CTE courses, as part of a multi-faceted career-focused research process, in the school media center, and in afterschool clubs and programs.

Crime Scene Investigator

You've probably seen crime scene investigators (CSIs) at work on television detective shows. They carefully gather clues at fictional crime scenes. Then they process the evidence in high-tech labs. Which clue will crack the case? It could be fingerprints, a weapon, or even cell phone files. DNA evidence like hair, blood, or saliva can help identify potential suspects. Every piece of evidence is like part of a giant puzzle. Putting them all together helps solve crimes.



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(Feel free to use the back of this sheet for longer answers)

Whodunnit?

Crime scene investigators are part scientist and part detective. The detective part of the job involves gathering evidence at a crime scene. Every possible clue must be identified, photographed, tagged, and bagged. The scientist part of the job happens at the police lab. Each piece of evidence is carefully examined using using a variety of high-tech tools.

Crime scene investigators work on serious crimes like murder and bank robbery. They obviously need to know a lot about science. Most of them have college degrees in criminal justice, forensic science, or biology. Many of them are also police officers who have graduated from a police academy. Thanks to the work of crime scene detectives, many a criminal has learned that crime does not pay.

CHALLENGE #1: *If you had this career...*

What kind of training would you need?

Where could you find a job?

How much money could you earn?

Who would you help and how would you make a difference

Why would (or wouldn't) you like doing a job like this?

CHALLENGE #2: *Think Tank*



Every person's DNA is unique. When criminals leave DNA evidence behind at a crime scene, it's almost as if they left a big sign that says, "I did it!"

Imagine that you are crime scene investigator. You found DNA evidence that identified a likely suspect in a serious crime. Now that suspect is on trial. You must testify about the evidence in court. How can you convince the jury that the DNA evidence is solid and can be trusted to solve this crime?

Put together a presentation to make your case.

Crime Scene Investigator Teacher Tips

Crime scene investigator (aka forensic scientist) is another high-interest way to engage students in STEM-focused career exploration. Students are likely to be familiar with the career from television and other media encounters. It is a career likely to appeal to those interested in law and public safety pursuits as well as those with strong science interests. In fact, it is a terrific example of how career options often bridge a person's interests and aptitudes.



DISCUSS

Who doesn't love a good mystery? Use a book, a current event, or other hook to start a discussion about how crime scene investigators use science to help solve crimes.

READ

Students can read about crime scene investigators out loud as a class or silently on their own.

CHALLENGE #1: If You Had This Career...

Several queries prompt students to get up close and personal with essential information about this career option. As they work through each question, remind students to relate this information to their own attributes, interests, and aspirations. Online research tools include:

- Using Google (or another approved Internet search engine) to make specific queries like “what kind of training does a crime scene investigator need” or “what is DNA.”
- Visiting career information websites like www.getmyfuture.org or www.mynextmove.org. Both of these websites are sponsored by the U.S. Department of Labor.
- If available, tapping into your school's career development software platform (such as Career Cruising) or your state's career and college information system (such as www.CFNC.org).

CHALLENGE #2: FZ | FS]

This challenge puts students in a scenario where they, as crime scene investigators, must testify in court about DNA evidence which suggests the guilt of a defendant in a criminal trial. Students must be prepared to with solid information to convince the jury of the reliability of DNA.evidence. Student deliverables can be as simple as a list of five reasons why DNA is an acceptable source of identification or as challenging as students actually making presentations before a mock jury. Available class time and learning objectives dictate how deep you'll want to dig into this subject matter.

EXTEND THE DISCUSSION

Use this career option as a way to open up discussion about other careers related to issues threatening the world's oceans and ideas for protecting these essential natural resources.

EXPLORE MORE STEAM CAREERS

Bright Futures Press features two STEAM-focused career exploration series in its middle grade collection. Go online to www.brightfuturespress.com to find out more about the **Find Your Future in STEAM** and **Emerging Tech Careers** series.

