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Prototypes and Procedures

In these pages, you'll find two terms used repeatedly: prototype and procedure. For our purposes, the term **prototype** is used to describe a typical example of something. The term **procedure** is used to describe a step-by-step process for accomplishing some goal. Whenever possible, we have included procedures that will help you to get started with a new skill or idea.

Procedures are most useful to novices, especially when encountering a very new skill or idea. People are most likely to use a procedure when faced with something quite new, especially when the complexity of a new challenge defeats the ability to grasp it as a prototype.

For example, when someone who has never touched a video game uses it for the first time, it is likely that they will need to follow a set of step-by-step instructions for how to turn it on, how to start a game, how to select a character, how to use the controller, and how to save the game. However, in a relatively short time, they will be able to enter and explore new games and game systems without a detailed procedure. They can do so because, through their experience with one game, they have learned to recognize the common elements among games and game systems and can make sense of and use the prototypes.

Prototypes are offered for the teacher's reference with the caveat that, like all exemplars[1], they should be utilized with caution[2] lest they influence rather than inspire. The **process** of creating Standard Operating Procedures matters as much as the procedures themselves. Simply put, we don't suggest that you reinvent the *concept* of the wheel, but strongly encourage you to create the ***right*** wheel for your students.

Introduction

The habits we build- intentionally or not- shape the way we live our lives, but how often are we really thoughtful about the habits we're building? In classrooms where teachers make at least 1,500 decisions a day,[3] it's hard to imagine being thoughtful about every single one of them. I think that experienced teachers develop a set of standard operating procedures that enable them to be calm, clear, and kind[4] throughout the day.

[1]https://www.edweek.org/leadership/study-showing-students-standout-work-can-backfire/2016/02?cmp=eml-enl-cm-news1-RM
[2] https://journals.sagepub.com/doi/abs/10.1177/0956797615623770
[3] https://www.edutopia.org/blog/battling-decision-fatigue-gravity-goldberg-renee-houser
[4] https://journals.sagepub.com/doi/full/10.1177/07435584221076055

Or at least that's what we strive to be. As adults, we also know that there are invariable going to be new problems and unexpected wrinkles but again- we have our ways of moving through them.

So why don't we teach kids to do the same?

In Critical Skills Classrooms[5], we present the idea of Standard Operating Procedures early on, as part of building collaborative learning communities. We help students to create a step-by-step process to use routinely in a given situation or when a set of conditions is encountered (like, say, a new problem to be solved). As with any new process, we begin by reflecting on past experiences, then we provide some scaffolding from which the students can draft their own SOPs, we test them, and then we assess, reflect, and revise as necessary.

The problems of the future are going to require problem solvers who know how to, well, solve problems. Having a familiar, time-tested plan of action[6] will help our students thrive no matter what the future brings. This book is designed to help you get started, but it's up to you and your students to make it your own. We hope you'll let us know what you learn and discover as you create systems and processes that work for you.

What kind of procedures & processes facilitate & enhance collaborative work?

A standard operating procedure is a step-by-step process that students use routinely in a given situation or when a set of conditions is encountered.

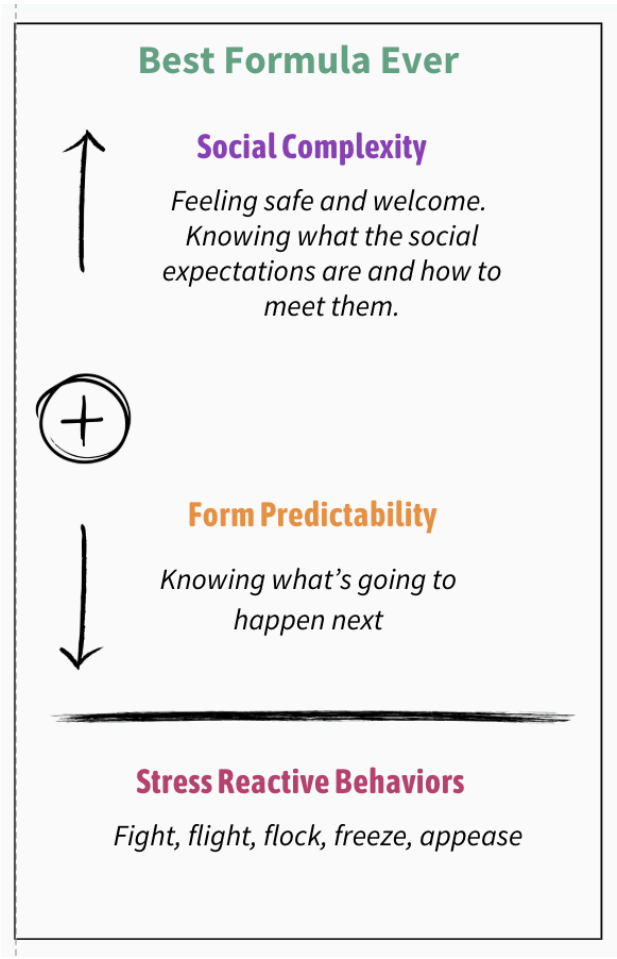
The term "standard operating procedures" (SOP) comes from the fire service. Fire Departments write SOPs to help facilitate the many decisions that need to be made as they attempt to solve the very complex problems inherent in how to put out a fire.

To help make collaborative problem-solving effective and efficient, we need to agree on procedures that will be followed automatically when certain situations are encountered. For example, if we agree that when a challenge is encountered, we all circle up and choose a facilitator, then we need not worry about those decisions.

