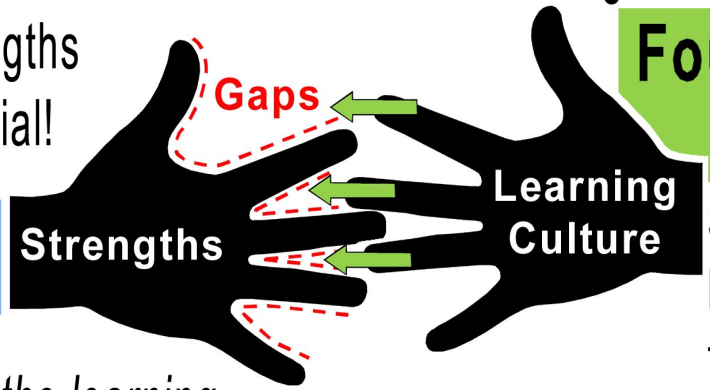
# Learning Culture
# SUCCESS TOOLKIT
## for Veterans


## Potential

Student potential is ***NOT*** questioned in a learning culture. All students have many strengths and great potential!

## Commitment

Student commitment ***IS*** questioned in a learning culture.




## Foundation for Learning

Student success begins with a strong foundaton for learning

## Freedom

*The purpose for the learning* - the goal for all students in a learning culture is to achieve ***FREEDOM!***

## Secret to Success

If you want to succeed in anything, then you must want it as much as you want to breathe!

# Learning Culture Success Toolkit for Veterans

## Table of Contents




***Acknowledgements*** – This toolkit was developed through the inspiration and leadership of student Veterans **Josh Forni – OS2**, **Andrew Gooch – EM2**, **Darrell Roddick – FC1** and **Kimberly Torres – GM2**. Special thanks to MESA Program Director Rafael Alvarez for his guidance and support.


Adapted from the San Diego City College MESA Program Model (2018)

## Welcome!



There comes a time in a person's life where one chapter ends and another begins. For whatever reason, and no matter how long ago that chapter ended, now is the time to start a new fresh and unscripted one racked with new ideas, conquered obstacles, and lived dreams. One full of potential … *your potential!*

There was a culture you used to belong to. Maybe you still do. Well, would you believe there is a culture amongst some of the top performing students on campus? It isn't some secret society, yet most students have no idea it exists. This culture is one that focuses on strength, empowerment, self-motivation and leadership. *Sounds familiar right?* This culture is … the LEARNING CULTURE.

This is your clean slate to start something extraordinary. It's exciting. It's new. It can also be frustrating and at times intimidating, but never question your potential. Just like every student you encounter on your journey, you have many strengths and great potential, as shown on the cover for this toolkit. Instead, what you should first question is your commitment, because in the learning culture we don't question potential, we question commitment. *Are you committed to being the most successful student you can be?* You must also recognize that while you have many strengths, you also have gaps (*not weaknesses*). Your challenge is to learn the learning culture, and use it to fill your gaps. You'll be amazed at the results!

Before you dive into this toolkit, stop and pat yourself on the back. Thank yourself for starting a journey that will lead to a gratifying life and future successes; a journey that will take you farther than you would have ever thought possible. You've taken the initiative to start the journey, now here are the tools you will need to make the path most traveled less difficult.

Tools by themselves are useless – *the hammer cannot hit the nail without your hand guiding it*. The tools in this toolkit were adapted from the learning culture in the San Diego City College MESA Program Model, and they have been successfully tried and tested by students just like you. The tools will help you and provide you with a solid foundation to build on, as long as you choose to use them. Think of the tools as S.O.P. (Standard Operating Procedure) in the learning culture.

Something defines every new chapter in life and helps to give it a title. When this chapter comes to an end, "*How I Destroyed College: A Guide to All A's*" is hopefully somewhat similar to the title you choose for it. *Welcome to City College!*

**Darrell Roddick – FC1** **Andrew Gooch – EM2** **Kimberly Torres – GM2** **Josh Forni – OS2**

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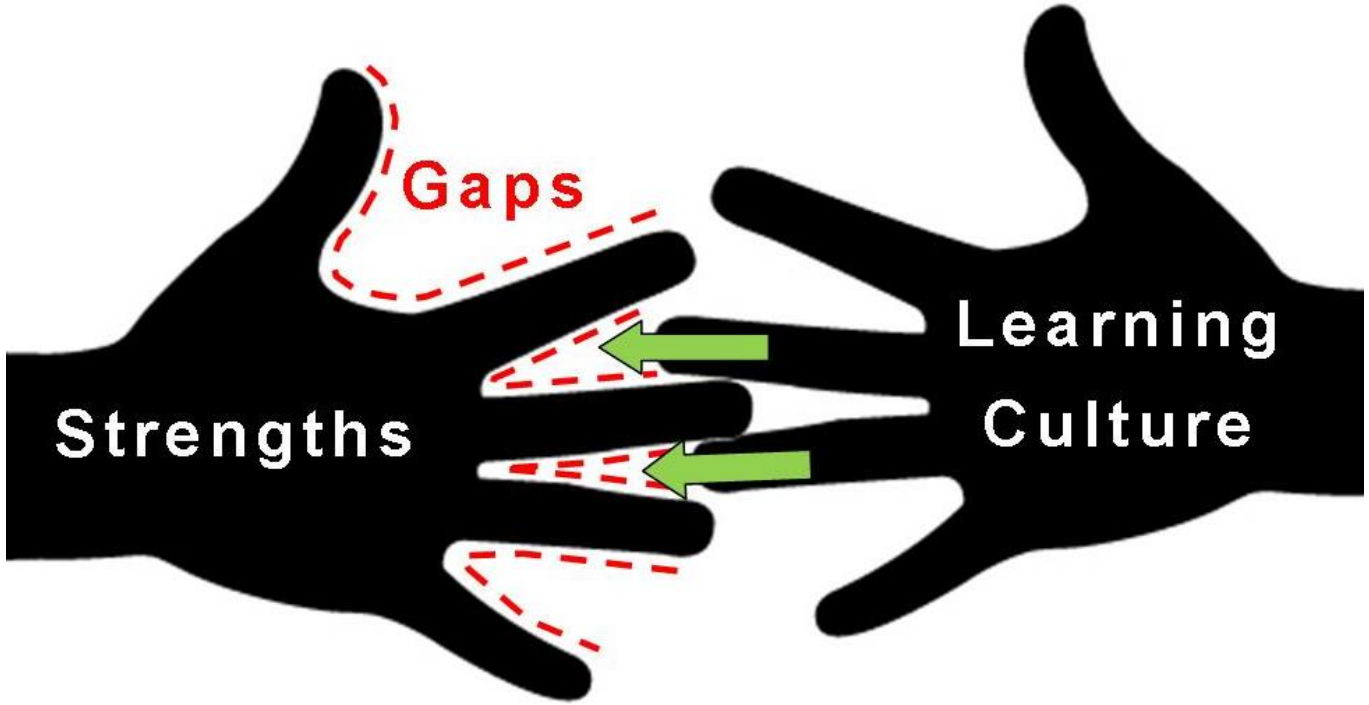
# Challenge

Student **POTENTIAL** is not questioned in the learning culture: *all students have great potential!* Yet, while **YOU** have many strengths, **YOU** also have gaps.

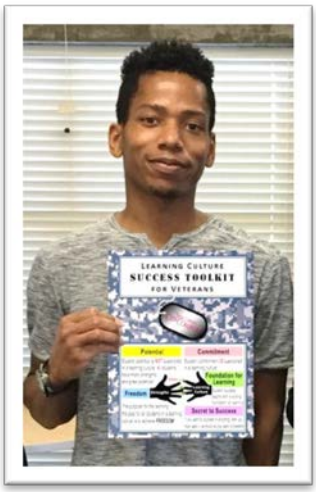



The ***CHALLENGE*** for all Creators is to learn the learning culture, and use it to fill their gaps.

Adapted from the San Diego City College MESA Program Model (2018)

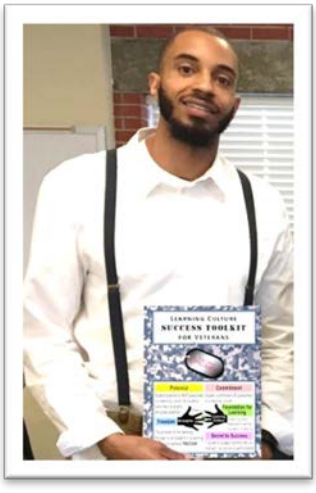
# *What the Learning Culture means to me!*

Student Testimonials




## Andrew Gooch – EM2

While in the Navy, I had taken a couple of college classes, but I never attended a campus nor did I know what being a full time student entailed. I was motivated and determined to be successful in all my classes in my first semester at City College. *I mean, after serving in the military how hard could a class be?* I started out ok, but by the end of my first semester, despite my hard work and drive, my grades were not where I wanted them to be. I knew something was missing. In the Navy there is a procedure for everything. We have a culture of doing things in a specific way, every time to ensure a safe and reliable operation. In college, I felt there was no culture to rely upon; no procedure to check myself against and see where I went wrong. It wasn't until I was introduced to the learning culture that I really understood what I was missing. After being immersed in a learning culture and being in an environment of success with like-minded peers, I finally have that missing piece I was looking for. My GPA the next semester was 4.0, and I'm excited to continue my college education.



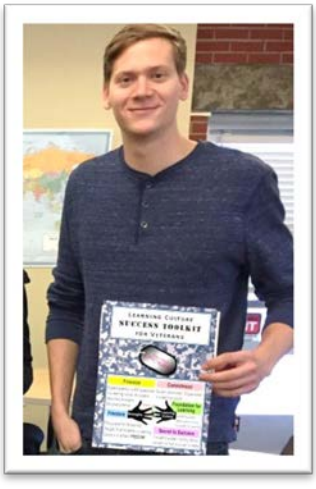
## Darrell Roddick – FC1

College was always a "thing" in my family that needed to be completed to ensure a good life. How one should go about completing it was never actually discussed. I found college to be stressful and confusing, and a lot of the time I felt I simply wasted my time. Before finding the learning culture, I was for all intents and purposes blind to any effective way of learning, studying, and, in the end, retaining information that I needed to be successful in my classes. Then I was given the tools, which I continue to use every day, to shift my mindset and become a successful student. I see more clearly the obstacles that higher education has laid out in front of me, but the tools help me to pave a smoother road to my success. The learning culture has given me the ability to earn grades that I thought were only for the select few individuals who just "got it." Now I get it, and it's thanks to having the right attitude and applying fundamental skills to learning. My advice is simple, "Ask yourself, why are you here and where do you want to be?" If the answer to these questions is *to be successful*, why not try a method that has been proven to work? Why wait? All it takes is commitment and determination. You just have to want it badly enough.

***What the Learning Culture means to me!*** Student Testimonials (*continued*)

## Kimberly Torres – GM2

I am a proud U.S. Navy veteran. I served from December 2008 to December 2012. I am a prior Gunner's Mate, second class petty officer with my surface warfare pin [GM2 (SW)]. When I first got out of the Navy, I was not able to start using my G.I. Bill benefits due to having my first child. I began taking transfer-level English and basic skills math at City College in summer 2017, working towards a BS in physics with a concentration in astronomy. That summer session went well, but it was hard for me to adjust to being a student. I didn't know how to go about studying, especially for math. I then had a full course load in the Fall semester, and I started to struggle in my math class. I failed my first exam. I tried the same study habits I used for my summer math class, but I just wasn't grasping the information. I started to get nervous that I was going to fail the class. It was then that I discovered the learning culture, and I was given the tools to help me succeed in my classes. The fact is that we all have gaps in our foundation for learning, and these tools can help to fill those gaps. I had done well in my first classes at City College in the summer, so I didn't think I had any gaps. Without hesitation, I started to use the tools, and I started to see improvement in my learning. I did really well on my next few quizzes and exams. I ultimately ended up with an A in the class. I was just missing the learning culture. It is now a part of my everyday routine, part of my "uniform of the day." *Remember going to quarters every morning to discuss what was expected for the day, and then ending the day with another quarters that was basically a recap of the day?* This gave everyone an "early alert" on what needed to be corrected. That's what this learning culture does. It helps you to see your problem areas and identify what can be done to fix them. With these tools, there is no doubt in my mind that you will succeed here at City College and beyond.



## Josh Forni – OS2

The toolkit you are holding is arguably the most important tool you will have throughout your college career, and, if used correctly, it will make you a very successful student. Once I was introduced to the learning culture, I identified the gaps in my learning and was able to change my approach towards school. Being prepared for class prevents you from playing "catch up," allows for effective use of the information you already have, and strengthens what is taught during lecture. Stop memorizing; start retaining and understanding. Surround yourself with people that care about your education as much as you do. *Good luck!*

# Cultural Iceberg*




## How does this apply to the ***Learning Culture***?

Just like every culture, the Learning Culture has two main parts - a surface and a deep culture. *Pay close attention to what exists in each part!* The surface culture can be more easily seen and understood; however, the deep culture is often more important, yet many students are not aware it. Make it your priority to learn the Learning Culture, both surface and deep culture, and use it to be in control of your learning and to create your own success. *That's what Creators do!*

*Adapted from Downing, Skip (2013). On Course: Strategies for Creating Success in College and in Life (7th Ed.)

# Differences between High School and College Culture*

| HIGH SCHOOL CULTURE | COLLEGE CULTURE |
|---|---|
| High school culture usually assumes immaturity. | College culture **expects maturity!** |
| Students have few choices and less freedom. | Students have many choices and much more freedom. |
| Students are required to attend high school. | Students are not required to attend college, it is a personal choice. |
| Teachers often remind students to complete assignments. | Professors give assignments and expect students to hand them in on time without reminders. |
| Teachers spend time disciplining students who create disruptions. | Professors do not tolerate disruptive students and may ask them to leave the class. |
| Students typically spend **30** or more hours in class each week, and teachers cover the majority of the course material during class. | Students typically spend **15** or fewer hours in class each week, and professors expect students to come prepared to discuss new material in class and review the lecture notes outside of class. |
| Teachers and parents manage much of the students' time. | Students ***must*** manage their own time. |
| Teachers are often pressured to "teach to the test" so that students can pass standardized assessments. | Professors have more "academic freedom" to choose what to teach and how to teach it, and they challenge students to be critical thinkers. |
| Academic standards are not always high, and students often get good grades without working too hard. | Academic standards are usually high, and all students are expected to do the work necessary to meet these challenging standards. |
| Family and friends provide advice or solutions to help students with academic, social, and other problems. | Students ***must*** solve their own problems or seek help from one of many support services available at the college. |
| Students' choice of classes is relatively limited by graduation requirements. | Students have many courses to choose from, and they are responsible for meeting with a counselor to create an educational plan. |
| Teachers and parents often dictate priorities for students. | Students are responsible for setting their own priorities and having a balance between academics, work and personal life, including parties, television, video games, browsing the Internet, etc. |
| Educational costs, including textbooks, are paid for by taxpayers. | Educational costs, including text books, are paid for by the students and/or the student's family, which may also include applying for financial aid and loans. |

In the college culture, students ***must*** always be in control of their learning!

*Adapted from Downing, Skip (2013). On Course: Strategies for Creating Success in College and in Life (7th Ed.)