Electrical Lineworker

NEWFLASH! When Hurricane Florence blew through the Carolinas, it knocked out power in a really big way. In emergency situations like these, electrical linemen and women join the ranks of other first responders to come to the rescue. Lineworkers come from near and far to restore electricity and help get weather damaged communities back up and running.

(Feel free to use the back of this sheet for longer answers)

Who Turned Out the Lights?

When electrical power goes out, homes, schools, and businesses pretty much grind to a standstill. That's why massive power outages caused by major weather situations are a big deal. It's also why people without power cheer when they see electrical lineworkers working on overhead power lines and ground level substations.

Electrical lineworkers are highly skilled electricians who maintain and repair equipment that moves electrical power from power plants to local consumers. The job requires special training in both trade school and on the job. It pays well, comes with the perk of working outdoors, and offers the chance to help communities in important ways. Plus, electrical lineworkers get to ride around in cool bucket trucks!

CHALLENGE #1: *If you had this career...*

What kind of training would you need?

Where could you find a job?

How much money could you earn?

Who would you help and how would you make a difference?

Why would (or wouldn't) you like doing a job like this?



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CHALLENGE #2: *Think Tank*

A huge hurricane has hit and electrical lineworkers are already at work restoring power in multiple states.

But...

Hundreds of thousands of homes and businesses are without power. It could be days or (gulp!) weeks before they get your power turned back on.

Good thing you are prepared! Use the back side of this page to sketch out and describe all the tools and supplies you gathered in your hurricane emergency kit. Of course, you thought through what you'll need to provide light, heat, food preparation, and a way to keep in touch with other people and the local news.



Electrical Lineworker Teacher Tips

As the saying goes, sometimes "you don't know what you've got until it's gone." That is certainly true when weather conditions wreak havoc on everyday conveniences like electricity. Entire communities can be left in the dark for days or weeks. It takes the skills of highly trained electricians called powerline technicians (or lineworkers) to get the lights back on.



DISCUSS

Recent news about hurricanes and other destructive types of weather. Talk about the types of first responders needed to keep people and property safe in emergency conditions.

READ

Students can read the text about powerline technicians out loud together (as a class or in teams) or on their own.

CHALLENGE #1: If You Had This Career...

Several questions prompt students to dig into essential information in a first person way that facilitates personal connections. Students can find answers to these questions by:

- Using Google (or another approved Internet search engine) to make specific queries like "powerline technician" or "lineworker."
- Visiting career information websites like www.getmyfuture.org or www.mynextmove.org. Both of these websites are sponsored by the U.S. Department of Labor.
- If available, tapping into your school's career development software platform (such as Career Cruising) or your state's career and college information system (such as www.CFNC.org).

CHALLENGE #2: Think Tank

Ask students to list all the ways they depend on electrical power. Describe a scenario where a hurricane or severe thunderstorm knocks out power to the neighborhood. Explain that people will have to improvise until lineworkers are able to restore electrical power. What kinds of tools and supplies would they need to sustain life and maintain a minimum level of comfort? Instruct them to use the back side of the Career Ideas Challenge worksheet to sketch out and describe the contents of an emergency power kit. For extra effectiveness, you may want to share the actual contents of your own emergency preparation kit.

EXTEND THE DISCUSSION

Use this career option as a way to open up discussion about how electricity works. For a terrific summary see, <https://science.howstuffworks.com/electricity.htm>.

BUILD YOUR CAREER EXPLORATION COLLECTION

Expand your middle grade career exploration programs with resources from Bright Futures Press featuring a collection of 43 interactive career exploration titles. Plus, free classroom activity guides! For more information visit www.brightfuturespress.com or contact Diane Lindsey Reeves at dreeves@brightfuturespress.com.

Marine Biologist

Biology is the study of life. Biologists focus on certain types of life forms. Zoologists study animals. Botanists study plants. Marine biologists explore sea life. Experts say that as many as one million species live in the world's oceans. Some estimate that hundreds of thousands of species are yet to be named and described. This leaves plenty of exploring for future marine biologists to do!



