

**SKILLS FOR SUCCESS  
WORK READY YOUTH PROGRAM**



**PROBLEM SOLVING  
WORKBOOK!**



## Acknowledgement

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# **PROBLEM SOLVING**

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**WELCOME TO THE SKILLS FOR SUCCESS WORK READY YOUTH PROGRAM**



## Q: HOW DO I USE THIS WORKBOOK?

1

START BY REVIEWING THE INFORMATION AND FUN FACTS ABOUT PROBLEM SOLVING AND SKILLS FOR SUCCESS.

2

PRACTICE YOUR SKILLS IN THE "WORKOUT" SECTION.

3

BUILD YOUR SKILLS IN THE "BOOSTER" SECTION.

4

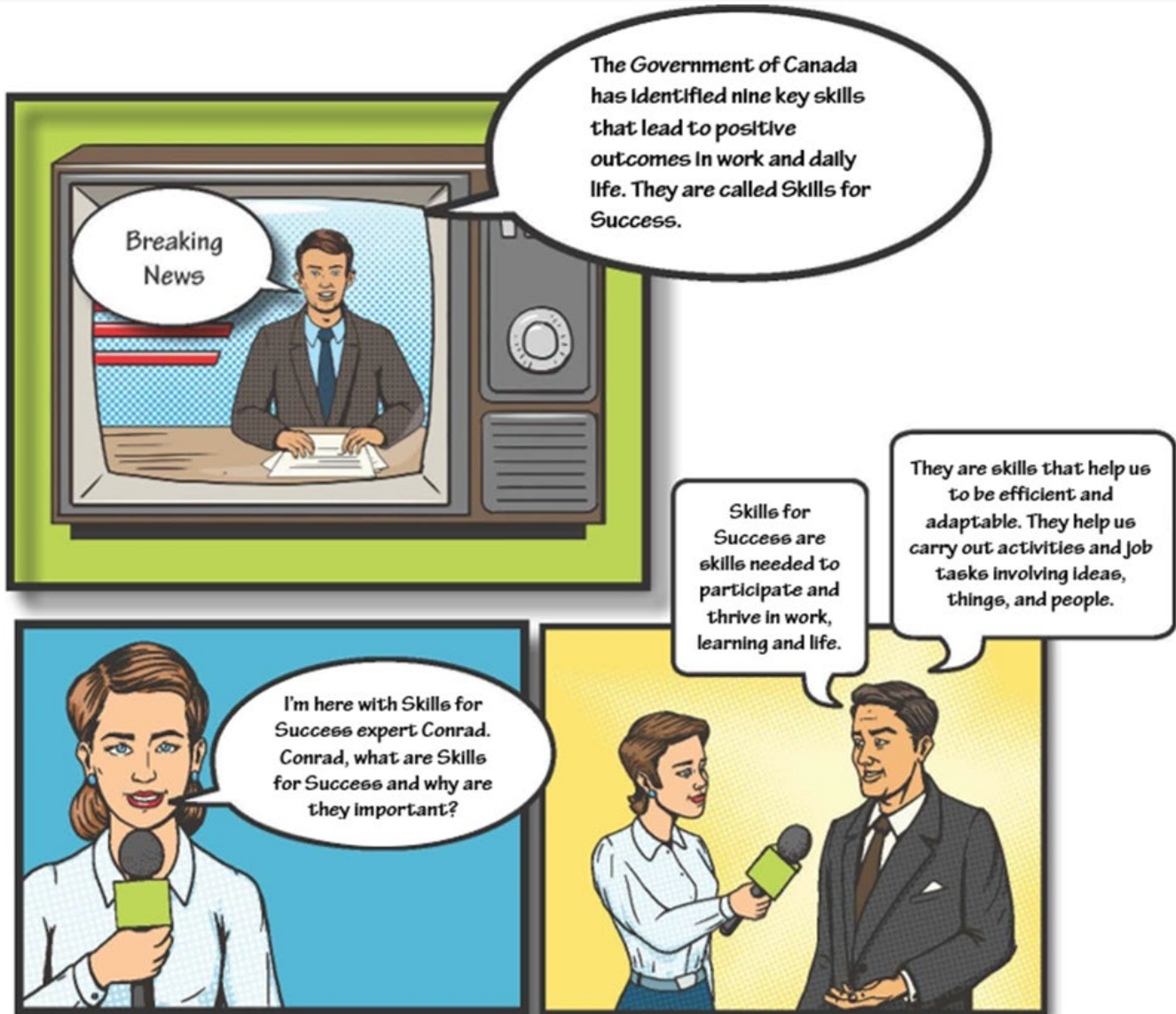
IN THE ANSWER KEY SECTION, CHECK YOUR WORK FROM THE WORKOUT SECTION.

5

TRY THE ASSESSMENT QUESTIONS AT THE END TO GET AN IDEA OF HOW STRONG YOUR SKILLS ARE.



## INTRODUCING THE SKILLS FOR SUCCESS



Breaking News

The Government of Canada has identified nine key skills that lead to positive outcomes in work and daily life. They are called Skills for Success.

Skills for Success are skills needed to participate and thrive in work, learning and life.

They are skills that help us to be efficient and adaptable. They help us carry out activities and job tasks involving ideas, things, and people.



I'm here with Skills for Success expert Conrad. Conrad, what are Skills for Success and why are they important?



**SKILLS FOR SUCCESS ARE THE SKILLS ALL PEOPLE NEED FOR WORK, LEARNING AND LIFE. THEY FORM THE FOUNDATION FOR LEARNING OTHER SKILLS.**





## THE NINE SKILLS FOR SUCCESS



Skills for Success are a major component of Skills/Compétences Canada Initiatives. Let's take a closer look.

### THE NINE SKILLS FOR SUCCESS

ADAPTABILITY ADAPTABILITÉ	COLLABORATION COLLABORATION	COMMUNICATION COMMUNICATION	CREATIVITY & INNOVATION CRÉATIVITÉ ET INNOVATION	DIGITAL COMPÉTENCES NUMÉRIQUES
NUMERACY CALCUL	PROBLEM SOLVING RÉSOLUTION DE PROBLÈMES	READING LECTURE	WRITING RÉDACTION	



## BUILDING SKILLS FOR SUCCESS

Think of a time you tried something new. It can be a sport, learning to code, learning to play an instrument. Maybe you were great at it right away, but most of us aren't. We practice so we get better. In the same way, you need to practice, to build your Skills for Success. To do this, you need to practice tasks, questions and problems related to the Skills for Success, starting with those at Entry level and working up to Intermediate and Advanced levels.

<b>SKILLS FOR SUCCESS LEVELS</b>		
Entry	Intermediate	Advanced
Practice needed	Ready to keep learning	Good to go!

Skills like muscles get stronger the more we use them and strengthening your Skills for Success will help you succeed in today's evolving work environment and in daily life.

### WHAT DO THE LEVELS MEAN?

- Tasks, questions, and problems at Entry level are less difficult than those at the Intermediate and Advanced levels.
- People with skills at Entry level need to practice, to make their skills stronger. When you have skills at, or above, Intermediate level, you have skills that are strong enough to allow you to learn academic, technical, or job-specific skills.
- Employers like to hire workers who are efficient, capable, learners because they know they are more likely to accurately solve problems, complete their work, learn new processes, and adapt to changes on the job.
- The skills are just as important in daily life. We all need to read information, fill out documents, make decisions about how much we can spend on things we want to buy, work, and communicate effectively with friends, family, teachers, and employers, and use computers and other digital technologies.







## GIVE IT A TRY! MATCHING TASKS AND SKILLS

Look at the list below. What skills do you think you would need to complete each task? Write the abbreviation for any of the skills you think would be used to complete the task. One is started for you as an example. (*HINT: they all require more than one skill.*)



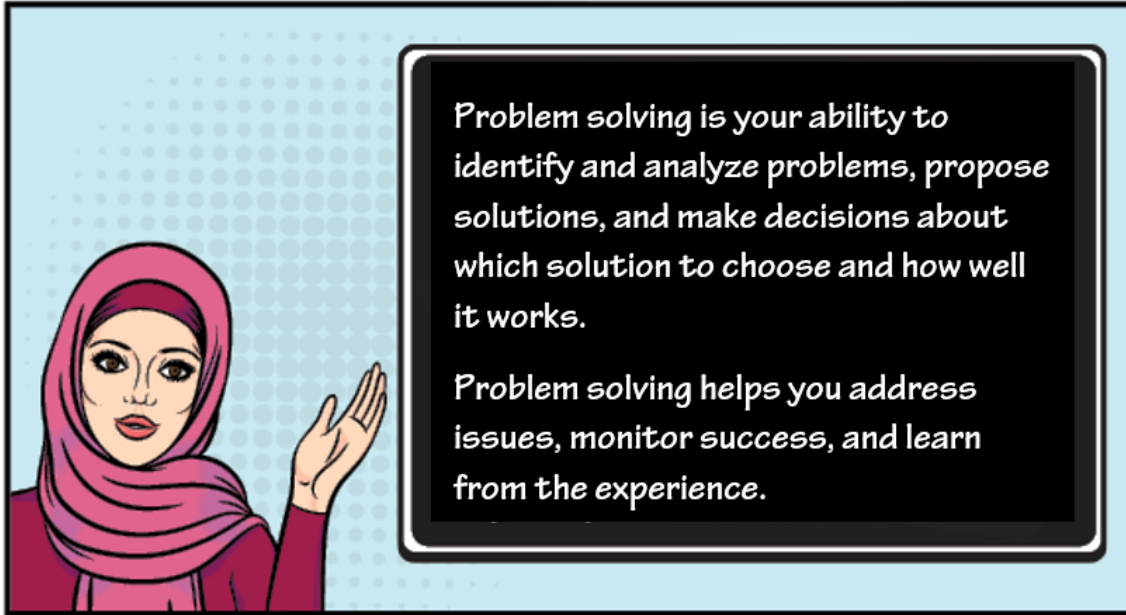
Task	Skills Used
Find information online to complete the set-up of a new iPhone.	
Apply online for a learner's license.	
Book concert tickets online.	
Help plan a fundraiser for your sports team.	
Make a plan to pay for the boots you want when they are more expensive than expected.	
Find an alternate way to travel when you can't use the car to go skiing.	
Text your coach to say you will be late for practice, and why, and how you will catch up on what you miss.	
Arrive at work early to learn the new customer payment system, from your boss.	NU,
Use an online transit schedule to get to your new job on time.	

Skills for Success	
ADA	Adaptability
COL	Collaboration
COM	Communication
CI	Creativity & Innovation
DIG	Digital
NU	Numeracy
PS	Problem Solving
RE	Reading
WR	Writing





## GETTING STARTED WITH PROBLEM SOLVING



### ABOUT PROBLEM SOLVING SKILLS

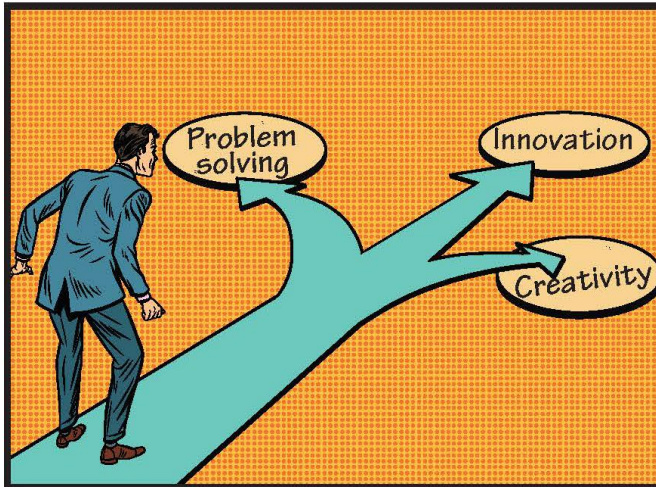
Every day you face new challenges at school or at work or in daily life. Some of these challenges require you to solve problems. Problem solving refers to all the steps in the process you use to identify and effectively address a challenge.

Problem solving can include things like thinking about different ways to complete a task and choosing the best solution or deciding what to do first when several activities are competing for your attention. The ability to think through, make decisions, and solve problems effectively improves the way you carry out tasks and activities and meet goals and deadlines at work or in other daily life situations. Strong problem-solving skills will help you gather the right information, identify solutions, and make useful decisions. As you learn from these experiences, you will strengthen your problem-solving skills and more quickly and effectively adapt to change.

Remember, problem solving is a process that takes time, and the first solution may not always be the best solution. Keep trying!



## PROBLEM SOLVING SKILLS MAKE A DIFFERENCE



### SKILLS FOR THE FUTURE

In the future, workers will rely much more on their thinking skills. Jobs will involve solving unstructured problems, analyzing information and generating innovative solutions.

Jobs will also change rapidly. Workers will need strong thinking skills to learn and adapt to change.

## YOU ARE USING YOUR PROBLEM SOLVING SKILLS WHEN YOU FOLLOW THIS PROCESS...



Identify and analyze a problem



Create multiple solutions



Choose the best solution



Implement the solution



Evaluate the results

**If the solution worked, congratulations! If not, try another.**



**NOW GIVE PROBLEM SOLVING A TRY**

Think about how you use your problem-solving skills every day – whether at a job or in your daily life. Complete the following table with an example of how you complete each of the steps in the problem-solving process either at work or in daily life: be as specific as you can. We’ve filled in examples from how a landscaper solves a problem, to help you get started.



<b>LEARNING CONTEXT</b>	<b>LANDSCAPER</b>	<b>YOU</b>
Recognize the problem	<i>Newly planted cedar trees are turning red.</i>	
Research possible causes	<i>Conduct internet research into cedar tree diseases and best conditions for growing. Discuss with co-workers. Inform supplier.</i>	
Select the best solution	<i>Decide trees need more water at root level.</i>	
Implement and evaluate the solution	<i>Install temporary irrigation system. Research says it will take 2 weeks to see the effect. Monitor then evaluate in 2 weeks.</i>	



## PROBLEM SOLVING SKILLS MAKE A DIFFERENCE

### AT WORK

When you are working, your problem-solving skills are an important factor in your success. Employers say that it is critical to productivity and business success to have employees with the ability to solve problems which includes being able to identify and analyze problems, propose solutions, and make decisions. Your safety, productivity, and opportunities to advance will all be impacted by your problem-solving skills.



### AT HOME

Our non-working life is impacted by our problem-solving skills too. Planning our days, and prioritizing things that are important to us, require us to use the skill. We identify and analyze problems, think through possible solutions and make decisions. Some of this is uncomplicated, because the problems are common life instances with which we are familiar. In other cases, it is much more complex, and the stakes are much higher. Do I get in the car with the friend I know has had a drink? Do I go to the party where there is a good chance there will be fights?

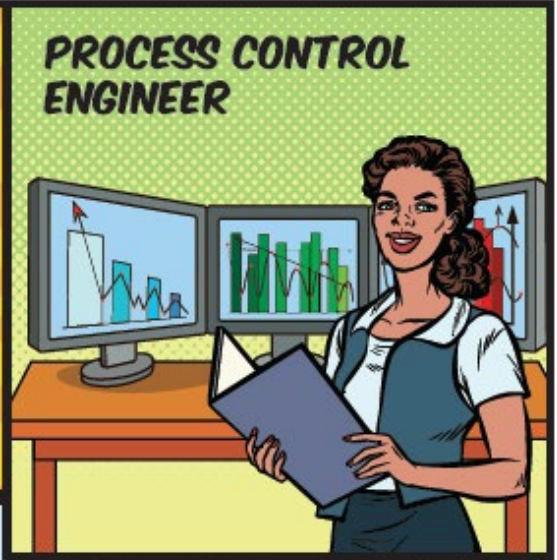
### MEASURING PROBLEM SOLVING SKILLS

Skill in problem solving is measured on three levels:

- Basic level: you can use your general knowledge and skills to process information, do routine troubleshooting, identify a solution, and confirm the problem is solved.
- Intermediate level: you can identify and analyze useful information, select a best option from multiple possibilities, and evaluate the effectiveness of your choice based on standard criteria.
- Advanced level: you can find information in diverse or unfamiliar sources or conduct your own research, and then synthesize and analyze complex information to find multiple options, select the best option and decide how to determine the effectiveness of the process and the solution or decision.



## COOL JOBS THAT USE PROBLEM SOLVING SKILLS





## A PROBLEM - SOLVING LESSON...



### IF AT FIRST YOU DON'T SUCCEED...

In 1909, the city of Vancouver got its first ambulance. Everyone was very excited. On its first trip with the city crew it ran over an American tourist at the corner of Pender and Granville. He became the first patient transported in the ambulance.



In 2022, Air Canada staff in Toronto had to ship one of the largest items the airline has ever loaded into a Boeing 767 – a 44-foot long IMAX screen weighing nearly 2,000 lbs – to Quito, Ecuador for a viewing of James Cameron’s “Avatar: The Way of Water”. Air Canada had never had to transport something so long in the 767s before. “Everyone on the team bought into the challenge and was excited to solve this puzzle,” Cargo Operations Engineering Manager, Mamun Ansari said. The screen was transported from Montreal to Toronto Pearson International Airport by truck, then they built a mock-up of the crate that would carry the screen using ABS pipes. The team used two loaders, placed at a “canted angle” to the 767, to lift the crate, while 20 Air Canada employees helped manoeuvre the crate into position inside the main deck. It took several hours to make sure the crate was properly secured for its flight. “There was a lot of excitement around this challenging shipment, but the teams all rose to the occasion and executed the plan.”



## PROBLEM SOLVING MAKES A DIFFERENCE

**THINK PROBLEM SOLVING ISN'T A BIG DEAL? THINK AGAIN!**



### **A PROBLEM SOLVING SKILLS DISASTER!**

Halifax, Nova Scotia was devastated on 6 December 1917 when two ships collided causing a massive explosion and one of the biggest disasters in Canadian history.

Check out the story below to find out how a lack of Skills for Success played a role in this tragedy.

### **THE FULL STORY**

Halifax, Nova Scotia was devastated on 6 December 1917 when two ships collided in the city's harbour, one of them a munitions ship loaded with explosives bound for the battlefields of the First World War. The result was the largest human-made explosion prior to the detonation of the first atomic bombs in 1945. Nearly 2,000 people died, another 9,000 were maimed or blinded, and more than 25,000 were left without adequate shelter.

The Halifax explosion would go down as the largest unintentional human-made explosion ever -- and that record still holds.

#### *Where do Skills for Success fit?*

A formal review identified a number of factors that lead to the disaster. Talking "Skills for Success" they included breakdowns in several components of problem solving including planning, decision making, and critical thinking.

*For a fascinating close-up look at the Halifax explosion go to the new CBC interactive found here <http://newsinteractives.cbc.ca/halifaxexplosion/>*

And in more recent news about the explosion, two Canadian filmmakers have created an Oscar nominated short film called The Flying Sailor about a sailor who was caught up in the explosion. <https://www.nfb.ca/distribution/film/flying-sailor-the>





## **PROBLEM SOLVING SKILLS IN ACTION!**



- 1.** Web designers and developers reorganize schedules and revise deadlines to help solve problems caused by later deliverables from consultants and co-workers. (Problem Solving Intermediate level)
- 2.** Automotive service technicians evaluate the quality of repairs. They consider the results of test drives and data from equipment, such as gas analyzers and scan tools. (Problem Solving Intermediate level)
- 3.** Computer network technicians replace hardware and upgrade software to solve problems. For example, they upgrade security monitoring and containment software when their computers and systems fail to detect viruses during test runs. (Problem Solving Basic level)
- 4.** To solve problems such as disruptions of work schedules, timelines, and budgets when specifications are changed after projects have already started, construction electricians assist in the development of new specifications and perform other work until projects are restarted. (Problem Solving Intermediate level)
- 5.** Gas fitters consult with police officers, fire fighters, repair crews and the company's emergency response team to solve problems, monitor success and learn from experience in the management of front-line responses of major gas leaks. (Problem Solving Intermediate level)



## **PROBLEM SOLVING SKILLS IN ACTION!**

- 6.** Kitchen helpers and line cooks substitute products to fill an order when there is a problem related to a shortage of the normal food item. (Problem Solving Basic level)
  
- 7.** Machinists solve problems by substituting materials or ordering what is needed when parts to complete a task are missing. They may also adjust their work schedule to reflect any delay. (Problem Solving Intermediate level)
  
- 8.** Steamfitters use information collected from internet research, operation manuals, other tradespeople, electrical engineers and manufacturers to solve problems when repairing difficult faults. (Problem Solving Intermediate level)
  
- 9.** Welders solve problems related to worksite hazards, by reading hazard assessment forms and Material Safety Data Sheets (MSDS), inspecting the worksite and speaking with safety officers, co-workers and supervisors. (Problem Solving Basic level)
  
- 10.** Web designers and developers deal with problems of non-compliance by co-workers and client staff by creating and sharing bulletins outlining the effects of non-compliance and restating institutional approval procedures for web sites. (Problem Solving Intermediate level)



**PROBLEM SOLVING SKILLS IN THE NEWS!**





Lost boy continued...

“I put them in Google and it gave me a pin of where he was roughly,” she said.

Neighbours and friends began searching the woods in the area of the coordinates. RCMP were called and ground search and rescue began suiting up.

Meanwhile, it was starting to get dark and Josh was hungry and cold. He made a shelter and ate some spruce buds. “The aftertaste was terrible,” he said.

Six hours after he left home, neighbour Tom Torak, who knows the area well, found Josh — thanks to those GPS coordinates.

The boy was cold and hungry, but OK. Josh said the experience won't stop him from exploring the outdoors, but he has learned a few things from the ordeal. Next time he'll take a friend and a fully charged phone.

Edited from: [cbc.ca/news/canada/nova-scotia/shelttext-google-lost-woods-1.3917013](http://cbc.ca/news/canada/nova-scotia/shelttext-google-lost-woods-1.3917013)



## PROBLEM SOLVING SKILLS BITS AND BITES

### PROBLEM SOLVED! HOW TO EAT A HAMBURGER WITHOUT MAKING A MESS.



According to a few researchers in Japan, there is a way to hold your hamburger so it doesn't spill everywhere when you eat it. The trick, they say, is to hold it with your thumbs and little fingers on the bottom and the rest of your fingers on top. The researchers did a lot of calculations and research to solve this problem!

<https://listverse.com/2020/01/08/8-problems-math-solved-for-us-no-one-asked-for/>



### NOT ALL PROBLEMS CAN BE SOLVED.

Turns out that there will never be a real Spiderman. Researchers discovered that geckos are the largest animal that will ever be able to scale a wall in the way Spiderman can. For a human to do so, their shoe size would either have to be a US 114, or 80% of their body's frontal area would need to stick to the surface. Conclusion – it's never going to happen, but at least we all know!

<https://listverse.com/2020/01/08/8-problems-math-solved-for-us-no-one-asked-for/>



**PROBLEM SOLVING SKILLS BITS AND BITES**



**WORLD FAMOUS DOODLER AND PROBLEM SOLVER**

Leonardo da Vinci was a famous Italian “Renaissance Man” who lived from April 1452 to May 1519. He is best known as the artist who created the world-renowned Mona Lisa painting.