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# Responsibility & Choice*



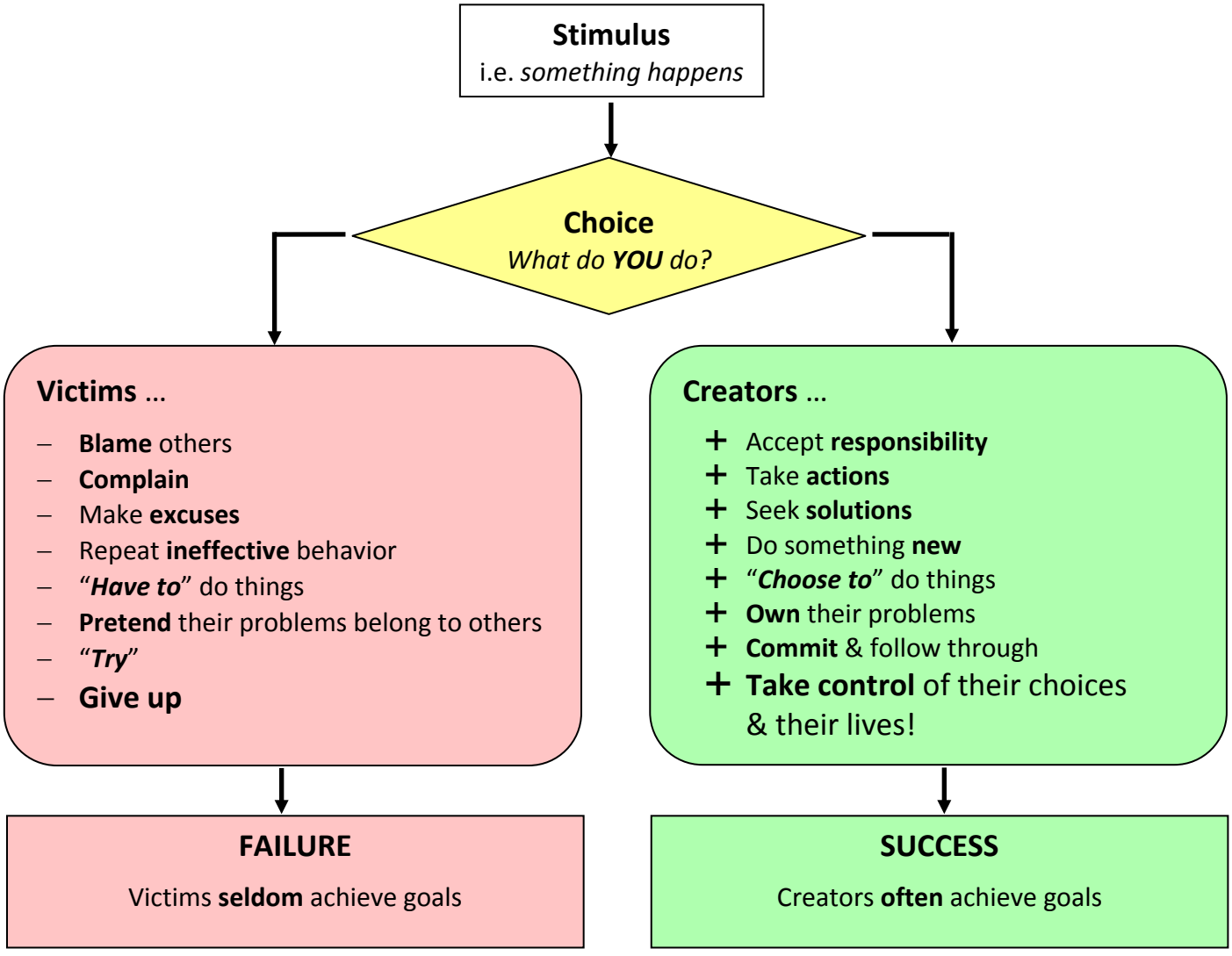
What is self-responsibility? Why is it the key to controlling the outcomes and experiences of your life? When faced with a choice, do ***YOU*** choose the role of ***Victim*** or ***Creator***?

*When people keep doing what they've been doing even when it doesn't work, they are acting as*

***VICTIMS***

*When people change their beliefs and behaviors to create the best results they can, they are acting as*

***CREATORS***




**CREATORS** take responsibility, take control of their choices, own the Foundation for Learning, use available resources, and achieve their goals. It's a matter of attitude.

*Need help? Speak with a Counselor about being a Creator and taking more control of your choices.*

*Reference: Downing, Skip. *On Course: Strategies for Creating Success in College and in Life.*

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# SECRET TO SUCCESS

*A Learning Culture of Success!*

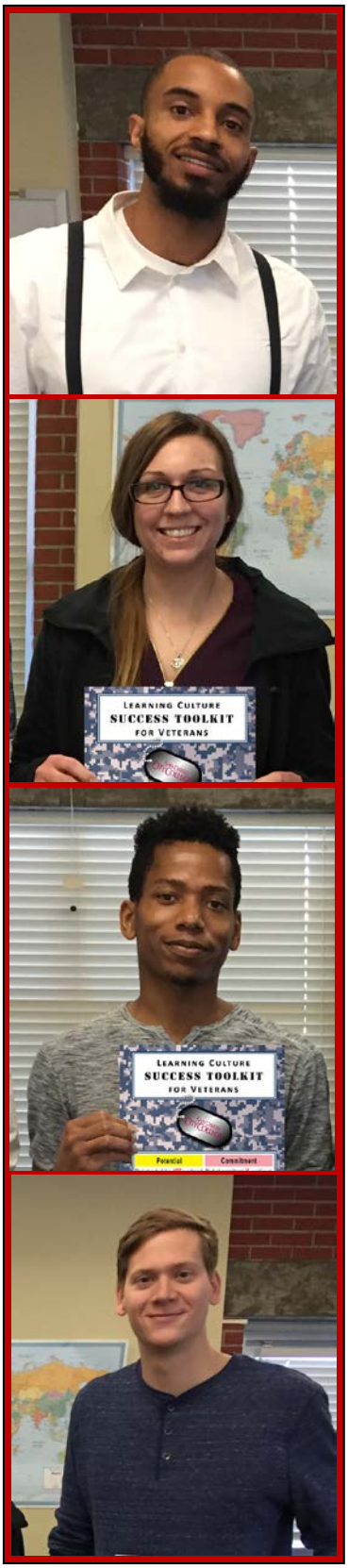
A *wise man* lived in an African village next to a lake. He knew every secret of life.

One day, two village kids decided to test the wise man. They asked him, "What is the secret to success?" Without saying a word, the wise man took each kid by the hand and walked them to the lake and into the water - *until they were completely underwater!* The kids didn't know how to swim, and they began to panic.

But just before they could no longer hold their breath, the wise man pulled them out to the shore. Taking deep breaths, the kids wildly began to catch their breath, and they screamed at the wise man, "Are you CRAZY? You could have killed us!" The wise man answered, "Just before I pulled you from the water, what was most important to you?" The kids replied, "We were going to drown. We wanted to breathe!"

Sharing his wisdom, the wise man said, "Exactly! When you find something in life that you want as much as ***you want to breathe***, then you will find the *secret to success*."

*Adapted from story by Dr. Edward Prather, Emerging Ethnic Engineers Program, University of Cincinnati*



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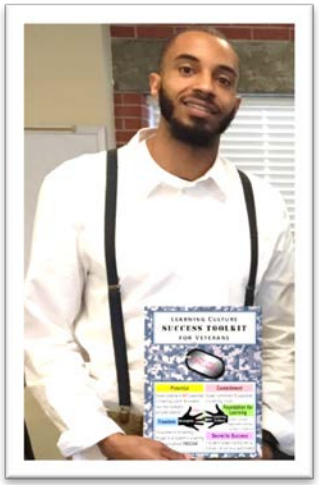
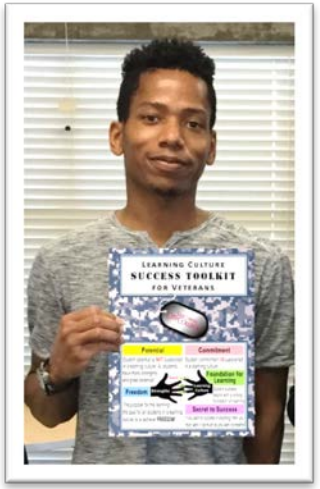
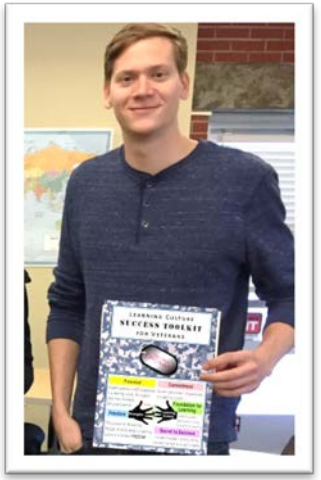
# ATTITUDE

"The Veterans Service Center does nothing for you – it does everything with you, and it will fight for you as hard as you fight for yourself!"



Adapted from the San Diego City College MESA Program Model (2018)

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# MENTAL TOUGHNESS

No matter how big or difficult the challenge, Creators have the ***mental strength***, ***emotional power***, ***desire***, ***discipline*** and ***confidence*** to succeed. That's what Creators do!

Adapted from the San Diego City College MESA Program Model (2018)

# 10-point Success Plan for Creators *after* Transfer

1. Protect *your* GPA
2. Academic Support Programs
3. Educational Planning
4. Mentors
5. Communication Skills
6. Career Prep: Resume, Cover Letter & Mock Interviews
7. Organizations & Leadership
8. Regional/National Conferences
9. Internships/Research
10. Community Service/Volunteering

For more information, please see the ***10-point Success Plan for Creators after Transfer*** handout

**Purpose** – The purpose of this plan is to give Creators the best opportunity for success when they graduate from the university. Follow this plan to create your future – *that's what Creators do!*

**Goal?** Before using this Success Plan, you must first identify your reason for being at the university. How do you plan to use your Bachelor's degree, i.e. do you wish to continue into graduate school, begin working in industry, conduct research or seek other opportunities? Once you know your goal(s) for "*after graduation*," this Success Plan is the key for achieving your goal(s).

Adapted from the San Diego City College MESA Program Model (2018)

# 12 10-point Success Plan for Creators *after* Transfer

**Purpose** – The purpose of this plan is to give Creators the best opportunity for success when they graduate from the university. Follow this plan to create your future – *that's what Creators do!* Enjoy the experience.

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☐ **Protect *your* GPA** – Academics must always come first. *This is not a choice!* You cannot hope to achieve your goals with a low GPA. Creators are expected to always be IN CONTROL of their learning by applying the learning culture and learning strategies, including Early Alert, to achieve academic excellence. Protect your GPA by finding a balance between academics, professional development, work and personal interests & responsibilities. KEY STRATEGIES: Build relationships with Professors & TA's (Teacher Assistants) and form study groups.

☐ **Academic Support Programs** – What support programs are available at your university (i.e. MESA, EOP, OASIS, LSAMP, CAMP, etc.)? Creators are expected to use self-advocacy to find every available support program to benefit from their services, including counseling, tutoring, financial aid, learning communities, etc.

☐ **Educational Planning** – An education plan is your roadmap for achieving your degree goal. What classes are required for your major? What other general education classes are required? Are you interested in having a "double major"? Will you benefit from having a "minor"? Which classes have pre-requisites or co-requisites? What should be your semester-by-semester plan? Is study abroad (*recommended!*) an option? When will you graduate? Creators must meet with their academic advisor regularly to discuss these and other important questions.

- ☐ **Mentors** – *Why mentors?* Because different mentors are needed in different situations. More than just friends, think of mentors as trusted "coaches" who can advise you in making decisions, planning, overcoming challenges, networking with others, and generally moving forward in your life. Creators are expected to have multiple mentors, including academic mentors (e.g. faculty, counselors, program directors and staff), professional mentors (e.g. industry professionals) and peer mentors (e.g. undergrad and graduate students). *Who are your mentors?*
- ☐ **Communication Skills** – More than just "good," effective communication skills (i.e. reading, writing, speaking and listening) are critical for success in life, work and relationships. These skills are also very important for leaders, who use communication skills as an important part of emotional intelligence. Beyond being scholars, Creators are leaders! *What steps are you taking to improve your communication and public speaking skills?* KEY STRATEGY: Join a Toastmasters group.
- ☐ **Career Prep: Resume, Cover Letter & Mock Interviews** – A polished resume and cover letter provide an introduction, while a quality interview gets the prize, i.e. internship, job, etc. Creators must take advantage of any and all of the university's career services, including workshops and career fairs.
- ☐ **Organizations & Leadership** – Student organizations provide critical opportunities for networking, industry exposure, leadership, conferences, competitions, scholarships and overall professional/personal development. Organizations also provide key opportunities for participating on design teams. *What organizations are you involved with?*
- ☐ **Regional/National Conferences** – What regional/national conferences are related to your major? When and where are they held? Beyond having the experience of traveling to other cities, conferences provide critical opportunities for networking with other scholars and professionals, learning about research and career options in your discipline, and presenting your work. KEY STRATEGY: Attending a conference during your Junior year is recommended; however, you *must* attend a conference in your Senior year.
- ☐ **Internships/Research** – *The answer is YES!* Creators *MUST* have 1 or more internship and/or research experiences (i.e. during summer, academic year or co-op schedule) before graduating. Beyond providing important industry exposure, experience, skills and networking opportunities with professionals in your field of interest, internship/research experiences will help you to decide if your goals for "*after graduation*" are right for you!
- ☐ **Community Service/Volunteering** – Beyond contributing to your community and providing content for your resume and scholarship applications, community service/volunteering provides great opportunities for gaining experience, developing leadership skills, networking with others, and team building. *What opportunities exist in your community?*

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# CREATOR LAW

1. IF YOU DON'T WRITE IT DOWN, IT DIDN'T HAPPEN
2. KEEP IT SIMPLE
3. WORK SMARTER, NOT HARDER

Adapted from the San Diego City College MESA Program Model (2018)

# Learning Styles

Knowing your learning style can help you determine the best ways for you to study. Knowing that will help you discover how you best remember information. This information can help you with everything from improving your test taking skills to choosing a career. Take the survey below to find out what your learning style is.

**Rank each statement as follows: 1 – Seldom/Never 2 – Sometimes 3– Often**

## Visual Learner

_____ I remember information better if I write it down.
_____ Looking at a person who is talking helps me stay focused.
_____ I need a quiet work space to study or work in.
_____ When I take a test, I can see a page of the textbook or information from the board in my head.
_____ When I'm given directions verbally, I need to write them down.
_____ Listening to music or other background noise is distracting to me when I'm trying to work.
_____ I don't always "get" jokes.
_____ When I'm in class or doing homework, I doodle on the margins of my notebook paper.
_____ I have trouble following lectures.
_____ I react very strongly to seeing colors.
_____ **TOTAL**

## Auditory Learner

_____ My papers and notebooks are very messy.
_____ When I read, I trace the words with my finger as I go along.
_____ I don't follow written directions very well.
_____ If I hear something, I will remember it.
_____ Writing is a difficult task for me.
_____ I tend to misread words from texts, like "same" and "some."
_____ It's easier for me to listen and learn than to read and learn.
_____ Interpreting peoples' body language isn't something I'm good at.
_____ If a text has small print or the quality of the copy is poor, I have a very difficult time reading it.
_____ My eyes get tired quickly even though I have had my vision checked and it's fine.
_____ **TOTAL**

## Kinesthetic/Tactile Learner

_____ I start projects before reading the directions.
_____ I don't like sitting at desks for a long time.
_____ I prefer to watch something being done, then do it myself.
_____ I use a trial and error when solving problems.
_____ I like reading my textbooks when I'm on an exercise bike or doing some other activity.
_____ I take a lot of study breaks.
_____ I don't give step-by-step instructions very well.
_____ I enjoy sports and exercise, and I'm quite good at one or more sports.
_____ I use my hands when I am describing something.
_____ When I rewrite or type my notes, it's easier for me to remember them.
_____ **TOTAL**

Your highest total is your preferred learning style. Read on to learn more about how you learn best and to get some valuable study tips:

16

# Learning Styles

**Visual Learners…**
- Need to see information to know it.
- Have a strong sense of color.
- May be artistic.
- Often have difficulty following spoken directions.
- May overreact to sound or noise.
- Often misinterpret words.

**Study Tips!**
- Use graphics to reinforce your learning, like films, pictures, diagrams, doodles.
- Color code your notes and tools.
- Ask for written directions.
- Use flow charts and diagrams when taking notes.
- Visualize the spelling of words and facts that you must memorize.

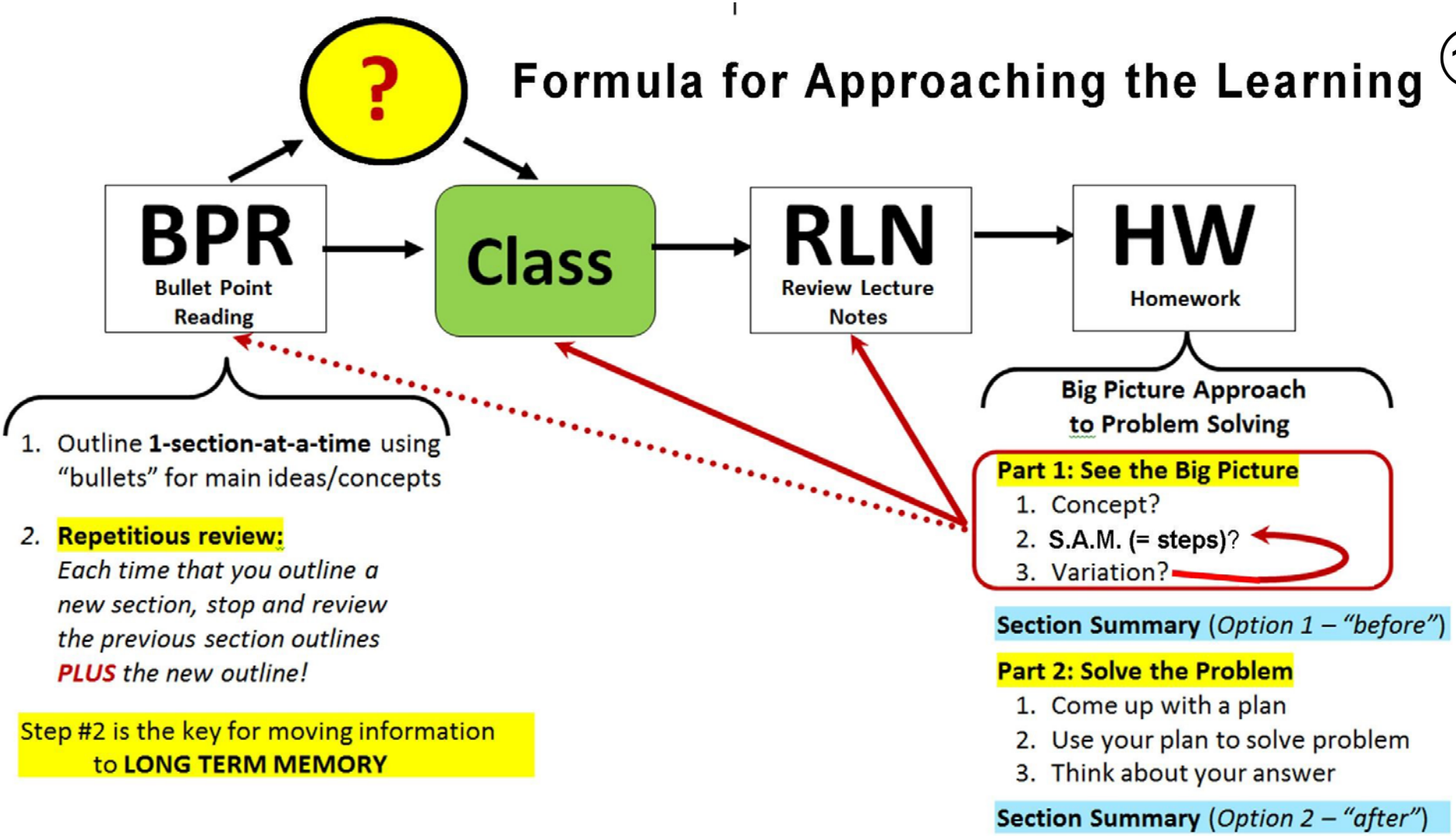
**Auditory Learners…**
- Need to hear information to know it.
- May have trouble following written directions.
- Have difficulty reading.
- Have problems with writing.
- Are often unable to read body language and facial expressions.

