

Frame the Collaborative Exercises



Strike a Balance

Each learning lab features a collaborative exercise to engage the mentees and provide a shared experience for reflecting on the topics featured in the videos. As a mentor, you play an important role in framing the purpose of these exercises.

Contents

- Purpose of collaborative exercise
- Strike a balance
- Mirror vs. Coach



In this deck, we'll start by walking through the purpose of the collaborative exercises. Then we'll discuss how important it is to strike a balance between multiple goals, including the goal of this program and what interests the mentees bring with them. We'll conclude by highlighting the difference between serving as a mirror and as a coach, both of which can help you to strike a balance when framing the collaborative exercises.

Purpose

- Why do we engage in the collaborative exercise?
- Exercises = opportunities
 - Simulate any tech or personal challenge they approach
 - Opportunity for teamwork + communication
 - Solving the exercise is *not* the point; instead their approach (and revision of approach)



The videos provide excellent food for thought, and the collaborative exercises are a chance for mentees to apply and explore the concepts in the session. Participants in the pilot consistently named these exercises as one of the most valuable components of the program. They are meant to simulate challenges or situations that mentees may encounter during tech or personal experiences, with an emphasis on how mentees and their peers enter into teamwork. Each exercise is designed to prompt collaboration having the mentees work with a partner or partners, providing an opportunity to gain insight into how they and others use communication.

The exercises anchor the topics of the session; to be clear, solving them is not the point. Instead, participants can gain insight into their approach to problem-solving and collaboration by giving them a hands-on activity to try. They serve as a shared concrete experience that can be used as a starting point for reflection.

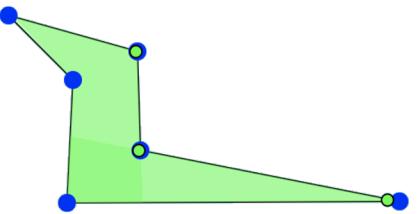
Collaborative Exercises

- **Session 2: Map the site + Spot the difference**
 - *Do any of these activities feel in/out of your comfort zone? How do you react?*
 - *How do you approach collaboration here?*
- **Session 3: Vim commands**
 - *Does using certain software lead you to feel you do/do not belong?*
 - *How can you support your peers?*
- **Session 4: Art Gallery challenge: Pick a plan**
 - *Do you have a strategy for approaching problem-solving?*
 - *How can you work together to evaluate if a plan is working?*
- **Session 5: Pivot exercise**
 - *Do you adapt when circumstances (and demands) change?*
 - *How can other perspectives contribute to more effective problem-solving?*

The toolkit moves through this set of exercises. You'll notice that most are themed using an ongoing "art gallery" problem to reduce the overhead of introducing new context. Here are some of the questions they might evoke.

How can framing improve the experience?

- Some find the exercises difficult, others easy
 - We try to avoid programming-specific content they may encounter in class (so we don't give conflicting advice)



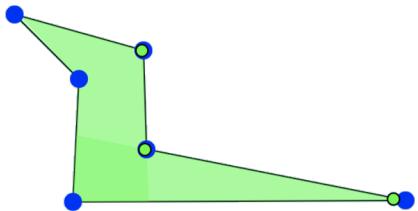
So why do the exercises need framing?

We designed the exercises to place participants into an analytic or problem-solving situation. We chose activities that are short enough to be completed in-session and do not assume prior technical experience. Mentees are asked to work with a partner, even for problems they may be able to solve on their own. This is intentional, and remember that finishing the activity is not where the value lies. Strong collaboration skills are applicable in almost every aspect of life, and the ability to communicate effectively, whether we are asking for help or supporting a teammate, can make the difference in our success.

The exercises are deliberately not programming challenges and, while they are tied to computational thinking, some mentees may wonder what their purpose is. Having a shared activity helps the entire group dig into something, even briefly, and can help mentees reflect on connections to what is happening (or did happen) in a course, at an internship, a hackathon, in a review session, or in office hours.

Why do they need framing?

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I've never done this. I'm really uncomfortable.

This is easy! Why are we doing this again?

Every cohort of mentees will be different; they bring different backgrounds and levels of experience to the program.

You may hear some mentees express discomfort or say, "I've never done this before" or "I am not sure what's being asked." This is a moment to connect to situations they may very likely encounter in their tech journey, whether learning a new development tool, presenting their work, working across multiple teams or areas, or being faced with a time constraint or changing demands.

You may hear other mentees say "This is so easy!" or "What is the point of this?" This is an opportunity to help them change perspective to see the value of pausing and reflecting on one's process, collaborative approach, or communication strategy. It might be easy for them now, but would it have been easy 5 years ago? What has unfolded during that time that contributes to their high self-efficacy now? And how could that same reflection be applied in another context?