But did you know that in addition to be a prolific creator da Vinci was also a great problem solver? Check out how he solved the problem of inaccurate clocks.

**FAMOUS PROBLEM SOLVER MAKES CLOCKS MORE ACCURATE.**

Clocks in da Vinci’s time were operated by weights like the ones you see in a cuckoo clock, and they were frequently inaccurate. Da Vinci solved the problem by creating a clock that used springs instead of weights. In a clock that used weights, as the minute or hour hand moved, it often moved forward or backwards a few seconds each time the weight resettled into place. Springs could retract more quickly than weights. By using springs instead of weights, da Vinci shaved a few seconds off the transition from minute-to-minute resulting in more accurate clocks.

<https://theleonardo.org/solving-problems-da-vinci-way/>

**TOP 10 REASONS WHY PEOPLE PROCRASTINATE...**

- 1.
- 2.
- 3.





## PROBLEM SOLVING SKILLS BITS AND BITES



### **GOT A PROBLEM? TRY DUCK TAPE!**

It might be the most versatile home repair item in the world. The extra sticky, plastic-coated tape was developed during WW11 as a water-resistant tool to be used in the field. Since then it's been used to mend everything from broken car windows to leaky pipes, to Matt Damon's living quarters in the movie "The Martian".

Check out these other uses...

### **CHECK OUT THESE OTHER PROBLEMS SOLVED WITH DUCT TAPE...**

1. **Remove pet hairs:** Make a DIY lint (and pet hair) remover by wrapping duct tape – sticky side out – around a paint roller.
2. **Wrap handles:** Duct tape wound around hammer handles and other tools gives you better grip.
3. **Waterproof shoes:** Cover the tops and sides of running shoes to protect them from puddles.
4. **Secure cords:** Duct tape cords in your home office to the floor to prevent tripping hazards.
5. **Fix a leak:** Repair garden hose leaks by wrapping the break with duct tape. It won't last forever, but it'll last long enough to water the garden.



**PROBLEM SOLVING SKILLS BITS AND BITES**

**IS IT DUCK TAPE OR DUCT TAPE?**

According to the 1st manufacturer, soldiers in WW11 dubbed the original green product “duck tape” because it forced moisture to flee “like water off a duck’s back.” Later, it was redesigned as the now familiar silver, and used to seal all kinds of things including heating “ducts”. So, technically, both are correct. To be safe, try “Duck brand duct tape.”



When it comes to finding the perfect one-of-a-kind dress or tuxedo for prom, there is a way to *make a statement*. How? By making your own Duck Tape® formalwear! Begun in 2000, the annual Duck® brand Stuck at Prom® Scholarship Contest continues to reward high school students in the U.S. and Canada for their imagination and creative expression. Students who make their own special-event attire and accessories from Duck Tape® can help offset the ever-increasing costs of college with the opportunity to win the more than \$ 50,000 in scholarships made possible by Duck® brand.

Source: <http://stuckatprom.com/>



**PROBLEM SOLVED! GRADUATION ON A BUDGET!**

Looking to find the perfect one-of-a-kind graduation dress or tuxedo? We’ve got the solution. Make your own Duck Tape graduation attire!

Find out how you can stand out in the crowd...and win a scholarship by creating a duck tape graduation outfit masterpiece.

Image source: [www.stuckatprom.com](http://www.stuckatprom.com)





## PROBLEM SOLVING SKILLS BITS AND BITES



### **MINECRAFT...SO MUCH MORE THAN A FUN GAME!**

Minecraft is a sandbox game that includes a virtual land where players can create their own worlds and experiences. But the game is much more than a fun adventure; players must also use their problem solving skills to identify and analyze problems, propose solutions, and make decisions. Read below to find out how some people are using Minecraft to build their problem solving skills.

In the real life version of Ottawa, Parliament Hill looms over the downtown, the Rideau Canal bisects the city, and the Senators take to the Canadian Tire Centre ice way out in Kanata. In Minecraft Ottawa, none of that is set in stone. [GeoOttaWow, unveiled in 2016](#), lets Minecraft players explore and refashion Ottawa's streets, houses, train tracks, as well as major buildings like Parliament Hill and City Hall. (FYI: Minecraft is a sandbox game. It's open ended, without a specific goal or constraining guidelines, allowing players to create their own experiences. Many users see Minecraft as a great way to teach math, science, problem solving, collaboration and history.)

"Now you have kids who are experimenting with basic principles of municipal planning. So, if they think, for instance, that an outdoor stadium should be somewhere, they can build one — and then they can look at what impact it would have on that area, and what the concerns would be," said Charles Duffett Ottawa's former chief information officer.

Other places in the real world have made themselves available on Minecraft, perhaps most notably the entire country of Denmark, which can be torn down and built back up according to players' whims and desires. The United Nations Block by Block program uses Minecraft to engage poor communities in urban design. It's been used in successful architecture projects in places from Haiti to Nairobi.

Edited from: <http://www.cbc.ca/news/canada/ottawa/ottawa-minecraft-1.3395885>



## PROBLEM SOLVING SKILLS BITS AND BITES

Problem-solving skills are an important component of creative thinking and innovation. Check out the story below about how Indigenous artists are challenging conformity and the status quo.



Image Sources: <http://boarderx.wag.ca/> (top left artist Roger Crait, top right artist Mark Igloiorite, bottom right artist Mason Mashon, bottom left artist Steven Thomas Davies, middle left artist Jordan Bennett)

Boarder X (pronounced boarder “crossings”), first presented at the Winnipeg Art Gallery, presents contemporary work by artists from Indigenous nations across Canada who surf, skate, and snowboard. The exhibition reveals how these practices are vehicles to challenge conformity and status quo, as well as demonstrate knowledge and preformed relationships with the land. Whether reading the urban terrain, making a cement jungle a playground, riding the natural contours of white immovable mountains, or shredding the ever-changing waves, it’s not about controlling land and water, but being humbled by their power.

Sources:

<http://boarderx.wag.ca/>

<https://www.wag.ca/event/boarder-x/>

<https://edmontonjournal.com/entertainment/books/wildlife-indigenous-art-in-the-most-freewheeling-of-contexts-at-agas-boarder-x>



**PUT YOUR SKILLS FOR SUCCESS  
TO WORK!**

**GIVE YOUR SKILLS A WORKOUT. SKILLS, LIKE  
MUSCLES, GET STRONGER THE MORE WE  
USE THEM. BUILD YOUR SFS MUSCLES BY  
WORKING TO COMPLETE THE WORKOUTS.  
YOU CAN CHECK YOUR ANSWERS IN THE  
ANSWER KEY.**

# PROBLEM SOLVING

Use the table of contents to navigate through this workbook. Track your progress by putting a checkmark beside each topic you complete.

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## 1. DON'T BRING ME PROBLEMS. BRING ME SOLUTIONS!

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### NOTE:

*This workbook is designed to help with practical problems you might encounter at school, at work, or in the community. These are problems like a bike breaking down or managing more than one deadline.*

*Sometimes problems are very personal and very complicated. In those cases, you need more than a 5-Step process; you need friends and other people to help you sort things out. For those kinds of problems, asking for help is a logical problem-solving strategy.*

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Both the statements below are true.

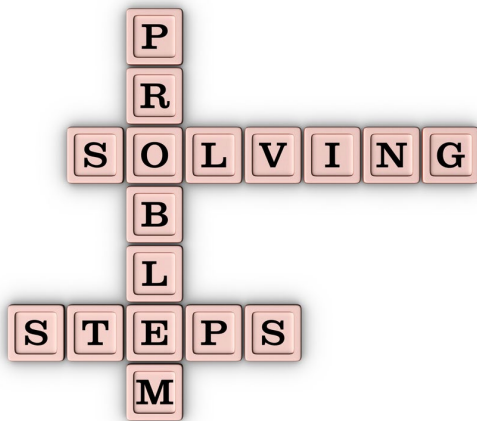
- Problems require solutions.
- Some problems are more difficult to solve than others.

What is also true is that employers value employees who bring them solutions to problems, not just problems.



Being an effective problem solver is a skill that can be learned. What helps with that learning is having a process to follow and opportunities to practice. The 5-step problem solving approach used in this workbook is a process you can practice that will help you to build your problem-solving skills.

The details of each of the steps listed below can be found on the next page. After you review the details, use the steps to help you solve the problems that follow.



## 5 Steps to Problem Solving

Step 1: Identify and Analyze the Problem

Step 2: Create Multiple Solutions

Step 3: Choose the Best Solution

Step 4: Implement the Solution

Step 5: Evaluate the Solution



## PROBLEM SOLVING STEPS - DETAIL

Step 1: Identify and analyze the problem.

Before you rush to come up with a solution, make sure you are clear about what the problem is.

Using the 5Ws as a guide can help you research and collect relevant information, to help you define the problem. After answering the 5Ws, think critically about the problem then write a short description of it to help you see any patterns or connections.

1. Who – who is involved or affected?
2. What – briefly, what seems to be the problem?
3. When – when did the problem occur – day/date/time/season etc.?
4. Where – in what location?
5. Why – do you think the problem occurred?

Step 2: Create multiple solutions.

How might the problem be solved?

- Be innovative and creative – anything goes.
- Brainstorm as many solutions as you can and write them down.
- Try not to decide if the solutions will work or not as you are brainstorming.



Step 3: Choose the best solution.

Now assess the solutions you thought of and choose the one you think is most likely to solve the problem. Think critically about the possible consequences of each solution. One way to assess them is to write down the pros and cons of each.



- Pros are the advantages: e.g., the solution would guarantee we could get the work done on time.
- Cons are the disadvantages: e.g., the solution would require extra work for everyone on weekends.

Step 4: Implement the solution.

- use the solution to try to solve the problem.

Step 5: Evaluate the solution.

Did the solution work? Great!

- If not, return to Step 3, and choose a different solution.
- If the second of your solution ideas doesn't work, go back to Step 1, and redefine the problem.
- Provide opportunities for feedback from others.



Step 1 in the problem-solving process is your chance to describe the problem in detail. It is also a good place to start to build your skills.

## WHERE'S JOSH?

Remember the news story about Josh? He was the lost 11-year-old who used his problem-solving and digital skills to ensure his rescue, when he got lost.

Josh Hopkins strolled into the woods near his family's home in Shelburne, N.S., with a pocketknife, and his phone. An hour into his hike, he realized he was lost. "I started to panic," he said. "I sat down for a minute, calmed down and I moved into this big clearing and sent my mom my coordinates."

He had just two per cent battery power left on his phone when he Googled his GPS coordinates and sent them in a text message to his mother. She had no idea what the jumble of numbers meant. "I put them in Google, and it gave me a pin of where he was roughly," she said.



Coordinates  
51.047984 -114.054675



It started to get dark, and Josh was hungry and cold.

Six hours after he left home, neighbour Tom Torak, who knows the area well, found Josh — thanks to those GPS coordinates. The boy was cold and hungry, but OK. Josh said the experience won't stop him from exploring the outdoors, but he has learned a few things from the ordeal. Next time he'll take a friend and a fully charged phone.

1.

Using the information in the story above, complete the tables to identify the problem from Josh's point of view and from his mother's point of view, by completing Step 1 of the problem-solving process.

*(problem solving Basic level)*

Josh





Who
What
When
Where
Why

*Josh's problem is*

**Josh's mother**

Who
What
When
Where
Why

*Josh's mother's problem is*



Now choose a practical problem that you are facing, or that you faced in the past.

**2.**

It might be something related to schoolwork or to a part time job, or it could be a challenge you are facing with one of the extra-curricular things you do. For example, your soccer and hockey practices overlap once every week, or the band you play in isn't interested in trying any of your original music.

Thinking about the problem, use the Step 1 questions to identify the information that is, or was, available to you and then write a brief description.

*(problem solving Basic level)*

Who
What
When
Where
Why

*The problem I chose is*



## Learning the Rest of the Steps in the Process

1.

After you review the story below, answer the five questions in the table that follows. Then write briefly what you think the problem is.  
*(problem solving Basic level)*

### The Story

Karim, Joseph, and Grant live close to the community basketball courts. They love to go to the courts to shoot hoops as often as they possibly can. The courts are used by a lot of the kids in the neighbourhood and the mesh on the hoops is gone. In some cases, it was torn off by kids hanging from it and in other cases it fell apart from being out in the weather all the time. The community can't afford to replace the mesh this year. Not having the mesh really bothers Joseph because he is just learning, and he finds it harder to aim the ball without having more than the hoop to shoot at. The guys are planning to spend Saturday morning shooting hoops and Karim and Grant are trying to think of something they can put on the hoops that will be helpful to Joseph.

### Step 1- Identify and analyze the Problem

Who?
What?
When?
Where?
Why?

*The problem is*



## Step 2 – Create Multiple Solutions

**2.**

Write down, in the Solutions column of the table below, all the solutions you can think of to fix the hoops. Don't be afraid to be creative and innovative! Try to think of at least three solutions.

*(problem solving Basic level)*

Solutions	Pros	Cons

## Step 3 – Choose the Best Solution.

**3.**

Decide on the pros and cons for each solution you came up with. In the table above, write the pros and cons in the appropriate columns. Next, review your pros and cons and write your choice for the best solution in the space below.

*(problem solving Basic level)*

Best Solution:

*Turn to the next page*



## Step 4 – Implement the Solution

4.

In this case, as you can see, a solution has been implemented. Go directly to Step 5 to evaluate the solution.



<http://obviousfun.com/logical-examples-of-solving-everyday-problems-13/>

5.

## Step 5 – Evaluate the Solution

Look at the picture that shows how one group solved the problem of mesh missing from the hoops. Do you think the solution in the picture solves the problem? Is this a solution you thought might work? In the space for evaluation comments, explain how you think the solution does or does not solve the problem you identified at the beginning of this workout.

*(problem solving Basic level)*

Evaluation Comments:



Follow the same process as in the previous workout to try to solve one more problem.

1. After you review the story below, answer the five questions in the table that follows. Then write briefly what you think the problem is.  
(*problem solving Basic level*)

### The Story

Marisa and Katrina have just moved into their first apartment. It turns out the oven, stove and microwave are not working. The landlord has said he will fix the problem, but not until the morning. It is too late to go out for something to eat and they are starving! They have four pieces of pizza left from lunch and they are trying to figure out how they could possibly heat them up so they don't have to eat them cold. They have various small appliances around that they each brought for the move, but none that are actually meant for any sort of cooking tasks.

### Step 1- Identify and Analyze the Problem

Who?
What?
When?
Where?
Why?

*The problem is*



## Step 2 – Create Multiple Solutions

**2.**

Write down, in the Solutions column of the table, all the solutions you can think of to heat up the pizza. Be creative and innovative! Try to think of at least three solutions.  
*(problem solving Basic level)*

Solutions	Pros	Cons

## Step 3 - Choose the Best Solution

**3.**

Decide on the pros and cons for each solution you came up with. In the table above, write the pros and cons in the appropriate columns. Review your pros and cons and write your choice for the best solution in the space below.  
*(problem solving Basic level)*

Best Solution:

*Turn to the next page*



## Step 4 – Implement the Solution

**4.**

In this case, as you can see, a solution has been implemented. Go directly to Step 5 to evaluate the solution.



<http://thechive.com/2014/04/11/these-problem-solvers-know-what-theyre-doing-34-photos/>

**5.**

## Step 5 – Evaluate the Solution.

Look at the picture that shows how Marisa and Katrina solved the problem of cold pizza. Do you think the solution in the picture solves the problem? Is this a solution you thought might work? In the space for evaluation comments, explain how you think the solution does or does not solve the problem you identified at the beginning of this workout.

*(problem solving Basic level)*

Evaluation Comments:





## Your Turn to Try All the Steps

We can all think of problems we come across in our daily lives. For example: you ride your bike to school each day and there is no bike path along the busiest section of your ride or the dog ate your homework or you want to participate in a camping trip with your outdoor education group but you don't have all the equipment you need or you have two assignments due on the same day or you are scheduled to cover a shift at work for your supervisor on the same night that there is a party you would like to attend.

1. Think of a problem that you face and would like to try to solve. It could be the problem you used to practice Step 1 or a different problem from school, work, a sports team you might play on or something you and your friends have discussed as a problem. Use the problem-solving process to generate a solution. Begin by answering the five questions and then writing a brief description of the problem.  
*(problem solving Basic level)*

### Step 1- Identify and Analyze the Problem

Who?
What?
When?
Where?
Why?

*The problem is*



## Step 2 – Create Multiple Solutions

**2.**

Write down, in the Solutions column, all the solutions you can think of for your problem. Be creative and innovative! Try to think of at least three solutions.

*(problem solving Basic level)*

Solutions	Pros	Cons

## Step 3 - Choose the Best Solution.

**3.**

Decide on the pros and cons for each solution you came up with. In the table above, write the pros and cons in the appropriate columns. Review your pros and cons and write your chosen solution in the space below.

*(problem solving Basic level)*

Best Solution:

*I think the best solution to the problem I described is*



**4.** Step 4 – Implement the Solution  
If you are able to, implement the solution to the problem you chose. Then go to Step 5 to evaluate your solution.

**5.** Step 5 – Evaluate the Solution  
If you were able to implement your chosen solution, evaluate the results by answering the questions.

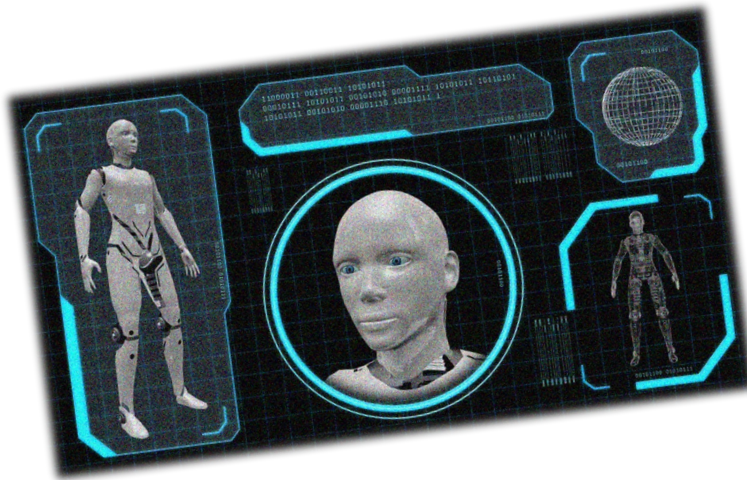
- Did the solution solve the problem?
- Did the solution work the way you thought it would?
- If you were faced with the same problem again, would you use the same solution or try a different one? Why or why not?

*(problem solving Basic level)*

Evaluation Comments:



Problem-solving skills are not only needed when something goes wrong. Sometimes solving problems is a regular and constant part of the job.



Video game designers and graphic illustrators, for example, constantly have to bring animated characters to life. 2D and 3D animators figure out how to add personality, facial expressions, movement, and physical looks to characters, based on the story in which the characters will appear. They also consider the impact of the speed of the animation. In gaming, they have to consider the limitations of the gaming platform.

This type of work requires regularly completing Intermediate level problem-solving tasks.

Dane Olds, a video game character designer with Bethesda Games Studios, explains what that means in the article below.

This job is made for anyone who loves art and video games — but be willing to hustle, Olds says. “This is a highly competitive industry.” An extensive knowledge of computers and familiarity with programs like Photoshop, ZBrush (a digital sculpting tool), 3Ds Max (a 3-D modeling program) and Substance Painter (3-D painting software) also helps.

Character artists also must understand the characters — and the worlds — they’re designing for. “They immerse themselves in the setting”, Olds says, “and their art has to make sense in the world that’s being created.”

Source: [https://www.washingtonost.com/express/wp/2016/11/15/steal-this-job-video-game-character-designer/?utm\\_term=27c41bc8dc27](https://www.washingtonost.com/express/wp/2016/11/15/steal-this-job-video-game-character-designer/?utm_term=27c41bc8dc27)



1.

Now it's your turn to try out the job of game character designer.

Imagine you are a graphics designer, and you have to design two new characters for a game.

The only direction you have is that the client wants the characters to be quite different from each other. The client's broad guidelines are as follows:

- Character 1: someone/thing from the ancient past. Think "Lord of the Rings" or "King Arthur"
- Character 2: someone/thing from the future. Think "Star Wars" or "Avatar"

On the next page is a table. The column on the left contains some of the criteria designers must consider when solving the problem of creating a character or characters that will be a fit with a specific game. Complete the table to think through your basic ideas for each of the characters described above.

*(problem solving Intermediate level, digital Intermediate level)*

The problem-solving process you practiced earlier works here too.

### Identify and Analyze the Problem:

You need to design two new characters that are based on the client's guidelines and will be a good fit with the overall game.

### Create Multiple Solutions:

Prepare to complete the table by brainstorming a list of all the ideas you can think up for how the characters might be when they are developed.

### Choose the Best Solution:

Choose what you believe are the best ideas you came up with.

### Implement the Solution:

Complete the table to give you your preliminary design plan.

### Evaluate the Solution:

After completing the table, use the descriptors in the table to sketch each of your characters.

*You may choose to sketch by hand or to use your digital skills by using a design or drawing program.*

When the sketches are complete, review by asking yourself the following questions.

1. Am I able to include all the features I included in the table?
2. Are there any features that do not work?
3. Can I alter them to make them work or do I need to find different features?



## CHARACTER DESIGN PLANNING

CRITERIA	CHARACTER # 1: Inspired by “Lord of the Rings” or “King Arthur”	CHARACTER #2: Inspired by “Star Wars” or “Avatar”
Human, animal, robot, other?		
Gender?		
Age?		
Body colour?		
Body size?		
Height?		
Hair?		



Language(s) spoken?		
Voice sounds like?		
Name?		
Family history?		
Origin?		
Special skills?		
Main purpose in life?		
Add you own:		

*Use the blank pages that follow to complete your sketches, if sketching by hand.*











## 2. DECISIONS DECISIONS

Decision making refers to making a choice among options. Choosing the best solution for a particular problem is an important part of effective problem solving and you may need to make several decisions to solve one problem. People make decisions all the time. They might be easy or familiar decisions, like what to have for lunch, which party to go to on the weekend, whether to go to the party or to stay in and study for finals, or whether or not to spend some of our savings on something we want (like the sunglasses everyone is wearing) or on something we need, (like new winter boots). Familiar decisions are often easy to make because we have made them before. It's useful to keep in mind that making a decision creates a result which may be positive or negative, and the results of a familiar decision may not be the same every time. Staying in to study instead of going out partying could have a very positive result if you get a passing grade or the mark you need to get into a program you want to take. Going out and not studying could have a negative result if you do not pass your final.



In addition to how familiar you are with the issue, other factors that can make decisions more or less difficult include whether you have enough background information to make an informed decision, if there is information you can review related to similar decisions that have been made, whether there is a process or decision tree you can use, whether the decision can be reversed, and what the consequences of the decision might be.