We need to generate a set of procedures that will guide us through the process of problem-solving. This process needs to ensure that each of the four functions of organizations (ideas, people, products, processes) is accomplished. We will not be able to generate all the SOPs that we might need; however, working with and organizing a

[5]https://www.google.com/url?q=http://antioch.edu/csc&sa=D&source=docs&ust=1759189536512014&usg=AOvVaw3SzejPgbhP_WYb9WlacUm4
[6]https://www.techtarget.com/searchbusinessanalytics/definition/standard-operating-procedure-SOP?Offer=abt_pubpro_AI-Insider

few obvious ones will make our process here more efficient and effective than it otherwise might be.



We believe that people do well when they can[7]. So what do we do when students aren't doing well? That's where this BFE– Best Formula Ever comes in. (thanks to Kim John Payne and his Center for Social Sustainability).

Social Complexity- relationships and how clear, changeable, or unpredictable they are. Uncertainty around social standing, appropriate behavioral expectations, and norms can create socially complex situations. "Where will I sit? Will anyone like me? Will the teacher be nice? Will I have friends today? This week? This year? Which brands are cool or uncool today? Are my clothes right?"

Form Predictability- the logistical details of our day-to-day lives. When we can anticipate the sequence of events, we will experience and the actions we are expected to take. Where to put coats and backpacks, where to sit, where to go for lunch or if you get sick, how to open a locker, what the agenda for the day will be, and how dependable that agenda is from day-to-day and week-to-week.

Stress/ Reactive Behaviors- fight, flight, flocking (clique) and freezing behaviors (kid in the back of the room with the hood up?) – are reflective of the level of fear in any given situation. Everyone knows about fight or flight but freezing and flocking are less well known. All of them are based in fear and neurologically they all make it impossible to learn.

Now, this isn't a static equation. Over time and with experience, you'll find that you can decrease the predictability and that the kids will be better able to manage social

[7]https://www.smartkidswithld.org/getting-help/emotions-behaviors/ross-greene-on-challenging-behavior/#:~:text=Child%20psychologist%20and%20author%20Ross,development%20of%20crucial%20cognitive%20skills.

complexity. You've built a community they can depend on to keep them safe, that kind of safe can handle bigger risks.

Standard Operating Procedures provide structures– processes and roles– that increase predictability and decrease social complexity. When practiced in low-stakes situations, they become the tools we reach for when things get complex. So, if things just aren't working, revisit your SoPs and check your social complexity and form predictability. You may find that by decreasing the former by building and maintaining community[8], by setting and enforcing behavioral expectations[9] and making sure your students know each other and increasing the latter by making your processes and structures and system transparent and by making sure your expectations are clear, you may find that you can get rolling again.

A Procedure for Creating Standard Operating Procedures

1. Set the expectation for the use of standard operating procedures with your students. Define the term and look at examples of SoPs.

2. Reflect individually and then as a group on the steps that they've taken in the past to solve problems. What worked? What didn't?

6. Have students revise their procedure as necessary.

3. Using a process like a WASH, create "draft" SoPs for use in a low-stakes problem-solving situation.

4. Have the students test their procedure in a problem situation.

5. Include an assessment of the procedure in the debriefing of their work.

A Prototype Challenge for Creating Standard operating procedures

"To help make our collaborative problem-solving effective and efficient, we need to agree on procedures that will be followed automatically when certain situations are encountered. For example, if we agree that when a challenge is encountered, we all circle up and choose a facilitator, then we need not worry about these decisions.

The term ***Standard Operating Procedures*** *(SOPs) comes from the fire service. Fire Departments write SOPs to help facilitate the many decisions that need to be made as they attempt to solve the very complex problem of how to put out a fire.*

[8] https://center.antioch.edu/csc/2024/01/05/that-community-wont-just-build-itself/
[9]https://www.canva.com/design/DAFuchaVFK4/wtUm1kCWuEpmeaYbYzPwmw/edit?utm_content=DAFuchaVFK4&utm_campaign=designshare&utm_medium=link2&utm_source=sharebutton

We need to generate procedures that ensure that each of the four functions (Ideas, People, Process, Product) of organizations are accomplished. We will not be able to generate all of the SOPs that we might need; however, coming up with a few obvious ones will make our process here more efficient and effective than otherwise."

Procedure:

(1) You will work together in home (base) teams.

(2) We will identify various problems that need solutions when a collaborative group tries to work together. Several that are typical are:

- *integrating new students into the classroom community;*
- *greeting visitors to the classroom;*
- *choosing a facilitator and other roles;*
- *starting a whole group challenge;*
- *making sure everyone is heard;*
- *making every product high quality.*
- *resolving conflicts*

(3) We will divide up the problems among the different teams.

(4) Each team will then write a procedure that will (hopefully) accomplish the task and put this on a piece of poster paper. Use our Tool Box as a source of ideas.

(5) We will then use a tool known as a carousel to get feedback from the other groups about this procedure. The teams will visit each of the other team's work sites in turn, critiquing the plans they see, and making commendations and suggestions.

(6) Finally, teams will use these ideas to make final versions of these procedures for posting. (As a community, we always reserve the right to change a procedure later if we find it's not working the way we thought it would.)

7) We will present our final versions to each other and seek provisional approval from the community.

Prototype Standard Operating Procedure

Defining a problem

1) Choose a leader and a recorder.

2) Each group member reads the problem silently.

3) Each group member says what s/he thinks the problem to be solved is.

4) The leader facilitates a five-minute discussion to reach an agreement.

5) The recorder writes down a new statement of the problem in the group's own words.