How to frame?

- Step back
 - What opportunity does this offer, from your view?
 - How does the exercise connect to the videos and topics for this session?
 - Does the exercise remind you of something from work or when you were in school?
 - Discuss with your co-mentor; what do they see?
 - How does this connect to your group's interests?

Taking the time and space to reflect helps us be strategic as we move forward and encounter different challenges. Articulating our process and analyzing why it was effective or how it can be improved is an important skill for almost any situation we encounter. You can frame the collaborative exercises to help mentees practice this. We recommend that you take a moment to step back and reflect on connections to your own journey in tech that your cohort will resonate with. For example, you might remind mentees how the ability to articulate their problem-solving process can manifest during a technical interview, that it can make the difference between showcasing your problem-solving skills or letting them go unnoticed.

You can use this slide to help prompt your reflection and discussion with your co-mentor.

Stay Flexible

- Stay flexible
 - What do mentees discover?
 - Which questions do mentees ask?
- Be open

"My favourite parts were the [collaborative exercises] because I would form my own assumptions and opinions, and then after hearing the rest of the students share their thoughts, I would recognize ideas that I had not previously considered."

- Mentee from 2020-2021 pilot

In session, try to stay flexible. You might have a particular framing in mind, but it is possible the mentees will want to pull the connections a different direction. It's also important to listen to what your mentees are saying and what kinds of questions resonate for them. As you get to know your cohort, you'll have a better sense of how the exercise might land -- if its value is limited, you can feel free to shorten the time dedicated to it, adapt the exercise, and/or move into a different direction. Be conscious of how you read the group, though, and don't make assumptions based on a few reactions. Be open to the opportunities the exercises can bring. Remember there is value in hearing other perspectives, as expressed by this quote from a mentee in the pilot.

Strike a Balance

Sharing

Step up

Framing

Structured
curriculum



Listening

Share space
with co-mentor

Mentees' ideas

Your experience

As a mentor, you'll be striking a balance for your cohort in multiple ways.

- You'll be balancing between sharing and listening. If mentors share for the entire time, they may not learn what is on mentees' minds. (Mentees also have valuable perspectives to offer, too!)
- You'll be balancing stepping up and sharing the space. A mentor needs to be willing to share their experiences, or change up the plan if the group dynamic requires it, and step back so their co-mentor can lead and bring themselves into the space too.
- You'll be balancing framing and being open to your mentees' ideas and interests. We encourage you to take the lead and frame the challenge, while at the same time, being ready to shift depending on the group's dynamics. That might mean shortening the activity to create space for another discussion.
- You'll be balancing the structure of this pilot-tested curriculum with your own experiences. You may have certain exercises or ideas for discussion that align well with the overall topics, and work better for your cohort. We know you bring valuable insights and want you to be assured there is time and flexibility to adjust.

Collab Exercise **the** ask

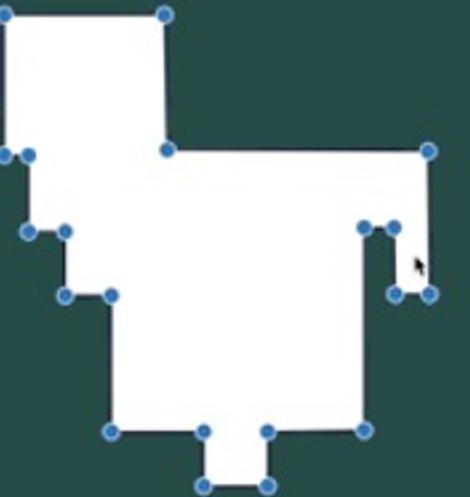
The "Art Gallery Problem": Given a simple polygon, place the fewest number of guards to cover the interior.

Are you up for the challenge?

How can you use the self-regulated learning feedback loop when tackling this problem?

We need to: plan, do, evaluate!