**Study Tips!**
- Get a small tape recorder and record yourself reading record your lectures to listen to later.
- Join study or discussion groups related to your classes.
- Ask for test questions or directions to be read aloud or put on tape.

**Kinesthetic/Tactile Learners…**
- Prefer hands-on learning.
- Often can assemble parts without looking at the directions.
- Don't like to sit still.
- Learn best when physical activity is involved.
- Have good coordination.
- Are good athletes.

**Study Tips!**
- Make models, do lab work, role playing.
- Take frequent breaks during study periods.
- Trace letters and words to learn spelling and remember facts.
- Use computers to reinforce learning through touch.
- Memorize information while walking or exercising.

# Formula for Approaching the Learning




**Creators use this formula to stay in control of their learning!**

Adapted from the San Diego City College MESA Program Model (2018)

"*The test was NOTHING like the homework!*" – Typical student who fails a test

*What is your approach to solving problems? Do you jump right into to the first problem assigned in the homework OR do you attempt to see the BIG PICTURE before starting to solve any problem? Seeing the BIG PICTURE can be the difference between passing and failing.*

## Part 1: Seeing the *BIG PICTURE*

**CONCEPT** – *the first question to ask is,* "what is the *Concept*?"

A *concept* is a main idea. When you have a problem, you need to be familiar with the concept that is associated with the problem.

*If you don't know the concept for your problem, then STOP here. Return to your BPR notes, textbook or lecture notes to better understand the concept BEFORE continuing.*

**S.A.M.** – *the next question is,* "what is the S.A.M.?"

- ☑ **Set-up**
- ☑ **Algorithm**
- ☑ **Method**

} = **S.A.M.**

Every concept has a specific *S.A.M.* (*i.e. steps to follow*) for solving problems.

*If you don't know the S.A.M. for your problem, then STOP here. Return to the examples in your textbook or lecture notes to better understand the S.A.M. BEFORE continuing.*

**VARIATION** – *now that you identified the Concept and S.A.M., ask yourself,* "what is the *Variation* AND how does the variation AFFECT the S.A.M.?"

When you have a group of problems - *review all of the problems in the group.* They share the same *concept*, but are the problems different or the same? If they're different, how do they differ? This "difference" is the *variation*.

Does the variation affect the S.A.M.? How do you need to modify the S.A.M. for different problems?

*If you don't know how to modify the S.A.M. for different problems, then look for example problems in other textbooks or online resources. If you still need help, see your professors, tutors or other classmates.*

Understanding how the variation affects the S.A.M. is critical. This is the key to getting an "A" on your next test.

Now that you understand the ***Concept***, ***S.A.M.*** and ***Variation***, you can see the ***BIG PICTURE*** and are ready to begin solving problems.

*Adapted from the San Diego City College MESA Program Model (2018)

# Part 2: Solving the Problem*

## COME UP WITH A PLAN – *Using the S.A.M. from Part 1 of the Big Picture Approach to Problem Solving, make a plan for solving your specific problem.*

Before *making a plan*, check that you have a clear understanding of the problem. What is the problem asking? Do you understand all the words in the statement of the problem? Can you restate the problem in your own words? Is there missing information that, if known, would allow you to solve the problem? *Still don't understand the problem? Then return to the steps in Part 1 of the Big Picture Approach to Problem Solving.*

*What are your techniques to solve problems?* Successful problem solvers use a variety of techniques when they attempt to solve a problem. Here are some recommended strategies:

- ☐ Make a list of the known and unknown information. *Can you express the unknowns in terms of the knowns?*
- ☐ Make a list of information that is needed
- ☐ Draw a diagram
- ☐ Make a table
- ☐ Work backwards
- ☐ Try to solve a similar but simpler problem
- ☐ Research the problem to determine whether there are known techniques for solving problems of its kind
- ☐ Try to determine whether some pattern exists
- ☐ Write an equation
- ☐ Guess at a solution and then check it

*Need help coming up with a plan? Then STOP here BEFORE continuing. Explain the problem to someone who may help (other classmates, tutors or professors). Ask them how they would solve it.*

## USE YOUR PLAN TO SOLVE THE PROBLEM

If you can see the Big Picture and have come up with a *good plan*, then this should be the easiest step in the Big Picture Approach to Problem Solving.

- ☑ Work carefully
- ☑ **Don't skip steps**
- ☑ Write clearly

*If have trouble solving the problem, then go back and make sure you didn't make any mistakes. No mistakes? Then maybe you need to come up with a new plan. Don't worry, this is part of the learning process. It may help to take a break and come back later with a clear mind.* ***Remember "20-minute rule"*** *– do not stay "stuck" on a problem more than 20 minutes. Skip it and get help later!*

## THINK ABOUT YOUR ANSWER – *Does your answer make sense? Does it fit with the Big Picture?*

This is the most rewarding and important step. Getting the right answer proves that you have mastered the learning, and it is the learning that matters most.

- ☑ Check that your answer is correct. Does it fit with your expectations? *If your answer is not correct, then step back through each step. Where is the error?*
- ☑ How would the answer change if the problem changed? (See VARIATION in Part 1)
- ☑ Marvel at your accomplishment. Enjoy the rewards of your hard work.

***CONGRATULATIONS!*** *You are now trained in the Big Picture Approach to Problem Solving.*

* Part 2 is adapted from the strategy by mathematician George Polya (1887-1985), author of *How to Solve It* (1945)

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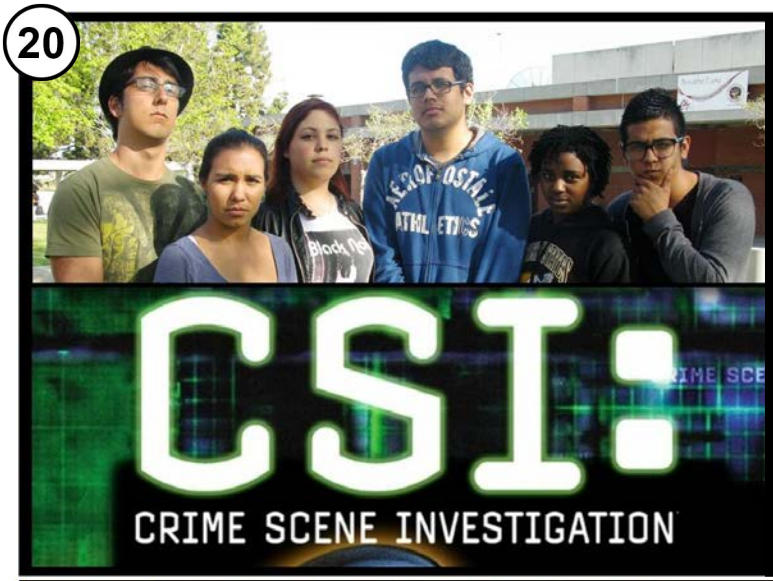



# Bullet Point Reading (BPR)*

A ***crime*** has been committed:
*Creators must investigate and solve the crime!*

* *Adapted from Guaranteed 4.0 Learning System*

**BPR CRIME SCENE DO NOT CROSS BPR CRIME SCENE DO NOT CROSS BPR**

Begin by looking at the **Big Picture** from 30,000 feet!

1. Identify the crime!
   - ➡ *The "crime" is the title of the chapter that you will BPR*
2. Identify the number of suspects
   - ➡ *The "suspects" are the sections in the chapter*
3. Read the name of the 1st suspect and *repeat the name*.
4. Read the name of the 2nd suspect, and *repeat the names of the 1st suspect then the 2nd suspect*. Continue this process of "reading and repeating names" for each new suspect.

*Congratulations CSI Investigator* - you're off to a great start! Now that ***you*** know the crime and the suspects, ***you*** are ready to move in closer to profile each suspect.

---

Profile* each suspect using **BPR** from 10,000 feet!

* Note: *The time needed for "profiling" is minimal, but it should be long enough for you to be familiar with each suspect.*

1. Begin by profiling (***outline***) the 1st suspect (***section***)
   a. What ***clues*** do you have about the suspect? What is ***important***?
   b. Do you recognize any **Big Picture** clues, i.e. **Concept**, **S.A.M.**, **and Variation**?
   c. Write down any questions to ask in class.
   d. If there is a ***summary***, use the summary to help you create your outline. *Insert a BPR bookmarker at the start of the section and a Big Picture bookmarker at the summary to help you go "back-and-forth".*
   - ➡ **Remember** – your outline must have enough information for you to recognize the suspect! Hint: *Can you recognize Einstein?*

2. Review the profile (***outline***) for the 1st suspect
3. Profile the 2nd suspect, *then* review the profiles for the 1st suspect then the 2nd suspect. Continue this process of "profiling and repetitious review" for each new suspect to move the information to your ***long term memory***!

*Congratulations CSI Investigator* – you have successfully profiled (**BPR'ed**) the suspects. ***You*** are prepared to work at ***ground level*** in class to solve the crime.

---

Solve the crime in class at ground level!

Listen carefully to your professor and take accurate notes. Your professor will review the **Big Picture** and provide more details about the crime. They will explain the **Concepts**, guide you through examples & steps (**S.A.M.**), identify key **Variations**, answer questions, and generally "connect the dots" to help you solve the crime!

***Congratulations CSI Investigator - yet another crime has been solved!***

Adapted from the San Diego City College MESA Program Model (2018)

# BPR (Bullet Point Reading) - Sample

**Lessons Learned** - BPR must be done, and it must be done well! This is where the learning begins. It is not optional. Coming to class prepared is Standard Operating Procedure (SOP) in a learning culture. Fortunately, BPR is the best strategy for coming to class prepared because it is simple to do, and it helps to move information to long-term memory.

**Big Picture** – Big Picture *must* be your focus when doing BPR, i.e. look for any Big Picture clues such **Concept**, **S.A.M.** (= *steps for solving problems*) and **Variation** in the problems. When you find any Big Picture clues, include them in your BPR notes. If you do not understand the Concept, S.A.M. or Variation, then write a question about the Concept, S.A.M. or Variation to bring to class.

**CSI: BPR** – Use the CSI:BPR method for doing BPR. For step-by-step instructions, see the CSI:BPR handout.

***When?*** The best time to do BPR is on the weekend. Do BPR for all sections to be covered during the week, as listed in the class syllabus or check with your professor. ***Caution*** – if your professor likes to "jump ahead" in lecture, then it will be necessary to be more than 1-week ahead with your BPR.

***Time Required & Test of BPR*** - The time it takes to do BPR is different for each student, but you must spend enough time to make the quality of your BPR high enough to allow you to follow your professors in class - *this is the test of BPR*. High quality BPR leads to high quality learning in class, which leads to high quality review of lecture notes immediately after class, which leads to high quality work on homework.

**Organizing Class Work** – For tips on how to organize BPR notes and other class work, including lecture notes, homework and section summaries, see the *Official* MESA Strategy for Organizing Class Work handout.

**Basic Tips**

- Look for clues, i.e. what is important!
  - Be very familiar with how your textbook is written
  - Are there any chapter or section **OBJECTIVES**?
  - Are there any **SUBTITLES**? Subtitles are the main points in a section.
  - Look for **BOLD** words
  - Is there a chapter or section **SUMMARY** (sometimes called **REVIEW**)? If yes, use the summary to help you identify any key points.
- Begin the BPR for each chapter by writing a list of the sections in the chapter, followed by the BPR for Section 1. Then begin a new page for the BPR for each new section.
- Use the front of pages only
  - Makes repetitious review easy
  - Leaves the back pages for notes
- Use "top-level" bullets for main points
- Indent sub-bullets
- Leave a space between sub-bullets
- Use color coding to help identify key points such as top bullets and main ideas
- Arrive early for each class, and review your BPR notes to be prepared for lecture

- Top-level bullet for main points
  - 2nd level sub-bullet supports main point
    - 3rd level sub-bullet supports 2nd level point

Red ovals and notes are included in this sample BPR to highlight main points and key clues.

CHAPTER 7

# Rational Expressions

sections in chapter



In this chapter, we expand our knowledge of algebraic expressions to include algebraic fractions, called *rational expressions*. We explore the operations of addition, subtraction, multiplication, and division using principles similar to the principles for numerical fractions.

chapter overview

Side Rear-View Mirror

Telescope

Magnifying Glass

Street Light Reflector

Sunglasses

Camera

### What Do the Above Have in Common?

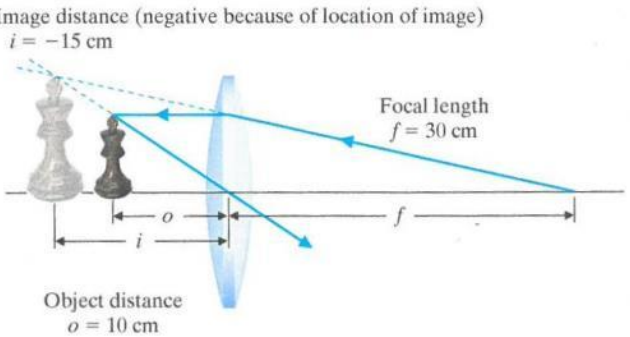
All the useful objects above contain convex mirrors or lenses or were made with convex mirrors or lenses. Basically, all of these objects were made using the rational equation below, called the Gaussian Mirror/Lens Formula. This equation or formula relates an object distance and image distance to the focal length. In general, the focal length is a measure of how strongly a lens converges or diverges light.

Of course, this is just one equation containing rational expressions. There are uses of rational expressions everywhere from health to sports statistics to driving safety. For some applications, see Section 7.1, Exercises 59 through 66, and Section 7.5, Exercises 43 through 52.

Gaussian Mirror/Lens Formula

$$\frac{1}{o}+\frac{1}{i}=\frac{1}{f}$$

$$\frac{1}{\text{object distance}}+\frac{1}{\text{image distance}}=\frac{1}{\text{focal length}}$$



# 7.1 Rational Functions and Simplifying Rational Expressions

**OBJECTIVES**

1 Find the Domain of a Rational Function.
2 Simplify or Write Rational Expressions in Lowest Terms.
3 Write Equivalent Rational Expressions of the Form $-\frac{a}{b} = \frac{-a}{b} = \frac{a}{-b}$.
4 Use Rational Functions in Applications.

section objectives

As we reviewed in Chapter 1, a rational number is a number that can be written as a quotient of integers. A **rational expression** is also a quotient; it is a quotient of polynomials.

**Rational Expression**

A rational expression is an expression that can be written in the form

$$\frac{P}{Q},$$

where $P$ and $Q$ are polynomials and $Q \neq 0$.

***Rational Expressions***

$$-\frac{2}{7} \qquad \frac{3y^3}{8} \qquad \frac{-4p}{p^3 + 2p + 1} \qquad \frac{5x^2 - 3x + 2}{3x + 7}$$

The first rational expression (or fraction) above is $-\frac{2}{7}$. For a negative fraction such as $-\frac{2}{7}$, recall from Section 1.7 that

$$-\frac{2}{7} = \frac{2}{-7} = \frac{-2}{7}$$

In general, for any fraction,

$$\frac{-a}{b} = \frac{a}{-b} = -\frac{a}{b}, \quad b \neq 0$$

This is also true for rational expressions. For example,

$$\frac{-(x+2)}{x} = \frac{x+2}{-x} = -\frac{x+2}{x}$$

Notice the parentheses.

Rational expressions are sometimes used to describe functions. For example, we call the function $f(x) = \frac{x^2 + 2}{x - 3}$ a **rational function** since $\frac{x^2 + 2}{x - 3}$ is a rational expression.

main point

OBJECTIVE 1 **Finding the Domain of a Rational Function**

As with fractions, a rational expression is **undefined** if the denominator is 0. If a variable in a rational expression is replaced with a number that makes the denominator 0, we say that the rational expression is **undefined** for this value of the variable. For example, the rational expression $\frac{x^2 + 2}{x - 3}$ is undefined when $x$ is 3, because replacing $x$ with 3 results in a denominator of 0. For this reason, we must exclude 3 from the domain of the function $f(x) = \frac{x^2 + 2}{x - 3}$.