6) Every group member signs the problem statement to indicate agreement and acceptance.

Generating multiple solutions/ideas

1) Individually, take five minutes. Write down the main idea in the center of a piece of paper.

2) Web anything that comes to mind about that main idea.

3) Starting with the letter M, the next person in alphabetic order who has not yet recorded gets up to do the recording.

4) For three minutes, ideas are generated by the group and recorded.

Organizing group tasks

1) Take out the planning tool.

2) Choose a taskmaster and a recorder.

3) Have the taskmaster act as facilitator until the procedure is finished.

4) Work together to decide what has to be done, in what order, by whom, and when.

5) Have the recorder record the results — make 2 copies.

6) Have each group member sign the plan, signifying commitment.

7) Put one copy in my box.

8) Use the plan.

Making a decision as a full class

1) Write the decision that needs to be made so that everyone can see it.

2) Write the different possible choices.

3) Write at least 3 criteria that will help us to make a good decision.

4) Assign a score to each criterion (3-very important, 2-somewhat important, 1- least important).

5) Rate how well each possible choice meets the stated criteria (0-3).

6) Multiply the criterion scores by the choice scores.

7) Identify the choice with the most points.

8) Double-check the winner against your feelings about using that choice.

9) Adjust criteria scores and repeat if necessary.

When technology doesn't work the way you expect it to

1) Is everything plugged in or charged?

2) Is your password correct? Are you logged into the correct account?

3) Check with a partner to see if they're having similar issues or they know how to fix the problem

4) Review any posters, videos or handouts that may solve your problem.

5) Ask the teacher for help.

Scripts for the coach

- *"We are going to be working on a series of challenges throughout the year. They will be problems for you to solve."*
- *"Let's look at the whole idea of problem-solving for a minute. When you are faced with a problem — a problem where you have time to think rather than an emergency — what do you believe is the first thing you should do?"*

- *“What happens if we jump in and solve a problem too quickly?”*
- *“Is the real nature of the problem always obvious?”*
- *“What are the consequences of assuming that you understand a problem and leaping directly to a solution?”*
- *“One of the skills that we will be targeting is the skill of defining a problem before setting out to generate solutions. What I would like you to do is to get into groups of five and write a six step standard operating procedure that you can use every time that I give you a problem, in writing, to solve. The procedure should describe the steps that you will take to define the problem. Your goal is to create a standard operating procedure that results in a clear statement in your own words of the real nature of the problem.”*
- *“We will test your procedures tomorrow on a problem.”*
- *"Let's review the steps we took. Did we solve the problem? Did we follow our SoPs? Why or why not? Do we need to revise our SoPs? What do we need to do the same or differently in the future?"*

Standard Teachers Operating Procedure

- **When issuing a challenge**
- Create Teams
- Issue the Challenge
- Chunk the Challenge
- Identify/ Define Task Roles
- Establish Criteria for:
    - Product
    - Desired Learning Outcomes
    - Process for Work
- Describe any special parameters
- **When troubleshooting/ problem solving on your own**
- Assess the quality of the community. Do you need to adjust the predictability of the processes? How is the social complexity?
- What grouping decisions did you make? Are the groups too small? Too large?
- Did You Over- or Under-Shoot the Level of Structure?
- Do students have too much or too little time to complete the work?
- How Complex Is the Work?
- Are Students Clear on the Form, Content, or Process standards?
- **When troubleshooting/ problem solving with students**
- Call a time-out. Ask students to return to their seats (or bring everyone together on the rug)

- Take a pause- a few minutes of quiet in which students reflect and write, think or draw on:
    - What would quality work look and sound like today?
    - What they saw and/or heard in class today?
    - How was number 1 the same or different from number 2?
    - What could they personally have done differently?
    - Are there questions they need answered in order to do quality work?
- Depending on the level of the problem, ask students to discuss their answers in small groups or as a whole class. (If small groups, be sure to have them report out) If students aren't able to discuss, have students turn in their answers in writing and compile their answers for a conversation the next day.
- Make a plan to move forward successfully either immediately or the next day.

When chunking a challenge

Identify and clarify the problem

- What problem are we supposed to solve?
- Why?
- What are we being asked to do/ make?
- Clarify unfamiliar words/phrases, identify questions