⌚ 4 min

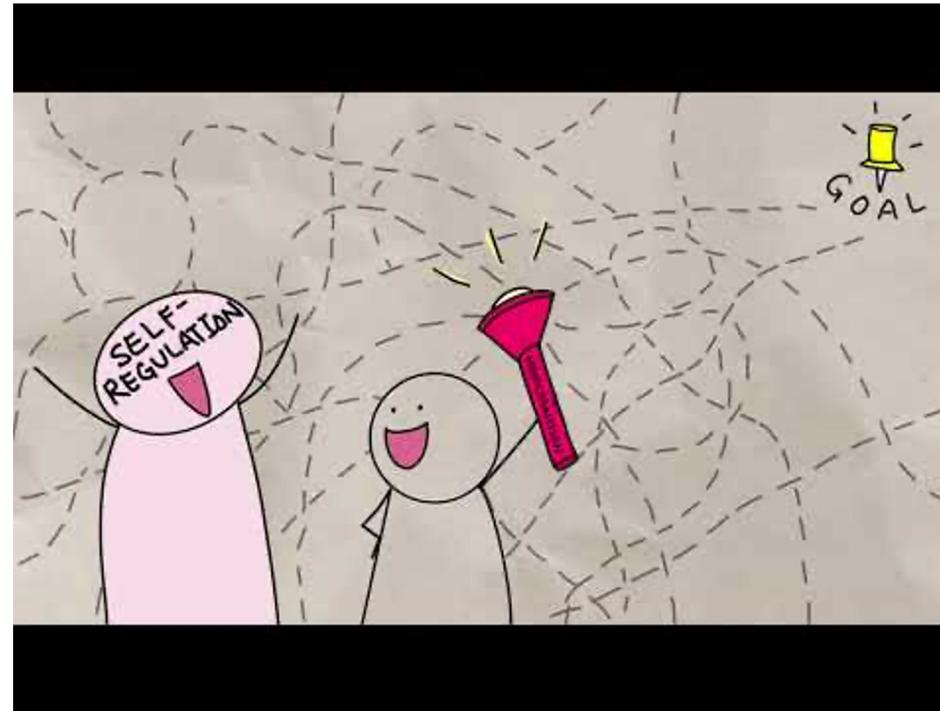


A **simple polygon** is composed of non-intersecting straight line segments that close off an **interior** region.

We should be **optimizing** their placement to use the fewest number of guards.

To help make this more concrete, let's consider a scenario. It takes place in Week 4's Learning Lab "Am I up for the challenge?" and is anchored in the Art Gallery problem.

How can I do this strategically? [Self-regulation]



The cohort has just watched the video on self-regulation.

Collab Exercise activity

In your group, you'll practice parts of the self-regulated learning cycle on the Art Gallery Problem.

1. PLAN phase: come up with a plan.

Choose one of the three ways to approach the problem of placing guards at points along the polygon:
"alternating" or "top and bottom" or "random half."

2. DO/EVALUATE phases: try it & see if it worked.

- Choose one person to screen share the web site.
- Try out the plan on each map from 1 – 10 or make a new one.
- Evaluate how well the plan works for each. Record your findings.

⌚ 15 min



The exercise is to try out one of the plans with their partner(s).

Scenario

You drop in on a group and one mentee says,

"We picked the 'top and bottom plan' and it is always going to work. So, honestly, this kind of felt like a waste of my time, and we stopped partway through. There is so much going on in the news and I have so much homework. Why are we doing this activity again?"

In this scenario, the mentee is feeling that the exercise is a waste of time.

How can you respond?

Reminder: Strike a Balance

- Frame the exercise **and** stay flexible
 - What opportunity does this offer, from your view?
 - What does the exercise remind you of?
 - Let mentee questions guide

First, remember you want to strike a balance. When you watched the video and looked at the activity, it may have raised opportunities from your viewpoint, and you may have had a particular framing in mind. For the plan this group chose (“top and bottom”), you may know that it won’t always work and fails on some of the later maps. Perhaps this reminded you of how you first tried to debug code. You can draw parallels to the implementation and debugging process – passing some tests doesn’t guarantee there aren’t other cases where it fails and you need to revise.

What the mentee is raising, however, might not align exactly with your framing. How can you flex to let their comment guide you?

Strategies: Mirror and Coach

Mirror: Notice and reflect back what you observe

Coach: Ask if willing to try alternative strategies or views

Beek, G. J. Zuiker, I., & Zwart, R. C. (2019). Exploring mentors' roles and feedback strategies to analyze the quality of mentoring dialogues. *Teaching and Teacher Education*, 78, 15-29.

Stone, D. & Heen, H. (2014). *Thanks for the Feedback: The science and art of receiving feedback well*. Viking Books.

Consider balancing two roles: mirror and coach.

- As a mirror, you notice and reflect back what you observe.
- As a coach, you ask if they are willing to try alternative strategies or views. As someone with more experience and insight, you might coach them in a certain direction.

Mirror Language

"**Tell me more** about what you and your group tried."

"**Walk me through** so I can see how you approached the exercise."

"It sounds like you didn't finish because this doesn't seem relevant to you. **Did I get that right?**"

In this circumstance, as a mirror, you may want to first get to know what they are doing. Some of the language of a mirror is "tell me more" or "walk me through." You can also check if you understand.