The domain of $f$ is then

$$\{x \mid x \text{ is a real number and } x \neq 3\}$$

"The set of all $x$ such that $x$ is a real number and $x$ is not equal to 3."

See examples for S.A.M. and Variation in problems

In this section, we will use this set builder notation to write domains. Unless told otherwise, we assume that the domain of a function described by an equation is the set of all real numbers for which the equation is defined.

**EXAMPLE 1** Find the domain of each rational function.

**a.** $f(x) = \dfrac{8x^3 + 7x^2 + 20}{2}$ **b.** $g(x) = \dfrac{5x^2 - 3}{x - 1}$ **c.** $f(x) = \dfrac{7x - 2}{x^2 - 2x - 15}$

*Solution* The domain of each function will contain all real numbers except those values that make the denominator 0.

**a.** No matter what the value of $x$, the denominator of $f(x) = \dfrac{8x^3 + 7x^2 + 20}{2}$ is never 0, so the domain of $f$ is $\{x|x \text{ is a real number}\}$.

**b.** To find the values of $x$ that make the denominator of $g(x)$ equal to 0, we solve the equation "denominator = 0":

$$x - 1 = 0, \quad \text{or} \quad x = 1$$

The domain must exclude 1 since the rational expression is undefined when $x$ is 1. The domain of $g$ is $\{x|x \text{ is a real number and } x \neq 1\}$.

**c.** We find the domain by setting the denominator equal to 0.

$$\begin{aligned} x^2 - 2x - 15 &= 0 \quad \text{Set the denominator equal to 0 and solve.} \\ (x - 5)(x + 3) &= 0 \\ x - 5 = 0 \quad &\text{or} \quad x + 3 = 0 \\ x = 5 \quad &\text{or} \quad x = -3 \end{aligned}$$

If $x$ is replaced with 5 or with $-3$, the rational expression is undefined. The domain of $f$ is $\{x|x \text{ is a real number and } x \neq 5, x \neq -3\}$.

**PRACTICE 1** Find the domain of each rational function.

**a.** $f(x) = \dfrac{4x^5 - 3x^2 + 2}{-6}$ **b.** $g(x) = \dfrac{6x^2 + 1}{x + 3}$ **c.** $h(x) = \dfrac{8x - 3}{x^2 - 5x + 6}$

**✔ CONCEPT CHECK**

For which of these values (if any) is the rational expression $\dfrac{x - 3}{x^2 + 2}$ undefined?

**a.** 2 **b.** 3 **c.** $-2$ **d.** 0 **e.** None of these

main point →

**OBJECTIVE 2 Simplifying Rational Expressions**

Recall that a fraction is in lowest terms or simplest form if the numerator and denominator have no common factors other than 1 (or $-1$). For example, $\dfrac{3}{13}$ is in lowest terms since 3 and 13 have no common factors other than 1 (or $-1$).

To **simplify** a rational expression, or to write it in lowest terms, we use a method similar to simplifying a fraction.

Recall that to simplify a fraction, we essentially "remove factors of 1." Our ability to do this comes from these facts:

- If $c \neq 0$, then $\dfrac{c}{c} = 1$. For example, $\dfrac{7}{7} = 1$ and $\dfrac{-8.65}{-8.65} = 1$.
- $n \cdot 1 = n$. For example, $-5 \cdot 1 = -5$, $126.8 \cdot 1 = 126.8$, and $\dfrac{a}{b} \cdot 1 = \dfrac{a}{b}$, $b \neq 0$.

Answer to Concept Check: e

In other words, we have the following:

$$\frac{a \cdot c}{b \cdot c} = \frac{a}{b} \cdot \frac{c}{c} = \frac{a}{b}$$

Since $\frac{a}{b} \cdot 1 = \frac{a}{b}$

Let's practice simplifying a fraction by simplifying $\frac{15}{65}$.

$$\frac{15}{65} = \frac{3 \cdot 5}{13 \cdot 5} = \frac{3}{13} \cdot \frac{5}{5} = \frac{3}{13} \cdot 1 = \frac{3}{13}$$

Let's use the same technique and simplify the rational expression $\frac{x^2 - 9}{x^2 + x - 6}$.

$$\frac{x^2 - 9}{x^2 + x - 6} = \frac{(x - 3)(x + 3)}{(x - 2)(x + 3)}$$ Factor the numerator and the denominator.

$$= \frac{(x - 3)\ (x + 3)}{(x - 2)\ (x + 3)}$$ Look for common factors.

$$= \frac{x - 3}{x - 2} \cdot \frac{x + 3}{x + 3}$$

$$= \frac{x - 3}{x - 2} \cdot 1$$ Write $\frac{x + 3}{x + 3}$ as 1.

$$= \frac{x - 3}{x - 2}$$ Multiply to remove a factor of 1.

This "removing a factor of 1" is stated in the principle below:

**Fundamental Principle of Rational Expressions**

For any rational expression $\frac{P}{Q}$ and any polynomial $R$, where $R \neq 0$,

$$\frac{PR}{QR} = \frac{P}{Q} \cdot \frac{R}{R} = \frac{P}{Q} \cdot 1 = \frac{P}{Q}$$

or, simply,

$$\frac{PR}{QR} = \frac{P}{Q}$$

In general, the following steps may be used to simplify rational expressions or to write a rational expression in lowest terms.

S.A.M.! →

**Simplifying or Writing a Rational Expression in Lowest Terms**

**Step 1.** Completely factor the numerator and denominator of the rational expression.

**Step 2.** Divide out factors common to the numerator and denominator. (This is the same as "removing a factor of 1.")

For now, we assume that variables in a rational expression do not represent values that make the denominator 0.

**EXAMPLE 2** Simplify each rational expression.

**a.** $\frac{2x^2}{10x^3 - 2x^2}$

**b.** $\frac{9x^2 + 13x + 4}{8x^2 + x - 7}$

(Continued on next page)

**Solution**

**a.** $\dfrac{2x^2}{10x^3 - 2x^2} = \dfrac{2x^2 \cdot 1}{2x^2(5x - 1)} = 1 \cdot \dfrac{1}{5x - 1} = \dfrac{1}{5x - 1}$

**b.** $\dfrac{9x^2 + 13x + 4}{8x^2 + x - 7} = \dfrac{(9x + 4)(x + 1)}{(8x - 7)(x + 1)}$ Factor the numerator and denominator.

$= \dfrac{9x + 4}{8x - 7} \cdot 1$ Since $\dfrac{x + 1}{x + 1} = 1$

$= \dfrac{9x + 4}{8x - 7}$ Simplest form □

**PRACTICE 2** Simplify each rational expression.

**a.** $\dfrac{5z^4}{10z^5 - 5z^4}$ **b.** $\dfrac{5x^2 + 13x + 6}{6x^2 + 7x - 10}$

Just as for numerical fractions, we can use a shortcut notation. Remember that as long as exact factors in both the numerator and denominator are divided out, we are "removing a factor of 1." We will use the following notation to show this:

$\dfrac{x^2 - 9}{x^2 + x - 6} = \dfrac{(x - 3)(x + 3)}{(x - 2)(x + 3)}$ A factor of 1 is identified by the shading.

$= \dfrac{x - 3}{x - 2}$ Remove a factor of 1.

Thus, the rational expression $\dfrac{x^2 - 9}{x^2 + x - 6}$ has the same value as the rational expression $\dfrac{x - 3}{x - 2}$ for all values of $x$ except 2 and $-3$. (Remember that when $x$ is 2, the denominator of both rational expressions is 0 and when $x$ is $-3$, the original rational expression has a denominator of 0.)

As we simplify rational expressions, we will assume that the simplified rational expression is equal to the original rational expression for all real numbers except those for which the original denominator is 0.

**EXAMPLE 3** Simplify each rational expression.

**a.** $\dfrac{2 + x}{x + 2}$ **b.** $\dfrac{2 - x}{x - 2}$

**Solution**

**a.** $\dfrac{2 + x}{x + 2} = \dfrac{x + 2}{x + 2} = 1$ By the commutative property of addition, $2 + x = x + 2$.

**b.** The terms in the numerator of $\dfrac{2 - x}{x - 2}$ differ by sign from the terms of the denominator, so the polynomials are opposites of each other and the expression simplifies to $-1$. To see this, we factor out $-1$ from the numerator or the denominator. If $-1$ is factored from the numerator, then

$$\frac{2 - x}{x - 2} = \frac{-1(-2 + x)}{x - 2} = \frac{-1(x - 2)}{x - 2} = \frac{-1}{1} = -1$$

If $-1$ is factored from the denominator, the result is the same.

$$\frac{2 - x}{x - 2} = \frac{2 - x}{-1(-x + 2)} = \frac{2 - x}{-1(2 - x)} = \frac{1}{-1} = -1$$ □

**Helpful Hint**

When the numerator and the denominator of a rational expression are opposites of each other, the expression simplifies to $-1$.

**PRACTICE 3** Simplify each rational expression.

**a.** $\frac{x+3}{3+x}$ **b.** $\frac{3-x}{x-3}$

**EXAMPLE 4** Simplify: $\frac{18-2x^2}{x^2-2x-3}$

*Solution*

$$\frac{18-2x^2}{x^2-2x-3} = \frac{2(9-x^2)}{(x+1)(x-3)}$$ Factor.

$$= \frac{2(3+x)(3-x)}{(x+1)(x-3)}$$ Factor completely.

$$= \frac{2(3+x)\cdot -1\,(x-3)}{(x+1)\,(x-3)}$$ Notice the opposites $3-x$ and $x-3$. Write $3-x$ as $-1(x-3)$ and simplify.

$$= -\frac{2(3+x)}{x+1}$$

**PRACTICE 4** Simplify: $\frac{20-5x^2}{x^2+x-6}$

**Helpful Hint**

When simplifying a rational expression, we look for **common *factors*, not common *terms*.**

$\frac{x\cdot(x+2)}{x\cdot x} = \frac{x+2}{x}$ — Common factors. These can be divided out.

$\frac{x+2}{x}$ — Common terms. There is no factor of 1 that can be generated.

**✔ CONCEPT CHECK**

Recall that we can only remove *factors* of 1. Which of the following are *not* true? Explain why.

**a.** $\frac{3-1}{3+5}$ simplifies to $-\frac{1}{5}$. **b.** $\frac{2x+10}{2}$ simplifies to $x+5$.

**c.** $\frac{37}{72}$ simplifies to $\frac{3}{2}$. **d.** $\frac{2x+3}{2}$ simplifies to $x+3$.

**EXAMPLE 5** Simplify each rational expression.

**a.** $\frac{x^3+8}{2+x}$ **b.** $\frac{2y^2+2}{y^3-5y^2+y-5}$

*Solution*

**a.** $\frac{x^3+8}{2+x} = \frac{(x+2)\,(x^2-2x+4)}{x+2}$ Factor the sum of the two cubes.

$$= x^2-2x+4$$ Divide out common factors.

**b.** $\frac{2y^2+2}{y^3-5y^2+y-5} = \frac{2(y^2+1)}{(y^3-5y^2)+(y-5)}$ Factor the numerator; group the denominator.

$$= \frac{2(y^2+1)}{y^2(y-5)+1(y-5)}$$ Factor the denominator by grouping.

$$= \frac{2\,(y^2+1)}{(y-5)\,(y^2+1)}$$

$$= \frac{2}{y-5}$$ Divide out common factors.

(Continued on the next page)

Answers to Concept Check: a, c, d

**PRACTICE 5** Simplify each rational expression.

**a.** $\dfrac{x^3 + 64}{4 + x}$ **b.** $\dfrac{5z^2 + 10}{z^3 - 3z^2 + 2z - 6}$

**✔ CONCEPT CHECK**

Does $\dfrac{n}{n+2}$ simplify to $\dfrac{1}{2}$? Why or why not?

main point →

**OBJECTIVE 3 Writing Equivalent Forms of Rational Expressions**

From Example 3, we have

$$\frac{2+x}{x+2} = \frac{x+2}{x+2} = 1 \quad \text{and} \quad \frac{2-x}{x-2} = \frac{2-x}{-1(2-x)} = \frac{1}{-1} = -1.$$

When performing operations on rational expressions, equivalent forms of answers often result. For this reason, it is very important to be able to recognize equivalent answers.

**EXAMPLE 6** List some equivalent forms of $-\dfrac{5x-1}{x+9}$.

*Solution* To do so, recall that $-\dfrac{a}{b} = \dfrac{-a}{b} = \dfrac{a}{-b}$. Thus

$$-\frac{5x-1}{x+9} = \frac{-(5x-1)}{x+9} = \frac{-5x+1}{x+9} \quad \text{or} \quad \frac{1-5x}{x+9}$$

Also,

$$-\frac{5x-1}{x+9} = \frac{5x-1}{-(x+9)} = \frac{5x-1}{-x-9} \quad \text{or} \quad \frac{5x-1}{-9-x}$$

Thus $-\dfrac{5x-1}{x+9} = \dfrac{-(5x-1)}{x+9} = \dfrac{-5x+1}{x+9} = \dfrac{5x-1}{-(x+9)} = \dfrac{5x-1}{-x-9}$

**Helpful Hint**

Remember, a negative sign in front of a fraction or rational expression may be moved to the numerator or the denominator, but *not* both.

**PRACTICE 6** List some equivalent forms of $-\dfrac{x+3}{6x-11}$.

Keep in mind that many rational expressions may look different, but in fact be equivalent.

main point →

**OBJECTIVE 4 Using Rational Functions in Applications**

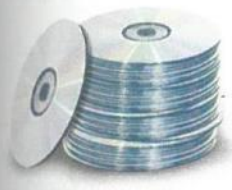
Rational functions occur often in real-life situations.

**EXAMPLE 7 Cost for Pressing Compact Discs**

For the ICL Production Company, the rational function $C(x) = \dfrac{2.6x + 10{,}000}{x}$ describes the company's cost per disc of pressing $x$ compact discs. Find the cost per disc for pressing:

**a.** 100 compact discs **b.** 1000 compact discs

Answers to Concept Check:
no; answers may vary.



**Solution**

**a.** $C(100) = \dfrac{2.6(100) + 10{,}000}{100} = \dfrac{10{,}260}{100} = 102.6$

The cost per disc for pressing 100 compact discs is \$102.60.

**b.** $C(1000) = \dfrac{2.6(1000) + 10{,}000}{1000} = \dfrac{12{,}600}{1000} = 12.6$

The cost per disc for pressing 1000 compact discs is \$12.60. Notice that as more compact discs are produced, the cost per disc decreases. □

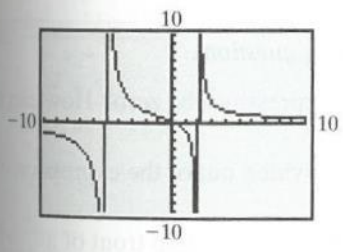
**PRACTICE 7** A company's cost per tee shirt for silk screening $x$ tee shirts is given by the rational function $C(x) = \dfrac{3.2x + 400}{x}$. Find the cost per tee shirt for printing:

**a.** 100 tee shirts **b.** 1000 tee shirts ■

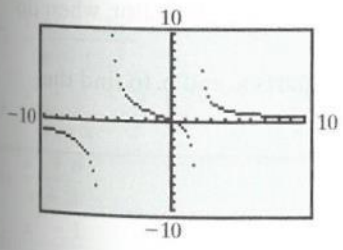
## Graphing Calculator Explorations

(Note: The information below about *connected* mode and *dot* mode may not apply to your graphing calculator.)

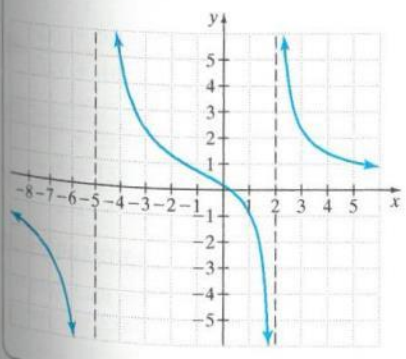
Recall that since the rational expression $\dfrac{7x - 2}{(x - 2)(x + 5)}$ is not defined when $x = 2$ or when $x = -5$, we say that the domain of the rational function $f(x) = \dfrac{7x - 2}{(x - 2)(x + 5)}$ is all real numbers except 2 and $-5$. This domain can be written as $\{x | x$ is a real number and $x \neq 2, x \neq -5\}$. This means that the graph of $f(x)$ should not cross the vertical lines $x = 2$ and $x = -5$. The graph of $f(x)$ in *connected* mode is to the left. In connected mode the graphing calculator tries to connect all dots of the graph so that the result is a smooth curve. This is what has happened in the graph. Notice that the graph appears to contain vertical lines at $x = 2$ and at $x = -5$. We know that this cannot happen because the function is not defined at $x = 2$ and at $x = -5$. We also know that this cannot happen because the graph of this function would not pass the vertical line test.