WASH/ Timeline/ IP3

- Brainstorming and decision making

Logistics

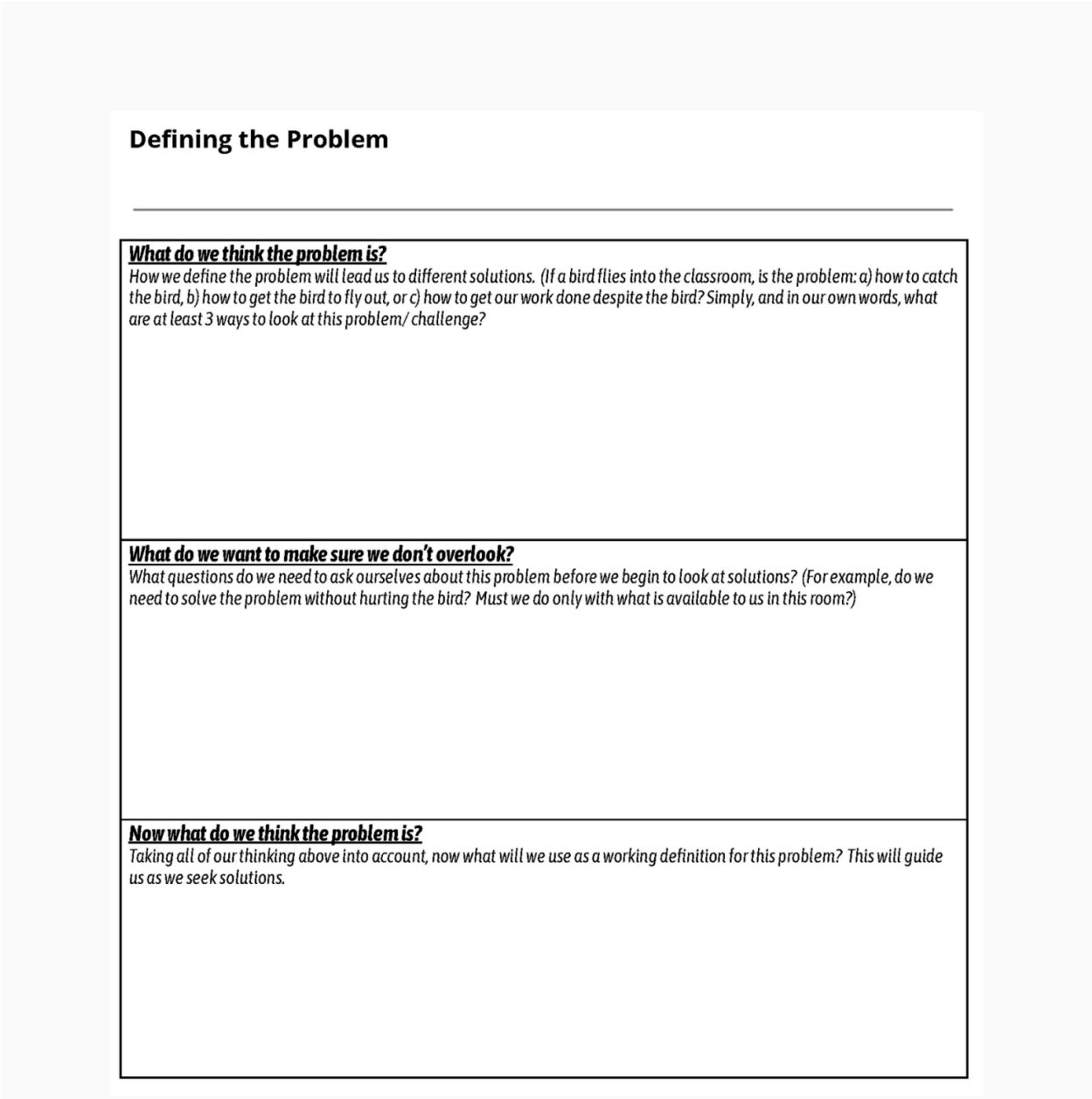
- Group size/ number of groups
- Roles within and across groups
- Timeline

How will we know if we've done the work well?

- Form, Content, and Process Criteria

Tools

On the following pages, you'll find some tools that may be useful for making and using your Standard Operating Procedures. Feel free to print, copy, and/or modify them. More free examples are available in our Tools Bank.



Defining the Problem

What do we think the problem is?
How we define the problem will lead us to different solutions. (If a bird flies into the classroom, is the problem: a) how to catch the bird, b) how to get the bird to fly out, or c) how to get our work done despite the bird? Simply, and in our own words, what are at least 3 ways to look at this problem/ challenge?

What do we want to make sure we don't overlook?
What questions do we need to ask ourselves about this problem before we begin to look at solutions? (For example, do we need to solve the problem without hurting the bird? Must we do only with what is available to us in this room?)

Now what do we think the problem is?
Taking all of our thinking above into account, now what will we use as a working definition for this problem? This will guide us as we seek solutions.

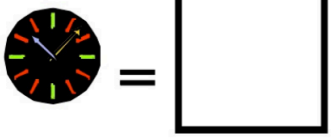
Do We Have All the Information?

	What do we already know?	*What do we need to know?*	*What do we want to know?*
Who			
What			
When			
Where			
Why			
How			

Brainstorm Ideas

Make a list.

Set a time limit.



Remember, no "put downs."