Decision making is part of problem solving and is also made up of a number of steps including:

1. Identify the decision that needs to be made.
2. Create a list of possible options.
3. Determine the possible results of choosing each option and make the decision.
4. Implement the decision.
5. Evaluate the results of the decision.



What follows are two scenarios you can use to practice making decisions, using the steps in the process.

1.

You and two other people your age recently started summer jobs as carpenters' helpers on a construction site. You have all been given safety training and the whole crew attends a safety meeting each day before starting work. At the meeting everyone is reminded about the importance of workplace safety. The other helpers don't seem to take the training or meetings seriously. They often do things that are risky for themselves and, potentially, for others on the crew. You have tried reminding them about what you learned in safety training, but they just ignore you. Should you report them to someone?  
*(problem solving Basic level)*



Identify the decision that needs to be made. (A clear and brief description of the problem.)

Create a list of possible options. (Sometimes it is clear there are just two options to choose from. Other times, there may be multiple options to consider.)

Determine the possible results of choosing each option and make the decision. (Think through the likely results for each option you identified. A pros and cons list for each can help.) Write your list and final decision here.



Implement the decision.

Evaluate the results of the decision. (What happened once the decision was made? Was the outcome what you expected? Would you make the same decision again or would you choose a different option?)

## 2.

You have been working hard at your part time job and picking up as many extra shifts as you can, because you would like to buy a car within the next year. Your good friend has invited you to come with her family on vacation to a place you have always wanted to go. However, your parents are not prepared to pay for your trip, and it would cost about half of what you have saved for the car.

*(problem solving Basic level)*

Identify the decision that needs to be made.

Create a list of possible options.

Determine the possible results of choosing each option and make the decision. Write your list and final decision here.



Implement the decision.

Evaluate the results of the decision.

**3.**

### BONUS QUESTION

You decided to go on the trip with your friend. You have estimated that it will cost you \$450.00. You make \$11.00 per hour, after taxes, at your job. To the nearest hour, how many hours will you need to work to cover the cost of your trip? How many four-hour shifts will it take?




*(numeracy Basic level)*

**1.**

In the table that follows are brief descriptions of three people who are trying to decide on the form of transportation that best fits their needs. The options they have to choose from are car, skateboard or transit. Read each description and decide which mode of transport best suits each person's needs.

*(problem solving Basic and Intermediate levels)*

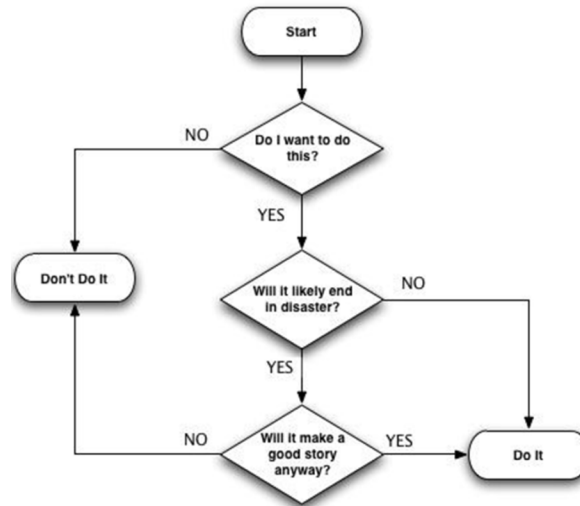


Person	Location	Routine	Finances	Best choice
<p><b>Anton</b> Single dad to a 2-year-old.</p> 	<p>Lives in the city. Close to major roadways and bus stops.</p>	<p>Works regular hours Monday to Friday. Has a childcare worker who comes into his home.</p>	<p>Not a lot of extra money. Trying to save for a down payment on a condo.</p>	
<p><b>Jen</b> Tech college student. Lives with one roommate. Roommate has a car.</p>	<p>Lives downtown, 10 blocks from the campus.</p> 	<p>Classes Monday to Saturday at different hours. Part time job Tuesday and Thursday evenings in her neighbourhood.</p>	<p>Part time job helps a little but tight budget. Student loans Doesn't want any more debt than is necessary.</p>	
<p><b>Perry</b> Shift worker in a skateboard manufacturing plant.</p> 	<p>Lives outside of the city. Bus service is only available in peak hours.</p>	<p>Has permanent employment. Shifts vary week to week. Takes extra shifts when they are available.</p>	<p>Finances are pretty steady.</p>	

When you need to make a decision, there are tools you can use to help you. Two useful tools are a pros and cons list, with which you are already familiar, and a decision tree.



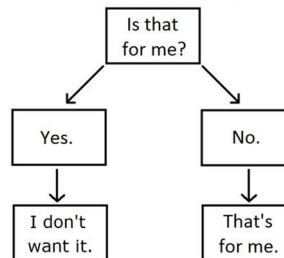
One common version of a decision tree is a type of flowchart. It is useful because it gives a picture of the options available in the decision to be made and prompts you to ask questions that will help you to make a considered decision. Decision trees may be simple or complex.



<http://www.nerve.com/web/internet-meme-hall-of-fame/internet-meme-hall-of-fame-flowcharts>

**MY DECISION-MAKING SKILLS CLOSELY RESEMBLE THOSE OF A SQUIRREL CROSSING THE STREET.**

My Cat's Decision-Making Tree.

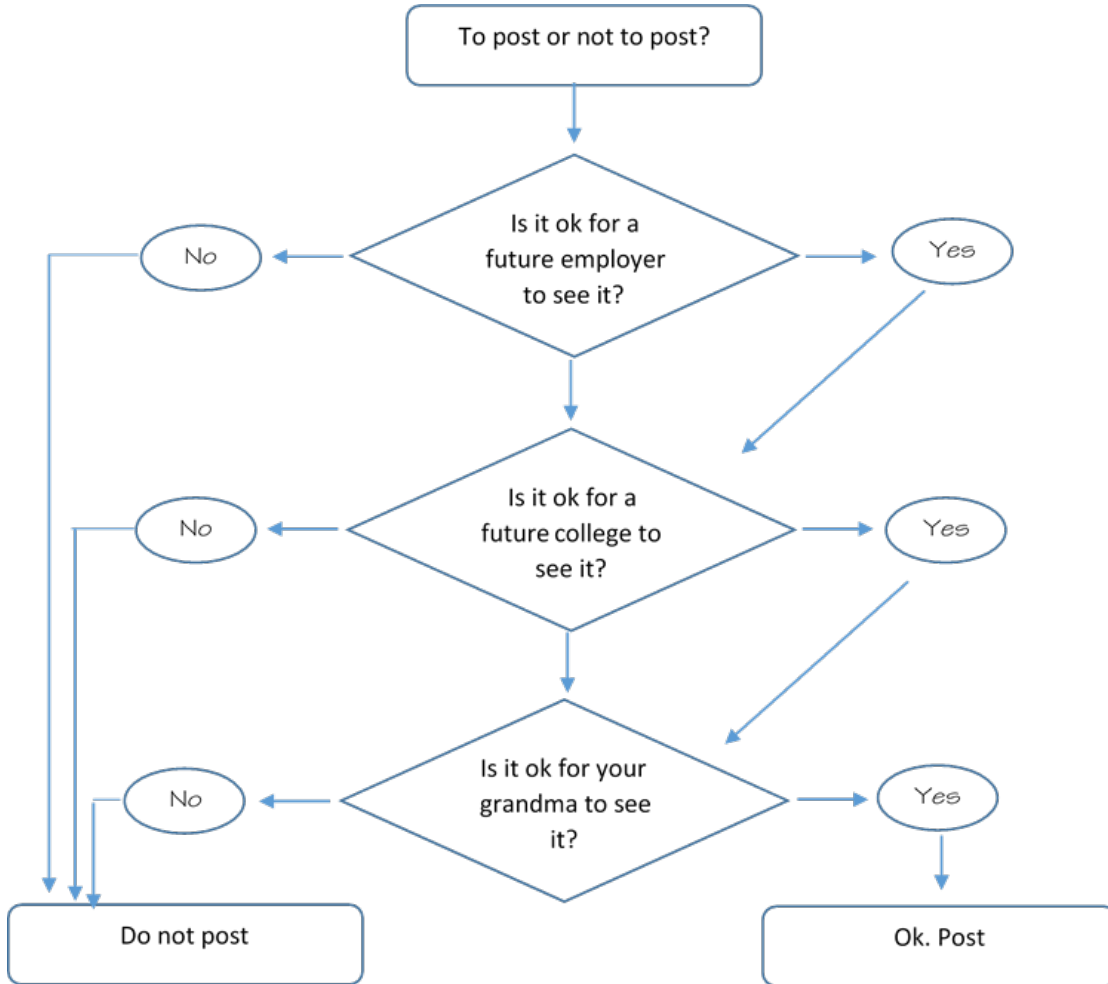


<https://whyevolutionistrue.wordpress.com/2012/10/13/two-animal-lolz/flow-chart/>

According to Cal Newport who wrote, *Deep Work: Rules for Focussed Success in a Distracted World*, “if you want to succeed at your job, it’s time to unplug and step away from your social media.” For many people, that’s not as easy as it sounds, but it is important to be sure that you are the one in control of your presence on social media and that you make the decisions about what you post and what you don’t post.

Below is a decision tree focussed on making a decision about whether or not to post on social media.





1.

Pick one of the social media accounts you use most often. Use the decision tree to review at least four posts you have made recently. Decide whether you should leave the post up or delete it. The post can be a comment, photo, or link: anything that clearly came from you. Remember to check not only your original post, but what has happened to it since. What comments or links are now associated with the post? Are you comfortable with them? Have there been pictures added to the comments on the post? Do they meet the criteria in your decision tree? Record your results in the table on the next page.  
*(problem solving Intermediate level)*

Post 1

---



Decision:

---

Reason:

---

Post 2

---

Decision:

---

Reason:

---

Post 3

---

Decision:

---

Reason:

---

Post 4

---

Decision:

---

Reason:

---



You and your companions have just survived the crash of a small plane. Both the pilot and co-pilot were badly injured in the crash and are not able to advise or help. It is mid-January, and you are in Northern Saskatchewan. The daily temperature is 25 below zero, and the nighttime temperature is 40 below zero. There is snow on the ground, and the countryside is wooded with several creeks criss-crossing the area. You know the nearest town is 20 kilometres away. You are all dressed in city clothes appropriate for an interview.

Edited from: <http://www.crystalspringsfoundation.org/>

Original source: <http://wilderdom.com/games/descriptions/SurvivalScenarios.html>

**1.** Below and on the next page, is a list of 11 items that you have been able to salvage from the plane. Your task is to rank the items, in order of importance for your survival, by writing the number in the *Rank* column, where 1 is the most useful and 11 is least useful. Below each item, write a brief description of how it could be used.

*(problem solving Advanced level)*

Item	Rank
A ball of steel wool Use:	
A small axe Use:	
Can of Crisco shortening Use:	
Newspapers (one per person) Use:	
Cigarette lighter (without fluid) Use:	
Extra shirt and pants for each survivor Use:	



20 x 20 ft. piece of heavy-duty canvas Use:	
A sectional air map made of plastic Use:	
One quart of 100-proof whiskey Use:	
A compass Use:	
Family-size chocolate bars Use:	



## 3. PLANNING: A TOOL FOR PROBLEM PREVENTION

Being an effective problem solver is important for school, work, and in your everyday life. But do you know what's even more important than solving problems? Preventing them in the first place! While not every problem can be prevented, taking time to plan your work or project before you begin can help you avoid many problems. It can also help you to have a solution ready to go if a problem does happen.

The ability to plan, like all components of problem solving, can be built with practice. A good place to start is by getting an idea of how well you plan now. Complete the quiz below to find out.

Instructions: Read each planning description and then give it a rating, based on how well you think you can do it. Then total your score to see how you are doing overall.

- 4 = I do this very well. I am consistent and successful at it.
- 3 = I am good at this. With some practice I can be pretty good.
- 2 = I am getting better, but still need to work on this some more.
- 1 = I am not particularly good at this – yet.

Planning Description: I can...	Rating
Accurately estimate time and effort required to complete a task.	
Identify and organize resources needed to complete a task.	
Organize personal time to ensure I carry out responsibilities.	
Identify tasks that are most important.	
Arrange tasks in a logical order.	
Use a "to do" list, task plan, or similar planning device to keep track of tasks and deadlines.	
Total Score	/24



Much of the time, workers do similar tasks every day. Through this repetition, effective workers get to be efficient at planning how they will get their work done.

Aircraft mechanics, for example, regularly need to do certain tasks such as analyze instrument readings, exchange information with flight schedulers, document repairs and make corrections. They need to be able to organize their workday to make sure they can complete work tasks that are assigned to them. They also need to be able to reorganize their job tasks if an aircraft unexpectedly needs to be repaired and inspected.

Planning work tasks before you start helps to improve efficiency and can help to improve safety. Each of the three questions below asks you to order the work activities described, in the order you think would be most efficient. Basically, you are creating a to-do list that provides a logical order in which the tasks should be completed.

In each case there is more than one logical way to order the tasks. Briefly explain why you chose the order in your list.

**1.**

Heavy Equipment Technicians maintain, repair, and overhaul heavy vehicles and industrial equipment, such as internal combustion engines and components, ground-engaging equipment including rippers and backhoes, and towed earth-moving equipment, commonly called scrapers. Write the task numbers in the order you would put them on a to-do list. Explain your choices in no more than two sentences.

*(problem solving Intermediate level)*

Test bulldozer

1. Check bulldozers for faults or malfunctions
2. Adjust equipment or repair defective parts
3. Clear bulldozer for use
4. Diagnose fault or malfunction

Order: \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_.

Explanation:



**2.**

Millwrights install, maintain, repair, and troubleshoot stationary industrial machinery, as well as mechanical equipment in factories, production plants and recreational facilities. Write the task numbers in the order you would put them on a to-do list. Explain your choices.

*(problem solving Intermediate level)*



1. Adjust defects or irregularities
2. Clean, lubricate and perform routine maintenance
3. Inspect lathe for defects
4. Operate lathe

Order: \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_.

Explanation:



### 3.

Bakers are responsible for making breads, bagels, pretzels, cakes, muffins, cookies and pastries as well as chocolate and candy, sugar sculptures and icing. They may prepare many different baked goods or specialize in just one. Write the task numbers in the order you would put them on a to-do list. Explain your choices.

*(problem solving Basic level)*

1. Bake mixed batter
2. Adjust frosting colour
3. Prepare batter and frosting for cake
4. Frost baked cake

Order: \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_.

Explanation:



One great planning tool is a flowchart. A flowchart is a type of diagram that represents a process or workflow, showing the steps as boxes of various kinds, and their order by connecting them with arrows. Flowcharts are designed to be easy to read. They are also intended to show an entire process “at a glance.” When you have tasks to accomplish, creating a flowchart can help you to plan the steps and keep you aware of the points where you will need to make decisions, to proceed.

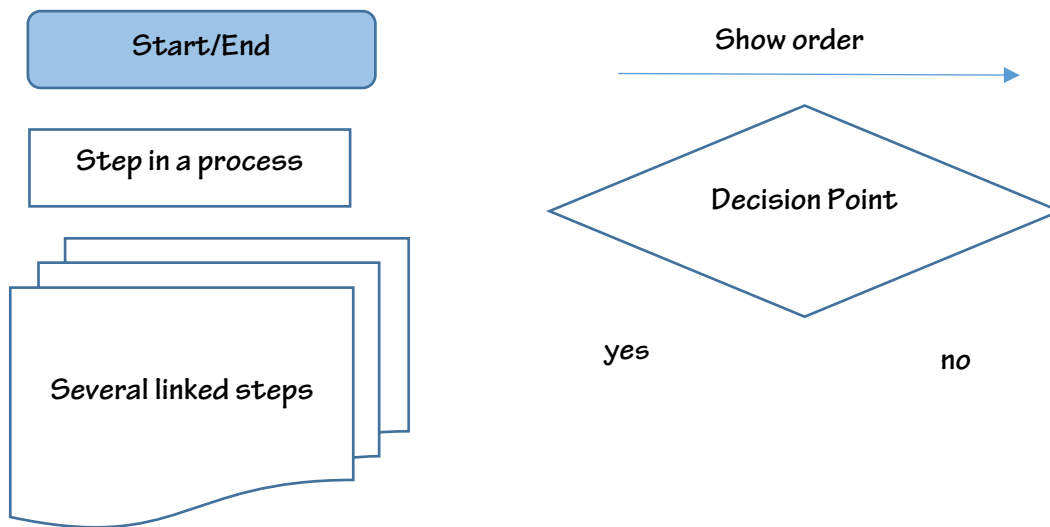


Only point-form text should be included in a flowchart. The idea is to reduce the amount of information that needs to be read, by using the flowchart to show the plan or process.

Flowchart hints and tips:

Below are the most common shapes used in traditional flowcharts.

- The rounded rectangle means the start or end of a process.
- The single rectangle is a step in a process.
- The multiple rectangles with the curved bottom indicate that there are several things to be done at this part of a process.
- Arrows are used to link it all together in the correct order.
- Diamonds are decision points. The decision to be made is written in the diamond and then a yes and no option is written on either side of the diamond, to show what happens in each case.
- The text in the shapes is very brief; just the main idea is included.
- Some flowcharts also use colour as part of the design.



Note that this is the formal way to complete a flowchart that is recognized across most industries. Some workplaces may use a more relaxed format where, for example, the box shapes are all the same.

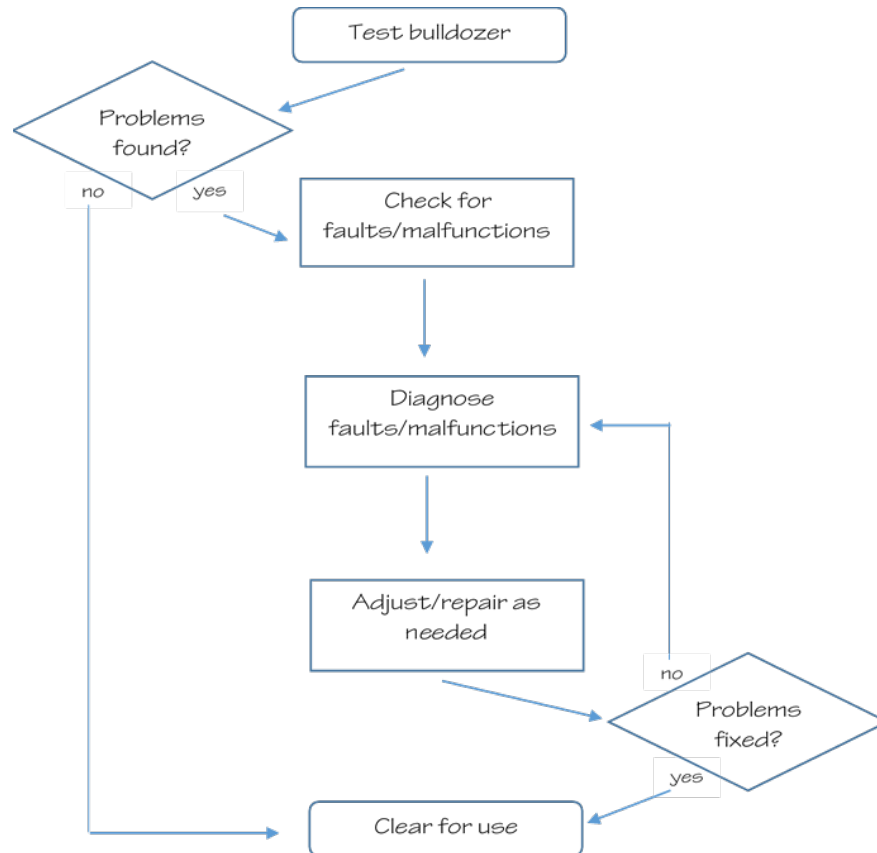
Earlier in this Workout, you created to-do lists that listed tasks in order of when they should be completed. Now you will turn one of those to-do lists into a flowchart, including the points at which you will need to make decisions.

As an example, one order for the Heavy Equipment Technician's work steps is shown below. It is followed by a flowchart of the steps and the decision point(s).





1. Test bulldozer
2. Check bulldozers for faults or malfunctions
3. Diagnose fault or malfunction
4. Adjust equipment or repair defective parts
5. Clear bulldozer for use



Your turn.

1.

Choose either the Millwright or the Baker and create a flowchart of the steps in the task they completed.

*(problem solving Advanced level)*

# Problem Solving



Your Flowchart Here



## Welding Safety Considerations

### Fire and Explosions

The welding arc creates extreme temperatures resulting in fire and explosion hazards, if safe practices are not followed. The real danger is not from the arc; it is from the intense heat near the arc and the heat, sparks and spatter created by the arc. Spatter can reach up to 10.7m away from the welding space.

### Steps to Safety

To prevent fires, before starting to weld, inspect the workspace. Look for any flammable materials and remove them from the area. Flammable materials may be liquid, solid, or gas. Locate the fire alarms and extinguishers and check each extinguisher's gauge to make sure it is full. If an extinguisher is not available or full, be sure to have access to fire hoses, sand buckets or other equipment that douses fire and know the location of the nearest fire exit.