The graph of $f(x)$ in *dot* mode is to the left. In dot mode the graphing calculator will not connect dots with a smooth curve. Notice that the vertical lines have disappeared, and we have a better picture of the graph. The graph, however, actually appears more like the hand-drawn graph below. By using a Table feature, a Calculate Value feature, or by tracing, we can see that the function is not defined at $x = 2$ and at $x = -5$.




*Find the domain of each rational function. Then graph each rational function and use the graph to confirm the domain.*




1. $f(x) = \dfrac{x + 1}{x^2 - 4}$
2. $g(x) = \dfrac{5x}{x^2 - 9}$
3. $h(x) = \dfrac{x^2}{2x^2 + 7x - 4}$
4. $f(x) = \dfrac{3x + 2}{4x^2 - 19x - 5}$

## Vocabulary, Readiness & Video Check

*Use the choices below to fill in each blank. Some choices may not be used.*

| | | | | | | |
|---|---|---|---|---|---|---|
| 1 | true | rational | simplified | $\frac{-a}{-b}$ | $\frac{-a}{b}$ | $\frac{a}{-b}$ |
| $-1$ | false | domain | 0 | | | |

**1.** A _____ expression is an expression that can be written as the quotient $\frac{P}{Q}$ of two polynomials $P$ and $Q$ as long as $Q \neq 0$.

**2.** A rational expression is undefined if the denominator is _____.

**3.** The _____ of the rational function $f(x) = \frac{2}{x}$ is $\{x \mid x \text{ is a real number and } x \neq 0\}$.

**4.** A rational expression is _____ if the numerator and denominator have no common factors other than 1 or $-1$.

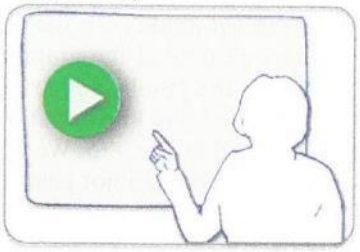
**5.** The expression $\frac{x^2 + 2}{2 + x^2}$ simplifies to _____.

**6.** The expression $\frac{y - z}{z - y}$ simplifies to _____.

**7.** For a rational expression, $-\frac{a}{b} =$ _____ $=$ _____.

**8.** True or false: $\frac{a - 6}{a + 2} = \frac{-(a - 6)}{-(a + 2)} = \frac{-a + 6}{-a - 2}$. _____

*Martin-Gay Interactive Videos*



*See Video 7.1*

*Watch the section lecture video and answer the following questions.*

OBJECTIVE 1

**9.** Why can't the denominators of rational expressions be zero? How can we find the domain of a rational function?

OBJECTIVE 2

**10.** In Example 6, why isn't a factor of $x$ divided out of the expression at the end?

OBJECTIVE 3

**11.** From Example 8, if we move a negative sign from in front of a rational expression to either the numerator or denominator, when do we insert parentheses and why?

OBJECTIVE 4

**12.** From Example 9, why do we subtract parts a. and b. to find the answer to part c.?

sections in chapter

Chapter # 7 - Rational Expressions

7.1 - Rational Functions and Simplifying Rational Expressions
7.2 - Multiplying and Dividing Rational Expressions
7.3 - Adding and Subtracting Rational Expressions with Common Denominators and Least Common Denominator
7.4 - Adding and Subtracting Rational Expressions with unlike Denominators
7.5 - Solving Equations Containing Rational Expressions
- Integrated Review: Summary on Rational Expressions
7.6 - Proportion and Problem Solving with Rational Equations
7.7 - Simplifying Complex Fractions

Section 1 BPR

7.1 - Rational Functions and Simplifying Rational Expressions

- Intro
  - rational expression: quotient (fraction) of two polynomials
    - negative rational expressions:

$$\frac{-a}{b} = \frac{a}{-b} = -\frac{a}{b} \quad ; b \neq 0$$

    - rational function $f(x)$

- Finding the Domain of a Rational Function ← main point
  - Dealing with fractions, so cannot divide by 0 or else undefined.
  - set denominator = 0 and solve for variable
  - present domain in set notation
    e.x. $\{x \mid x \text{ is a real number and } x \neq 3\}$

The set of all x — such that — domain restriction

indent sub-bullets

top-level bullet

leave space between bullets

• Simplifying Rational Expressions ← main point

- A fraction is in simplest form when the denominator and numerator have no other common factor.

S.A.M.! →

- To simplify: ① Completely factor both numerator and denominator.
② Divide out common factors (cancel to 1's).

$$\frac{PR}{QR} = \frac{P}{Q} \cdot \frac{R}{R} = \frac{P}{Q} \cdot 1 = \frac{P}{Q}$$

* Variation: opposite factors ← include variations

- when the denominator and numerator are opposite of eachother, expression simplifies to $-1$

• Writing Equivalent Forms of Rational expressions ← main point

- Rational expressions may look different but can be written in an equivalent form.

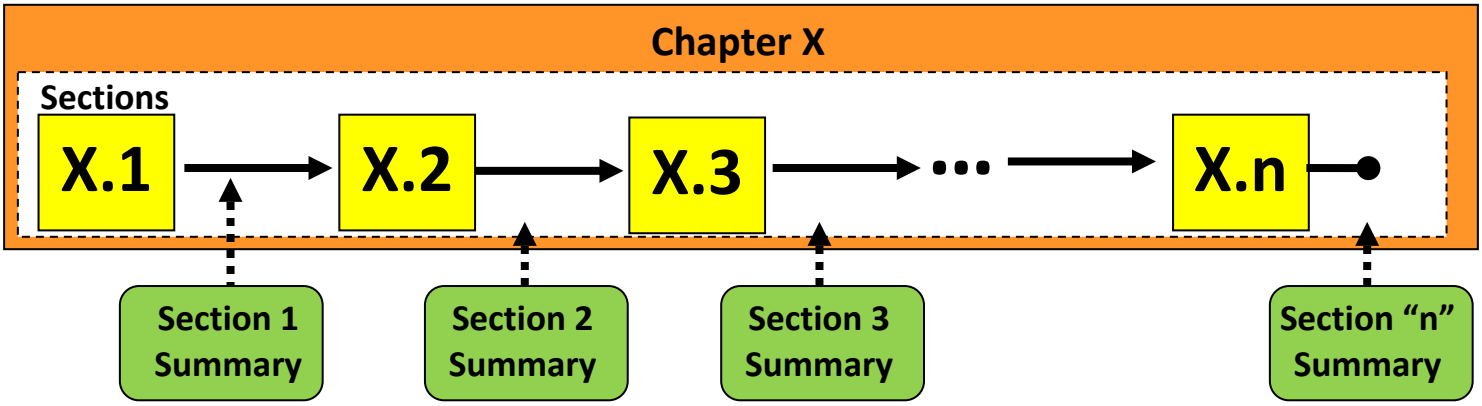
e.x. $\frac{2+x}{x+2} = \frac{x+2}{x+2} = 1$

• Using Rational Functions in Applications ← main point

- Rational functions occur in real-life situations

# Section Summaries

*Capturing the Big Picture!*

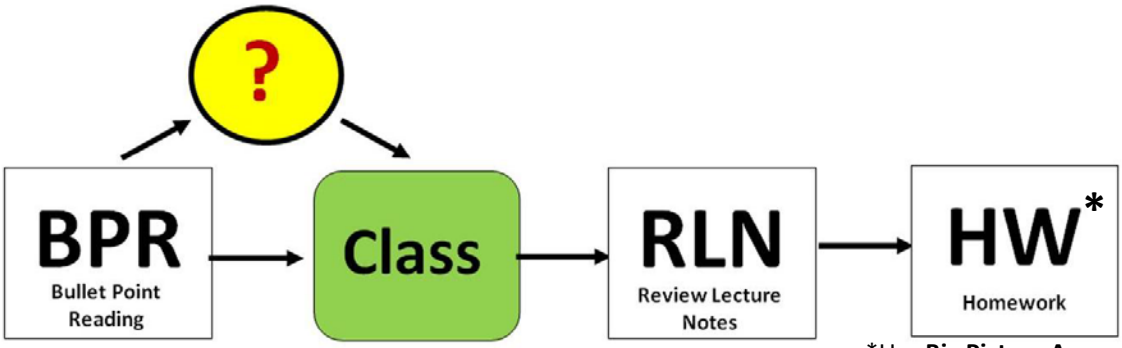



## Purpose

"***Section Summaries***" are a great way to capture the ***Big Picture*** and demonstrate a mastery of the material.

## Method

Creators work through *each* Section by following the basic formula for approaching the learning:




*Use **Big Picture Approach to Problem Solving**

By using the ***Big Picture Approach to Problem Solving***, Creators can see the ***Big Picture*** when they ***complete*** each Section, and they can answer the following questions:

1. **CONCEPT** – what is the *Concept*?
2. **S.A.M.** (Setup-Algorithm-Method) – what is the *S.A.M.* (i.e. *steps to follow for solving problems*)?
3. **VARIATION** – what is the *Variation* AND how does the variation AFFECT the S.A.M.?

With the Big Picture fresh in their minds, Creators can easily write a ***Section Summary*** capturing the Big Picture ***before*** moving to the next Section. This method is repeated after each Section.

## Benefits

+ Section Summaries provide an opportunity to capture the Big Picture in writing (Remember **Creator Law #1**: *If you don't write it down, it didn't happen!*), and they make it easier to prepare for tests!
+ If the Big Picture is not clear (Concept, S.A.M. & Variation), then Creators can get help by reviewing their Section Summaries with other Creators, tutors and/or professors.
+ **Repetitious review**: Each time a new Section Summary is completed, stop and review the previous Section Summaries ***plus*** the new Section Summary. This is key for moving information to ***long term memory*.**

# Plan of Attack

*What is your plan?*

To succeed in any class, you must know what the class requires, and you must have a plan for success.

- *What is the number of exams for the class?*
- *When are the exams scheduled?*

Once you understand what the class requires, the next step is to break the semester down one exam at a time, beginning with Exam 1:

- *What chapters will be covered on Exam 1?*
- *What are the sections that will be covered for each chapter?*

If you know what Exam 1 will cover, it is very easy to write a Plan of Attack for Exam 1 (Creator Law #1: If you don't write it down, it didn't happen!). A sample plan is shown at right for Exam 1 in Math 150. The plan includes:

- Exam date
- List of Chapters and Sections to be covered
- Checkboxes for tracking completion and progress
- Mastery status for each chapter (i.e. *can you explain it?*)

Armed with a plan of attack, your challenge is to PLACE THE PLAN WHERE YOU CAN SEE IT EVERY DAY and use it to stay in control of your learning, stay focused, track your progress and work to achieve excellence!

Continue this strategy for each exam until the end of the semester. *That's what Creators do!*

# *SAMPLE* Plan of Attack



Plan of Attack for Exam 1

Math 150 – Calculus I

Date of Exam 1: Thursday, February 18

**Chapter 2 The Derivative**

- ☐ 2.1 Two Equivalent Problems
- ☐ 2.2 The Derivative of a Real Function
- ☐ 2.3 Trigonometric Functions
- ☐ 2.4 Limits
- ☐ 2.5 Properties of Limits

**Chapter 3 Techniques of Differentiation**

- ☐ 3.1 The Algebra of Derivatives
- ☐ 3.2 The Power Rule
- ☐ 3.3 The Chain Rule
- ☐ 3.4 Derivatives of Implicitly Defined Functions

**Chapter 4 Continuity and Differentiation**

- ☐ 4.1 Continuity
- ☐ 4.2 Properties of Continuous Functions
- ☐ 4.3 The Mean Value Theorem
- ☐ 4.4 Applications of the Mean Value Theorem
- ☐ 4.5 Higher-Order Derivatives
- ☐ 4.6 Linear Approximation
- ☐ 4.7 The Differential of a Real Function

**Note**: After completing each Section, remember to write a Section Summary to capture the Big Picture, i.e. Concept, S.A.M. and Variation

**Mastery**

☐ Chapter 2 ☐ Chapter 3 ☐ Chapter 4

*Can you explain it?*

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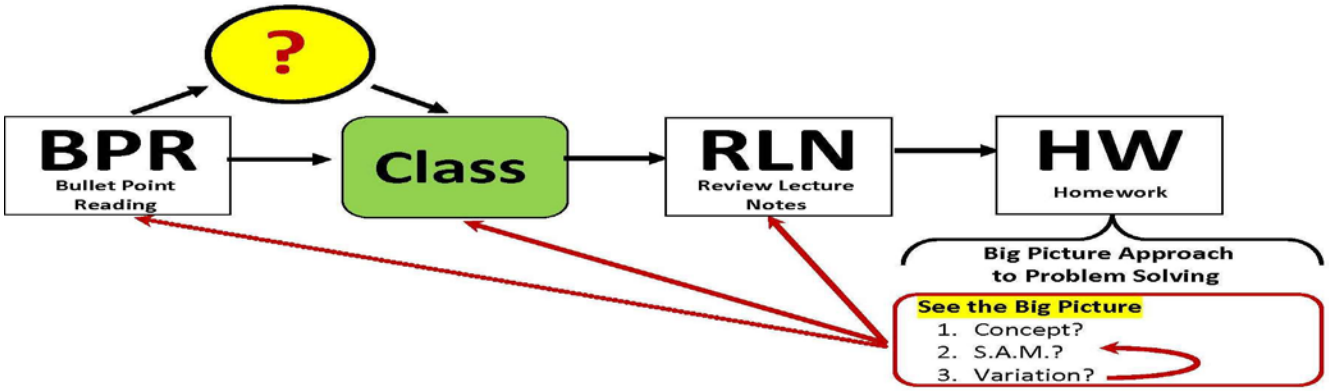
# Lessons Learned from Creators: Things to know!

***Work smarter, not harder***




## BIG PICTURE, BIG PICTURE, BIG PICTURE!

☐ ***What is your name?*** The learning challenge for all Creators is to see the **Big Picture**. Fortunately, all Creators are trained to see the Big Picture by answering three questions:

1) What is the **CONCEPT**, i.e. what is the main idea?
2) What is the **S.A.M.**? Note: S.A.M. = steps for solving problems
3) What is the **VARIATION** in the problems, AND how does the variation affect the S.A.M.?

*All Creators are expected to know these three questions as easily as they know their name!* This is what it means to work at the "Big Picture" level. If you are not focusing on the three Big Picture questions, then it is possible that you are missing information that will be needed for a quiz or exam.

## KEY STRATEGIES

☐ ***Plan of Attack.*** The Plan of Attack is a simple, yet very powerful tool that all Creators are expected to use. For any class, the Plan Attack must have the date of the next exam and a listing of all chapters and sections to be covered on the exam, including titles. Your challenge is to PLACE THE PLAN WHERE YOU CAN SEE IT DAILY - and use it to stay in control of your learning, stay focused, track your progress and work to achieve excellence! Follow this Plan of Attack strategy for each exam throughout the semester. For more details and a sample Plan of Attack, please see the Plan of Attack handout.

☐ ***BPR (Bullet Point Reading).*** BPR must be done, and it must be done well! This is where the learning begins. It is not optional. Coming to class prepared is Standard Operating Procedure (SOP) in a learning culture. But BPR is the best strategy for coming to class prepared because it is simple to do, and it helps to move information to long-term memory. For step-by-step instructions for doing BPR, please see the **CSI:BPR** handout. For other BPR help or samples, speak with a tutor or other Creators. ***Tip*** - the best time to do BPR is on the weekend for the sections that will be covered during the week. This guarantees that you will come prepared to every class. Plus, it is not enough to *just* do BPR. The quality of your BPR must be high enough to allow you to follow your professors in class. This is the test of BPR - high quality BPR leads to high quality learning in class, which leads to high quality review of lecture notes immediately after class, which leads to high quality work on homework.

☐ ***Questions.*** If you have any questions while doing BPR, then write them down to bring to class. These questions should be related to the three Big Picture questions. If you are unclear about the Concept, S.A.M. or Variation, then be prepared to ask about the Concept, S.A.M. or Variation in class.

☐ ***Class.*** Besides sitting in the "learning T" (i.e. in the front-row and down the middle), Creators are expected to have a focus on the three Big Picture questions in class. If the Concept, S.A.M. and Variation are not clear during lecture, then be prepared to ask your professor for clarification.

☐ ***RLN (Review of Lecture Notes).*** The "forgetting curve" reminds us that lecture notes must be reviewed immediately after class when you have nearly 100% recall of the lecture (*your recall drops to less than 50% only 1-hour after lecture!*). If you have high quality BPR and high quality learning in class, then it should be easy to see the Big Picture by reviewing your lecture notes to answer the three Big Picture questions. If you have difficulty seeing the Big Picture when you review lecture notes immediately after class, then this is a RED FLAG (i.e. Early Alert!) meaning that you must improve the quality of your BPR, the quality of your in-class learning or the quality of both. If online lecture videos are available (e.g. Khan Academy, Just Math Tutorials, MIT Open Courseware, etc.), then it may be helpful to watch the lecture videos BEFORE you BPR to help your understanding of the material. If you find that you still have difficulty following your professor in class, then you may need help from tutors or other Creators to improve the quality of your BPR. You may also need to see a tutor for help with questions after you BPR and BEFORE going to class.

☐ ***Homework.*** Once you complete the homework for any section, it is expected that you can truly see the Big Picture, i.e. you can answer the three Big Picture questions. If this is not true, then you must continue to work on problems until you prove to yourself that you can see the Big Picture. If necessary, seek help from tutors, other Creators or your professor.

