



BREAKING POINT  
technical

# Team Manager Workbook

2024-2025 Challenge Season

## Introduction

The purpose of this workbook is to help team managers with this year's technical challenge: Breaking Point. Team manager(s) remember, you can **teach, guide, and mentor**, while team members can **do, create, and interpret**. This workbook will try and help team managers teach. The workbook contains activities you can use during team meetings to teach your team.

In this year's challenge, teams have been asked to design and build Assembly and Destruction equipment that will assemble and disassemble a Stack of up to 20 items while telling a story about a character who lacks something important and attempts to gain it including a wishful scene as well as a frustration point. Teams will be scored on their technical design and technical innovation of their Assembly and Destruction Equipment, risk taking of their Stack items and design, storytelling, and dramatic impact of their wishful scene and frustration point, and two team selected Team Choice elements. This workbook provides activities to help spark ideas and understanding of most of these elements.

Team managers; please remember the rules regarding **interference** when using these activities with your team.

Let us begin!



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0 – may be a rock

15 – may be the average you would expect a team your age to find or create

30 – may be the most awesome thing that could be built in 3 months for a team your age group

The scale is subjective: it's up to your team to decide. Ask them to compare each piece of equipment. What technical method does it use to assemble or destroy(disassemble)? How was the equipment made, was it team created or something that came from a store? Equipment items that are completely store bought may rank lower: if everyone can buy it, it's not technically innovative (it's not unique or creative).

Use the same scale for technical design and have the team rate each invention again based on its technical design. How well does the equipment work? Does it do what it was designed to do? Does it work the same way every single time? A piece of equipment that falls apart or does not work consistently (is glitchy) might score lower than a piece of equipment that is very reliable and works every time.

Keep the big sheets of paper around with their rankings. Don't throw it away! Whenever the team gets a new equipment idea, ask them to go back to their rankings and try placing the new item on the scale.

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## Activity #2 Story

As part of the challenge, your team needs to create a story about a character who lacks something important and attempts to gain it. The story must include a Wishful Scene and a Frustration Point. A Wishful Scene for this challenge is defined as a portion of the presentation in which the character or characters express an intense desire for the important thing they lack. A Frustration Point for this challenge is defined as a part of the story in which it seems as if the character or characters have no way of gaining the important thing. The Frustration Point and the Wishful Scene must be independent of each other, two distinct moments in the story.

Materials: Note Cards, Pens, Pencils and or Markers

Homework: Ask each team member to bring to the next team meeting 3 ideas for a main character, 3 ideas for something that each of the 3 characters might lack, 3 examples of something that might cause them a frustration point when trying to get the item they lack, and 3 ideas of why the character might really wish for the item they lack. Make sure the team members come up with the examples themselves: no help from parents. Resist giving your team examples – ask them for examples.

Team Meeting: During your team meeting, talk about each example they brought in.

Put the ideas on notecards. Create piles for each group of notecards, one for main characters, one for the things they could lack, one for frustration points, one for wishful reasons. Randomly select one card from each pile.

Ask your team to create a 2-minute play using the randomly selected cards. Then select a time frame (Past, Present or Future). Give them 5-minutes to plan their play.

Repeat the challenge several times and talk to the team about how every story has a beginning, middle and end. Sometimes it can help to start with the end in mind and then create a story that leads to the agreed upon ending. Ask them how they felt about their wishful scene and frustration point, were they obvious, did they fit the character, did they make sense within the story?

If the team is up for it, record these mini plays and watch them back at a later time, see if their thoughts or feelings change over time.

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## Activity #4 Integration

The icing on the cake in the Technical Challenge is integration. In fact, integration is a lot like baking a cake; when you're baking a cake if you take out ANY of the ingredients (the egg, the flour, or something else) you no longer have a cake! A well-integrated scoring element should be like an ingredient in a cake, without it the presentation just isn't the same.

A good way to teach teams about integrating elements into their story is through self-evaluation.

Below is a rubric for the team to evaluate integration wherever it may be: in their solution, after an instant challenge, or in a movie.