Brainstorming

Problem or Key Idea

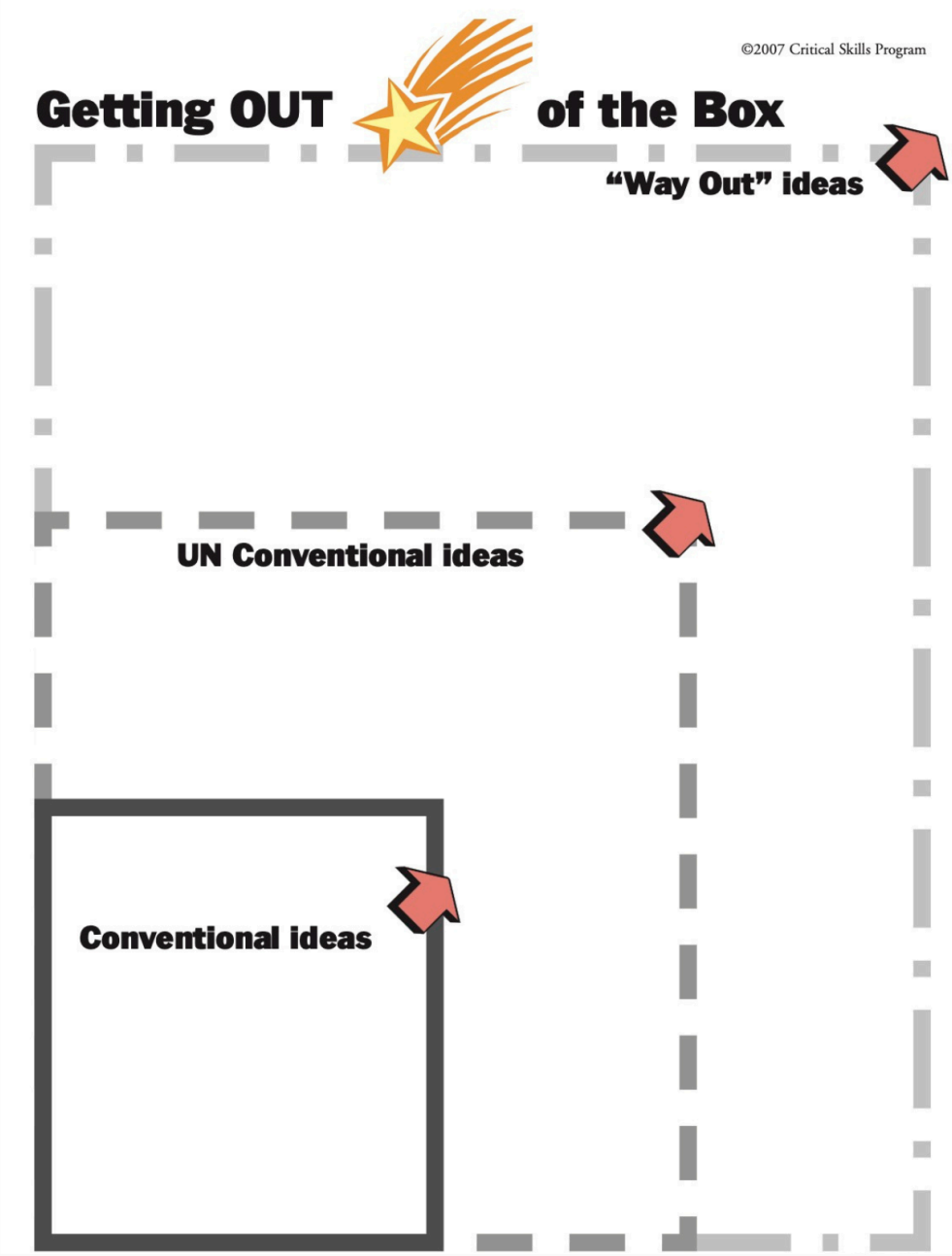
Rules:

1. All ideas are valid — judgment or criticism is not allowed.
2. Everyone should feel free to voice any idea. Even "wild ideas" are valid.
3. Piggy-backing or hitch-hiking on the ideas of others is allowed — encouraged even!
4. The more ideas, the better.

Follow-Up

1. Leave all ideas as written.
2. Set some **criteria** for evaluating and "pruning" the ideas. Examples: "Can we do that?" "Is it relevant to American Literature?" "Is it fun?" "Is it creative?"
3. Discuss ideas that fit the criteria. Circle, star, or highlight the ones that fit.
4. Discuss ways to develop the ideas.

Criteria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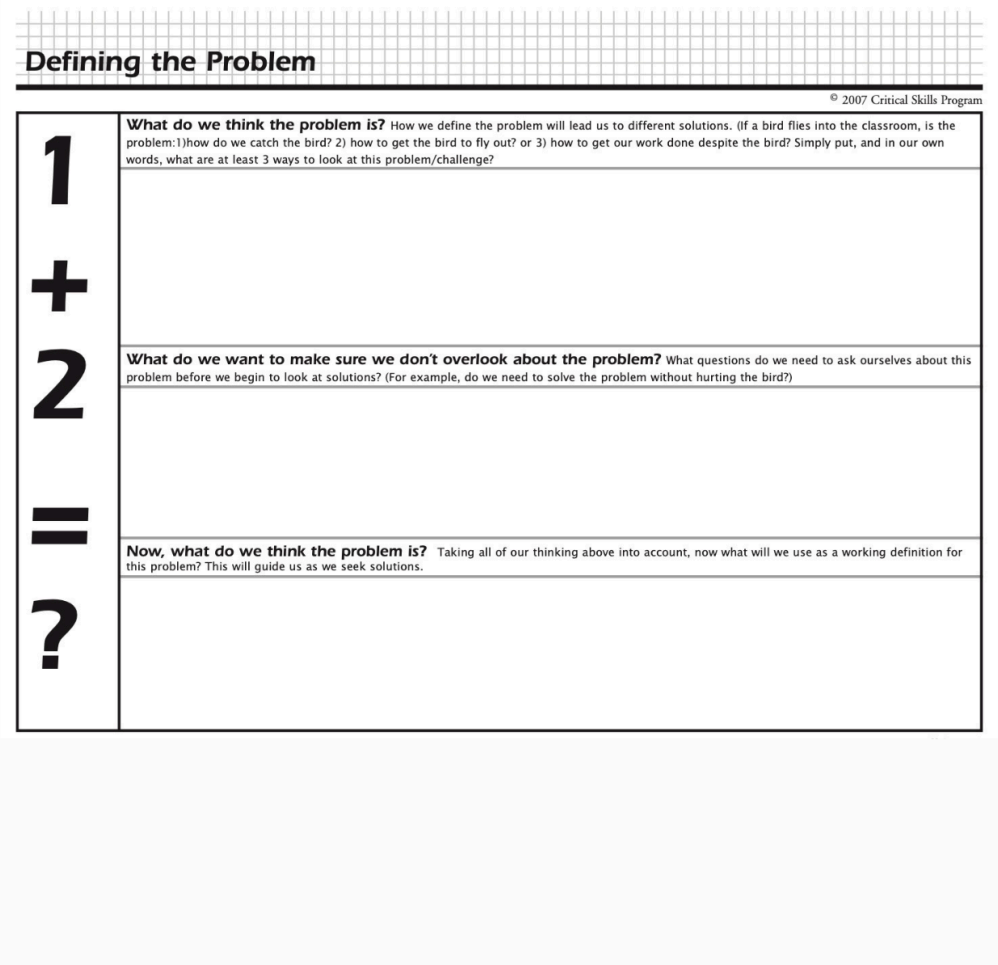
Getting OUT of the Box
"Way Out" ideas
UN Conventional ideas
Conventional ideas