☐ ***Section Summaries.*** Section Summaries capture the Big Picture. Once you complete each section, Creator Law #1 tells us that you must write the answers to the three Big Picture questions related to the section (*otherwise it didn't happen!*). This is what it means to write a Section Summary, and Creator Law #3 tells us that your Section Summaries will be crucial for preparing for exams! For more information, please see the Section Summaries handout. ***Tip #1*** - Since you must always look for the Big Picture (i.e. in BPR, Class, RLN and Homework), then highlight any Big Picture clues (i.e. Concept, S.A.M. and Variation) in your BPR, lecture notes and homework when you find them to make it easy to write a Section Summary – *you just need to collect your "highlights"!* ***Tip #2*** – see your professors in office hours to review your Section Summaries each time that you complete a section. Your professors will easily identify any gaps in your "Big Picture" and overall confirm your mastery of the material. This step is very easy to do, yet it is critical to help you avoid any mistakes related to the Big Picture. *Enjoy the experience!*

☐ ***Weekly Time Management Plan.*** Regardless of what time management system you use, you MUST create a weekly plan to manage your time effectively to meet academic, work and personal demands. Use this link (goo.gl/fzQYfc) to download a weekly time planner in EXCEL. Use the planner to schedule time for classes, work, BPR (on weekends!), RLN after classes, Homework, Professor Office Hours, Study Groups, meals, commuting, etc. With EXCEL, time blocks can be easily color coded. Follow your time plan daily beginning Week 1, and make necessary adjustments from week to week. ***Tip***: Schedule CEO-time (Chief Executive Officer – *you are the CEO of your own corporation!*) every Friday, and use this time to review your progress for the week & plans for the next week, then make any necessary adjustments to your weekly time plan. *Note*: A weekly time plan can work only if you have a true balance between academics, work and personal commitments, e.g. full-time work and full-time school is a plan for failure. Carefully choose your priorities to give yourself the best opportunity for success.

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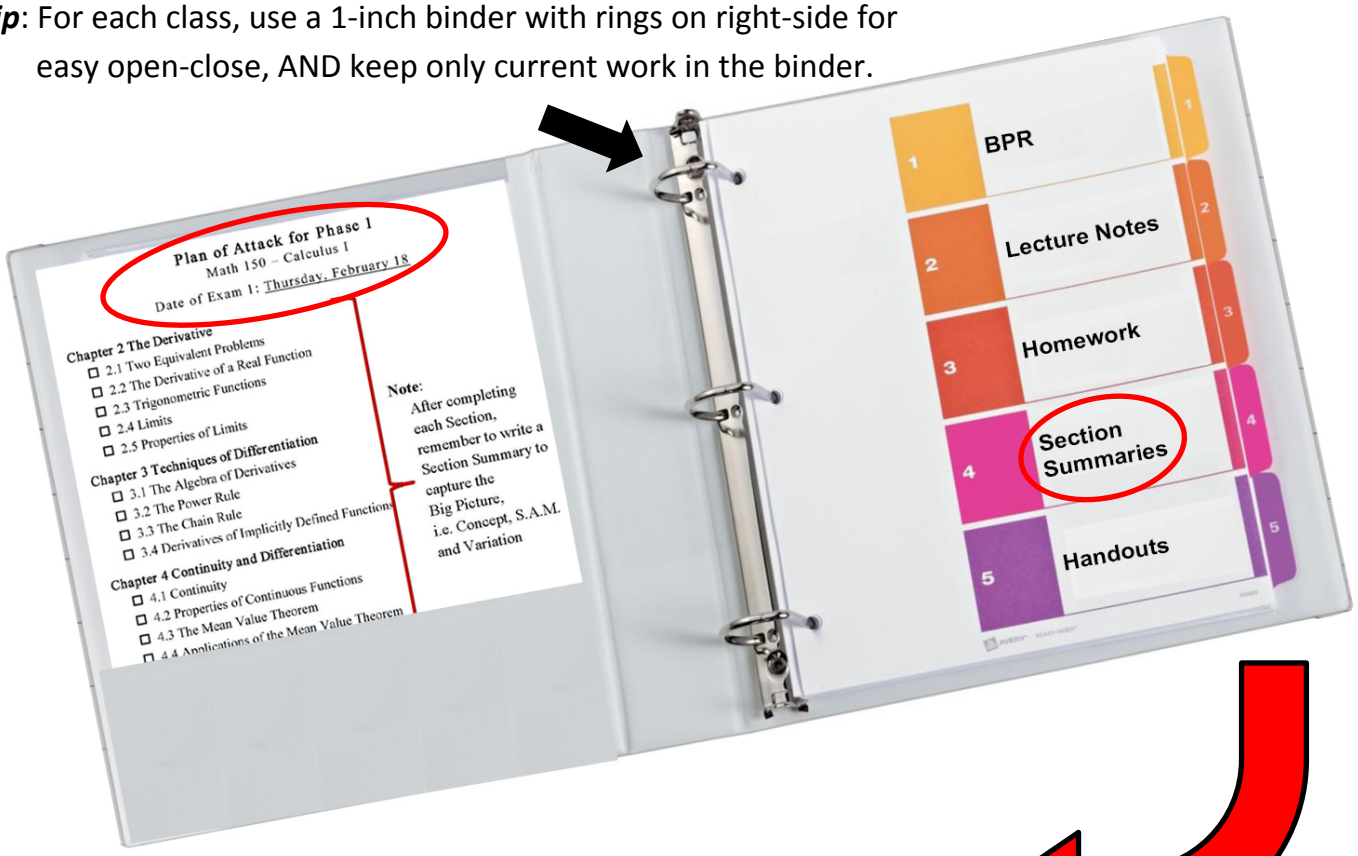
# *Official* Creator Strategy for Organizing Class Work

37

***Tip***: For each class, use a 1-inch binder with rings on right-side for easy open-close, AND keep only current work in the binder.





**Move ALL work to a 3-prong folder after each exam**

- Include ***corrected*** exam
- Organize classes by choosing a different folder COLOR for each class

***Repeat*** this strategy, use a new folder for each exam, and label each folder.

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# Semester Kickoff: *Steps to Success*

Creators have what it takes to succeed, but success becomes easier to achieve when you begin with a strong start to each semester. Follow these steps "before the semester begins" and during "week 1" to give yourself the best opportunity for success. Enjoy the experience. *That's what Creators do!*

## Before the semester begins

☐ **Syllabus** – send an email to your professors to request the syllabus for each of your classes. This will help you to know what to expect for the semester & which books to purchase, know what will be required, and begin preparing for Day 1. *Tip*: For Spring classes, you can meet with your professors before the end of the Fall semester to request a syllabus for Spring. You can also take this opportunity to learn more about what to expect for the class. *Note*: Emails can be sent to professors by clicking on their NAME in the online class schedule.

☐ **Begin BPR** (Bullet Point Reading) – with the syllabus as a guide, begin your BPR for the first sections to be covered in class. Ideally, you want to have your BPR completed for the first 2 weeks of the semester by Day 1. *Legend #1*: Creator Jonny Orozco completes a pre-BPR using Microsoft OneNote for his classes, which includes an outline of Chapter titles, Section titles and Sub-Section titles. He then adds details to his pre-BPR as he moves through the semester. *Legend #2*: Knowing he was registered for a very challenging Spring class, Creator Rick Tenorio used the winter break to complete his BPR for the class for the entire semester!

☐ **Weekly time management plan** – regardless of what time management system you use, you MUST create a weekly plan to manage your time effectively to meet academic, work and personal demands. Use this link (goo.gl/fzQYfc) to download a weekly time planner in EXCEL. Use the planner to schedule time for classes, work, BPR (on weekends!), RLN after classes, Homework, Professor Office Hours, Study Groups, meals, commuting, etc. With EXCEL, time blocks can be easily color coded. Follow your time plan daily beginning Week 1, and make necessary adjustments from week to week. *Tip*: Schedule CEO-time (Chief Executive Officer – you are the CEO of your own corporation!) every Friday, and use this time to review your progress for the week & plans for the next week, then make any necessary adjustments to your weekly time plan. *Note*: A weekly time plan can work only if you have a true balance between academics, work and personal commitments, e.g. full-time work and full-time school is a plan for failure. Carefully choose your priorities to give yourself the best opportunity for success.

☐ **Lecture videos and online resources**– search online for quality videos and other resources for your classes, including MIT Open Courseware, Khan Academy, Just Math Tutorials, Gooru, Quizlet, etc. For a listing of online resources, see the Learning Strategies page under the Foundation for Learning link on the right navigation bar on the MESA Program website. *Tip*: If available, improve the quality of your learning by viewing lecture videos before beginning your BPR. This will aid your understanding of the Big Picture for any topic.

☐ **Networking** – do you know any Creators who have already taken the classes that you plan to take? Did they have the same professors? Past students can be your best resource! What lessons learned and key strategies, especially about books and other resources, can you learn from them? Make it a priority to connect with them.

## Week 1

☐ **Hello my name is _____** (Professor Office Hours) – building relationships with professors is a key strategy for protecting your GPA (see "10-Point Success Plan for Creators after Transfer"). Begin establishing your relationship with professors by introducing yourself during Week 1. If possible, meet with your professors during their first office hour. Share with them your major. Then have a brief conversation with them about the class. For more tips, see the Interaction with Faculty: *Hello my name is* ... handout. Interact with your professors early and often to create your own success!

☐ **Plan of Attack** – the Plan of Attack is your plan for success in each class. Begin by understanding what each class requires, i.e. what is the number of exams, and when are they scheduled? Then start with the 1st exam, what chapters and sections will be covered on the exam? Once you know what will be covered, it is very easy to write a Plan of Attack for Exam 1, including the date of the exam with a listing of the chapters and sections to be covered (Creator Law #1: If you don't write it down, it didn't happen!). Your challenge is to PLACE THE PLAN WHERE YOU CAN SEE IT EVERY DAY and use it to stay in control of your learning, stay focused, track your progress and work to achieve excellence! Continue this strategy for each exam until the end of the semester. For a sample plan and other tips, see the Plan of Attack handout.

☐ **Study Groups** – there are many benefits to study groups, but the most important benefit is that study groups are a key strategy for success. Begin building your study group (2-6 max) and deciding your meeting schedule starting on Day 1. Have a work plan for each group meeting, and support each other to stay focused on the Big Picture (Concept, S.A.M. & Variation). Expect all group members to work as a team, i.e. be committed to the group, come prepared, stay focused, actively participate, take turns in leading discussions, share & compare strategies, have mutual respect, and generally provide support & motivation to make learning rewarding and fun.

☐ **Tutoring** – tutoring is NOT a magic solution for success in classes. All Creators know that success begins with quality BPR, followed by quality learning in class, followed by quality review of lecture notes immediately after class, followed by quality work on homework using the Big Picture Approach to Problem Solving. Only when this "quality" effort is made, then tutoring can be an important resource. Visit the City College Tutorial Center during Week 1 for a semester schedule of tutors and related subjects.

## Other key strategies & available resources in the Foundation for Learning

- ☐ **Early Alert**: 1 – Recognize challenges immediately when they occur; 2 – Seek solutions; 3 – Implement change
- ☐ **Creator Law**: 1 – Write; 2 – Simple; 3 – Smarter
- ☐ **BPR** (Bullet Point Reading): Follow CSI:BPR method on weekends. *Success begins with quality BPR!*
- ☐ **RLN** (Review Lecture Notes): Immediately after class
- ☐ **Big Picture Approach to Problem Solving**: Concept, S.A.M. (i.e. steps) & Variation
- ☐ **Section Summaries**: Capture the Big Picture. Reminder - *review these with your professors!*
- ☐ **Test Taking Strategies**: 1 – Prepare; 2 – Work the test!; 3 – Correct the test
- ☐ **Effort Tracker**: Week-by-week checkup
- ☐ **Learning Styles**: 1 – Visual, 2 – Auditory; 3 – Tactile/Kinesthetic
- ☐ **Emotional Intelligence**: Being aware of, understanding and managing your emotions
- ☐ **Self-advocacy**: *Fight for yourself!*

# 40 Hello my name is _____, and I am a Creator!

## Interacting with Faculty beginning Week #1

***Why?*** Because building relationships with professors is a key strategy for protecting your GPA (see "10-Point Success Plan for Creators *after* Transfer"). Beyond being responsible for teaching and giving course grades, professors can be great mentors and advocates. A positive relationship with a professor also makes it possible for professors to write some of the strongest letters of recommendation for scholarships, research programs, graduate school, etc. Professors can also provide great career advice. In general, Creators have much to learn from professors both inside and outside of the classroom. Make it a plan to begin building relationships with your professors starting in Week #1, and then enjoy the learning experience – *that's what Creators do!*

***Interacting with Faculty*** – Professors easily recognize Creators in their classes. Creators apply the learning culture, use self-advocacy and generally distinguish themselves as being serious about their learning: they are respectful of their professors and other classmates; they don't miss coming to class; they come to class early, and they come to class prepared (i.e. BPR); they sit in the front row (i.e. the "learning T"); they participate in class and ask intelligent questions; they successfully complete assignments; they excel on exams; they speak with professors often, including after class and during office hours; they take accountability for their learning; they are natural leaders in class; and they serve as role model students.

***Plan for Week #1*** – Begin establishing your relationship with professors by introducing yourself during Week #1. If possible, meet with your professors during their first office hour. Share with them your major. Then have a brief conversation with them about the class. Here are some sample questions to consider:

- ☐ What can I look forward to learning in your class?
- ☐ What do you expect for students to be successful in your class?
- ☐ What topics give students the most difficulty? What strategies or resources do you recommend for these and other topics?
- ☐ What is your favorite lecture in this class and why?

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Here are other sample questions to consider as you become more comfortable in your relationships with your professors:

- ☐ Did you go to a community college?
- ☐ What did you study and where did you receive your academic degrees, i.e. Bachelor's, Master's, Ph.D., etc?
- ☐ What challenges did you face as a student, and how did you overcome them?
- ☐ Why did you choose your area(s) of study, and what inspired you to become a professor?

***Professors "are people" too!*** Professors are knowledgeable and experienced in their areas. However, their role is to facilitate learning. Remember that as a Creator you must be in control of your own learning. Interact with your professors early and often to create your own success!

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# Test Taking Strategies

## Prepare Mentally, Physically & Emotionally

- Have a plan and begin preparing days in advance – *work smarter, not harder!*
- Know what the test will cover, what types of questions will be asked and what test aids will be allowed
- Review course outline, BPR & lecture notes, homework and previous tests
- Get enough sleep the night before – *cramming doesn't work!*
- Arrive early, get a good seat, stay relaxed and confident

## Work the Test!

- ***BEFORE*** starting:
  - ✓ *Memory dump* - write down where possible everything important you need to remember
  - ✓ Quickly scan the entire test:
    - o *How many questions are there, what are the types of questions & how many points is each question worth?*
    - o *Which questions are easier?*
- Read the directions for each question carefully. If you do not understand a question, ask for clarification.
- Answer the easiest and shortest questions first
- For multiple choice questions, read all choices, eliminate what you can and choose the best answer
- For essay questions, quickly prepare an outline of important ideas and facts that answer the question. *Do not write around the question.*
- ***Pace yourself!*** Watch the time - if you get stuck on any question, move on and come back to it later. *You may remember how to answer the question by working on other questions*.
- Answer every question, unless there is a penalty for guessing.
- ***Beware!*** Absolutes (always, never, etc.) are usually included in incorrect responses
- ***Final review!*** Before turning in your test, review your answers. Check that you answered all questions, and look for any silly mistakes.

## It's Not Over!

- Correct your test when you get it back
- Re-do every question that you got wrong, and understand why you got it wrong the first time – *see the Big Picture*
- What you learn from your mistakes will help you to be more successful

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# Time Management Strategies

## Getting Started

### Time Management Goal

Building time management strategies is similar to planning a budget. Your ***GOAL*** in time management is to regain control of your time.

### Get and Use a Calendar

Your calendar can be on paper, computer, cell phone or other tool. No matter where it is - make sure you **HAVE** one. *Keep trying new tools* until you find one that works for you.

## Writing Down Your Schedule

### What Should My Schedule Include? *Time for …*

- ☑ Classes
- ☑ BPR, Review of Lecture Notes, Homework, Study Groups and Professor Office Hours
- ☑ Commuting *to* and *from* school
- ☑ Work
- ☑ Meals & exercise
- ☑ Personal commitments, "*me time*" and sleep!

### Notes

- For every ***hour*** of class time, you need an average of ***two hours*** of study time
- Schedule time before class to review BPR notes and after class to review lecture notes
- Schedule breaks at the end of large tasks
- Schedule extra time on your assignments in order to work with unexpected tasks. If you expect to need one-half hour to do homework, give yourself 1-hour to do it. *Don't put extra stress on yourself by limiting your time*.