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(Feel free to use the back of this sheet for longer answers)

Dolphins, Turtles, Sharks and More

Marine biologists study anything and everything that lives in the sea. This includes creatures big and small--from algae and seaweed to whales and great coral reefs. Marine biologists observe sea life in its natural habitat. They look at how things like climate change and pollution impact the ocean and its inhabitants. They investigate ways to save endangered species. Some of their work takes place at sea. Much of their work takes place on land in laboratories. This is where marine biologists conduct research, study specimens, and write reports.

Exploring the world's oceans requires a love of science and advanced training. Marine biology is a competitive field. Advanced math and computer skills give aspiring marine biologists an edge.

CHALLENGE #1: *If you had this career...*

What kind of training would you need?

Where could you find a job?

How much money could you earn?

Who would you help and how would you make a difference?

Why would (or wouldn't) you like doing a job like this?

CHALLENGE #2: *Think Tank*



What types of marine species are in danger of becoming extinct? Pick a specific species of interest to you. Use the Internet and library resources to learn more about your chosen species.

Design a poster to create awareness about the problem and suggest ways to solve it. Important questions to explore include:

- Why is the species is endangered?
- Are human behaviors contributing to the problem?
- How would the absence of this species upset the ecosystem or affect other species?

Marine Biologist Teacher Tips

A variety of STEM-related careers.



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DISCUSS

Dive into a discussion about the ocean. Ask students to about any encounters they've had taking beach trips or visiting aquariums. Transition the discussion into sea-faring careers.

READ

Students can read about marine biologists out loud as a class or silently on their own.

CHALLENGE #1: If You Had This Career...

Several queries prompt students to get up close and personal with essential information about this career option. As they work through each question, remind students to relate this information to their own attributes, interests, and aspirations. Online research tools include:

- Using Google (or another approved Internet search engine) to make specific queries like “what kind of training does a marine biologist need” or “where do marine biologists work .”
- Visiting career information websites like www.getmyfuture.org or www.mynextmove.org. Both of these websites are sponsored by the U.S. Department of Labor.
- If available, tapping into your school’s career development software platform (such as Career Cruising) or your state’s career and college information system (such as www.CFNC.org).

CHALLENGE #2: FZ | FS]

Succeeding in almost any career requires acquiring expert level knowledge about it. Marine biologists tend to specialize in very specific types of marine life. This Think Tank activity challenges students to become "experts" about a type of sea life of interest to them. Most aspiring marine biologists gravitate toward marine mammology. That is the study of **cetaceans** (families of whales and dolphins) and **pinnipeds** (seals, sea lions, and walrus). These subjects are, of course, fair game. Topics related to plant life, microorganisms, and other life forms are also acceptable. If there is time, divide the class into groups and allow students to present their findings to the class as if they were educating young students at an aquarium.

EXTEND THE DISCUSSION

Use this career option as a way to open up discussion about other careers related to issues threatening the world's oceans and ideas for protecting these essential natural resources.

EXPLORE MORE STEAM CAREERS

Bright Futures Press features two STEAM-focused career exploration series in its middle grade collection. Go online to www.brightfuturespress.com to find out more about the **Find Your Future in STEAM** and **Emerging Tech Careers** series.

Physician's Assistant

Health care is already America's biggest employer. By the year 2025, even more health care workers will be needed. This is true for two reasons. One reason is that the population is growing. The second reason is that many Americans will be over the age of 55 by then. More people need more care. And older people tend to need extra care as they age. This means one thing: lots of job opportunities in the coming years.

(Feel free to use the back of this sheet for longer answers)



In the Middle Between Doctor and Nurse

Physician's assistants, or PAs, help take care of sick patients. Some PAs tend to people with colds, flu and other common illnesses. They put casts on broken limbs, stitch up wounds, and order medical tests. Others work with certain types of patients such as those with cancer or heart problems. PAs do many of the same things that doctors do. The biggest difference is training. Doctors often need up to 15 years of special training. PAs must first earn a college degree. They need at least three years of health care experience. Then they get three years of medical training. PAs work together with licensed medical doctors. There are many opportunities for PAs. They fill a huge health care need.