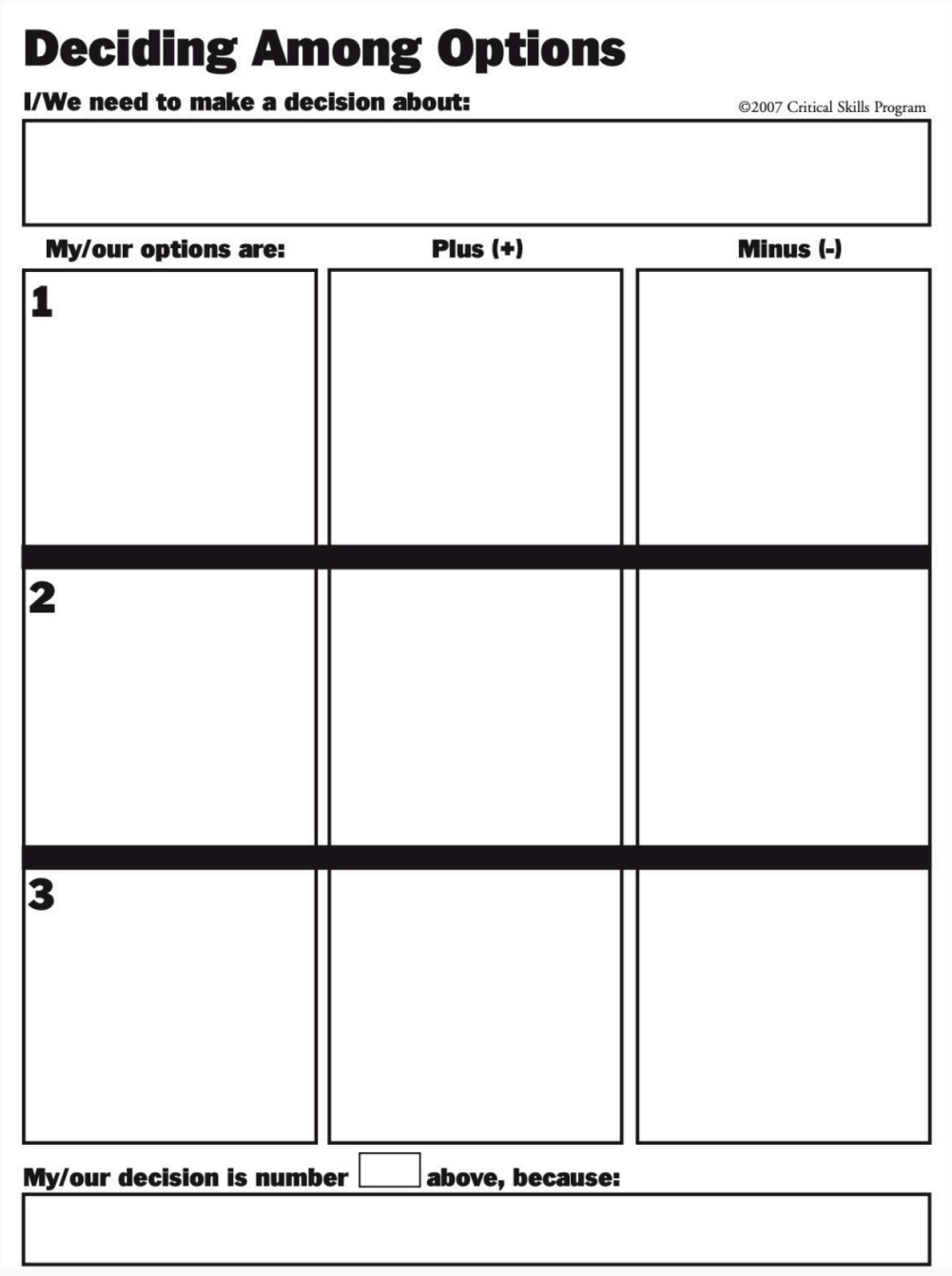
Defining the Problem

1 + 2 = ?

What do we think the problem is? How we define the problem will lead us to different solutions. (If a bird flies into the classroom, is the problem:1)how do we catch the bird? 2) how to get the bird to fly out? or 3) how to get our work done despite the bird? Simply put, and in our own words, what are at least 3 ways to look at this problem/challenge?

What do we want to make sure we don't overlook about the problem? What questions do we need to ask ourselves about this problem before we begin to look at solutions? (For example, do we need to solve the problem without hurting the bird?)

Now, what do we think the problem is? Taking all of our thinking above into account, now what will we use as a working definition for this problem? This will guide us as we seek solutions.