### Important Tips

- ☑ Schedule everything
- ☑ Do the tough stuff first
- ☑ Divide large assignments into smaller parts
- ☑ **Create a To-Do List** - Divide the list into groups and prioritize each of the three groups by deadline
  ***Group 1*** - Stuff ***due today*** or having ***high priority***
  ***Group 2*** – Stuff with a ***later deadline***, i.e. tomorrow, this week, this month
  ***Group 3*** – Stuff that ***can wait***, i.e. does not have a real deadline

## Working With Your Schedule

- ☑ Work your day according to your plan. If something new comes up (i.e. ***an emergency***), make sure you reschedule the things that you had planned to do.
- ☑ Trying to do too much at the same time can lead to stress, pressure & burnout. Learn when to say "no" to people who will take up your time.
- ☑ Completely finish your tasks and put away anything you use. *It will be easier to find the next time!*

### There's Always Tomorrow

It takes time to learn how to manage your time. If your schedule for the day falls apart, don't quit on your time management. Instead, pick up the pieces and start again tomorrow. Review your plan at the end of each week to see what did and what didn't work. Improve your time management skills one week at a time. *That's what Creators do!*

# Weekly Study Hours

*How many hours do you have available for studying each week?*

Time management is a challenge for all students. The challenge exists because students have many things to do, yet there are only **168** total hours in a week. The solution is to have a healthy balance between study time and non-study time, then use the study time effectively. On average, students should plan to spend 2 hours of study time for every hour they spend in class. The key is to know how much time you need for studying, then budget your time wisely. Use the planning worksheet below for managing your time. *That's what Creators do!*

| **Non-Study Activities** | **Sample Budget** (Hours) | ***Your Budget*** (Hours) |
|---|---|---|
| Sleep | 56 (8 hrs/day x 7 days) | |
| Classes | 12 (12 units) | |
| Work | 20 | |
| Meals | 14 (2 hrs/day x 7 days) | |
| Personal Hygiene | 14 (2 hrs/day x 7 days) | |
| Travel/Transportation | 10 (2 hrs/day x 5 days) | |
| Personal Activities | 6 | |
| "Me-time" | 5 | |
| Exercise | 3 | |
| Extra-curricular | 2 | |
| Laundry/Cleaning | 2 | |
| Other: | | |
| Other: | | |
| **Total – *non study time*:** | **144** | |
| **Hours available for studying:** (*Equals 168 – "total non study time"*) | **24** | |

| **Study Activities** | **Sample Budget** (Hours) | ***Your Budget*** (Hours) |
|---|---|---|
| BPR (Bullet Point Reading) | 2 | |
| RLN (Review Lecture Notes – *after class*) | 2 | |
| SG (Study Groups) | 2 | |
| POH (Professor Office Hours | 2 | |
| Tutoring | 1 | |
| HW (Homework) | 15 | |
| **Total –*study time*:** | **24** | |

# Weekly Time Management Planner

| Time | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday |
|---|---|---|---|---|---|---|---|
| **6:00** | | | | | | | |
| 6:30 | | | | | | | |
| **7:00** | | | | | | | |
| 7:30 | | | | | | | |
| **8:00** | | | | | | | |
| 8:30 | | | | | | | |
| **9:00** | | | | | | | |
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| 9:30 | | | | | | | |
| **10:00** | | | | | | | |
| 10:30 | | | | | | | |

# Sample Time Management Plan



Use CEO (Chief Executive Officer) time each Friday to review your progress for the week that just passed and plan for the next week. *You are the CEO of your company!*

Arrive at the same time each day

Schedule time to speak with professors during POH (Professor Office Hours)

Arrive early for class & review your BPR

Review lecture notes (RLN) immediately after class:

- Avoid having back-to-back classes
- If possible, do RLN with SG (Study Group) to see Big Picture
- ***Tip***: Section Summaries can be completed during scheduled RLN time

End of the day: Schedule "prep time" for any final prep needed for the next day's classes

| Time | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday |
|---|---|---|---|---|---|---|---|
| 6:00 | | | | | | | |
| 6:30 | | | | | | | |
| 7:00 | Commute | Commute | Commute | Commute | Commute | | |
| 7:30 | | | | | | | |
| 8:00 | Work | Math POH | Work | Math POH | CEO time | Flexible Time | Flexible Time |
| 8:30 | | | | | | | |
| 9:00 | | Math | | Math | Meeting | | |
| 9:30 | | | | | | | |
| 10:00 | | | | | Meal | | |
| 10:30 | Review BPR | | Review BPR | | Math HW | | |
| 11:00 | Physics | | Physics | | | Physics BPR | |
| 11:30 | | | | | | | |
| 12:00 | | Math RLN/ SG | | Math RLN/ SG | Meeting | Meal | Meal |
| 12:30 | | | | | | | |
| 1:00 | | Work | | Work | | Flexible Time | Physics BPR |
| 1:30 | Break | | Physics | | | | |
| 2:00 | Intro Engr | | | | Math HW | | Engr BPR |
| 2:30 | | | | | | | |
| 3:00 | | | Physics POH | | Physics HW | | Math HW |
| 3:30 | | | | | | | |
| 4:00 | Engr RLN | | Physics RLN | | | | |
| 4:30 | Meal | | | | Commute | | Break |
| 5:00 | Physics RLN | | Work | | Meal | Math BPR | |
| 5:30 | | | | | | | |
| 6:00 | Commute | | Commute | Commute | | | Physics HW |
| 6:30 | Physics HW | | Meal | Meal | | | |
| 7:00 | | Commute | Physics HW | Math HW | | Meal | |
| 7:30 | | Meal | | | Me Time | | |
| 8:00 | Break | Math HW | | | | Math HW | |
| 8:30 | Engr HW | | | | | | |
| 9:00 | | | Break | Break | | | Physics prep |
| 9:30 | | | | | | | |
| 10:00 | Math prep | Physics prep | Math prep | Physics HW | | | |
| 10:30 | | | | | | | |

Schedule "flex" time that can be used for personal or academic needs

Do BPR on the weekends!

***Tip***: Section Summaries can be completed during scheduled HW (Homework) time

Schedule "Me Time" to focus on YOUR individual needs (i.e. social, rest, etc.) to have balance in your life. *Use your Me Time to reward yourself!*

## Other Time Management Strategies

- Be realistic & schedule enough time for tasks
- For every hour of class time, you need an average of 2 study hours outside of class
- Schedule challenging tasks earlier in the day
- Make exercise a priority for a healthy mind & body
- Excel makes color coding and revisions easy

Adapted from the San Diego City College MESA Program Model (2018)

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# EMOTIONAL INTELLIGENCE (EQ)*

*Your ability to be aware of, understand and manage your emotions!*

## Self-Awareness

Knowing yourself, i.e. your goals, values, feelings, needs, strengths & weaknesses. *Includes*:

- Emotional awareness
- Accurate self-assessment
- Self-confidence

## Social Skills

The ability to effectively interact and build positive relationships with others to achieve a desired goal or outcome. *Includes*:

- Influence
- Communication
- Conflict management
- Leadership
- Change catalyst
- Building bonds
- Collaboration and cooperation
- Team capabilities


## Empathy

Being able to see yourself in others, i.e. recognize and appreciate the feelings and experiences of others. *Includes*:

- Understanding others
- Developing others
- Service orientation
- Leveraging diversity
- Political awareness

## Self-Regulation

The ability to control your own emotions (*Creator behavior*), rather than being controlled by them (*Victim behavior*). *Includes*:

- Self-control
- Trustworthiness
- Conscientiousness
- Adaptability
- Innovativeness

## Motivation

Having the desire, passion and ability to achieve personal goals. *Includes*:

- Achievement drive
- Commitment
- Initiative
- Optimism

Adapted from the San Diego City College MESA Program Model (2018)

* Adapted from *Why Emotional Intelligence Is A Key Factor To Success!* (https://steemit.com/life/@sirwinchester/why-emotional-intelligence-is-a-key-factor-to-success) and *Emotional Intelligence: What Is It And How Do We Develop It? Part 1* (http://dispatchist.com/emotional-intelligence-how-develop-it-part-1/). For more information, please see the *Emotional Intelligence* references on the "Listing of MESA Handouts" page on the MESA Program website (www.sdcity.edu/mesa).

# *The Quick Emotional Intelligence Self-Assessment**



*Adapted from a model by Paul Mohapel (paul.mohapel@shaw.ca)

Emotional intelligence (*referred to as* **EQ**) is your ability to **be aware of**, **understand** and **manage your emotions**. *Why is EQ important?* While intelligence (*referred to as* **IQ**) is important, success in life depends more on EQ. Take the assessment below to learn your EQ strengths!

| Rank each statement as follows: | **0** (*Never*) | **1** (*Rarely*) | **2** (*Sometimes*) | **3** (*Often*) | **4** (*Always*) |
|---|---|---|---|---|---|

## Emotional Awareness – *Total*: _____

| | |
|---|---|
| 0 1 2 3 4 | My feelings are clear to me at any given moment |
| 0 1 2 3 4 | Emotions play an important part in my life |
| 0 1 2 3 4 | My moods impact the people around me |
| 0 1 2 3 4 | I find it easy to put words to my feelings |
| 0 1 2 3 4 | My moods are easily affected by external events |
| 0 1 2 3 4 | I can easily sense when I'm going to be angry |
| 0 1 2 3 4 | I readily tell others my true feelings |
| 0 1 2 3 4 | I find it easy to describe my feelings |
| 0 1 2 3 4 | Even when I'm upset, I'm aware of what's happening to me |
| 0 1 2 3 4 | I am able to stand apart from my thoughts and feelings and examine them |

## Emotional Management – *Total*: _____

| | |
|---|---|
| 0 1 2 3 4 | I accept responsibility for my reactions |
| 0 1 2 3 4 | I find it easy to make goals and stick with them |
| 0 1 2 3 4 | I am an emotionally balanced person |
| 0 1 2 3 4 | I am a very patient person |
| 0 1 2 3 4 | I can accept critical comments from others without becoming angry |
| 0 1 2 3 4 | I maintain my composure, even during stressful times |
| 0 1 2 3 4 | If an issue does not affect me directly, I don't let it bother me |
| 0 1 2 3 4 | I can restrain myself when I feel anger towards someone |
| 0 1 2 3 4 | I control urges to overindulge in things that could damage my well being |
| 0 1 2 3 4 | I direct my energy into creative work or hobbies |

## Social Emotional Awareness – *Total*: _____

| | |
|---|---|
| 0 1 2 3 4 | I consider the impact of my decisions on other people |
| 0 1 2 3 4 | I can tell easily tell if the people around me are becoming annoyed |
| 0 1 2 3 4 | I sense it when a person's mood changes |
| 0 1 2 3 4 | I am able to be supportive when giving bad news to others |
| 0 1 2 3 4 | I am generally able to understand the way other people feel |
| 0 1 2 3 4 | My friends can tell me intimate things about themselves |
| 0 1 2 3 4 | It genuinely bothers me to see other people suffer |
| 0 1 2 3 4 | I usually know when to speak and when to be silent |
| 0 1 2 3 4 | I care what happens to other people |
| 0 1 2 3 4 | I understand when people's plans change |

## 48 Relationship Management – *Total*: _____

| | |
|---|---|
| 0 1 2 3 4 | I am able to show affection |
| 0 1 2 3 4 | My relationships are safe places for me |
| 0 1 2 3 4 | I find it easy to share my deep feelings with others |
| 0 1 2 3 4 | I am good at motivating others |
| 0 1 2 3 4 | I am a fairly cheerful person |
| 0 1 2 3 4 | It is easy for me to make friends |
| 0 1 2 3 4 | People tell me I am sociable and fun |
| 0 1 2 3 4 | I like helping people |
| 0 1 2 3 4 | Others can depend on me |
| 0 1 2 3 4 | I am able to talk someone down if they are very upset |

***My EQ strengths!*** Mark your EQ total scores to assess your strengths and areas for improvement.

| Domain | Score |
|---|---|
| Emotional Awareness | 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 |
| Emotional Management | 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 |
| Social Emotional Awareness | 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 |
| Relationship Management | 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 |

Measure your effectiveness in each domain using the following key:

**0 – 24** Area for Enrichment: ***Requires*** attention and development

**25 – 34** Effective Functioning: Consider ***strengthening***

**35 – 40** Enhanced Skills: Use as ***leverage*** to develop weaker areas

***Using your EQ strength*** – for your strongest EQ domain, give an example of how you demonstrate your strength in your daily life or work: _____

_____

_____

***Effects of your EQ strength*** – for your weakest EQ domain, give an example of how this affects you AND others in your daily life or work: _____

_____

_____

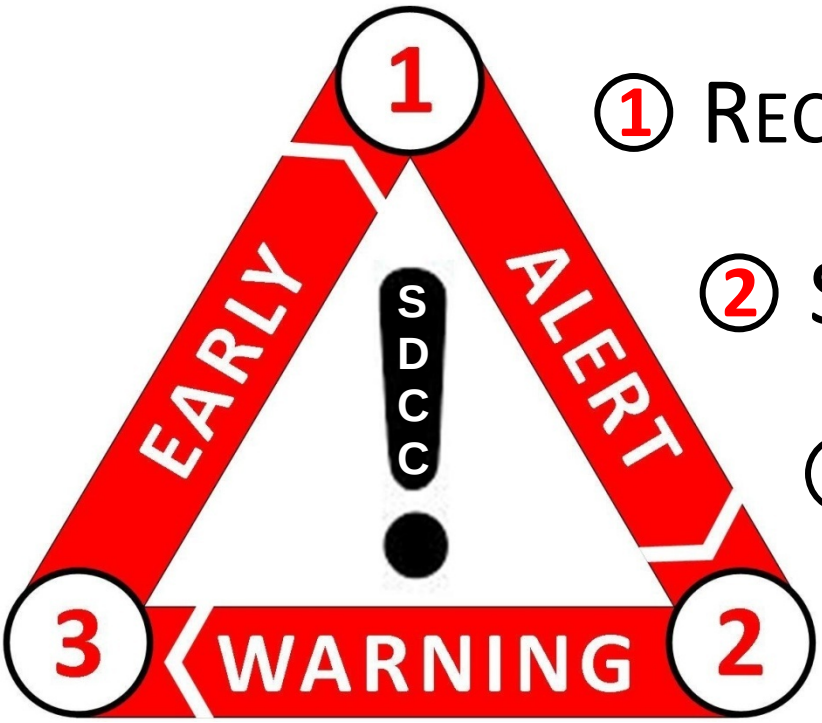
***Improving your EQ strength*** – for your weakest EQ domain, what steps can you take to strengthen yourself in this area? How will this benefit you in your daily life or work? _____

_____

_____

*For help in developing your EQ strengths, visit the City College Mental Health Counseling Center*

# Early Alert Watch




① RECOGNIZE →

② SEEK SOLUTIONS

③ IMPLEMENT CHANGE

# It's a CRIME to ignore red flags!

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MESA Program Model (2018)

50

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# EARLY ALERT

RECOGNIZE ◆ SEEK SOLUTIONS ◆ IMPLEMENT CHANGE

## Why is ***Early Alert*** important for students?

Early Alert is a strategy for handling challenges as soon as possible to increase academic success. Early Alert steps include: ① RECOGNIZING challenges immediately when they occur, ② SEEKING SOLUTIONS to the challenges, and ③ IMPLEMENTING CHANGE to overcome the challenges.


Early Alert is very important because ***GPA matters*** and student success depends on effectively overcoming challenges each semester. If not handled correctly, challenges easily lead to *falling behind in classes*, *feeling overwhelmed*, *lower performance*, and eventually *failure*.

## Examples of ***Early Alert*** in action …*What action must you take?*

### ① Recognizing challenges: *Spotting the red flags* (🚩)

- 🚩 Failing to do **BPR (Bullet Point Reading)**
- 🚩 Coming to class without learning supplies, i.e. textbook, notebook, calculator, etc.
- 🚩 Poorly organized class materials, i.e. BPR, lecture notes, quizzes, handouts, etc.
- 🚩 Arriving late or missing class
- 🚩 Failing to review lecture notes immediately after class
- 🚩 Trouble seeing the **Big Picture (Concept, S.A.M. & Variation)**
- 🚩 Difficulty with or *NOT* completing homework
- 🚩 Low performance on quizzes or exams
- 🚩 Failure to complete Progress Reports
- 🚩 Not balancing academics, work and home
- 🚩 Breaking the Creator Laws: *write*, *simple*, *smarter*
- 🚩 **Victim behavior: *Self sabotage!***

### ② Seeking solutions to challenges: *Self-Advocacy*

- ☑ Review the Foundation for Learning strategies, including Learning Styles
- ☑ Get re-trained on the **Formula for Approaching the Learning**, including **BPR**, **CSI:BPR**, and **Big Picture Approach to Problem Solving**
- ☑ Use a **SmartPen** to record lectures
- ☑ Take advantage of campus resources
- ☑ See tutors in Tutorial, Math or English Centers
- ☑ Visit professors during office hours
- ☑ Form study groups
- ☑ View online lecture videos
- ☑ Get help from other Creators
- ☑ Get training on Test Taking Strategies and Time Management Strategies
- ☑ Speak with a Counselor
- ☑ Visit Mental Health Counseling, DSPS, etc.

### ③ Implementing change to overcome challenges: *Master the approach to the learning*

- ➡ Establish a sense of urgency: *No urgency, no change!*
- ➡ Set short-term goals for improvement
- ➡ **Implement solutions from Step ②**
- ➡ Use Weekly Planner for time management
- ➡ ***Follow-up***: Are your solutions working? If no, get more help or seek other solutions (**Step ②**).