CHALLENGE #1: *If you had this career...*

What kind of training would you need?

Where could you find a job?

How much money could you earn?

Who would you help and how would you make a difference?

Why would (or wouldn't) you like doing a job like this?

CHALLENGE #2: *Think Tank*

Flu season is right around the corner. Getting the flu is no fun at all. It can make people feel miserable for days. The flu can even be deadly.

As a future PA, you want to protect your patients from this very contagious disease. Look online for information about the "2018 flu virus." Also ask health care providers or the school nurse to share what they know about it.

Use the back side of this paper to sketch out a flu warning poster. Be sure to describe the symptoms. Add tips for avoiding the virus. And include ideas for taking care of someone with the flu.

Just be sure to follow your own advice!

Physician's Assistant Teacher Tips

It isn't much of a leap to suggest that many of your students will one day be employed in the health care industry. Health care accounts for almost 20 percent of the U.S. gross domestic product (GDP). For the first time in history, it employs more people than manufacturing and retail. According to the U.S. Bureau of Labor Statistics, employment of physician assistants is projected to grow 37 percent from 2016 to 2026, much faster than the average for all occupations.



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DISCUSS

Ask students to describe the different roles of doctor and nurse. Explain that physician's assistants benefit between the two with more responsibility than a nurse and less than a doctor. Nurse practitioners are similar to physician's assistants. The difference is that nurse practitioners have prior training and experience as nurses.

READ

Students can read the text about **Benefit** out loud together (as a class or in teams) or on their own.

CHALLENGE #1: If You Had This Career...

Several questions prompt students to dig into essential information in a first person way that facilitates personal connections. Students can find answers to these questions by:

- Using Google (or another approved Internet search engine) to make specific queries like “what kind of training does a physician's assistant need” or “salary information for physician's assistant.”
- Visiting career information websites like www.getmyfuture.org or www.mynextmove.org. Both of these websites are sponsored by the U.S. Department of Labor.
- If available, tapping into your school's career development software platform (such as Career Cruising) or your state's career and college information system (such as www.CFNC.org).

CHALLENGE #2: Find It!

They are asked to seek out information online and through personal encounters with health care professionals (when available). You may want to consider asking the school nurse to visit the class for a brief question and answer session. Students will use their findings to create a **Yield**.

EXTEND THE DISCUSSION

Use this career option as a way to open up discussion about other types of health care professions that students know about.

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Check out the Bright Futures Press career exploration collection of interactive books for middle grade readers at www.brightfuturespress.com. Find a free classroom activity guides!

Rescue Diver

What started out as a fun adventure exploring caves with friends has turned into a world class disaster. Twelve young soccer players and their coach are stuck deep in a flooded cave and can't get out. Time is running out to rescue them before monsoon rains make it impossible!

(Feel free to use the back of this sheet for longer answers)

Rescue Divers Save the Day

Rescue divers are called upon to save the day in water emergencies involving people or, in some cases, property. They have to think fast and act quickly—often in very dangerous conditions—to resolve each situation safely. Rescue divers often face life or death situations and put themselves at great risk to help others. Their success largely depends on skill, physical endurance, and teamwork. Some of the best rescue divers in the world are employed by the military as Navy Seals. These highly trained divers perform daring rescues as well as challenging military missions.



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CHALLENGE #1: *If you had this career...*

What kind of training would you need?

Where could you find a job?

How much money could you earn?

Who would you help and how would you make a difference?

Why would (or wouldn't) you like doing a job like this?

CHALLENGE #2: *Your Big Ideas*



Help! A soccer team has been trapped inside a flooded cave for several days. It is totally dark inside and the team has no food. There is only one way out and it is a couple miles away. Rescue involves diving through deep, rough water AND climbing slippery rocks and treacherous cliffs. More rain is expected soon and it could make rescue impossible. Oh, and one more thing—the children don't know how to swim.

Imagine you are part of the team in charge of getting the team out safely. Use the space on the back side of this paper to sketch out and describe your rescue plan.