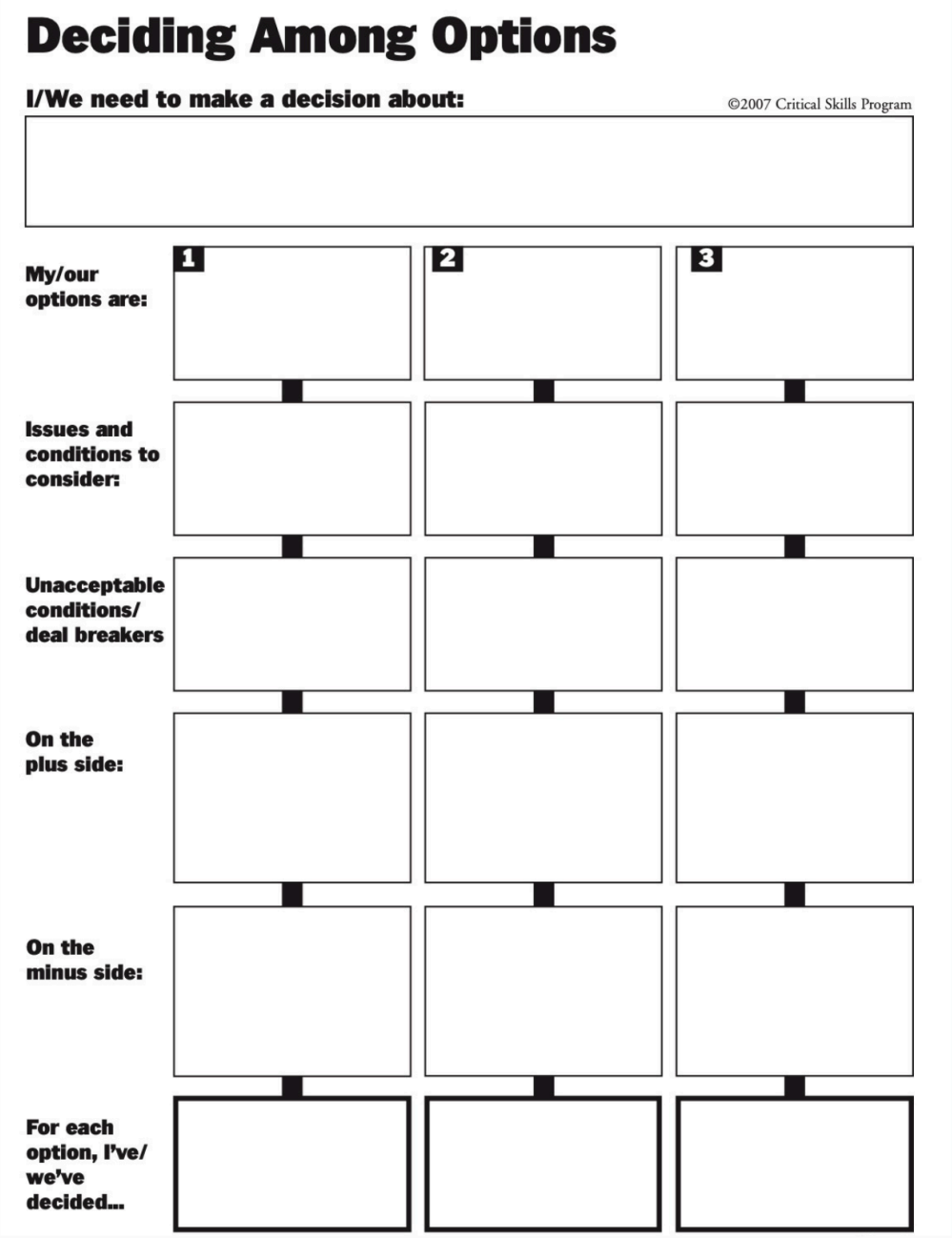


Deciding Among Options

I/We need to make a decision about:

My/our options are:	Plus (+)	Minus (-)
1		
2		
3		

My/our decision is number ☐ above, because:



Deciding Among Options

I/We need to make a decision about:

	1	2	3
My/our options are:			
Issues and conditions to consider:			
Unacceptable conditions/ deal breakers			
On the plus side:			
On the minus side:			
For each option, I've/ we've decided...			

Decide on the Best Idea

What are the qualities of a best idea?

What is your best idea?

Test your idea.

What will happen if you use this idea?

Alternatives, Possibilities, Choices

adapted from de Bono's Thinking Course. Edward De Bono

This is the problem. . .