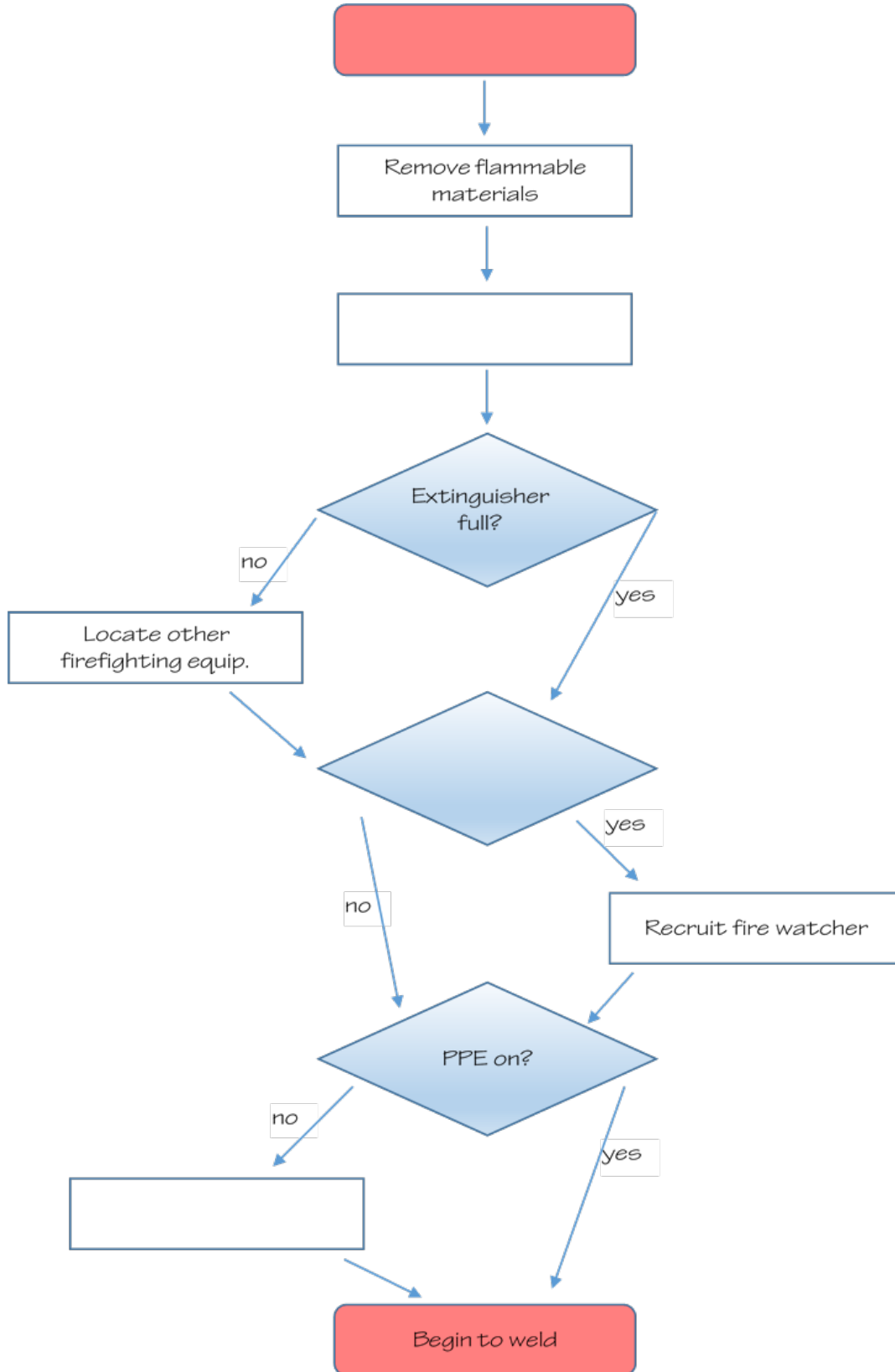
If welding within 10.5 m of flammable materials, have a fire watcher nearby to keep track of sparks. Remain in the work area for at least 30 minutes after welding, to be sure there are no smoldering fires. Put a fire-resistant material, such as a piece of sheet metal or fire-resistant blanket, over any flammable materials within the work area, if you can't remove them.

For personal safety, be sure to wear the right personal protective equipment (PPE). This includes, but is not limited to, a welding helmet, flame-resistant clothing, boots and gloves.

1.

On the next page is a partially completed flowchart showing the planning steps described in the article above that should be taken before beginning to weld. Use the information in the article to help you complete the flowchart

*(problem solving Basic level, reading Intermediate level)*





## Making A Move

When there are several tasks to be completed, a well-organized to-do list can help you to sort the tasks into an order that will result in a successful outcome and avoid obvious problems..

Moving, whether moving to a new home, a residence at a post-secondary institution, or moving a workplace, is an event that requires lots of planning. A well-planned move is much less disruptive than one that is not.

In the case of moving a workplace, planning is important also to minimizing the amount of revenue lost due to lost worktime during the move. Planning helps keep the move organized and minimizes disruption.

1.

On the next page is a list titled *Workplace Move To-Do List*. The list has seven sections and a total of 15 individual tasks that need to be completed. The tasks are not written in the right spaces and/or sections of the list and so they are not in a logical order. Review the list and then number the tasks in the order in which you think they should be completed. One has been done for you as an example.

*(problem solving Basic level)*



WORKPLACE MOVE TO-DO LIST	
TASK	#
<i>Two Months Before Move Date</i>	
Keep packing.	
Set up mail forwarding at the post office.	
Advertise items to be sold or given away.	
Change insurance and registration on any company-owned vehicles.	
<i>One Month Before</i>	
Get packing materials.	
Send out change of address information to customers.	
Choose a moving company.	
<i>Two Weeks Before</i>	
Start packing.	
Rest!	
Stay with movers while they load the truck.	
<i>One Week Before</i>	
Sort what will be moved and what will be sold or disposed of.	
Final packing.	13
<i>Day Before</i>	
Find out where moving truck can park and if need to reserve any space at the new location, for the day of the move.	
<i>Moving Day</i>	
Arrange to transfer utilities.	
<i>End of Moving Day</i>	
Keep packing.	



## The Bigger Picture

Every day in workplaces and other large organizations across Canada, problems are solved, decisions made, and work tasks planned. Some of these activities are small and routine, but others have enormous impact on whether the workplace or organization will struggle, change direction, or become a success. The results of those solutions, decisions, and plans becomes the history of the organization and can be demonstrated in a timeline.

Control MFG. is a Canadian company known for building high end, custom skateboards, and longboards. It has been in operation for over 25 years and the boards are often described as being Canada's finest. Over the years the company has been in operation there have been many changes made, as the business grew and the owners solved problems, made decisions, and planned the steps necessary to help the company to keep growing.

1.

On the next page is a list of eight of the main changes implemented by the owners. They are not in chronological order. To the right of the list is a list are eight dates. Read the descriptions of the changes and then draw a line from each date to the innovation you think took place on that date.

Hints:

- Look for keywords and phrases like AGAIN, or MOVED TO ANOTHER LEVEL to help you decide.
- Pay attention to the numbers, especially when they are referring to the manufacturing spaces.

*(problem solving Basic level)*



CHANGE	DATE
Control Skateboards MFG and 5-0 Skatepark is expanded to 7000 square feet.	1993
A dynamic online sales system is created, to cater to as many new customers as possible, and sales move up to another level.	1995
At 18, Carl Savard spent most of his time looking into ways to build his own skateboards. ... With the help of his family, Carl upgrades his machinery and sets up his first wood shop in his family's garage.	1996
Control expands again adding 7000 square feet, making it a 14 000 square foot factory with 15 employees.	1997
In early 1996 when skateboarding was in its full expansion stage, Carl and his family move the woodshop to an industrial area in a large enough space to facilitate the expansion of his company and the first ever indoor skatepark located on the south shore of Quebec City.	2001
The skatepark is closed to concentrate on manufacturing skateboards. The extra space is used to house innovative machinery such as a numerical 5 axes CNC tooling robot that bring the skateboard manufacturing process to the next level.	2004
Control Skateboard Inc. is founded.	2006
The woodshop is moved into the most advanced setup to date, in a 6800 square foot location, with top-of-the-line computer-controlled router, robotic machinery, high precision molds and 55 presses.	2012





## 4. DO THE ANALYSIS

Critically analyzing problems helps you make logical decisions that can more clearly be explained to others. Critical thinking is an important component of problem solving. In national surveys and consultations, Canadian employers consistently identify critical thinking as one of the top skills they are looking for. Using critical thinking lets you take apart complex problems so you can clearly understand all the components.

You know critical thinking doesn't just mean "being critical" and pointing out what's wrong with everything. But do you know what it does mean?

Critical thinking:

- is about making judgements based on reasoning,
- involves assessing information and ideas based on *criteria*,
  - *Criteria* are standards against which it is possible to evaluate. (A single criteria is a criterion).
- is frequently a component of problem solving and decision making, and
- considers related consequences and includes thinking about what happens after you solve the problem or make the decision.

Critical thinking improves the quality of your problem solving by making sure you have considered what may happen after you implement a particular solution.

According to the Government of Canada, critical thinking is one of the top three skills needed by hairstylists. Match the component of critical thinking to the correct tasks that hairstylists need to complete.

Component	Task
1. Hairstylists use critical thinking to make judgements about...	A. whether the client's hair will be damaged, which could perhaps lose them business.
2. They assess...	B. whether particular hairstyles will look good on clients.



3. To decide on hairstyle options, the <i>criteria</i> they consider includes...	C. the condition of a client's hair and scalp and determine whether any treatments are required and, if so, which treatment is appropriate.
4. The <i>consequences</i> they consider include...	D. bone structure, facial shape, hair growth patterns, ear and nose size, skin tone and eye colour.

Answer: 1B, 2C, 3D, 4A

Read the advertisement below and then answer the questions that follow.

### The Image Institute

Upon completion of our training, students enter the industry feeling motivated, excited and confident in their knowledge and skills.

The students work with clients from the very first week of the program ensuring that they are relaxed and comfortable with them and are better able to understand their needs.

The Image Institute has been in business for 25 years and during that time our instructors have won more than 45 awards for our training methods and innovative approach to healthy hair design.

Our graduates have a notable competitive edge over graduates from other programs, allowing for an effortless transition to a spa or salon.

Call us to learn more. We look forward to welcoming you to the institute.

1.

How does the Image Institute ensure its graduates know how to work with clients to determine the best style or cut?

*(problem solving Basic level, reading Basic level)*



2.

What does the ad imply the Image Institute does better than other esthetics training schools?

*(problem solving Basic level, reading Basic level)*

3.

What specific criterion does the ad imply makes the Image Institute the best choice for high quality training?

*(problem solving Basic level, reading Basic level)*

The purpose of advertising is to sell products. There are regulations and guidelines in place to try to keep companies honest in what they promise or claim, about their products. However, as they are still trying to get you to buy something, it is important to think critically about what they are offering. The ability to do that is sometimes referred to as having “media literacy.”

4.

The Image Institute promises learners several things. You are interested in taking the kind of training the institute offers, but you would like to determine whether the information in their advertisement is accurate. List three ways you could check the accuracy of the information.

*(problem solving Basic level,)*

1.

2.

3.



Inspectors, in public and environmental health and occupational health and safety (OH&S), judge the safety of workplaces and the severity of workplace hazards, to determine whether they meet occupational health and safety regulations.

For example, occupational health and safety officers conduct planned and unplanned inspections.



1.

The [Workplace Inspection Report](#) was completed by an OH&S officer, after a safety inspection of a workplace. There are five items marked with an X, indicating they were unsatisfactory.

On the page following the report, there is a table with three columns:

Item requiring attention	Consequences of not correcting situation	Required action
--------------------------	--	-----------------

Each item marked with an X in the [Workplace Inspection Report](#) has been written in the *Item requiring attention* column in the table.

Your job is to:

1. Write a brief description of what you think the consequences could be of not correcting the situation.
2. Write, briefly, what action you think is needed to address the problem.



*(problem solving Intermediate level, writing Basic level)*



## Workplace Inspection Report

Completed by: M Horgan

Date completed: April 27, 2023

Indicate with an X items that require attention.

Walkways free of obstacles		Floor coverings in good condition	
Fire exits unobstructed		Hazardous materials properly labeled	X
Fire extinguishers accessible and in working order		Unexpired Material Safety Data Sheets available	X
Employees trained in use of extinguishers, in last 12 months	X	No slip or trip hazards present	
Fire doors in good mechanical condition		Hazardous materials properly stored	
First aid kit complete and accessible	X	Employees aware of emergency procedures	
Tool storage cabinets secured to walls	X	Employees aware of security procedures	





Item requiring attention	Consequences of not correcting situation	Required action (and by who)
<i>Employees trained in use of extinguishers, in last 12 months</i>		
<i>First aid kit complete and accessible</i>		
<i>Tool storage cabinets secured to walls</i>		
<i>Hazardous materials properly labeled</i>		
<i>Unexpired Material Safety Data Sheets available</i>		



1.

Below is a story about Minha, a job seeker who is a graphic artist. Following Minha's story is a job posting for a position as a graphic artist. Minha is not sure whether she should apply for the job.

1. Review Minha's story and the job posting.
2. In the story, underline Minha's criteria for a job.
3. In the job posting, circle each of the criteria described by the employer.

*(problem solving Basic level, reading Basic level)*

## Minha's Story

Minha is interested in finding an entry-level position as a graphic artist. She completed a one-year diploma at an arts academy with a specialty in drawing and a two-year program in multi-media design, at a technical college.

She has done some part-time work with a couple of small design firms and has received good feedback on her artistic and technical skills and attention to detail. Her customer service skills have been pointed out as something she needs to work on, mainly because she is very shy and has difficulty talking to people she doesn't know well.

Minha would like a job that is full time, pays well enough that she can afford an apartment on her own, and that does not require her to have too much contact with customers or to work overtime. She needs a job soon.



## GRAPHIC ARTIST / PREPRESS TECHNICIAN POSITION

**Extra Great Graphic Communications** – Vancouver, B.C.

**Email:** [xt\\_raG\\_HR@xt\\_raG.bc.ca](mailto:xt_raG_HR@xt_raG.bc.ca)

Expanding international award-winning graphic arts/printing firm has an immediate opening for an experienced individual to join our elite team of quality-minded professionals. Position requires applicants to be highly motivated with superior attention to detail.

Send us your resume, including experience, wage history, wage requirement, and a statement about how you can contribute to our company and why you want this position.

### Position Details

Minimum 2 years experience in prepress and/or printing; in-depth knowledge of Adobe Creative Cloud; ability to pre-flight and correct client furnished files; and create outstanding design/artwork for high-end award-winning printing projects. Exceptional customer service skills, ability to understand and clearly communicate complex specifications, meet tight deadlines while multi-tasking and possesses excellent written and verbal communication skills.

**Job Type:** Full time

**Required Experience:** 2 years on Prepress.





## 2.

Make brief notes in response to the guiding questions listed below.  
*(problem solving Basic level)*

Guiding Questions

What is the situation?

What is happening?

Why is it important?

## 3.

Now complete the table below and answer the question that follows.  
*(problem solving Basic level)*

Minah is using critical thinking to make a decision that will help her solve the problem of ...	
She is assessing...	
The criteria she is using include...	



The consequences of what Minah is considering include...

What action do you think Minah should take?



## 5. BUILD A BETTER MOUSETRAP! NEW IDEAS. BETTER SOLUTIONS.

There's a saying that goes, "Build a better mousetrap and the world will beat a path to your door". The ideas behind it are that people are always looking for something that solves a real problem (like mice in the house) and for a new and improved way to fix the problem (like a better mousetrap).

Often problems are solved by inventing or by innovating. Do you know the difference?

### Invent

To think up and design something that has not existed before.

Did you know?

- In 1911, Joseph Coyle of B.C. invented the egg carton, solving the messy problem of how to get eggs home from the store.
- In the 1980s, Rachel Zimmerman, a 12-year-old in Ontario, invented a software program that made it possible for people who couldn't speak, because of disabilities or injuries, to communicate.

### Innovate

To make changes to something that already exists.

Innovation has been described as daring to do things smarter, faster, and better, and as what leads to new processes and products.

Did you know?

- In 2013 Meghan Shea developed a new water filter that uses crushed seeds from a tree. The filter is cheap, easy to make and removes 99% of E. coli bacteria from water.

<http://www.popularmechanics.com/technology/g1315/10-innovators-who-changed-the-world-in-2013/?slide=4>

Inventors and innovators can be any age and can be inventing and innovating for any reason.

Things they have in common though are that they have really good problem-solving skills, and they are using them to make something better.



Some inventions are the result of an inventor wanting to solve a big problem like climate change or reducing the number of car accidents in a country each year. But the inventor knows that, to make a difference, an invention needs to focus on a smaller, specific problem that will have an impact on the big problem and that people will be able to relate to.

1.

Compare the information in the articles on the next two pages. Use the table below to help you keep track of the information. In each case, the big problem has been identified for you. You will need to determine the specific problem the inventor is trying to solve.

*(problem solving Intermediate level, reading Basic level)*

	Story 1	Story 2
Inventor(s) name		
Age(s)		
Location		
Invention name(s)		
Big problem(s) trying to solve	<i>Reduce energy consumption</i>	<i>Improve, and reduce cost of, access to the internet for the developing world</i>
Specific problem(s) trying to solve		
Awards won		
Age at time of first invention		
Education		



## Article 1

### *Inventor hopes to get flashlight creation into production this year.*

A 19-year-old inventor from B.C., whose creations include a flashlight that runs off the heat of the human hand and a mug that uses heat from a drink to charge a phone, is among several Canadians named to the 2017 Forbes magazine's annual 30 under 30 lists. Ann Makosinski, a second year student at the University of British Columbia, made the Forbes list in the energy category.

Starting when she was seven years old Makosinski would make things with a hot glue gun and stuff she found at home. "I'd take garbage and I'd glue them together and create inventions." She told CBC news. "Of course, they never worked, but the idea of taking the resources around me and piecing them together to make something better or to solve a problem was kind of there from the start.

Makosinski said her e-Drink mug is currently a functioning prototype and she hopes once she gets her Hollow Flashlight into production this year that she will have more time to work on the mug with some professional electrical engineers.

Something that catches people by surprise, she said, is that she is studying English literature at university. "I think it is important to have a balance of science and arts and to be able to be accessible in either field." she said. It's just that has interested me, but I still do all my science and other business outside school."

The young inventor's creations had already earned her accolades, including being named to Time's 30 under 30 list and a win in her age group at the Google Science Fair, both in 2013. She has also appeared on Jimmy Fallon's late-night television show and has delivered five TEDx talks.

Source: <http://www.cbc.ca/news/business/ann-makosinski-forbes-list-1.3922424>



### Article 2

#### 'Sketchy' high school Wi-Fi inspires teens to design new app

Look out Silicon Valley. Some tech-savvy teenagers from Fall River, N.S., have designed a cellphone app that can help you get essential information from the web — even if you don't have access to wireless internet or a data plan on your phone.

Users of the OffNet app have to have a cellphone that's capable of sending and receiving text messages. Then they simply use the app to text a question to a remote server. The server does the internet search for them and sends a text back with the information they're looking for. The app can only be used to access websites that are primarily text-based, such as weather, directions, news, definitions, Wikipedia or Twitter.

App developer Zack Rooney, 17, said he and his classmate, Cooper Gagnon, were inspired to design the app after getting frustrated with the "very sketchy Wi-Fi" available at Lockview High School in Fall River.

"You're in biology class trying to look up, you know, what mitosis is," Rooney said, and "lo and behold, the website's blocked or the Wi-Fi cut out on you." "It's really annoying," he added. So, the teens decided to create a solution that could "give us the information we want, whenever we want it."

They signed up for a week-long hackathon competition at Saint Mary's University in Halifax and ended up winning with their OffNet design. Rooney was 15 years old at the time. ...

Ultimately, the goal is not to make money from the app, but to make the world a better place, Rooney said. Rooney ... gave the example of an Ecuadorian farmer with a cellphone — but no data or Wi-Fi — who might want to know what the weather will be like tomorrow.

This app would allow him to do that, he said. The plan is to perfect the app and then disseminate it in the developing world. "We want to be that bridge to the next billion users on the internet," Rooney said.

Source: <http://www.cbc.ca/beta/news/canada/nova-scotia/offnet-app-developer-cellphones-wi-fi-data-fall-river-teens-text-messages-1.3951894>



The e-Drink Mug, Hollow Flashlight and OffNet inventions are all good ideas focussed on solving real-world problems.

Imagine you are an investor with enough money to fund only one of the inventions, for large-scale manufacturing.

- Which invention would you choose?
- How would you make your decision?

One way to decide would be to develop a list of criteria against which you can compare each of the inventions. A common list of criteria helps to ensure the same factors are considered for each invention. As the decision maker, you can create your own list of the criteria you consider to be important.

**2.**

In the table below, one criterion has been entered. Identify at least three more criteria you would use to make your decision and write them in the criteria column in the table below.

Put a ✓ in the column below the name of the invention that you think best meets each criterion.

The invention that receives the most ✓ is the one you would invest in.

*(problem solving Intermediate level)*

Criteria ↓	e-Drink Mug	Hollow Flashlight	OffNet
1. Would benefit the most people			
2.			
3.			
4.			
5.			
TOTAL			



## THE MUSEUM OF FAILURE

Invention and innovation are creative ways to solve problems and strong problem-solving skills are important to every employer. But for every successful idea, there are hundreds that don't make it into production or don't last very long if they do.



Museum of Failure <https://www.youtube.com/watch?v=PfdBTsyrqal>

These are some common reasons new products fail.

- Product is intended to solve a problem that doesn't really exist
- Product only solves a problem a few people have so it is very expensive
- Product is wasteful
- Too many similar products already exist
- Companies don't understand their existing consumers

1.

Did you know there is an entire museum dedicated to product failures? At the Museum of Failure, there are many interesting products that didn't make it.

In a way, the museum itself is an example of a business facing a problem and having to find a solution. They first tried to exist as a brick-and-mortar permanent building but couldn't make it a success, so they had to innovate. The museum now operates on the internet and in small traveling, pop-up exhibits.

Four of the museum's products are listed below. For each product:




- decide why you think it failed.
- suggest one change that you think might have made the product more successful.

If you haven't heard of the product, you can do some online research to help you find the answers.





The first one is done for you as an example.  
(*problem solving Intermediate level, digital Basic level*)

Invention	Why it failed	Change that might have helped
<p>Bic for Her</p> 	<p><i>The company didn't understand their customers and thought more women would buy pens if they were pink. But, woman don't need special pink pens because men and woman use pens the same way.</i></p>	<p><i>Just make a better quality, cheaper pen that everyone can use.</i></p>
<p>New Coke</p> 		
<p>Harley Davidson Motorcycle Perfume</p> 		



<p>Heinz Purple and Green Ketchup</p> 		
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## THE INVENTION CHALLENGE

Have you ever thought of a product you would like to invent; something that would help to solve a problem that you think is important? Want to give it a try?

Below is a set of steps you can follow, to help you plan your own unique product and to describe it to potential partners, investors, and users.

*(problem solving Intermediate level, writing Basic level)*

1. Identify a big problem that you would like to solve (for example, *climate change*) and write it down.
  
2. Think of another problem, related to the big one, but small enough that a product you might invent could have an impact. It might be something within your home, community, school, or job. Write down what the problem is. Try to describe it in just one phrase or sentence, to keep it clear and manageable. (For example, *people in my community use many plastic bags each day for their garbage*).
  
3. Put your problem-solving skills to work to envision a product that could help to solve the problem you identified. (For example, *compostable garbage bags*).



Name your product and draw a model of what you think it will look like.

4.

5.

Create a list describing the people you think will use the product you invent. Some questions to consider are:

- How old are they?
- Where do they live?
- What sorts of jobs do they have if they are of working age?
- Why do you think they would be interested in trying your solution to the problem?

What other questions might you ask?

Describe your intended users here.

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- 6.** Think of at least three questions you will need to find answers to, to be able to develop your product. List the questions and, in the Information Source column, ideas for where you might start your research to find the answers.

Question	Information Source
1.	
2.	
3.	

- 7.** Think about and write down how you will test your product once it is developed.

- 8.** Write a short description of your product that you can share with the potential users – and that is likely to make them want to try it.