Rescue Divers Teacher Tips

This Career Ideas Challenge features a career that kept the entire world riveted for weeks over the summer of 2018. Rescue divers in Thailand accomplished what many feared could never be done when they pulled a team of trapped soccer players out of the depths of a flooded cave. Use this activity to open a discussion about both this specific event as well as other courageous career options.



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DISCUSS

Ask students to share what they know about the Thailand event. This discussion can go in many directions and you may want to let students voice their reactions before turning the focus around to the role rescue divers played.

READ

Students can read the text about rescue divers out loud together (as a class or in teams) or on their own.

CHALLENGE #1: If You Had This Career...

Several questions prompt students to dig into essential information in a first person way that facilitates personal connections. Students can find answers to these questions by:

- Using Google (or another approved Internet search engine) to make specific queries like “what kind of training does a rescue diver need?” or “salary information for rescue divers.”
- Visiting career information websites like www.getmyfuture.org or www.mynextmove.org. Both of these websites are sponsored by the U.S. Department of Labor.
- If available, tapping into your school’s career development software platform (such as Career Cruising) or your state’s career and college information system (such as www.CFNC.org).

Ask students to imagine themselves in charge of a rescue situation like the one in Thailand. Challenge them to come up with different ways to approach such a rescue. They can use back side of the hand-out to list the options and think about other types of team members they might need to support the rescue effort.

For added effectiveness, you might want to have them compare their ideas with those used in the actual rescue. The Internet is full of fascinating accounts that can be found by using a search query of “how was Thailand soccer team rescued?”

EXTEND THE DISCUSSION

Use this career option as a way to open up discussion about other careers that require courage, daring, and extraordinary physical skills.

FIND MORE CAREER EXPLORATION RESOURCES

Check out the Bright Futures Press career exploration collection of interactive books for middle grade readers at www.brightfuturespress.com. The collection includes 43 titles in 5 distinct series. Plus, free classroom activity guides!

Retail Manager

FileZWSa` XdUS` kUS` WUS` dS` V`afeaXgiftsZ" Santa's helpers" scramble to fill stockings and find perfect gifts for the people on their lists. They scout out bargains and blow-out sales at favorite online and shopping mall stores. Before the holiday season is over shoppers will have dropped over \$1.05 trillion dollars and retail managers everywhere will be ready for a well-deserved rest!



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(Feel free to use the back of this sheet for longer answers)

Shop Until You Drop

Retail managers are in charge of stores where customers shop for favorite products. This includes all the shops you find at malls plus all the places you look for phones, food, cars and much, much more. Retail managers fill many roles. These super-organized professionals hire, schedule and supervise staff. They make sure that stores appeals to a specific target market with well-stocked shelves, lots of great products, and attractive signs and displays. They conduct training meetings, order inventory, and handle payroll. Some retail managers have earned college degrees in retail management. Others get on-the-job training and move up the ranks. A great way to find out if this career path is right for you is to get a part-time job in a retail store. You may also want to find out if your school has a DECA club and get involved in all they have to offer!

CHALLENGE #1: *If you had this career...*

What kind of training would you need?

Where could you find a job?

How much money could you earn?

Who would you help and how would you make a difference?

Why would (or wouldn't) you like doing a job like this?

CHALLENGE #2: *Think Tank*

There's something for everyone. This saying is especially true for shoppers. Some people enjoy checking out the latest fashions. Others prefer browsing the aisles of video game, sporting goods, or book stores.

Imagine you have saved up a nice wad of cash and are ready to spend it. Map out your idea of the ultimate shopping spree.

Be sure to include all the stores you'd want to visit--starting with your favorites. For each store on your list, add two things:

- the products you'd look for
- the reason why you like to shop in each store



Retail Manager Teacher Tips

'Tis the season for lots of shopping! The holiday months are when many retailers hit pay dirt as "Santa's helpers" stock up on gifts for friends and family. According to the U.S. Department of Commerce, retail sales between the months of November 2017 and January 2018 topped \$1.05 trillion dollars. That adds up to lots of opportunity for the managers and sales clerks who keep all kinds of retail stores running smoothly all year long.