Materials: Integration Rubric

Team Meeting: During your meeting give out the rubrics to each team member to evaluate integration at different times:

- After practicing the team solution/skit
- After practicing a performance based Instant Challenge
- After writing the script
- When choosing Team Choice Elements
- When reviewing the video recording from the previous activity

You can also have team members evaluate the Integration of elements in non-DI related realms like in a movie, a video game, an online video, or scoring elements of their bedrooms. Some example questions: How well integrated are the items you find in hunt rounds of Fall Guys, what about the holiday theme of the challenges? How well does the way the person is dressed fit with the theme of the video? How integrated is the guitar poster in a space themed bedroom, what about an Einstein poster?

As a team manager, you need to be thoughtful about how you present this activity to avoid interference. It is not interference to ask questions like "did you score those reasonably?" or to have them score a particular element, but you cannot say "This integration is actually a 1" or score one of their elements yourself.

**Integration Rubric**

Element:					
What is lost if we remove this element?					
What would be lost if we changed this element to something else?					
	<b>1</b> Not at All	<b>2</b> A little	<b>3</b> Some	<b>4</b> A lot	Why?
If we remove this item how much will the story change?					
How significant is this loss?					
How much did including this element improve the performance?					
Total Score: <i>(a higher score means the element is more integrated)</i>					

## Activity #5 Risk Taking

This activity helps encourage the team to think about Risk Taking in terms of the challenge. Risk taking in this challenge is all about precarious elements, novelty, complexity, and difficulty required to build the stack.

Materials: Several sheets of paper, Popsicle sticks, rubber bands, paperclips, tape, straws, pipe cleaners, sugar cubes (or Lego blocks), and a ruler

Team Meeting: Ask the team to build a structure, it must be at least 1 ft tall and include at least 10 pieces of material, give them 10 min to complete.

This can be done as a whole team activity or by individual team members.

Once finished have the team present their solution(s) then ask the team to evaluate the risk taking in the design of their structure.

As a team manager, you need to be thoughtful about how you present this activity to avoid interference. It is not interference to ask questions like "did you score those reasonably?" or "why did you score it that way", but you cannot score the device for the team. Remind the team of the definition of risk taking in this solution: does it look precarious? Is it novel? Is it complex? Was it difficult to build or easy?

Device:					
	1 Not at All	2 A little	3 Some	4 A lot	Why?
Novelty					
Difficulty					
Complexity					
Above & Beyond					
Total Score: <i>(a higher score means the device has more risk taking.)</i>					

Have the team repeat the activity again, this time have them focus on risk taking while they build. Discuss your results.



## Activity #6 Workmanship

This activity helps with teaching your team about the meaning of workmanship and some guiding questions to increase your team's workmanship. Workmanship is one of the three elements scored in Team Choice Elements.

Workmanship quality or effort that is evident in a solution is based on the age group (EL, ML, SL, or UL) of the team. It has to do with how well implemented an idea is.

Remember, a team will only be scored on their own workmanship. If a part of the solution is store-bought, only the team's modifications will be scored for workmanship. An element that can be easily reproduced with not much time or effort might score lower for workmanship.

Team Meeting: During your meeting give out the Workmanship rubrics to each team member to evaluate workmanship at different times throughout the process.

Have the team make a list of possible TCE from their solution. Have them evaluate these possibilities using the rubric.

This can be done as a whole team activity or by individual team members.

Have them add and remove items from the list as they move through their solution design.

As a team manager, you need to be thoughtful about how you present this activity to avoid interference. It is not interference to ask questions like "did you score those reasonably?" or to have them score a particular element, but you cannot score the elements for the team.

### Workmanship Rubric

Element:		
Questions	Team Answer	Low/Medium/High Workmanship
How long would it take us to rebuild this element?		

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What parts of our element are high quality?		
What parts of this element have lower quality?		
How well put together is this element?		
Where did we put effort into this element?		
What parts of this element could we put more effort into?		
Are there any commercially produced or store-bought items we could reproduce ourselves?		

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