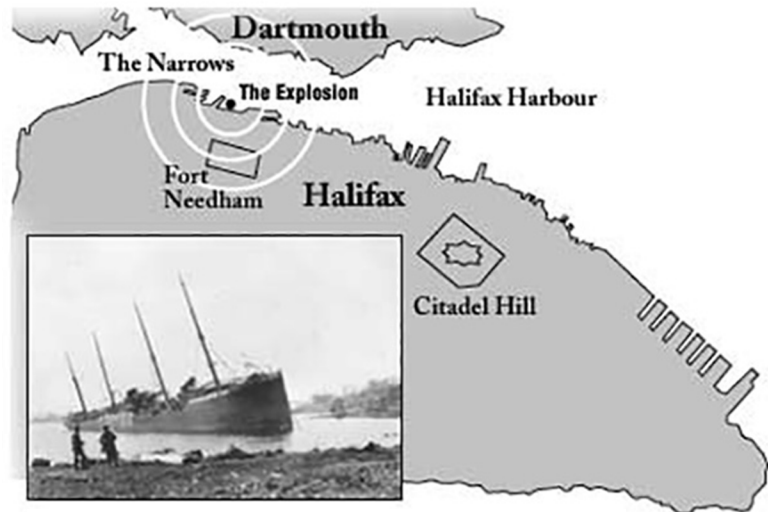


## 6. LARGEST HUMAN-MADE EXPLOSION! NOW THAT'S A PROBLEM!

### The Story

On December 6, 1917, a Norwegian ship called the SS Imo arrived in Halifax Harbour to pick up relief supplies for war victims in Belgium. After loading the supplies, they could not leave the harbour for two days because, the coal they needed for fuel was late. When they did leave, the SS Imo had to navigate the narrow channel out of the harbour, which was crowded with other ships. In the outgoing lane of the channel, the Imo picked up speed, to pass slower ships.

In the incoming lane was the Mont-Blanc, a ship loaded with explosives, on its way to France. The Mont-Blanc had the right of way, but there was nowhere for the SS Imo to go, because the channel was too narrow. As a last attempt to avoid a collision, the Mont-Blanc made a hard left and the Imo reversed its engines. If only one ship had made a move, things might have worked out alright. Instead, the ships rubbed against one another causing a fire to start.



<https://novascotiaincredible.com/halifax-explosion/>

The Mont-Blanc didn't stand a chance. Neither did anyone else in the harbour or surrounding city.

The Halifax explosion would go down as the largest unintentional human-made explosion ever - and that record still holds!

A formal review, completed after the Halifax explosion, identified a number of factors that led to the disaster. Looking at the explosion in terms of Skills for Success, it looks like better problem-solving skills might have prevented the disaster or at least reduced its impact.



1.

You have learned that making decisions, planning, and critical thinking are all important components in effective problem solving. Using the information in the article, identify at least one error made related to each of the three components. Write a brief description of each error, in the table below.

*(problem solving Intermediate level, reading Basic level)*

<p>Planning</p>	
<p>Critical Thinking</p>	
<p>Decision Making</p>	



## 7. PLAN B

Planning is a key component of successful problem solving. The Air Canada team that had to solve the problem of how to ship the Imax screen without damaging it not only planned on paper, but they also built a mock-up of the crate they believed they would need to carry the screen, using light weight ABS pipe, to make sure their solution would work.

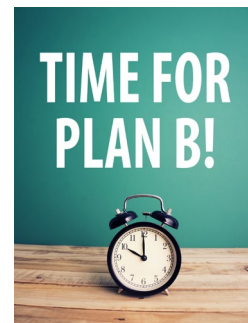
The solution did work, and the screen was successfully transported but not every problem is solved on the first try.

### PLAN A AND PLAN B

When you make a plan, you set out what you want to happen: that's your *Plan A*. But sometimes Plan A doesn't go the way you want so it's useful to have a *Plan B*.

Plan B is your backup plan; also called a contingency plan. Plan B is used only if Plan A doesn't work. But that doesn't mean you should wait until Plan A fails before thinking about Plan B.

Here are some examples.



If your <b>Goal</b> is...	Your <b>Plan A</b> is...	But what if...	Your <b>Plan B</b> is...
Get to school for 8 AM	Catch the bus at 7:45	The 7:45 is late?	Catch an earlier bus, in future
Go to a web design workshop after school and be home in time to help make dinner	Catch a ride to the workshop and back with a friend who has a car	The friend is not coming back right after the workshop?	Confirm the fastest transit route back. Let your brother know he should start the cooking and you will finish it.
Make some extra money for a gift	Ask your boss for extra hours	The boss says no?	Plan something that doesn't cost money



Drive to work	Pass your driving test	You fail the test?	Find the most efficient transit route and prepare to take test again
To be completely prepared for your first day as an apprentice electrician	Arrive early with a complete set of all the tools I might need	There are tools the electricians use at this job that you don't have yet?	Ensure your phone is charged. Use it to take photos of, and record any details you need, to locate tools to add to your kit.

1.

Under Plan A, write 3 things you want to do this week. Under *But what if* write something that might prevent you from completing Plan A. Under Plan B, write 1 or 2 steps you could take so that things still work out. The first one is done as an example.

*(problem solving Intermediate level)*

Plan A	But what if	Plan B
<i>Finish report due Friday</i>	<i>Your laptop crashes?</i>	<i>Make sure you have a backup copy of the report. See if you can borrow a laptop to finish on time.</i>






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## **LEMONS TO LEMONADE**

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Ever heard the expression, “when life gives you lemons make lemonade”? The idea is that when you get something sour (or bad), like lemons, you turn it around and make something sweet (or good) out of it, like lemonade.

While it isn’t always easy, being able to turn a bad situation into a good one is a very useful skill.

Turning a negative situation into a positive one is also a skill that requires being able to come up with a new plan – and sometimes very quickly.

Here are some tips for making the best of things. Ask yourself:

- What can I do right now to make this better?
- What can I do in the future, so this doesn’t happen again?
- What part of this can I control?
- What part of this can I not control?

Recognizing what you can and cannot control in any situation is an important step in making difficult situations in your work or personal life easier to manage.



For each of the following “lemon situations”, think of 2 things you can plan to do to make the situation better. Write your ideas in the space provided.

*(problem solving Intermediate level)*

1.

You’ve been given a brief assignment in your volunteer job that you don’t like.

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2.

You’re working on a group project with people you don’t like.

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3.

You were late with your part of a group assignment and now no one wants to work with you.

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4.

You don’t think you have enough experience to succeed at the part time job you have been offered.

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5.

You've been late twice, and your boss says if it happens again, you're fired.

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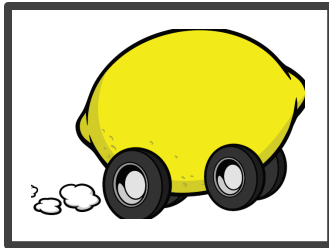
6.

On Tuesday you got assignments for 3 different classes, all are due on Monday, but you already have plans to go camping for the weekend.

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Did You Know: The word "lemon" is applied to many things that are defective or useless? A car is a lemon and so are other electrical or mechanical products that don't work right from the time you buy them. Why "lemon"? It's that bitter, sour taste left in your mouth after you buy something that's no good or get ripped off.

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## **PHOTOGRAPHER CONTINGENCY PLAN**

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Photographers use their creative abilities and their digital skills to do their jobs. Great photographers also use the planning and critical thinking components of problem solving to make backup plans to help them get the right shot or to keep a shoot on track if things go wrong.

Read the article below adapted from *photographytalk.com* and answer the questions that follow.

*(problem solving Intermediate level, reading Intermediate level)*



Why risk losing everything you've worked so hard for by not having a contingency plan in case of an emergency? Let's explore a few things you need to have in your contingency plan.

Back up your data. Do not trust your images to a single hard drive. You need a backup, then you need a backup of your backup. The rule of thumb here is to follow the 3-2-1 rule: have three copies of everything - a primary and two backups; have your files on two types of storage devices - a hard drive and a CD, for example, and, have one copy of your files off-site - such as Dropbox or another cloud-based storage provider.

Identify a backup person. If something were to happen to you and you can't make a shoot you're booked for, you need to have a list of trustworthy photographers you can contact to take your place. Talk with them ahead of time about being on your emergency list and get their contact information.

Include details in your Plan B. Having backup photographers is a good start when creating a contingency plan, but you also need to give them enough details that they can do your job in an emergency. Things like location of your equipment and files, client contact information, calendar of appointments, a list of second shooters, assistants, and vendors that you've worked with in the past, and a list of all your logins and passwords, including for your website and email. Obviously, your backup person needs to be someone you really trust.

Lastly, be sure that your clients understand that you've got a backup plan in place. Part of prepping your clients should be giving them assurances that your emergency photographers are every bit as talented as you. If possible, you might even give a quick introduction to your emergency contacts - just their name or business name, how long they've been a photographer, and a couple of reasons why you trust them with your business.

Adapted from: <https://www.photographytalk.com/photography-articles/6592-how-to-plan-for-an-emergency-your-photography-contingency-plan>

What do each of the numbers in the 3-2-1 Plan refer to?

1.

3 =

---

2 =

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1 =

---

What two groups of people need to know you have a contingency plan?

2.

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What one person should you share your passwords with?

3.

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Use the information in this scenario to complete a backup plan. A plan template can be found on the next page.

You have been hired to do the photography for a CD release for the band Bucks Beyond. The work includes photos of the artist for the cover art, media releases, and for their electronic press kit (EPK). You are also to work the release event to provide still photos. Another photographer will do the video. The release is to take place at 830 Green Ave. W. on April 25, 2024. Photo sessions for cover art, media and the EPK need to be scheduled for 3 months previous and they need to be done in two separate sessions: one for cover art and one for media and the EPK. The band may get many bookings that interfere with dates you plan for the shoots.

You and another photographer, Georgia Montagne, have an agreement to provide support to each other on shoots in case either of you is not able to make a shoot you are leading on, unless she is away on a job. If that is the case, your next option is Annie Leibowitz or Ansel Adams. Both have full backup teams they can bring in as well, if necessary.

**Project Backup Plan**

Project type	CD release	
Client name		
Release date		
Release address		
<b>ITEM</b>	<b>PLAN A</b>	<b>PLAN B</b>
Photo session 1 date		
Photo session 1 content		
Photo session 2 date		
Photo session 2 content		
Back up photographer		



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## **BE PREPARED!**

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*Be Prepared* is a useful motto. Used by the Scouts of Canada it is meant to signify that they practice advance thinking about how to act in emergency situations so that they are not taken by surprise.

Being prepared doesn't just mean worrying about problems that could happen. It also means thinking ahead so that you have confidence you will be able to manage if problems do arise because you will have prepared by planning for them. For example, you must complete the construction of an outdoor stage for a music festival by Friday. You know it can be done if the weather holds. Your contingency plan is to have quick access to tarps and a frame to cover the work area, in the event of rain.

In some types of emergencies, planning ahead saves lives. The website [www.getprepared.gc.ca](http://www.getprepared.gc.ca) provides scenarios you can use to practice how you would respond in an emergency. Try the one described below.

*(problem solving Intermediate level)*

You come home from school and see that the door to your house is broken. You think someone you don't know may be inside.

1.

Who should you contact? A parent, neighbour or 9-1-1?

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Explain your choice.

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2.

What should you tell 9-1-1?

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Explain your answer.

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3.

Where should you wait for help? At your house or somewhere else?

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Explain your choice.

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## 8. SOLVING PROBLEMS BEFORE THEY HAPPEN

### PROBLEM PREVENTION 101

The jobs website *Monster.ca* provides valuable information about how to succeed at work. It may sound obvious, but one of the best ways to succeed is to solve problems, or even better, prevent them from happening in the first place. *Monster.ca* highlights the benefits of being organized as an effective way to avoid and solve problems. For example, if you are organized:

You can increase your productivity.

- By being organized, you will not waste time looking for things and will have more time to work on important tasks. You will increase the amount of work you can get done – Problem solved!

You can reduce your stress level.

- If you are organized, finding things should be easy and not a source of stress.. You'll be calm and focussed – Problem solved!

You can be on time – consistently.

- Organization and punctuality go together. Respect the people you work with by being on time. You'll enjoy productive, respectful relationships with co-workers – Problem solved!

You can ensure you meet deadlines.

- Don't miss an important deadline on a project because you weren't organized, tasks piled up and you missed completing work that had to be done. Meet your deadlines – Problem solved!

On a scale of 1-10, where 10 is *super-organized* and 1 is *needs a lot of help*, what score do you think you deserve for organization?

\_\_\_ /10





## **CONTROL THE CHAOS**

There are some things you can't control. But there are some actions you can take to be better organized and avoid potential problems. For each of the items listed below that you can control, write at least one thing you can do to better organize it. The first one is done as an example.  
*(problem solving Basic level)*

Things you can control	Organizational strategy
Laptop	<i>Up to date anti-virus software installed. Files regularly backed up.</i>
Phone	
Calendar	
Study space	
Car	
Homework	
Your health	
Add your own idea	

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## **WHERE DOES THE TIME GO?**

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STEP 1. An important first step to being organized is recognizing how much time you are spending on things already. Think about what you did in the past week. Include time you spent sleeping. Complete the calendar. Add as much detail as you can remember.

*(problem solving Basic level)*

MON	TUES	WED	THURS	FRI	SAT	SUN



STEP 2. Each 7-day week contains 168 hours. Using the information you put in the calendar, complete the following table to show how you spent those hours. The activities you list must total 168 hours. Start by listing the hours you were asleep.

*(problem solving Basic level)*

Activity	# of hours
Sleeping	
<b>TOTAL</b>	<b>168</b>



STEP 3. Based on how you spent your time, identify one thing that you would like to change. Is there anything you were trying to do that didn't get done and led to a problem? For example, you were late with an assignment or missed going out with friends because you had left an assignment to the last minute. Do you think you could have avoided the problem if you had organized your time differently? If so, what, and how would the reorganization solve the problem? (*problem solving Intermediate level*)

Write your ideas here.

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## **PROBLEM PREVENTION STRATEGIES**

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In the hamburger story, the researchers in Japan did a lot of work to solve the problem of preventing a mess when eating burgers. Their prevention strategy means that other people never need to face that problem again. Sometimes preventing problems is just as important as being able to solve them.

Research shows you can train yourself to practice good work habits or strategies that will reduce the number of problems you face at work or school.



You know that making a habit of keeping your workspace clean and organized is important to preventing the problem of losing things. But have you thought about organizing your knapsack as a way to prevent problems? One prevention strategy is to pick 1 or 2 days in the week where you will take everything out and decide if you need it right away (goes back in the knapsack), might need it later (move it to your workspace), or will never need it (recycle it).

Another useful strategy is to organize your schoolwork in a way that will help you avoid the problems of forgetting an assignment or running out of time to complete one. A paper calendar, a calendar on your phone, or an organizing app can all do this. Here's how:

1. Enter the due date of every assignment as you get it.
2. Then enter a fake deadline a few days before the due date so you know it's coming.
3. Break big assignments into parts and enter the dates you need to have each part completed. For example, *finish research*, or *write first draft of report*.
4. Most importantly, check your planner every day to stay on top of things.

Taylor is a grade 11 student who uses a calendar to keep track of their school assignments. For every assignment, Taylor enters:

- The due date with the name of the course and assignment type (e.g., an English essay is written EN essay).
- A “fake” due date 2 days before the actual due date.
- The dates all major parts of the assignment will be completed.

Taylor tries not to schedule schoolwork Tuesdays or Saturdays as they have a part time job then. Use the information in the three assignment descriptions to fill in Taylor's calendar for the next month. (*problem solving Intermediate level*)

1. Environmental Science field report (ES FR). Assigned October 31. Due November 14. Parts are A. field work, B. analysis and C. the report.
2. Drafting green design (DR GD). Assigned November 1. Due November 15. Parts are A. proposal and B. design.
3. Mandarin (speaking) group presentation (MGP). Assigned Nov 7. Due November 29. Parts are A, choosing a topic and B. a meeting and C. a meeting.

# 2024 **NOVEMBER**

<b>SUNDAY</b>	<b>MONDAY</b>	<b>TUESDAY</b>	<b>WEDNESDAY</b>	<b>THURSDAY</b>	<b>FRIDAY</b>	<b>SATURDAY</b>
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30



Have you heard of minimalism?



Beginning in the 2000s, minimalism was promoted as a great way to simplify your life by living with less. Fewer clothes and other possessions. Living with less stuff – living with the minimum.

The idea behind minimalism is that if you reduce the amount of stuff you own you can reduce the number of problems you experience that are caused by being surrounded by clutter. If you stop focussing on the stuff, you can start focussing on life. Some minimalists set targets like owning only 30 items of clothing, or 20 books, or donating one object every time they buy something new. Does this make sense to you? Do you think you could be a minimalist?

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## **THE PROBLEM WITH BEING DISORGANIZED**

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Everybody tells you that being organized is better for work and school, but did you know that being disorganized can actually make you sick?

Research confirms that extreme disorganization can not only aggravate allergies due to growing germs, dust, and molds, but it can also affect mental health by increasing stress and anxiety levels, decreasing sleep, and even result in fire hazards.

Keeping your study and workspaces clean and organized is a good way to avoid all these problems and stay healthy.



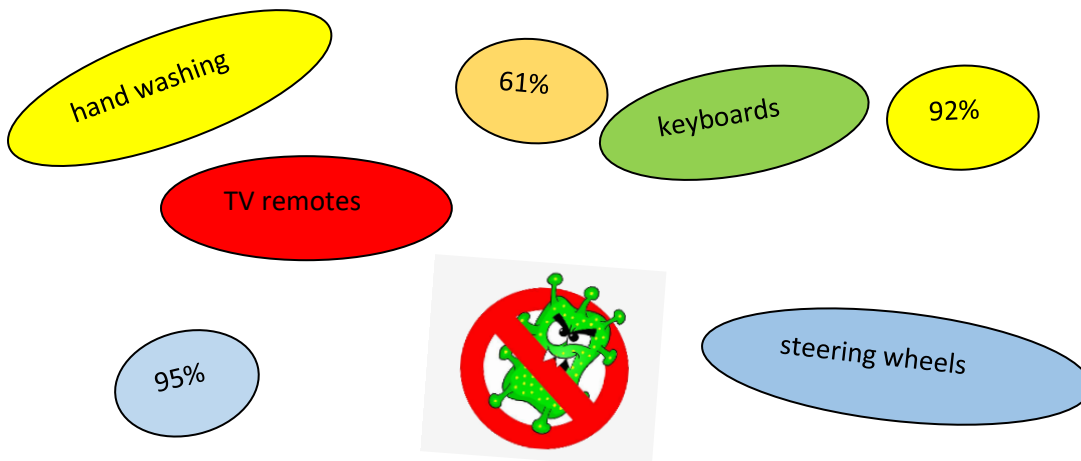


Match the facts on the left with the information in the bubbles.

*(reading Basic level, problem solving Intermediate level)*

- A. \_\_\_\_\_ have up to 400 x the germs of a toilet seat.
- B. \_\_\_\_\_ of adults don't wash their hands long enough to kill germs.
- C. The #1 way to stop the spread of germs is \_\_\_\_\_.
- D. \_\_\_\_\_ have 450 bacteria per sq. inch.
- E. The dirtiest place in most hotels is the \_\_\_\_\_.
- F. \_\_\_\_\_ of cellphones have bacteria including e coli.
- G. \_\_\_\_\_ of illness with vomiting is caused by skin to skin contact like shaking hands.

*Before you move on, check the answers on the next page.*





## Answers

- A. *keyboards* have up to 400 x the germs of a toilet seat.
- B. 95% of adults don't wash their hands long enough to kill germs.
- C. The #1 way to stop the spread of germs is *hand washing*.
- D. *Steering wheels* have 450 bacteria per sq. inch.
- E. The dirtiest place in most hotels is the *TV remotes*
- F. 93% of cellphones have bacteria including *e coli*.
- G. 61% of illness with vomiting is caused by skin-to-skin contact like shaking hands.

Given what you now know, write 2 things you can do to avoid the problem of getting sick at school or work.

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## LIKE A WELL-OILED MACHINE

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Almost every job requires you to work with other people or other groups of people. And everybody hopes that things will run smoothly: like a well-oiled machine. Unfortunately, no matter how organized you or your team are, sometimes other teams can be disorganized and that can cause problems downstream for your part of the work.

Read what happened on this project and answer the questions that follow.

Martine Construction had the contract to rebuild a suburban strip mall. The goal was to turn the mall around quickly so, whenever possible, the site supervisor scheduled up to 4 sub-trades on site at the same time. They were deployed in different parts of the mall and normally didn't interfere with each other's work.

Then, one day everything seemed to go wrong. First, a new electrical crew was called in at the last minute. The electrical team they were subbing for had explained the job and, as it sounded simple, the new team just started working without checking in. They were used to having, and expected to have, the run of the work site, but it turned out they had set up in the same spot as the scheduled sprinkler fitters, so both the electrical and sprinkler work came to a standstill while they tried to sort it out. At that point, the ceiling installers, who would follow the sprinkler fitters, assessed the situation and figured their time would be better spent at another job, so they left. The inspector then showed up and approved the sprinkler fitting, but now the ceiling installers were across town.

Next a load of flooring that was back ordered arrived unexpectedly and without paperwork for the site supervisor, a change order from the client suddenly appeared without the usual 24-hour notice, and a municipal clerk showed up with a question about a permit request related to some of the electrical work that had been filed without signatures.

Finally, in the end unit of the mall, the drywallers, who had showed up to start at 7 a.m., discovered there was a leaky pipe behind the framing work that hadn't been reported and needed to be repaired before any drywall work could proceed. Quite a day of non-stop problems.

*(problem solving Intermediate level, reading Basic level)*

List 4 occupations of people working on the mall.

1.

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2.

What did the municipal clerk need?

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3.

Why did the inspector come to the work site?

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4.

For each of the following problems, identify at least one action that could have been taken to prevent the problem, and who was responsible for the action. The first one is done as an example.

PROBLEM	PREVENTATIVE ACTION	RESPONSIBILITY
Electrical team setting up with sprinkler fitters	<ol style="list-style-type: none"> <li>1. Team could have checked with site supervisor.</li> <li>2. Original electrician could have told subs to check with supervisor before starting.</li> </ol>	<p>Subbing electrical team lead</p> <p>Electrician who arranged for subs</p>
No signature on form		



Flooring delivery		
Client change order		
Ceiling installers not on site		
Leaky pipe		





**BUILD YOUR SKILLS FOR  
SUCCESS!**

**IN THIS SECTION OF THE WORKBOOK, YOU CAN  
GIVE YOUR SKILLS A BOOST BY REVIEWING  
SOME SKILLS FOR SUCCESS BASICS.**

# **PROBLEM SOLVING**

Use the table of contents to navigate through this workbook. Track your progress by putting a checkmark beside each topic you complete.

SECTION AND TOPIC		Pg.	√
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1	Problem Solving Booster – Guide to Problem Solving	121	
2	Problem Solving Booster – Critical Thinking	123	





## 1. A GUIDE TO PROBLEM SOLVING



### A HANDY REFERENCE TO FIVE-STEP FOR BETTER SOLUTIONS

This workbook focusses on the process of problem solving and three of its most frequently used components:

1. Problem Solving
  - Decision Making
  - Critical Thinking
  - Planning

Practicing the five-step process for solving problems will help you to generate solutions and evaluate their results while building your problem-solving proficiency.