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DISCUSS

Open the discussion by asking students about their holiday shopping plans. What are their favorite stores? Where are they finding the best bargains? Transition to discuss the careers involved in operating stores of all types and sizes.

READ

Students can read about retail store managers together as a class or silently on their own.

CHALLENGE #1: If You Had This Career...

Several queries prompt students to get up close and personal with essential information about this career option. As they work through each question, remind students to relate this information to their own attributes, interests, and aspirations. Online research tools include:

- Using Google (or another approved Internet search engine) to make specific queries like “what kind of training does a retail manager need” or “what is the typical salary for a retail manager.”
- Visiting career information websites like www.getmyfuture.org or www.mynextmove.org. Both of these websites are sponsored by the U.S. Department of Labor.
- If available, tapping into your school’s career development software platform (such as Career Cruising) or your state’s career and college information system (such as www.CFNC.org).

CHALLENGE #2: FZ | FS]

Students are asked to map out their ultimate "shop til you drop" shopping spree. Their maps should include lists of favorite stores along with two qualifiers: the products they'd look for in each shop AND the reason why they like to shop in each shop. The latter query is meant to get them thinking about customer service and branding aspects that appeal to their shopping sensibilities.

EXTEND THE DISCUSSION

Use this career option as a way to open up discussion about other careers related to the supply chain involved in getting products from idea to retail store. Start with the production of raw materials and take it from there.

EXPLORE MORE CAREER CLUSTERS

The **World of Work** series offered by Bright Futures Press features titles for each of the 16 nationally recognized career clusters: *Architecture & Construction*; *Arts & Communication*; *Business & Administration*; *Education & Training*; *Finance*; *Food and Natural Resources*; *Government*; *Health Services*; *Hospitality & Tourism*; *Human Services*; *Information Technology*; *Law & Public Safety*; *Manufacturing*; *Marketing, Sales & Service*; *STEM*; and *Transportation*. Retail managers are profiled in the *Marketing, Sales and Service* title.

Robotic Engineer

Think robots! What's the the first thing that comes to mind? Is it futuristic characters in a movie or video game?

Maybe your first thought was about vacuum cleaners or lawn mowers. Probably not! But robots now do chores like these in many homes.

Making life easier for humans is a big challenge for robotic engineers. So are robots that drive cars and fight cancer!

(Feel free to use the back of this sheet for longer answers)



The Future of Robots and You

Robots are machines programmed to do two types of things. Robots do things that people can't do. Robots also do things that people don't want to do. They are used to repeat the many steps involved in making products like cars or candy. They also do jobs that are too dangerous for humans. For instance, the military uses robots to defuse bombs.

One thing that robots cannot do is create themselves. That's where robotic engineers come in. They design robots to "think" and "act" in human-like ways. Robotic engineers must know a lot about math, science, and technology. They are problem-solvers and creative thinkers.

CHALLENGE #1: *If you had this career...*

What kind of training would you need?

Where could you find a job?

How much money could you earn?

Who would you help and how would you make a difference?

Why would (or wouldn't) you like doing a job like this?

CHALLENGE #2: *Think Tank*

If you could invent a robot, what would you want it to do? Think about your own life as a student. In what ways could a robot make your life easier (or more fun)?

Draw a picture and use words to describe how your robot would work. Start with the problem and show the steps your robot would make to solve it.

How could your robot make the world a better place for students? Be creative and get specific with your ideas.



Robotic Engineer Teacher Tips

Robots can be an effective way to engage students of all ages in STEM learning. Robots are also the source of high demand, STEM-focused career opportunities. Fueled by innovations in industries that include transportation (self-driving cars!), medicine (nanomedicine!) and the military (neutralize explosive devices!), the job outlook is good for robotic engineers.



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DISCUSS

Ask students to make a list of the types of real and fictional robots they know about. Discuss differences and similarities between the two types.