Adapted from the San Diego City College MESA Program Model (2018)

*Thinking of a*

# DEGREE *or* CERTIFICATE?

**Read this!**

51

**Transfer/Career Center** – ***begin here for career exploration***

Contact - Phone: (619) 388-3722 Room: A-301 Website: www.sdcity.edu/transfer

**Transfer Resources**

- Learn about transfer
- Choose a major
- Choose a transfer university
- Transfer guarantee programs
- Transfer dates & deadlines
- Contact a transfer university
- Transfer coursework requirements
- Apply for admission
- Apply for financial aid
- Apply for scholarships

**Career Resources**

- Career assessment/exploration
- Research occupations
- Learn about training programs
- Research potential employers
- Find an internship
- Search for jobs
- Create a resume
- Create a cover letter
- Prepare to interview
- Enroll in Work Experience

**Counseling Center – *now what is your goal*? *See a counselor to create your education plan!!!***

Contact - Phone: (619) 388-3540 Room: A-366 Website: www.sdcity.edu/StudentSupportResources/counseling.asp

## Transfer to 4-year University*

*Did You Know?
*A Transfer Studies Associate Degree is available!*

YES, YOU CAN DO IT! *See a counselor to learn more about*:

- ☐ Transfer requirements (*minimum of 60 units*) and deadlines
- ☐ Articulation agreements
- ☐ Lower Division General Education Plans for Transfer, including IGETC, CSU GE-Breadth and UCSD-TAG
- ☐ Available Transfer Workshops, including:
  - How to Transfer
  - CSU/UC Application
  - Transfer Options
- ? Online sources for detailed information
  - Transfer/Career Center: www.sdcity.edu/transfer
  - Assist: www.assist.org
  - CSU Mentor: www.csumentor.edu
  - UC Pathways: www.ucop.edu/pathways

## Associate Degree*

*Did You Know?
*Over **60** types of Associate Degrees are available!*

YES, YOU CAN DO IT! *See a counselor to learn more about*:

- ☐ **Associate in Science Degrees**
  Awarded in engineering, physical sciences, biological sciences and occupational disciplines
- ☐ **Associate in Arts Degrees**
  Awarded in the social sciences, humanities, the arts and related disciplines
- ☐ Associate degrees require completion of a minimum of 60 units, including:
  1. Major Requirements
  2. General Education Requirements
  3. District Requirements
  4. Elective Credits (*if needed*)
- ? Sources for detailed information
  - Catalog (*paper*): Available in the Counseling Center and bookstore
  - Catalog (*online*): www.sdccd.edu/students/college-catalogs
    Note: See the catalog for a "60 unit degree breakdown" and a list of available degrees

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For more information, visit the City College website: www.sdcity.edu

**Counseling Center – *now what is your goal? See a counselor to create your education plan!!!*** (*continued*)

## Certificate*

*Did You Know?
*Over **70** types of Certificates are available!*

YES, YOU CAN DO IT! *See a counselor to learn more about*:

- ☐ **Certificate of Completion** (*Typically requires completion of 3 to 17 units*)
  Designed to prepare students for employment, job enhancement and/or job advancement
- ☐ **Certificate of Achievement** (*Requires completion of 18 or more units*)
  Designed for students with specific personal or occupational goals

? Sources for detailed information

- Catalog (*paper*): Available in the Counseling Center and bookstore
- Catalog (*online*): www.sdccd.edu/students/college-catalogs
  Note: See the catalog for a list of available certificates

## Other Counseling Services

- ☐ **Career Counseling**

  **Note**: You should seek career counseling **IF** you are undecided about a career or major and/or need assistance setting an academic goal.

  - Career counseling is very important in helping students to identify career paths that are appropriate to their interests, values and personality
  - Career exploration - students are advised to complete the following steps in the Transfer/Career Center (Room A-301) prior to having a career counseling appointment:
    1. Take the following two assessments to learn more about yourself
       + **Interests, Abilities and Values** Assessment
       + **Personality** Assessment
    2. Use MyPlan.com to review occupations that best match your interests, abilities, values and personality.
    3. Use available resources to determine employment opportunities for your occupations of interest.

- ☐ **Personal Counseling**
  - FREE Personal Counseling services are provided to assist students in dealing with personal concerns that might interfere with their academic performance at City College
  - Personal Counseling services assist students with Self-evaluation, Goal-setting, Stress Management, Decision Making and Personal Adjustment
  - **Important**: Personal Counseling is provided in a safe and confidential atmosphere where students have an opportunity to talk about their individual concerns

## How to Access Counseling Services*

*Tip:
*See a counselor at least once every semester*

Counseling services are offered on a "walk-in" basis and by appointment

- ☐ **"Walk-in"** counseling provides an opportunity to see a counselor for quick questions that can be answered in less than 10 minutes
  - "Walk-in" counseling is offered during the Counseling Center's hours of operation. Contact the Counseling Center for specific hours.
  - No appointment is needed for "walk-in" counseling
- ☐ **1-hour counseling appointments** are offered for comprehensive services involving academic, career and personal counseling. Contact the Counseling Center for available appointments.

  1-hour appointments are recommended for the following services:
  - Creating a student's first education plan
  - Detailed review of an existing education plan
  - Comprehensive review of requirements for a Certificate, Associate Degree or Transfer
  - Full review of a student's current course work in relation to their goals
  - Comprehensive, life altering career counseling
  - Other in-depth counseling

# Educational Planning and General Education Transfer Plans

An education plan is your roadmap for achieving your transfer goal. This plan includes: ① classes for satisfying transfer requirements in your major (also known as "*prep for major*"), and ② classes for satisfying general education requirements. For UC's and CSU's, visit "assist.org" online to learn which classes are required for transfer in your major. Based on information from assist.org, below is a sample summary of classes needed for transfer from City College to UCSD or SDSU in common science, engineering and math majors.

General education (GE) requirements are met by completing the IGETC (Intersegmental GE Transfer Curriculum) for transfer to a UC and by completing the IGETC or CSU GE Breadth Requirements for transfer to a CSU. Once you have an education plan, it is very important to develop a semester-by-semester plan for taking your classes to have a balance of *prep for major* & *general education* classes and to estimate how long it will take to transfer. ***Note***: Be aware of class pre-requisites and advisories. For more transfer information, please search online for "UC admissions" and/or "CSU Mentor." Please speak with a Counselor for additional assistance and guidance.

*Prep for Major* Classes for Transfer from **City College** to **University of California, San Diego** (*Effective 2014-15*)

| City College Classes | Biology | Chemistry | Computer Science | Engineering | | | Math | Physics |
|---|---|---|---|---|---|---|---|---|
| | | | | Civil | Electrical | Mechanical | | |
| BIOL 210 A + B | R | | E | | | | | |
| CHEM 200 | R | R | E | R | R | R | | R |
| CHEM 200 L | R | R | | | | | | |
| CHEM 201 | R | R | E | | | R | | |
| CHEM 201 L | R | R | | | | | | |
| CHEM 231 | R | R | | | | | | |
| CHEM 231 L | | R | | | | | | |
| CHEM 233 | R | R | | | | | | |
| CHEM 233 L | | R | | | | | | |
| CISC 190 | | | R | | | | R | |
| ENGE 210 | | | | | | R | | |
| MATH 121 | E | | | | | | | |
| MATH 122 | E | | | | | | | |
| MATH 150 | E | R | R | R | R | R | R | R |
| MATH 151 | E | R | R | R | R | R | R | R |
| MATH 245 | | | R | | | | | |
| MATH 252 | E | R | R | R | R | R | R | R |
| MATH 254 | | | R | R | R | R | R | R |
| MATH 255 | | R | | R | R | R | R | R |
| PHYS 180 A + B | E | | | | | | | |
| PHYS 181 A +B | E | | | | | | | |
| PHYS 195 | E | R | E | R | R | R | | R |
| PHYS 196 | E | R | E | R | R | R | | R |
| PHYS 197 | E | R | | R | R | R | | R |

Notes ➡ **R**: Required **E**: Elective – *student's choice*. See assist.org for details

**UCSD majors** – *as shown on assist.org*:

Biology: General Biology B.S.
Chemistry ➡ Chemistry and Biochemistry: Chemistry B.S
Computer Science ➡ CSE: Computer Science B.S
Civil Engineering ➡ Structural Engineering B.S.
Electrical Engineering ➡ ECE: Electrical Engineering B.S.
Mechanical Engineering ➡ Mechanical Engineering B.S.
Mathematics ➡ Mathematics: Applied Mathematics B.S.
Physics ➡ Physics B.S.

54 *Prep for Major* Classes for Transfer from **City College** to **San Diego State University** (*Effective 2014-15*)

| City College Classes | Biology | Chemistry | Computer Science | Engineering | | | Math | Physics |
|---|---|---|---|---|---|---|---|---|
| | | | | Civil | Electrical | Mechanical | | |
| BIOL 107 | | | | R | R | R | | |
| BIOL 200 | R | | E | E | | | E | |
| BIOL 210 A + B | R | | E | | | | | |
| CHEM 200+L | R | R | E | R | | R | | R |
| CHEM 201+L | R | R | E | | | | | |
| CHEM 231+L | R | R | | | | | | |
| CHEM 251 | | R | | | | | | |
| CISC 190 | | | E | | | | E | |
| CISC 192 | | | | | R | | | |
| ENGE 151 | | | | | | R | | |
| ENGE 200 | | | | R | | R | | |
| ENGE 210 | | | | | | E | | |
| ENGE 240 | | | | | R | | | |
| ENGE 250 | | | | R | | R | | |
| ENGE 260 | | | | | R | R | | |
| MATH 107 | | | E | | | | E | |
| MATH 119 | | | E | E | | | E | |
| MATH 121 | E | | | | | | | |
| MATH 122 | E | | | | | | | |
| MATH 150 | E | R | R | R | R | R | R | R |
| MATH 151 | | R | R | R | R | R | R | R |
| MATH 245 | | | R | | | | R | |
| MATH 252 | | R | | R | R | R | R | R |
| MATH 254 | | | R | | R | | R | |
| MATH 255 | | | | R | R | R | | |
| MFET 115 | | | | | | E | | |
| PHYS 125 | E | | | | | | | |
| PHYS 126 | E | | | | | | | |
| PHYS 180 A + B | E | | | | | | | |
| PHYS 181 A +B | E | | | | | | | |
| PHYS 195 | | R | E | R | R | R | | R |
| PHYS 196 | | R | E | R | R | R | | R |
| PHYS 197 | | | | | | R | | R |
| PSYC 258 | | | E | E | | | E | |

Notes ➡ **R**: Required **E**: Elective – *student's choice*. See assist.org for details

**SDSU majors** – *as shown on assist.org*:

Biology
Chemistry: B.S. with Certificate of the American Chemical Society
Computer Science
Civil Engineering
Electrical Engineering
Mechanical Engineering
Mathematics: B.S. - Emphasis in Applied Mathematics
Physics: General - B.S.

SAN DIEGO STATE UNIVERSITY

SAN DIEGO CITY COLLEGE

*Provided by the* **San Diego City College MESA Program**
www.sdcity.edu/mesa

MESA Mathematics Engineering Science Achievement

Revised June 15, 2015

# *Thinking of* DROPPING *or* WITHDRAWING *classes?*

## Read this!

***Did You Know***

**DROPPING** a class:

- Means that you formally cancel your enrollment
- *Classes may only be dropped on or before the drop deadline*

**WITHDRAWING** from a class - MUST be taken very seriously:

- Means that you formally cancel your enrollment
  **PLUS** – you will have a "W" recorded on your permanent record
  **AND** – it's possible that you may not be able to retake the class
- *You may only withdraw between the drop deadline and the withdrawal deadline*

Beware of DROPS and WITHDRAWALS, because money matters:

$ You may not be able to get your money back for the class

$ If you receive financial aid, you may need to pay back a portion of the money received

$ You may not be eligible in the future to receive Financial Aid

Beware of DROPS and WITHDRAWALS, because:

- It will take you longer to earn a certificate, degree or transfer
- If you miss the drop deadline, you may receive an "F" for the class
- Your record of withdrawals may result in:
  - ⊗ **PROBATION** – *you will need to show immediate improvement in classes*
  - ⊗ **DISQUALIFICATION** - *you may* **NOT** *be able to take any more classes*

*Don't let your time and effort go to waste!*

**Deadlines** – CHECK the schedule of classes to confirm dates:

- DROP deadline - typically the end of the 2nd week after the semester begins
- WITHDRAWAL deadline - typically the 10th week after the semester begins

**Important:** *It is* **NOT** *the responsibility of your professor to drop students that haven't been attending class* - **it is your responsibility!**

**More Info**

| | | |
|---|---|---|
| Counseling Center | Room A-366 | (619) 388-3540 |
| Financial Aid Office | Room A-270 | (619) 388-3501 |
| Admissions Office | Room A-241 | (619) 388-3475 |

Still need to DROP or WITHDRAW? Do it correctly:

1. Look for deadline dates in:
   - Schedule of classes
   - Admissions Office
   - Online at studentweb.sdccd.edu
2. Drop/withdraw classes online through Reg-E (https://studentweb.sdccd.edu/reg-e) ONLY on or before the deadline
3. After dropping/withdrawing a class, review your status of enrollment on "Reg-E" to confirm the changes and check for any errors.

56

STOP

*Thinking of*

# DROPPING *or* WITHDRAWING *classes?*

**Read this!**

| **Reasons** - *for drops or withdrawals* | **Help/resources** - *for avoiding drops or withdrawals* |
|---|---|
| **ACADEMICS** | |
| ⊗ Class is too difficult<br>⊗ Do not understand the concepts<br>⊗ Didn't do the assignments/fallen too far behind<br>⊗ Study habits need improvement<br>⊗ Unable to pull up grade after the drop deadline<br>⊗ Course load was too heavy<br>⊗ Have a learning disability<br>⊗ Don't need this class for graduation/transfer<br>⊗ Changed to another section<br>⊗ Course was not interesting<br>⊗ Don't think the class is fair<br>⊗ Curriculum was not challenging enough<br>⊗ Language barriers | ☐ Speak with your professor<br>☐ Visit Counseling Center for **ACADEMIC** Counseling and Action Plan<br>☐ Help with schoolwork:<br>■ Tutorial/Learning Center<br>■ English Center<br>■ Math Center<br>■ Library<br>■ Independent Learning Center<br>☐ Study groups<br>☐ DSPS: Disability Support Programs and Services<br>☐ Specialized services<br>■ MESA Program<br>■ EOPS<br>■ Honors<br>■ Puente<br>■ New Horizons<br>☐ Student Affairs |
| **FINANCIAL** | |
| ⊗ Problems with financial aid coming through<br>⊗ Have no means to pay for the course<br>⊗ Required textbooks are not affordable<br>⊗ Financial situation changed/need to work more hours<br>⊗ No longer have a means to pay for transportation<br>⊗ Lost job | ☐ Speak with your professor<br>☐ Financial Aid Office–financial assistance, work study<br>☐ Student Affairs - fee deferment, book loans<br>☐ EOPS – financial assistance, other support<br>☐ Scholarships Office – free money<br>☐ Transfer/Career Center – search for jobs<br>☐ Visit Counseling Center for **CAREER** Counseling<br>☐ City College website – jobs on campus<br>☐ Library – books on reserve<br>☐ New Horizons – book loans |
| **PERSONAL** | |
| ⊗ Having a family crisis<br>⊗ Class does not fit in personal schedule<br>⊗ Decided to take this course elsewhere<br>⊗ No longer have transportation to attend class<br>⊗ Have no daycare available<br>⊗ Have a personal injury/physical health crisis<br>⊗ Pregnant or about to give birth<br>⊗ There has been an unforeseen event/emergency<br>⊗ Victim of domestic abuse<br>⊗ Moving away<br>⊗ Placed on active military duty<br>⊗ Have become homeless<br>⊗ Death in the family<br>⊗ Do not like your professor's style of teaching<br>⊗ Have other issues with your professor | ☐ Speak with your professor<br>☐ Visit Counseling Center for **PERSONAL** Counseling<br>☐ Student Health Services<br>☐ Mental Health Services<br>☐ DSPS: Disability Support Programs and Services<br>☐ EOPS – personal counseling<br>☐ Child Development Center<br>☐ Transfer/Career Center – search for jobs<br>☐ A.S. Cashier – bus/trolley passes<br>☐ Student Affairs – join a club for peer support, support for miscellaneous issues<br>☐ Campus Police |

SAN DIEGO CITY COLLEGE

For more information, visit the City College website: www.sdcity.edu

SAN DIEGO CITY COLLEGE

# Victims:

# Blame
# Complain
# Make Excuses

# Self Sabotage!

# Choose to be a Creator!

U.S. AIR FORCE

Adapted from the San Diego City College MESA Program Model (2018)

# Important Factors for College Readiness & Success

Understanding the college system, college standards and the ***CULTURE*** of college!

Having an identity as a college student

Emotional Intelligence

Mental Toughness

Self-advocacy (= ***fight for yourself!***)

Goal Focus

Study Skills

Time Management

Academic Skills: Reading, writing, math, technology, and communication skills