On the next page is a handy reference guide you can use as a quick reminder of the steps in the process and of what tools and actions you undertake at each step.



STEPS 1 - 5	PROBLEM SOLVING IN ACTION	PROBLEM SOLVING KEY COMPONENTS IN ACTION			USEFUL TOOLS
		<b>DECISION MAKING</b>	<b>CRITICAL THINKING</b>	<b>PLANNING</b>	
<b>IDENTIFY &amp; ANALYZE THE PROBLEM</b>	Use the 5Ws as a guide to help define the problem. Research as needed. Write a short description of the problem.	Write a brief, clear description of the decision that needs to be made.	Write a brief, clear description of the judgement to be made.	Ask yourself, what task or tasks do I need to accomplish?	The 5Ws Written descriptions Lists Information gathering
<b>CREATE MULTIPLE SOLUTIONS</b>	Brainstorm possible solutions. Research as needed.	Make a list of your options.	Consider what must be evaluated and what criteria should be used for the evaluation to make the judgement.	Consider what steps are involved in completing the task or tasks.	Brainstorming lists Information gathering
<b>CHOOSE THE BEST SOLUTION</b>	Evaluate the possible solutions. Choose the one you will use.	Consider the likely results of each of the decisions you could make. Choose the decision.	Determine what you believe would be the consequences of actions that could be taken. Choose the course of action.	Choose whether to create an ordered list or a flow chart of tasks, depending on which you think will be most efficient.	Pros and cons lists Flowcharts Information gathering
<b>IMPLEMENT THE SOLUTION</b>	Put the solution into action.	Put the decision into action.	Take action / make the judgement.	Complete the tasks, according to the order you chose.	Courage
<b>EVALUATE</b>	Ask – did the solution work? Have you solved the problem? Would you consider using the same solution again? Why or why not?	Ask – was the outcome of the decision what you expected? Would you make the same decision again? Why or why not?	Ask – were the consequences what you expected? Would you evaluate the situation the same way again? Why or why not?	Ask – did the order you chose allow you to complete the work efficiently? Would you choose to do the work in the same order again? Why or why not?	Questions Reflection Feedback surveys



## 2. CRITICAL THINKING: A KEY COMPONENT OF PROBLEM SOLVING

As you have read in this workbook, critical thinking is one of the key components of effective problem solving. It is also something that employers frequently list in their job postings and ask about in job interviews. Critical thinking can help you to solve problems in every job, whether you need to analyze information, come up with solutions, or be creative.

Critical thinking refers to:

*The process of evaluating ideas and information to make judgements. It has 3 components: judgements, criteria, and consequences.*

That sounds complicated. Let's break it down.

To evaluate means to measure the good and bad points of something or many things. And judgment means to make a choice about which is best. Criteria and consequences are a little more complicated.

1 = a criterion  
2 or more = criteria

Criteria are the standards you measure or evaluate things by. For example, the criteria you use to evaluate:

- ice cream could be taste, cost, quality of ingredients and how fast it melts.
- what car to buy could be price, age, colour, and the number of kilometres per litre.
- whether to get a part-time job could be time available, salary, skills match

Consequences are what happens when you make a judgement. Consequences can be:

- minor (sometimes called "low stakes") like when you end up with a flavour of ice cream you don't like,

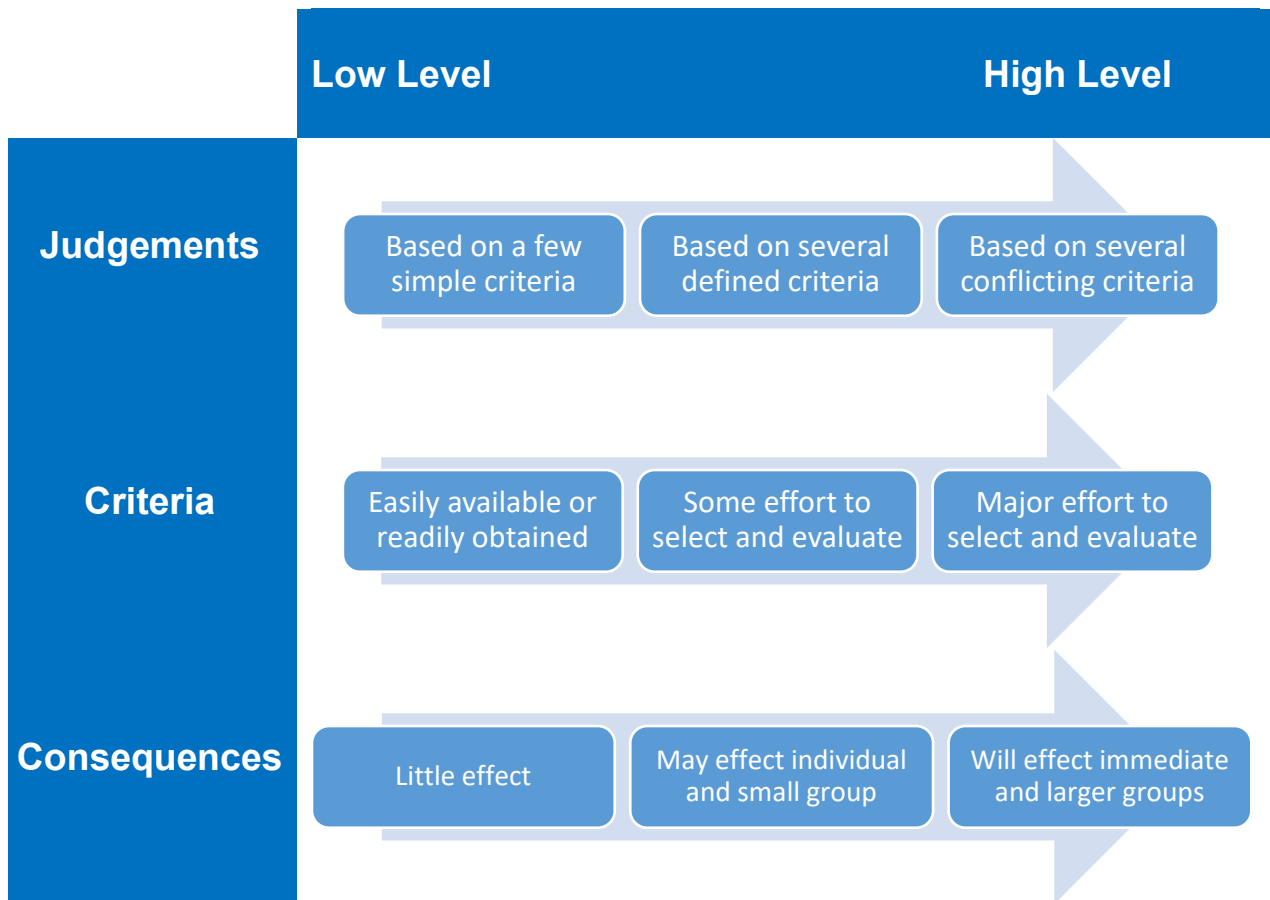
or

- major ("high stakes") like spending all of your money on a car that gives you a lot of trouble and always needs repairs or taking a part time job when you don't have time and then you have to give up sports and your grades drop.



## CRITICAL THINKING AT A GLANCE

This graphic shows the relationship between judgements, criteria, and consequences. Basically, the more complicated any of these three are, the more difficult the problem-solving task will be.



## WHO SAYS CRITICAL THINKING MATTERS?

*Critical thinking, problem solving, and self-management are included in the top skills identified as needed by workers in 2025. The World Economic Forum <https://www.weforum.org/reports/the-future-of-jobs-report-2020/digest>*

*The function of education is to teach one to think functionally and to think critically. Dr Martin Luther King Jr. (Civil Rights Icon)*

*Critical thinking is the key to creative problem solving in business. Richard Branson (CEO Virgin Records, Airlines, Media)*



# **ANSWERS FROM THE SFS WORKOUTS!**

**IN THIS SECTION OF THE WORKBOOK, YOU CAN  
CHECK YOUR ANSWERS FOR THE SKILLS FOR  
SUCCESS WORKOUTS YOU COMPLETED!**

# PROBLEM SOLVING

Use the table of contents to navigate through this workbook. Track your progress by putting a checkmark beside each topic you complete.

SECTION AND TOPIC		Pg.	√
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1	Don't Bring Me Problems. Bring Me Solutions!	129	
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## 0. MATCHING TASKS AND SKILLS

**USE THE ANSWERS BELOW TO CHECK YOUR WORK.**

Suggested responses are below. You may have thought of more/other Skills for Success for getting the job done.



Task	Skills Used
Find information online to complete the set-up of a new iPhone	RE, DS, PS
Apply online for a learner's license	RE, WR, PS
Book concert tickets online	DS, RE, PS
Help plan a fundraiser for your sports team	NU, PS, COM, COL, CI
Make a plan to pay for the boots you want when they are more expensive than expected.	PS, NU, RE
Find an alternate way to travel when you can't use the car to go skiing.	COM, COL, CI
Text your coach to say you will be late for practice, why, and how you will catch up on what you miss	DS, WR, PS, COL
Arrive at work early to learn the new customer payment system, from your boss	NU, COL, COM
Use an online transit schedule to get to your new job on time	PS, NU, DS







## 1. DON'T BRING ME PROBLEMS. BRING ME SOLUTIONS!

**USE THE ANSWERS BELOW TO CHECK YOUR WORK.**

1.

Using the information in the story above, complete the tables on the next page, to describe the problem from Josh's point of view and from his mother's point of view, by completing Step 1 of the problem solving process.

*(problem solving Basic level)*

Who?	<i>Josh</i>
What?	<i>Is lost in the woods</i>
When?	<i>Evening, "getting dark"</i>
Where?	<i>In the woods about an hour from his home in Shelburne</i>
Why?	<i>Wasn't paying attention because excited about gifts</i>

*Josh's problem is he is lost in the woods and his cellphone is out of battery.*



Who	<i>Josh's mother</i>
What	<i>Got a strange text from her son</i>
When	<i>About an hour after he left home</i>
Where	<i>At her home</i>
Why	<i>She doesn't know where he was thinking of going when he left</i>

*Josh's mother's problem is Josh is lost in the woods and she only has a vague idea of where he might be found.*

## 2.

Completing Step 1 of the problem-solving process to consider a problem of your own.  
(*problem solving Basic level*)

Answers will vary. An example is below.

Who	<i>Me</i>
What	<i>Want to work but can't work as much as employers want me to</i>
When	<i>Now, while I am trying to find work</i>



Where	<i>At places where I would like to work part time</i>
Why	<i>Employers want me to work more hours than I think I can</i>

*The problem I chose is - I really want to work part time this year, but all the places I apply want me to be able to work 12 hours each week and I don't think I can work more than eight hours and do my schoolwork and play sports.*

### Learning the Rest of the Steps in the Process

1.

The story of Karim, Joseph, and Grant.

After you review the story below, answer the five questions in the table that follows. Then write briefly what you think the problem is.

*(problem solving Basic level)*

### Step 1-Identify and analyze the Problem

Who?	<i>Karim, Joseph, and Grant</i>
What?	<i>The mesh is missing on the baskets at the court where they shoot hoops</i>
When?	<i>The mesh has been gone for a while but now that Joseph is trying to learn to play, it is a current problem</i>
Where?	<i>The neighbourhood basketball court</i>
Why?	<i>The missing mesh is a problem because it makes it harder to learn to shoot the basketball accurately.</i>



*The problem is there is no mesh on the basket and Joseph finds it harder to learn to shoot accurately.*

Step 2 – Create Multiple Solutions

2.

Write down, in the Solutions column of the table below, all the solutions you can think of to fix the hoops. Don't be afraid to be creative and innovative! Try to think of at least three solutions.

*(problem solving Basic level)*

Some possible solutions

*See if they can buy some mesh themselves to fix at least one of the hoops.*

*Try to think of something else to use.*

*Practice a lot with Joseph to try to help him to shoot accurately without the mesh.*

Step 3 – Choose the Best Solution

3.

Decide on the pros and cons for each solution you came up with. In the table above, write the pros and cons in the appropriate columns. Next, review your pros and cons and write your choice for the best solution in the space below.

*(problem solving Basic level)*

*Your best solution here*

*Answers will vary*

4.

*Solution was to use old shorts in place of mesh*

Step 5 – Evaluate the Solution

5.

Look at the picture that shows how one group solved the problem of mesh missing from the hoops. Do you think the solution in the picture solves the problem? Is this a solution you thought might work? In the space for evaluation comments, explain how you think the solution does or does not solve the problem you identified at the beginning of this workout.

*(problem solving Basic level)*



**Example Evaluation Comments**

*The solution solves the problem of defining where the mesh would be, but the shorts don't let the shooter see exactly where the ball is going.*

*The solution sort of solves the problem, but the opening left by the shorts waistband is narrower than the hoop.*

Follow the same process as in the previous workout to try to solve one more problem.

- 1.** The story of Marisa and Katrina  
After you review the story below, answer the five questions in the table that follows. Then write briefly what you think the problem is.  
*(problem solving Basic level)*

**Step 1- Identify and Analyze the Problem**

Who? <i>Marisa and Katrina</i>
What? <i>They are hungry, all they have to eat is leftover pizza, and they don't have any working appliances</i>
When? <i>Late in the evening, after they finished moving into their new apartment</i>
Where? <i>Their new apartment</i>
Why? <i>They really want their leftover pizza heated up, but because none of their cooking appliances are working, they aren't sure how they can get it heated.</i>

*The problem is that Marisa and Katrina really want to heat up their leftover pizza, but they can't because the oven, stove and microwave in their apartment are not working.*



## Step 2 – Create Multiple Solutions

2.

Write down, in the Solutions column of the table, all the solutions you can think of to heat up the pizza. Be creative and innovative! Try to think of at least three solutions.

*(problem solving Basic level)*

Some possible solutions

*See if there is a neighbour who will let them use their microwave for a minute.*

*If they have a BBQ set up, they could heat it on there.*

*If they have an electric frypan, they could heat it in that.*

## Step 3 - Choose the Best Solution

3.

Decide on the pros and cons for each solution you came up with. In the table above, write the pros and cons in the appropriate columns. Review your pros and cons and write your choice for the best solution in the space below.

*(problem solving Basic level)*

Your best solution here

*Answers will vary*

4.

Solution was to use an iron and a hair dryer to heat the pizza. The iron was supported in a wire mesh basket.

## Step 5 – Evaluate the Solution.

5.

Look at the picture that shows how Marisa and Katrina solved the problem of cold pizza. Do you think the solution in the picture solves the problem? Is this a solution you thought might work? In the space for evaluation comments, explain how you think the solution does or does not solve the problem you identified at the beginning of this workout.

*(problem solving Basic level)*

Example Evaluation Comments

*It would probably take a long time, but it might work.*

*The iron might be ruined if any grease from the pizza leaks into it.*

*The bottom of the pizza might burn before the top gets warmed by the hair dryer.*



1.

Think of a problem that you face and would like to try to solve. It could be the problem you used to practice Step 1 or a different problem from school, work, a sports team you might play on or something you and your friends have discussed as a problem. Use the problem-solving process to generate a solution. Begin by writing a brief description of your problem and answering the five questions.

*(problem solving Basic level)*

Answers will vary. An example is below.

Step 1- Identify and Analyze the Problem

Who? <i>me</i>
What? <i>Want to work but can't work as much as employers want me to.</i>
When? <i>Now, while I am trying to find work.</i>
Where? <i>At places near my home, where I would like to work part time.</i>
Why? <i>Employers want me to work more hours than I think I can.</i>

*The problem is I really want to work part time this year, but all the places I apply that are near me want me to be able to work 12 hours each week and I don't think I can work more than eight hours and do my schoolwork and play sports.*

2.

Step 2 – Create Multiple Solutions

Write down, in the Solutions column, all the solutions you can think of for your problem. Be creative and innovative! Try to think of at least three solutions.

*(problem solving Basic level)*



Solutions	Pros	Cons
<i>I could figure out how to rearrange my life so I can work 12 hours.</i>	<i>I could work at a place nearby. I would make more money.</i>	<i>I might have to give up a sport or miss some practices. My marks might not be as good because of time spent at work.</i>
<i>Give up the idea to work this year and plan my life next year so I can work 12 hours.</i>	<i>I would have more time for sports and schoolwork. My weekends would be free.</i>	<i>I wouldn't have any money unless I can convince my parents to help me out.</i>
<i>See if I can find eight hours work per week with an employer that is farther away.</i>	<i>I would have spending money. I would not need to work 12 hours per week.</i>	<i>I would end up spending extra time travelling to and from work. I would have to spend money on transit or maybe even cabs if I work late.</i>
<i>I could create my own job.</i>	<i>I would be able to control the hours I work. It would be fun to create my own job.</i>	<i>I would need time to learn how to be my own employer. I might not get any customers.</i>

Step 3 - Choose the Best Solution.

**3.**

Decide on the pros and cons for each solution you came up with. In the table above, write the pros and cons in the appropriate columns. Review your pros and cons and write your chosen solution in the space below.

*(problem solving Basic level)*

Best Solution:





*I think the best solution to the problem I described is to rearrange my schedule so I can be available to work 12 hours a week, somewhere close to home.*

4.

#### Step 4 – Implement the Solution

If you can, implement the solution to the problem you chose. Then go to Step 5 to evaluate your solution.

5.

#### Step 5 – Evaluate the Solution.

If you were able to implement your chosen solution, evaluate the results by answering the questions.

- Did the solution solve the problem?
- Did the solution work the way you thought it would?
- If you were faced with the same problem again, would you use the same solution or try a different one? Why or why not?

*(problem solving Basic level)*

*My solution made it possible for me to get a job near home. I didn't spend a lot of time getting to and from work and working 12 hours per week gave me as much spending money as I needed. The solution worked, but as I expected, I ended up missing some of my sports practices and so I wasn't always on the first line during important games. That was kind of disappointing, but I did keep my marks up so that was good. I think I would make the same decision next time because it mostly worked out the way I thought it would and I didn't have to sacrifice too much.*

#### Remember

*Sometimes problems are very personal and very complicated. In those cases, you need more than a 5-Step process; you need friends and other people to help you sort things out.*

*Don't be afraid to ask for help. Asking for help is a logical problem-solving strategy.*



1.

Now it's your turn to try out the job of game character designer.  
(*problem solving Intermediate\_level, digital Intermediate\_level*)

*Answers will vary*



## 2. DECISIONS DECISIONS

**USE THE ANSWERS BELOW TO CHECK YOUR WORK.**

1.

You and two other people your age recently started summer jobs as carpenters' helpers on a construction site. You have all been given safety training and the whole crew attends a safety meeting each day before starting work. At the meeting everyone is reminded about the importance of workplace safety. The other helpers don't seem to take the training or meetings seriously. They often do things that are risky for themselves and, potentially, for others on the crew. You have tried reminding them about what you learned in safety training, but they just ignore you. Should you report them to someone?

*(problem solving Basic level)*

*Sample Answer*

Identify the decision that needs to be made. (A clear and brief description of the problem)

*Whether or not to report your co-workers for not following safety procedures.*

Create a list of possible options. (Sometimes it is clear there are just two options to choose from. Other times, there may be multiple options to consider.)

- 1. Talk to them again myself.*
- 2. Talk to one of the carpenters and ask for advice.*
- 3. Talk to the supervisor myself and ask him not to say who reported them.*

Determine the possible results of choosing each option and make the decision. (Think through the likely results for each option you identified. A pros and cons list for each can help.) Write your list and final decision here.

- 1. They might listen this time.*
- 2. The carpenter might have good advice that would help.*
- 3. The carpenter might think I am not a good team player.*



4. *The supervisor might appreciate knowing the problem exists so he can do something about it before there is an accident.*

*I decided I would speak to the Supervisor.*

Implement the decision.

Evaluate the results of the decision. (What happened once the decision was made? Was the outcome what you expected? Would you make the same decision again or would you choose a different option?)

*The supervisor spoke to my co-workers, and they started taking the safety training much more seriously.*

*I would make the same decision again because I think it is really important to make sure people don't get hurt at work.*

## 2.

You have been working hard at your part time job and picking up as many extra shifts as you can, because you would like to buy a car within the next year. Your good friend has invited you to come with her family on vacation to a place you have always wanted to go. However, your parents are not prepared to pay for your trip and it would cost about half of what you have saved for the car. (*problem solving Basic level*)

Identify the decision that needs to be made.

*Should I go on holiday with my friend's family?*

Create a list of possible options.

- 1. Spend half of my savings to go on holiday.*
- 2. Stay home and keep saving.*
- 3. See if my parents will give me a loan to go on holiday, that I can pay back after I get my car.*

Determine the results of choosing each option and make the decision. Write your list and final decision here.

- 1. I will have to wait a lot longer to get my car.*
- 2. I will get the car sooner, but I will miss seeing a place I would really like to see.*



3. *I can go on holiday, but I will still have to keep working extra shifts to pay my parents back even after I get the car.*

*I decided I will not go on holiday.*

Implement the decision.

Evaluate the results of the decision.

*I will get my car when I wanted to and will not be in debt to my parents. I will be sorry not to see the vacation destination, but I can do that another time when I have saved money again.*

### BONUS QUESTION

3.

You decided to go on the trip with your friend. You have estimated that it will cost you \$450.00. You make \$11.00 per hour, after taxes, at your job. To the nearest hour, how many hours will you need to work to cover the cost of your trip? How many four hour shifts will it take?

*(numeracy Basic level)*

*41 hours*

*Either is acceptable:*




*10.25 shifts or 11 shifts*



1.

In the table below are brief descriptions of three people who are trying to decide on the form of transportation that best fits their needs. The options they have to choose from are car, skateboard or transit. Read each description and decide which mode of transport best suits each person's needs.

*(problem solving Intermediate level)*

Person	Location	Routine	Finances	Best choice
<p>Anton Single dad to a 2-year old.</p> 	<p>Lives in the city Close to major roadways and bus stops</p>	<p>Works regular hours Monday to Friday Has a childcare worker who comes into his home</p>	<p>Not a lot of extra money Trying to save for a down payment on a condo.</p>	<p><i>Transit</i></p>
<p>Jen Tech college student Lives with one roommate Roommate has a car</p> 	<p>Lives downtown 10 blocks from the campus</p>	<p>Classes Monday to Saturday at different hours Part time job Tuesday and Thursday evenings in her neighbourhood</p>	<p>Part time job helps a little but tight budget Student loans Doesn't want any more debt than is necessary</p>	<p><i>Skateboard</i></p>
<p>Perry Shift worker in a skateboard manufacturing plant</p> 	<p>Lives outside of the city Bus service is only available in peak hours.</p>	<p>Has permanent employment Shifts vary week to week Takes extra shifts when they are available.</p>	<p>Finances are pretty steady.</p>	<p><i>Car</i></p>



1.