READ

Students can read about robotic engineers out loud as a class or silently on their own.

CHALLENGE #1: If You Had This Career...

Several queries prompt students to get up close and personal with essential information about this career option. As they work through each question, remind students to relate this information to their own attributes, interests, and aspirations. Online research tools include:

- Using Google (or another approved Internet search engine) to make specific queries like “what kind of training does a robotic engineer need” or “what can robots do.”
- Visiting career information websites like www.getmyfuture.org or www.mynextmove.org. Both of these websites are sponsored by the U.S. Department of Labor.
- If available, tapping into your school’s career development software platform (such as Career Cruising) or your state’s career and college information system (such as www.CFNC.org).

CHALLENGE #2: FZ] FS]

Robots are being used to solve problems in many industries such as manufacturing, transportation, the military and more. Robots are also being used to make life easier for humans. Ask students to identify a problem or challenge faced by the typical middle grade students. Then have them sketch out ideas for a robot that could be created to solve that problem.

EXTEND THE DISCUSSION

Use this career option as a way to open up discussion about other ways robots might be used to change the world.

EXPLORE MORE STEAM CAREERS

Bright Futures Press features two STEAM-focused career exploration series in its middle grade collection. Go online to www.brightfuturespress.com to find out more about the **Find Your Future in STEAM** and **Emerging Tech Careers** series. **Find Your Future** includes titles for *Science, Technology, Engineering, Art, and Mathematics*. **Emerging Tech Careers** features titles for *Artificial Intelligence, Drone Technology, Nanomedicine, Personal Space Travel, Robot Technology, Self-driving Car Technology, Virtual Reality Technology, and Wearable Electronics*.

Video Game Designer Teacher Tips

It probably isn't much of a stretch to assume that you often encounter students who are obsessed with playing video games. This Career Ideas Challenge falls into the "if you can't beat them, join them" category by associating gaming with a high-tech career. It also introduces expanded opportunities as artificial intelligence, virtual reality, and other emerging technologies are applied to simulated learning environments used in education, business, the military, and the government.



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DISCUSS

Take a survey of the most popular video games played by your students. Turn the conversation toward the people and professions behind their favorite games. Make a list of the types of careers associated with creating video games.

READ

Students can read the text about video game designers out loud together (as a class or in teams) or on their own.

CHALLENGE #1: If You Had This Career...

These queries prompt students to dig into essential information in a first person way that facilitates personal "self to world" connections. Students can find answers to these questions by:

- Using Google (or another approved Internet search engine) to make specific queries like "video game designer" "video game developer" or even "artificial intelligence scientist."
- Visiting career information websites like www.getmyfuture.org or www.mynextmove.org. Both of these websites are sponsored by the U.S. Department of Labor.
- If available, tapping into your school's career development software platform (such as Career Cruising/Xello) or your state's career and college information system (such as www.CFNC.org).

CHALLENGE #2: Think Tank

Ask students to identify a specific subject in school that they encountered difficulty mastering by traditional means of textbook and class lectures. Challenge them to come up ideas for presenting that same subject in an interactive game or simulation. Ask them to use the back side of their activity sheets to create storyboards that show how their game would work. Storyboards are graphic organizers that use words and illustrations to flowchart the sequence of action in a game.

EXTEND THE DISCUSSION

Introduce students to SCRATCH, an online learning community where they can create games, stories and animations. The site is hosted by the Massachusetts Institute of Technology and can be found at <https://scratch.mit.edu>.

BUILD YOUR CAREER EXPLORATION COLLECTION

Check out the new **Emerging Tech Careers** series produced by Bright Futures Press as a way to introduce cutting-edge tech careers to your middle grade students. Eight titles feature exciting careers in *Artificial Intelligence*, *Drone Technology*, *Nanomedicine*, *Personal Space Travel*, *Robot Technology*, *Self-Driving Car Technology*, *Virtual Reality*, and *Wearable Electronics*. For more information visit www.brightfuturespress.com or contact Diane Lindsey Reeves at dreeves@brightfuturespress.com.