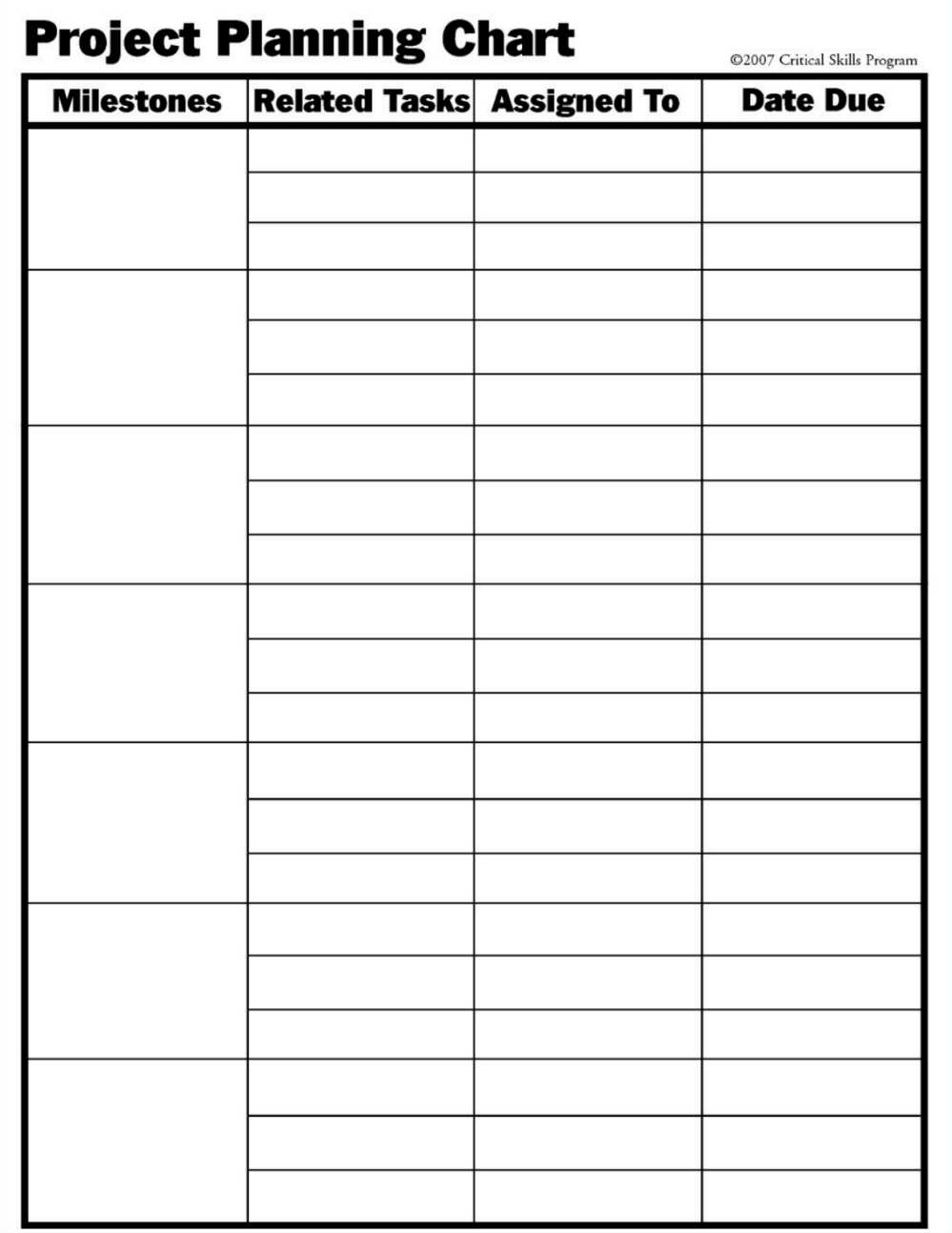
WAIT! What are some other ways it could be interpreted?

This is my idea for a solution to the problem...

WAIT! What are some other possible solutions?

This is what I've decided . . .

WAIT! What other choices do I have?



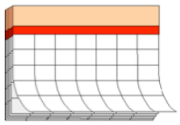
Project Planning Chart

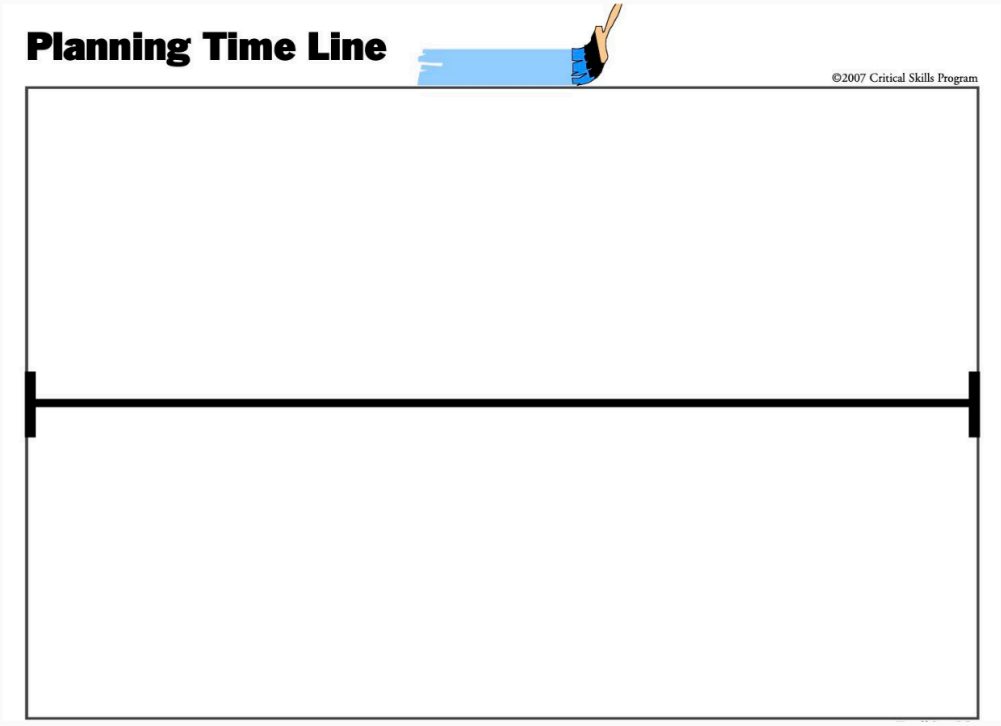
Milestones	Related Tasks	Assigned To	Date Due

Who is Doing What?

Role or Job 	Assigned to... 	Job Description 

Make a Plan for Your Work

In what order?	What has to be done? 	Who should do it? 	When should it be finished? 


Planning Time Line
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