Pick one of the social media accounts you use most often. Use the decision tree to review at least four posts you have made recently. Decide whether you should leave the post up or delete it. The post can be a comment, photo, or link: anything that clearly came from you. Remember to check not only your original post, but what has happened to it since. What comments or links are now associated with the post? Are you comfortable with them? Have there been pictures added to the comments on the post? Do they meet the criteria in your decision tree? Record your results in the table on the next page.

*(problem solving Intermediate level)*

*Responses will vary*

You and your companions have just survived the crash of a small plane. Both the pilot and co-pilot were badly injured in the crash and are not able to advise or help. It is mid-January, and you are in Northern Saskatchewan. The daily temperature is 25 below zero, and the nighttime temperature is 40 below zero. There is snow on the ground, and the countryside is wooded with several creeks crisscrossing the area. You know the nearest town is 20 kilometres away. You are all dressed in city clothes appropriate for an interview.

Edited from: <http://www.crystalspringsfoundation.org/>

Original source: <http://wilderdom.com/games/descriptions/SurvivalScenarios.html>

1.

Below and on the next page, is a list of 11 items that you have been able to salvage from the plane. Your task is to rank the items, in order of importance for your survival, by writing the number in the Rank column, where 1 is the most useful and 11 is least useful. Below each item, write a brief description of how it could be used.

*(problem solving Advanced level)*

Answer key

RANKINGS

1. Cigarette lighter (without fluid): The gravest danger facing the group is exposure to cold. The greatest need is for a source of warmth and the second greatest need is for signaling devices. This makes building a fire the first order of business. Without matches, something is needed to produce sparks, and even without fluid, a cigarette lighter can do that.
2. Ball of steel wool: To make a fire, the survivors need a means of catching the sparks made by the cigarette lighter. This is the best substance for catching a spark and supporting a flame, even if the steel wool is a little wet.
3. Extra shirt and pants for each survivor: Besides adding warmth to the body, clothes can also be used for shelter, signaling, bedding, bandages, string (when unraveled), and fuel for the fire.



4. *Can of Crisco shortening: This has many uses. A mirror-like signaling device can be made from the lid. After shining the lid with steel wool, it will reflect sunlight and generate 5 to 7 million candlepower. This is bright enough to be seen beyond the horizon. While this could be limited somewhat by the trees, a member of the group could climb a tree and use the mirrored lid to signal search planes. If they had no other means of signaling than this, they would have a better than 80% chance of being rescued within the first day. There are other uses for this item. It can be rubbed on exposed skin for protection against the cold. When melted into an oil, the shortening is helpful as fuel. When soaked into a piece of cloth, melted shortening will act like a candle. The empty can is useful in melting snow for drinking water. It is much safer to drink warmed water than to eat snow, since warm water will help retain body heat. Water is important because dehydration will affect decision making. The can is also useful as a cup.*
5. *20 x 20-foot piece of canvas: The cold makes shelter necessary, and canvas would protect against wind and snow (canvas is used in making tents). Spread on a frame made of trees, it could be used as a tent or a wind screen. It might also be used as a ground cover to keep the survivors dry. Its shape, when contrasted with the surrounding terrain, makes it a signaling device.*
6. *Small axe: Survivors need a constant supply of wood in order to maintain the fire. The axe could be used for this as well as for clearing a sheltered campsite, cutting tree branches for ground insulation, and constructing a frame for the canvas tent.*
7. *Family size chocolate bars (one per person): Chocolate will provide some food energy. Since it contains mostly carbohydrates, it supplies the energy without making digestive demands on the body.*
8. *Newspapers (one per person): These are useful in starting a fire. They can also be used as insulation under clothing when rolled up and placed around a person's arms and legs. A newspaper can also be used as a verbal signaling device when rolled up in a megaphone-shape. It could also provide reading material for recreation.*
9. *Quart of 100 proof whiskey: The only uses of whiskey are as an aid in fire building and as a fuel for a torch (made by soaking a piece of clothing in the whiskey and attaching it to a tree branch). The empty bottle could be used for storing water. Can also be used as an antiseptic for a wound. The danger of whiskey is that someone might drink it, thinking it would bring warmth. Alcohol takes on the temperature it is exposed to, and a drink of minus 30 degrees Fahrenheit whiskey would freeze a person's esophagus and stomach. Alcohol also dilates the blood vessels in the skin, resulting in chilled blood being carried back to the heart, resulting in a rapid loss of body heat. Thus, a drunk person is more likely to get hypothermia than a sober person is.*
10. *Compass: Because a compass might encourage someone to try to walk to the nearest town, it is a dangerous item. Its only useful feature is that it could be used as a reflector of sunlight (due to its glass top).*





11. Sectional air map made of plastic: This is also among the least desirable of the items because it will encourage individuals to try to walk to the nearest town. Its only useful feature is as a ground cover to keep someone dry.





## 3. PLANNING: A TOOL FOR PROBLEM PREVENTION

**USE THE ANSWERS BELOW TO CHECK YOUR WORK.**

1.

Heavy Equipment Technicians maintain, repair, and overhaul heavy vehicles and industrial equipment, such as internal combustion engines and components, ground-engaging equipment including rippers and backhoes, and towed earth-moving equipment, commonly called scrapers. Write the task numbers in the order you would put them on a to-do list. Explain your choices in no more than two sentences.

*(problem solving Intermediate level)*

Answers will vary

Order: \_\_ 1, 2, 5, 3, 4

OR

Order: \_\_ 2, 5, 3, 1, 4.

*Explanation:*

*First order assumes bulldozer is tested to determine if anything is wrong; if yes, there is a check for specific issues*

*Second order assumes bulldozer is checked for faults/malfunctions and then tested before being cleared. Either order would work, but might be improved safety by testing before releasing*

2.

Millwrights install, maintain, repair and troubleshoot stationary industrial machinery, as well as mechanical equipment in factories, production plants and recreational facilities. Write the task numbers in the order you would put them on a to-do list. Explain your choices.

*(problem solving Intermediate level)*

Answers will vary.



Order: 3, 2, 1, 4

Order: 2, 3, 1, 4

*Explanation:*

*As long as start with clean or inspect, the other steps can be completed in whatever order makes most sense, provided #4 is last.*

### 3.

Bakers are responsible for making breads, bagels, pretzels, cakes, muffins, cookies and pastries as well as chocolate and candy, sugar sculptures and icing. They can prepare many different baked goods or specialize in just one. Write the task numbers in the order you would put them on a to-do list. Explain your choices.

*(problem solving Basic level)*

Answers will vary

Order: 3, 1, 2, 4

Order: 3, 2, 1, 4

*Explanation:*

*The first step needs to be to prepare the batter and frosting and the last step is to frost the cake. Frosting colour can be adjusted before or after baking the cake.*

### 1.

Choose either the Millwright or the Baker and create a flowchart of the steps in the task they completed.

*(problem solving Basic level (Baker), Intermediate level (Millwright))*

Flowcharts will vary, but should:

- *start and end with a rounded circle.*
- *include decision points that are shown using diamond shapes.*
- *have a yes and no side to each decision.*
- *use rectangles to show each step.*

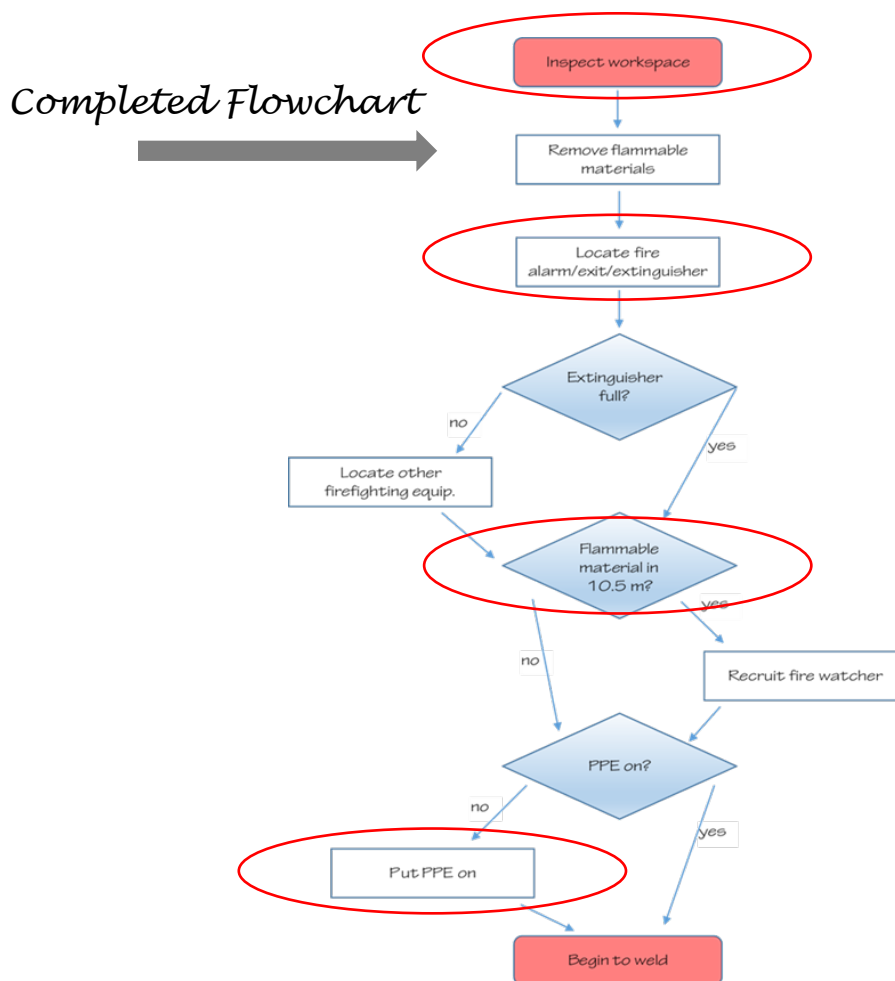


- use arrows to show the direction of the process.  
*How did you do?*

1.

On the next page is a partially completed flowchart showing the planning steps described in the article above that should be taken before beginning to weld. Use the information in the article to help you complete the flowchart.

*(problem solving Basic level, reading Intermediate level)*





1.

On the next page is a list titled *Workplace Move To-Do List*. The list has seven sections and a total of 15 individual tasks that need to be completed. The tasks are not written in the right spaces and/or sections of the list and so they are not in a logical order. Review the list and then number the tasks in the order in which you think they should be completed. One has been done for you as an example.

*(problem solving Basic level)*

ANSWERS WORKPLACE MOVE TO-DO LIST	
TASK	#
<b>Two Months Before Move Date</b>	
Keep packing.	5
Set up mail forwarding at the post office.	10
Advertise items to be sold or given away.	7
Change insurance and registration on any company-owned vehicles.	12
<b>One Month Before</b>	
Get packing materials.	3
Send out change of address information to customers.	8
Choose a moving company.	1
<b>Two Weeks Before</b>	
Start packing.	4
Rest!	15
Stay with movers while they load the truck.	14
<b>One Week Before</b>	
Sort what will be moved and what will be sold or disposed of.	2
Final packing.	13
<b>Day Before</b>	
Find out where moving truck can park and if need to reserve any space at the new location, for the day of the move.	6
<b>Moving Day</b>	
Arrange to transfer utilities.	11
<b>End of Moving Day</b>	
Keep packing.	9

1.

### The Bigger Picture

On the next page is a list of eight of the main changes, implemented by the owners. They are not in chronological order. To the right of the list is a list of eight dates. Read the descriptions of



the changes and then draw a line from each date to the innovation you think took place on that date.

*(problem solving Basic level)*

CHANGE	DATE
Control Skateboards MFG and 5-0 Skatepark is expanded to 7000 square feet.	1993
A dynamic online sales system is created, to cater to as many new customers as possible, and sales move up to another level.	1995
At 18, Carl Savard spent most of his time looking into ways to build his own skateboards. ... With the help of his family, Carl upgrades his machinery and sets up his first wood shop in his family's garage.	1996
Control expands again adding 7000 square feet, making it a 14 000 square foot factory with 15 employees.	1997
In early 1996 when skateboarding was in its full expansion stage, Carl and his family move the woodshop to an industrial area in a large enough space to facilitate the expansion of his company and the first ever indoor skatepark located on the south shore of Quebec City.	2001
The skatepark is closed to concentrate on manufacturing skateboards. The extra space is used to house innovative machinery such as a numerical 5 axes CNC tooling robot that bring the skateboard manufacturing process to the next level.	2004
Control Skateboard Inc. is founded	2006
The woodshop is moved into the most advanced setup to date, in a 6800 square foot location, with top-of-the-line computer-controlled router, robotic machinery, high precision molds and 55 presses.	2012



1993	At 18, Carl Savard spent most of his time looking into ways to build his own skateboards. Using wood working tools, homemade molds and sheets of maple veneer he was able to accomplish his desires. With the help of his family Carl upgrades his machinery and sets up his first wood shop in his family's garage.
1995	Control Skateboard Inc is founded
1996	In early 1996 when skateboarding was in its full expansion stage, Carl and his family move the woodshop to an industrial area in a large enough space to facilitate the expansion of his company and the first ever indoor skatepark located on the south shore of Quebec City.
1997	Control Skateboards MFG and 5-0 Skatepark expand to 7000 square feet.
2001	Skatepark closes to concentrate on manufacturing skateboards and to use the extra space to add innovative machinery such as a numerical 5 axes CNC tooling robot and brings the skateboard manufacturing process to the next level.
2004	Woodshop moved into the most advanced setup to date in a 6 800 square feet location, with top of the line computer controlled router, robotic machinery, high precision molds and 55 presses.
2006	Sales move to another level by creating a dynamic online sales system to cater to as many new customers as possible.
2012	Expands again adding 7000 square feet, now making it a 14 000 square feet factory and 15 employees.





## 4. DO THE ANALYSIS

**USE THE ANSWERS BELOW TO CHECK YOUR WORK.**

1.

How does the Image Institute ensure its graduates know how to work with clients to determine the best style or cut?

*(problem solving Basic level, reading Basic level)*

*Gets them working with clients right away so they get lots of experience.*

2.

What does the ad imply the Image Institute does better than other esthetics training schools?

*(problem solving Basic level, reading Basic level)*

*Trains learners better than other training schools.*

3.

What specific criterion does the ad imply makes the Image Institute the best choice for high quality training?

*(problem solving Basic level, reading Basic level)*

*Receive training from award winning instructors*

4.

The Image Institute promises learners several things. You are interested in taking the kind of training the institute offers, but you would like to determine whether the information in their advertisement is accurate. List three ways you could check the accuracy of the information.

*(problem solving Basic level)*

Answers will vary. Four sample answers follow.



1. Create a chart to compare what the Institute offers to what two or three other similar schools offer, using the same criteria for each.
2. Research the Institute's online profile; look for names of award-winning instructors.
3. Check online for reviews of the Institute and of instructors, by former students and clients.
4. Search for articles about the Institute generally.

The Workplace Inspection Report was completed by an OH&S officer, after a safety inspection of a workplace. There are five items marked with an X, indicating they were unsatisfactory at the time of the inspection.

On the next page there is a table with three columns:

Item requiring attention	Consequences of not correcting situation	Required action
--------------------------	--	-----------------

Each item marked with an X in the Workplace Inspection Report has been written in the *Item requiring attention* column of the table.

Your job is to:

1. Write a brief description of what you think the consequences could be of not correcting the item.
2. Write, briefly, what action you think is needed to address the problem.

*(problem solving Intermediate level)*

Item requiring attention	Consequences of not correcting situation	Required action (and by who)
<i>Employees trained in use of extinguishers in last 12 months</i>	<i>If there is a fire, there could be even more extensive damage because no one knows how to use the fire extinguishers. This could mean company downtime, layoffs, and injuries or even death.</i>	<i>Organize training for employees (manager, supervisor, or Human Resources)</i>



<i>First aid kit complete and accessible</i>	<i>If there is an accident needed first aid could be delayed meaning injury could be more serious and recovery time could be longer.</i>	<i>Check kit contents, replenish missing stock, and communicate to all employees where the kit is (safety officer)</i>
<i>Tool storage cabinets secured to walls</i>	<i>Cabinet could fall over causing damage to the tools or to any person in the area resulting in downtime and possible injury.</i>	<i>Arrange to have cabinet emptied, secured to wall, and restocked (maintenance department)</i>
<i>Hazardous materials properly labeled</i>	<i>The materials could be used for the wrong purpose or combined with other materials resulting in explosion or dangerous fumes.</i>	<i>Check and label all materials. If unsure of contents, dispose of the materials following all safety requirements. (Safety officer)</i>
<i>Unexpired Material Safety Data Sheets are available</i>	<i>Composition of materials, or the instructions for safe handling may have changed. Following expired data sheets may lead to improper results or accidents.</i>	<i>Destroy expired MSDS. Locate current MSDS and post, bringing the replacements to the attention of all affected employees (safety officers)</i>

1.

Below is a story about Minha, a job seeker who is a graphic artist. Following Minha's story is a job posting for a position as a graphic artist. Minha is not sure whether she should apply for the job.

1. Review Minha's story and the job posting.
2. In the story, underline Minha's criteria for a job.
3. In the job posting, circle each of the criteria described by the employer.

*(problem solving Basic level, reading Basic level)*



## Minha's Story

Minha is interested in finding an entry-level position as a graphic artist. She completed a one-year diploma at an arts academy with a specialty in drawing and a two-year program in multi-media design, at a technical college.

She has done some part time work with a couple of small design firms and has received good feedback on her artistic and technical skills and attention to detail. Her customer service skills have been pointed out as something she needs to work on, mainly because she is very shy and has difficulty talking to people she doesn't know well.

Minha would like a job that is full time, pays well enough that she can afford an apartment on her own, and that does not require her to have too much contact with customers or to work overtime. She needs a job soon.

### GRAPHIC ARTIST / PREPRESS TECHNICIAN POSITION

**Extra Great Graphic Communications** – Vancouver, B.C.

**Email:** [xt\\_raG\\_HR@xt\\_raG.bc.ca](mailto:xt_raG_HR@xt_raG.bc.ca)

Expanding international award-winning graphic arts/printing firm has an immediate opening for an experienced individual to join our elite team of quality-minded professionals. Position requires applicants to be highly motivated with superior attention to detail.

Send us your resume, including experience, wage history, wage requirement, and a statement about how you can contribute to our company and why you want this position.

#### Position Details

Minimum 2 years experience in prepress and/or printing; in-depth knowledge of Adobe Creative Cloud; ability to pre-flight and correct client furnished files; and create outstanding design/artwork for high-end award-winning printing projects. Exceptional customer service skills, ability to understand and clearly communicate complex specifications, meet tight deadlines while multi-tasking and possesses excellent written and verbal communication skills.

**Job Type:** Full time

**Required Experience:** 2 years on Prepress



**2.** Make brief notes in response to the guiding questions listed below.  
*(problem solving Basic level)*

**Guiding Questions**

What is the situation?

*Minha needs a job, and she has found a posting for a job similar to what she thinks she wants. She needs to think through whether the job is a good fit for her.*

What is happening?

*Minha is comparing the criteria in the job posting against her own criteria for a job.*

Why is it important?

*Thinking through whether the job is a good fit for what she wants before she applies will help ensure that, if Minha gets the job, she will be satisfied at her work.*

**3.** Now complete the table below and answer the question that follows.  
*(problem solving Basic level)*

<p>Minah is using critical thinking to make a decision that will help her solve the problem of ...</p>	<p><i>Whether or not to apply for a job that is similar to what she would like, but not exactly what she had in mind.</i></p>
<p>She is assessing...</p>	<p><i>Her likely fit with the job</i></p>



<p>The criteria she is using includes...</p>	<p><i>Her own needs and wants related to a job versus the need and wants of the company hiring.</i></p>
<p>The consequences of what Minah is considering include...</p>	<ul style="list-style-type: none"> <li>• <i>Not getting a job, if she determines that she cannot adjust her criteria to better fit with those of the company, e.g., being willing to work well with customers.</i></li> <li>• <i>Ending up with a job that she does not like.</i></li> <li>• <i>Ending up working at a company that determines she is not a good fit for them.</i></li> </ul>

What action do you think Minah should take? Answers will vary.



**5. BUILD A BETTER MOUSETRAP!**

**NEW IDEAS. BETTER SOLUTIONS.**

**USE THE ANSWERS BELOW TO CHECK YOUR WORK.**

1.

Compare the information in the articles on the next two pages. Use the table below to help you keep track of the information. In each case, the big problem has been identified for you. You will need to determine the specific problem the inventor is trying to solve.

*(problem solving Intermediate level, reading Basic level)*

	Story 1	Story 2
Inventor(s) name	<i>Ann Makosinski</i>	<i>Zack Rooney and Cooper Gagnon</i>
Age(s)	<i>19</i>	<i>17 (Cooper is assumed to be the same age as Zack)</i>
Location	<i>BC (Victoria then UBC)</i>	<i>Fall River, NS</i>
Invention name(s)	<i>e-Drink mug Hollow Flashlight</i>	<i>OffNet</i>
Big problem(s) trying to solve	<i>Reduce energy consumption</i>	<i>Improve, and reduce cost of, access to the internet for the developing world</i>
Specific problem(s) trying to solve	<i>Keep phone charged Keep flashlight working</i>	<i>Ability to connect to web without wifi or data plan</i>
Awards won	<i>Forbes 30 under 30 Times 30 under 30 for 2013</i>	<i>St Mary's University Hackathon competition</i>



	<i>Google Science Fair 2013</i>	
First invention	7	15
Education	<i>Studying English literature</i>	<i>High school</i>

## 2.

In the table below, one criterion has been entered. Identify at least three more criteria you would use to make your decision and write them in the criteria column in the table below.

Put a ✓ in the column below the name of the invention that you think best meets each criterion.

The invention that receives the most ✓ is the one you would invest in.  
(*problem solving Intermediate level*)

### Sample answers

Criteria ↓	e-Drink Mug	Hollow Flashlight	OffNet
1. Would benefit the most people			
2. <i>Importance of the problem to the country or world</i>			✓
3. <i>Uniqueness of the idea</i>		✓	
4. <i>Best for the environment</i>			✓
TOTAL	0	1	2

## 1.

Four of the museum's products are listed below. For each product:

- decide why you think it failed
- suggest one change that you think might have made the product more successful








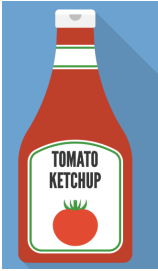
If you haven't heard of the product, you can do some online research to help you find the answers.

The first one is done for you as an example.

*(problem solving Intermediate level, digital Basic level)*

Invention	Why it failed	Change that might have helped
<p>Bic for Her</p> 	<p><i>The company didn't understand their customers and thought more women would buy pens if they were pink. But women don't need special pink pens because men and woman use pens the same way.</i></p>	<p><i>Just make a better quality, cheaper pen that everyone can use.</i></p>
<p>New Coke</p> 	<p><i>Because it suggested there was something wrong with the existing Coke; even though it was the best-selling cola drink at the time. Angered loyal Coke drinkers who were afraid the product they loved would disappear.</i></p>	<p><i>Should never have done it. Respect the old saying, "if it ain't broke, don't fix it." If they wanted to increase existing sales, they could have tried marketing to a group that didn't drink much cola (seniors, for example) instead of upsetting people who were already customers.</i></p>
<p>Harley Davidson Motorcycle Perfume</p> 	<p><i>The company didn't understand their customer base and under-estimated the appeal of the Harley brand. They mistakenly thought Harley drivers would buy anything that had the Harley name and logo attached. No real connection between Harley and perfume.</i></p>	<p><i>Conduct focus groups with female Harley riders before the product launch to get their input.</i></p>



<p>Heinz Purple and Green Ketchup</p> 	<p><i>Because it didn't make more people buy ketchup; it just split the existing market. Designed to appeal to children but parents do the grocery shopping and either thought it was gross, or they weren't looking to get their kids to eat more ketchup. Heinz created a solution to a problem that didn't exist. And when parents did buy it, kids got bored quickly leaving several half-finished bottles of different-coloured ketchup in the fridge.</i></p>	<p><i>Might have done better if they'd introduced only one new colour and focussed on that. (FYI: in total they created green, purple, orange, teal, blue and pink. Way too many choices.</i></p>
---	---	---

## THE INVENTION CHALLENGE

1.

Have you ever thought of a product you would like to invent; something that would help to solve a problem that you think is important? Want to give it a try?

Below is a set of steps you can follow, to help you plan your own unique product and to describe it to potential partners, investors and users.

*(problem solving Intermediate level, writing Basic level)*

*Answers will vary*



## 6. LARGEST HUMAN-MADE EXPLOSION! NOW THAT'S A PROBLEM!

**USE THE ANSWERS BELOW TO CHECK YOUR WORK.**

1.

Using the information in the article, identify at least one error made related to each of the three components of problem solving. Write a brief description of each error in the table below.

*(problem solving Intermediate level, reading Basic level)*

Planning	<i>Method chosen to get out of the harbour when it was jammed with ships did not demonstrate good planning as it did not take into consideration what other ships might do.</i>
Critical thinking	<i>The Imo decided to try to pass slower ships in the channel, causing her to be closer to the Mont Blanc. They did not consider that her increased speed would make it harder to slow or avoid a collision.</i>
Decision making	<i>Both ships made poor decisions. The SS Imo decided to increase its speed leaving it with less time to maneuver to avoid the collision. Then the Imo decided to reverse its engines, and the Mont Blanc decided to make a hard left resulting in the collision. Initially either of the ships could have decided to be patient and wait for a clearer channel.</i>





## 7. PLAN B

USE THE ANSWERS BELOW TO CHECK YOUR WORK.

### PLAN A AND PLAN B

1. Under *Plan A*, write 3 things you want to do this week. Under *But what if* write something that might prevent you from completing Plan A. Under *Plan B*, write 1 or 2 steps you could take so that things still work out. The first one is done as an example.  
Answers will vary. Examples given below. (*problem solving Intermediate level*)

Plan A	But what if	Plan B
Finish report due Friday	Your laptop crashes?	Make sure you have a backup copy of the report. See if you can borrow a laptop to finish on time.
Get to part time job on time everyday.	Buses are delayed on day of your second shift?	Make sure you have enough money with you to be able to call a cab, if buses are delayed
Talk to coach about missing 2 practices so you can go on a camping trip.	The coach says if you don't practice, you don't play	Suggest you attend 1 practice with the other squad and change camping plans so only miss 1 practice



<p><i>Use the car to pick up a chair a friend is giving you for your room.</i></p>	<p><i>The day and time you need the car, your sister has already booked it</i></p>	<p><i>Confirm more than 1 possible pick-up time with your friend so you will have flexibility</i></p>
--	--	---

## LEMONS TO LEMONADE

For each of the following “lemon situations”, think of 2 things you can plan to do to make the situation better. Write your ideas in the space provided.

*(problem solving Intermediate level)*

*Answers will vary. Examples given below.*

**1.**

You’ve been given a brief assignment in your volunteer job that you don’t like.

*Decide that you will complete the assignment and do a good job, to demonstrate your willingness to be a good team player.*

*After you complete the assignment, ask for a meeting with the volunteer coordinator, to discuss what options there are for future assignments.*

**2.**

You’re working on a group project with people you don’t like.

*Check with other groups to see if it might be possible to switch with someone.*

*Limit the time you need to spend with the group by completing as much of your part of the work as you can on your own.*

**3.**

You were late with your part of a group assignment and now no one wants to work with you.

*Tell members of the group you hope to join that you know you did not do your part on the previous assignment, but that you are committed to ensuring you do your part this time.*



*Always meet your deadlines for future assignments.*

**4.**

You don't think you have enough experience to succeed at the part time job you have been offered.

*Speak to your supervisor about your concerns. Explain that you believe you will need help to be able to succeed.*

*Review your resume to determine if your skills are overstated.*

**5.**

You've been late twice, and your boss says if it happens again, you're fired.

*Sincerely apologize and describe what you will do to fix the problem.*

*Figure out what you need to change, in order to get to work on time every time.*

**6.**

On Tuesday you got assignments for 3 different classes, all are due on Monday, but you already have plans to go camping for the weekend.

*Create a schedule with all the tasks you need to complete to get the assignments done before you go, then decide if it is feasible.*

*Recognize that you may not be able to go camping.*



## PHOTOGRAPHER CONTINGENCY PLAN

Photographers use their creative abilities and their digital skills to do their jobs. Great photographers also use the planning and critical thinking components of problem solving to make backup plans, to help them get the right shot, or to keep a shoot on track if things go wrong.

Read the article below adapted from *photographytalk.com* and answer the questions that follow. (*problem solving Intermediate level, reading Intermediate level*)

Why risk losing everything you've worked so hard for by not having a contingency plan in case of an emergency? Let's explore a few things you need to have in your contingency plan.

Back up your data. Do not trust your images to a single hard drive. You need a backup, then you need a backup of your backup. The rule of thumb here is to follow the 3-2-1 rule: have three copies of everything - a primary and two backups; have your files on two types of storage devices - a hard drive and a CD, for example, and have one copy of your files off-site - such as Dropbox or another cloud-based storage provider.

Identify a backup person. If something were to happen to you and you can't make a shoot you're booked for, you need to have a list of trustworthy photographers you can contact to take your place. Talk with them ahead of time about being on your emergency list and get their contact information.

Include details in your Plan B. Having backup photographers is a good start when creating a contingency plan, but you also need to give them enough details that they can do your job in an emergency. Things like location of your equipment and files, client contact information, calendar of appointments, a list of second shooters, assistants and vendors that you've worked with in the past, and a list of all your logins and passwords, including for your website and email. Obviously, your backup person needs to be someone you really trust.

Lastly, be sure that your clients understand that you've got an emergency backup plan in place. Part of prepping your clients should be giving them assurances that your emergency photographers are every bit as talented as you. If possible, you might even give a quick introduction to your emergency contacts - just their name or business name, how long they've been a photographer, and a couple of reasons why you trust them with your business.

Adapted from: <https://www.photographytalk.com/photography-articles/6592-how-to-plan-for-an-emergency-your-photography-contingency-plan>

What do each of the numbers in the 3-2-1 Plan refer to?

1.

3 = copies of everything - a primary and two backups





2 = have your files on two types of storage devices - a hard drive and a CD, for example

1 = have one copy of your files off-site - such as Dropbox or another cloud-based storage provider

2.

What two groups of people need to know you have a contingency plan?

Your back-up and your client

3.

What one person should you share your passwords with?

Your chosen back-up person

Use the information in this scenario to complete a contingency plan. A plan template can be found on the next page.

You have been hired to do the photography for a CD release for the band, *Bucks Beyond*. The work includes photos of the artist for the cover art, for media releases and for their electronic press kit (EPK). You are also to work the release event to provide the still photos. Another photographer will do the video. The release is to take place at 830 Green Ave. W. on April 27, 2020. Photo sessions for cover art, media and the EPK need to be scheduled for 3 months previous and they need to be done in two separate sessions: one for cover art and one for media and the EPK. The band may get bookings that interfere with dates you plan for the shoots.

You and another photographer, Georgia Montagne, have an agreement to provide support to each other on shoots in case either of you is not able to make a shoot you are leading on, unless she is away on a job. If that is the case, your next option is to contact either Annie Leibowitz or Ansel Adams. Both have full backup teams they can bring in as well, if necessary.

### Project Backup Plan

Project type	CD release	
Client name	Bucks Beyond	
Release date	April 25 27, 2020	
Release address	830 Green Ave. W.	
ITEM	PLAN A	PLAN B
Photo session 1 date.	Sunday, January 19 – less likely to be booked	Tuesday, January 21 – also less likely to be booked
Photo session 1 content	Cover art	Cover art
Photo session 2 date.	Thursday, January 23 – could get booked	Monday, January 20 – less time between photo sessions, but less likely to be booked
Photo session 2 content.	Media and EPK	Media and EPK
Back up photographer	Georgia Montagne	Annie Leibowitz



## BE PREPARED

In some types of emergencies, planning ahead saves lives. The website [www.getprepared.gc.ca](http://www.getprepared.gc.ca) provides scenarios you can use to practice how you would respond in an emergency. Try the one described below.

*Answers may vary but should be similar to the examples given below. (problem solving Intermediate level)*

You come home from school and see that the door to your house is broken. You think someone you don't know may be inside.

**1.** Who should you contact? A parent, neighbour or 9-1-1?  
911

Explain your choice.

*911 is the best contact option for potentially dangerous situations.*

**2.** What should you tell 9-1-1?  
*My name and address, where I am currently located, and that I have arrived home to see the front door is broken and that I am worried whoever broke the door could still be in the house.*

Explain your answer.

*911 will need to know who is calling, the location of the problem, that I am not in danger and what the problem is.*

**3.** Where should you wait for help? At your house or somewhere else?  
*At a neighbour's, if there is one nearby who is home. Otherwise, on the street at a safe distance from the house.*

Explain your choice.

*I need to stay away from the house until I know it is safe, but I need to be available to speak with police when they arrive.*





## 8. SOLVING PROBLEMS BEFORE THEY HAPPEN

**USE THE ANSWERS BELOW TO CHECK YOUR WORK.**

### CONTROL THE CHAOS

For each of the items listed below that you can control, write at least one thing you can do to better organize it. The first one is done as an example. (*problem solving Basic level*)

*Answers will vary. Examples given below.*

Things you can control	Organization strategy
Laptop	<i>Up to date anti virus software installed. Files regularly backed up</i>
Phone	<i>Lock with a password Delete battery draining apps</i>
Calendar	<i>Update daily. Use reminder function</i>
Study space	<i>Keep clean and germ free. Throw away papers you don't need once a week</i>
Car	<i>Keep at least half full of gas. Do regular maintenance</i>
Homework	<i>Create a schedule. Start assignments before you think you need to.</i>



Your health	<p><i>Get regular sleep.</i></p> <p><i>Drink 2 litres of water a day</i></p>
Add your own idea	

## **PROBLEM PREVENTION STRATEGIES**

Taylor is a grade 11 student who uses a calendar to keep track of their school assignments. For every assignment, Taylor enters:

- The due date with the name of the course and assignment type (e.g., an English essay is written EN essay)
- A “fake” due date 2 days before the actual due date
- The dates all major parts of the assignment will be completed.

Taylor tries not to schedule schoolwork Tuesdays or Saturdays as they have a part time job then. Use the information in the three assignments descriptions to fill in Taylor’s calendar for the next month. (*problem solving Intermediate level*)

1. Environmental Science field report (ES FR). Assigned October 31. Due November 14. Parts are A. field work, B. analysis and C. the report.
2. Drafting green design (DR GD). Assigned November 1. Due November 15. Parts are A. proposal and B. design.
3. Mandarin (speaking) group presentation (MGP). Assigned Nov 7. Due November 29. Parts are A, choosing a topic and B. a meeting and C. a meeting.

## 2024 NOVEMBER

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
					1	2 X
3 ES FR A	4	5 X	6 ES FR B	7 DR GD A	8 M GP A	9 X
10 ES FR C	11 ES FR 2 days! DR GD - B.	12 X	13 DR GD -2 days!	14 ES FR DUE	15 DR GD DUE	16 X
17	18 M GP B	19 X	20	21	22	23 X
24	25 M GP C	26 X	27 M GP -2 days!	28	29 M GP DUE	30 X



## LIKE A WELL-OILED MACHINE

*Answers to what happened on the construction project.*

Martine Construction had the contract to rebuild a suburban strip mall. The goal was to turn the mall around quickly so, whenever possible, the site supervisor scheduled up to 4 sub-trades on site at the same time. They were deployed in different parts of the mall and normally didn't interfere with each other's work.

Then, one day everything seemed to go wrong. First, a new electrical team was called in at the last minute. The electrical team they were subbing for had explained the job and, as it sounded simple, the new team just started working without checking in. They were used to having, and expected to have, the run of the work site, but it turned out they had set up in the same spot as the scheduled sprinkler fitters, so the electrical work came to a standstill. At that point, the ceiling installers, who would follow the sprinkler fitters, assessed the situation and figured their time would be better spent at another job, so they left. The inspector then showed up and approved the sprinkler fitting, but now the ceiling installers were across town.

Next a load of flooring that was back ordered arrived on site unexpectedly, a change order from the client suddenly appeared without the usual 24-hour notice, and a municipal clerk showed up with a question about a permit request related to some of the electrical work that had been filed without signatures.

Finally, in the end unit of the mall, the drywallers, who had showed up to start at 7 a.m., discovered there was a leaky pipe behind the framing work that hadn't been reported and needed to be repaired before any drywall work could proceed. Quite a day of non-stop problems.

*(problem solving Intermediate level, reading Basic level)*

1. List 4 of the occupations of people working on the mall.

*Electrical/electricians, sprinkler installers, site supervisor, ceiling installers, drywallers, inspector*

2. What did the municipal clerk need?

*Information about an unsigned permit request.*





**3.** Why did the inspector come to the work site?

*To approve the sprinkler installation.*

**4.** For each of the following problems, identify at least one action that could have been taken to prevent the problem, and who was responsible for the action. The first one is done as an example.

PROBLEM	PREVENTATIVE ACTION	RESPONSIBILITY
Electrical team setting up with sprinkler fitters	<ol style="list-style-type: none"> <li>1. Team could have checked with site supervisor.</li> <li>2. Original electrician could have told subs to check with supervisor before starting</li> </ol>	<p><i>Subbing electricians / electrical team lead</i></p> <p><i>Electrician who arranged for subs</i></p>
No signature on form	<ol style="list-style-type: none"> <li>1. Site supervisor should have checked permit request before it was filed.</li> <li>2. Person completing the form should have checked to see that it had been filled out completely.</li> </ol>	<p><i>Site supervisor</i></p> <p><i>Likely the electrical team lead</i></p>



<p>Flooring delivery</p>	<ol style="list-style-type: none"> <li>1. Person in purchasing and receiving at the flooring company should have given paperwork to the delivery people.</li> <li>2. Delivery team should have asked about paperwork when they picked up the load</li> </ol>	<p>Purchasing and receiving clerk</p> <p>Delivery team / delivery team lead</p>
<p>Client change order request</p>	<p>Client should have followed the requirements for the 24-hour notice of a change request.</p>	<p>Client</p>
<p>Ceiling installers not on site</p>	<p>Ceiling installers should have checked in with the site supervisor to confirm their assessment of the situation, before leaving the site.</p>	<p>Ceiling installers / installer's team lead</p>
<p>Leaky pipe</p>	<p>Assuming the leak existed when the framers were working on that wall, they should have reported it.</p>	<p>Framers / Framer's team lead</p>

**SKILLS FOR SUCCESS  
WORK READY YOUTH PROGRAM**



**SFS  
ASSESSMENT!**

# **PROBLEM SOLVING**

Use the table of contents to navigate through this workbook. Track your progress by putting a checkmark beside each topic you complete.

SECTION AND TOPIC		Pg.	√
Assessment		179	
1	Problem Solving Skill Testing Questions	181	
2	Problem Solving Skill Testing Questions – Answer key	189	



## 1. PROBLEM SOLVING SKILL TESTING QUESTIONS

**TRY THE 11 QUESTIONS BELOW THEN CHECK THE ANSWER KEY TO SEE HOW WELL YOU DID.**

1.

You and eight people are going to a bowling party. Some people have special food requests. Zack wants the meal package and two extra slices of pizza. Christy wants three hot dogs and no pizza. How many packages do you order?

### BOWLING BIRTHDAY PACKAGE

We have great fun and food packages!

#### Your party package includes:



- 90 minutes of **Cosmic Bowling** (based on availability)
- 2 slices of a large cheese pizza
- 1 large hotdog
- 1 medium soft drink

All you have to do is bring the cake and candles!

*Our Bowling Birthday Package is just \$17.50/ person  
(Tax Included; Gratuity not included; minimum of 6 children/teens)*

- Order 8 birthday packages and extra pizza and hot dogs.
- Order 9 birthday packages and two extra hot dogs.
- Order 9 birthday packages and three extra hot dogs.






**2.**

In what direction will the tool handle be rotated?

Rotate the tool handle counter clockwise 270°  
until it is lined up with the centreline  
of the rear cylinder.



- a) 
- b) 
- c) 



3.

You are the team leader for today's robotics competition. Alex is sick and can't go to the competition. Who would you choose as the driver?

Team Member	Team Role
You	Leader, decides on group strategy, robot designer
Alex	Driver, operates the robot, robot designer
Elena	Mechanic, fixes and maintains the robot
Mike	Scout, makes observations about other team's robots, robot parts builder

- a) Mike
- b) Elena
- c) You

4.

Which set of measurements is most important to a designer, when designing jeans?

- a) Waist / Hips
- b) Bust / Hips
- c) Waist / Height



**5.**

Your current weekly workout routine is shown below. You need 240 points to reach your next achievement level. What could you do to reach that next level?

Exercise Coach App	
Exercise	Points per week
Running 30 min x 3 days	90
Pull Ups 10 reps x 3 sets	30
Push Ups 15 reps x 4 sets	60

- a) Run 20 mins, 1 set pull ups, 1 set push ups
- b) Run 30 mins, 2 extra sets push ups
- c) Run 40 mins, 1 set of 10 pull ups

Internet service provider technicians visit customers' homes and businesses to fix technical issues. They track the problems and solutions in their reports using codes. A customer's issue was quickly solved with a few adjustments.

**6.**

Which code will the technician use in the report?

- a) 121 faulty hookup and/or customer equipment
- b) 122 fine tuning only
- c) 123 test ok





7.

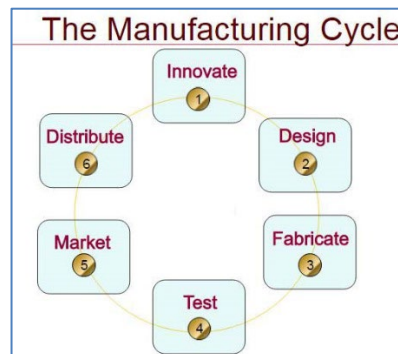
Students who are building the set for a school play are being interviewed by a local TV reporter. What is the suggested order for interviews?

Job	Time Available
Set decorator	1:30 to 2:45
Carpenter 1	1:00 to 3:00
Carpenter 2	2:15 onward
Painter	1:30 to 2:00

- a) Carpenter 1, painter, set decorator, carpenter 2
- b) Painter, carpenter 2, set decorator, carpenter 1
- c) Set decorator, painter, carpenter 1, carpenter 2

8.

At which step in the manufacturing process are potential buyers made aware of the product?



- a) Test
- b) Market
- c) Distribute



9.

You are writing a blog about censorship and how the right to express opinions about one's beliefs can affect how people judge others by race, religion or values. What do you need to be aware of when writing this blog?



- a) Writing about people your audience knows
- b) Tone of voice, choice of words
- c) Formal or informal vocabulary

10.

What does this ad imply the Esthetics Institute does better than other esthetics training schools?

**The Esthetics Institute's Edge**  
Upon completion of our training, students enter the industry feeling motivated, excited and confident in their knowledge and skills. They will have a notable competitive edge over graduates from other programs, allowing for an effortless transition to a spa or salon.

- a) Guarantees success
- b) Provides better training than other programs
- c) Graduates will get a job



A client consultation is a fact-finding mission and the first part of the service hairstylists give their clients. Ensuring mutual understanding is very important.

**11.**

A client has trouble explaining the type of colour or style she would like. What is the best way for a stylist to ensure he understands what she wants?

- a) Describe to her what he thinks she wants.
- b) Describe to another stylist what he thinks the client wants.
- c) Show the client pictures of what he thinks she is describing.





## 2. PROBLEM SOLVING

### SKILL TESTING QUESTIONS

### ANSWER KEY

#### HOW DID YOU DO ON THE 11 QUESTIONS?

1.

You and eight people are going to a bowling party. Some people have special food requests. Zack wants the meal package and two extra slices of pizza. Christy wants three hot dogs and no pizza. How many packages do you order?

*b) Order 9 birthday packages and two extra hot dogs.*

Problem solving – Basic Level

2.

In what direction will the tool handle be rotated?

*c) *

Problem solving – Basic Level

3.

You are the team leader for today's robotics competition. Alex is sick and can't go to the competition. Who would you choose as the driver?

*b) Elena*

Problem solving – Basic Level

4.

Which set of measurements is most important to a designer, when designing jeans?

*a) Waist / hips*

Problem solving – Basic Level



5.

Your current weekly workout routine is shown below. You need 240 points to reach your next achievement level. What could you do to reach that next level?

*b) Run 30 mins, 2 extra sets push ups*

Problem solving – Basic Level

6.

Which code will the technician use in the report?

*b) 122 fine tune only*

Problem Solving – Basic Level

7.

Students who are building the set for a school play are being interviewed by a local TV reporter. What is the suggested order for interviews?

*a) Carpenter 1, painter, set decorator, carpenter*

Problem solving – Basic Level

8.

At which step in the manufacturing process are potential buyers made aware of the product?

*b) Market*

Problem solving – Basic Level

9.

You are writing a blog about censorship and how the right to express opinions about one's beliefs can affect how people judge others by race, religion or values. What do you need to be aware of when writing this blog?

*b) Tone of voice, choice of words*

Problem solving – Intermediate Level



10.

What does this ad imply the Esthetics Institute does better than other esthetics training schools?

*b) Provides better training than other programs*

Problem solving – Basic Level

11.

A client has trouble explaining the type of colour or style she would like. What is the best way for a stylist to ensure he understands what she wants?

*c) Show the client pictures of what he thinks she is describing*

Problem solving – Basic Level

How did you do?

Enter the number of answers that you got correct. \_\_\_\_\_/11

9 - 11 correct: Good work! You've mastered the fundamentals and your skills might be quite quickly increased with practice.

6 - 9 correct: Keep at it! Your skills need to be improved, but some of the fundamentals are in place. It might be possible to improve reasonably quickly.

<6: Your skills definitely need practice.