Practice empathy and active listening

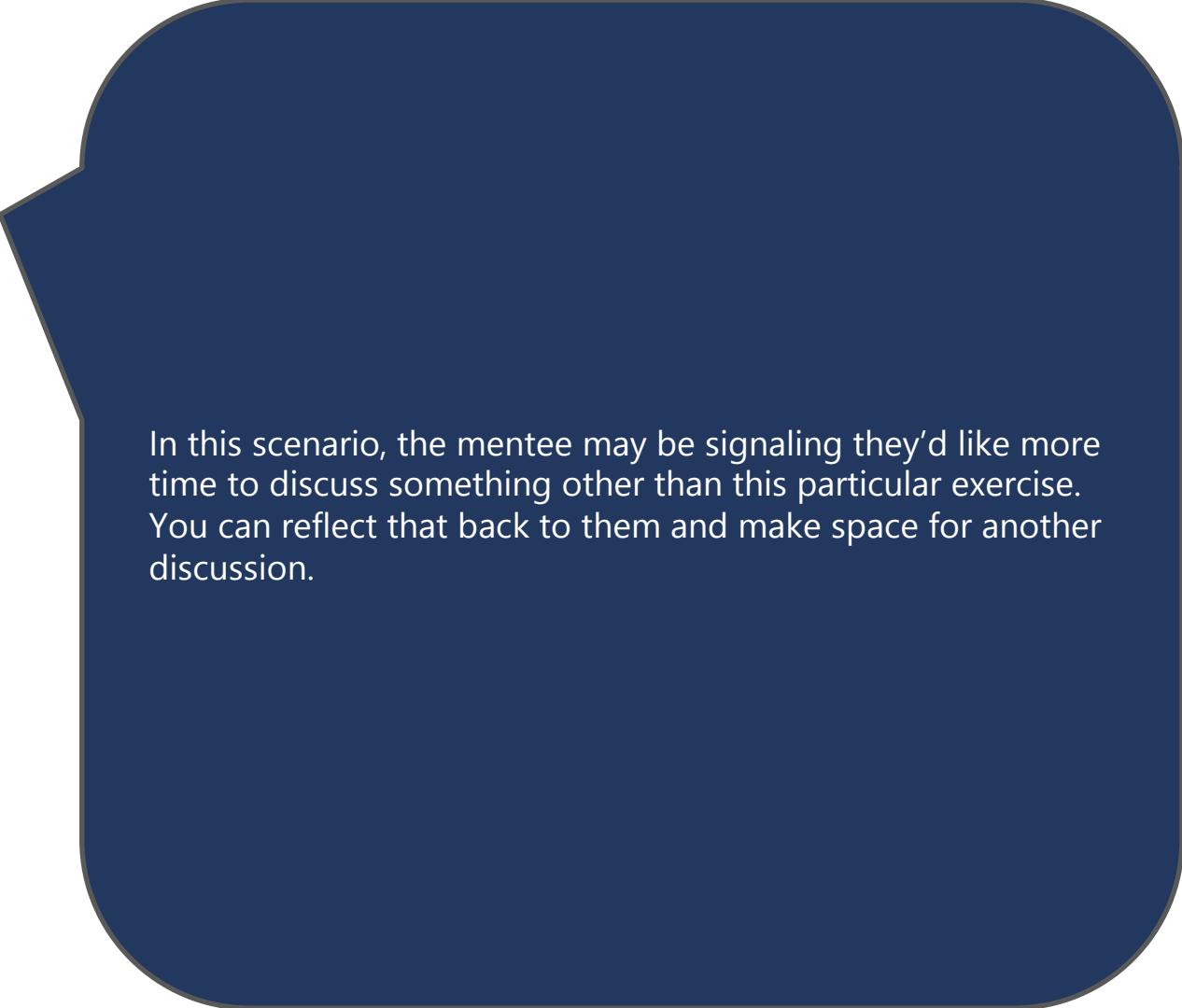
"There is so much going on in the news and I have so much homework. Why are we doing this activity again?"

I hear you. I understand where you are coming from.

I've been there, too. Even today at work I had a big meeting with my team and my mind was on the news.

Thank you for sharing your thoughts.

We can make space for that discussion today for sure.



In this scenario, the mentee may be signaling they'd like more time to discuss something other than this particular exercise. You can reflect that back to them and make space for another discussion.

Coach Language

"Are you willing to try a new way of looking at this exercise? Let's review a few alternatives. In a recent project I had something similar that I thought would always work. How can you argue that it will always work?"

"What if you *had* tried a different plan? What do you think would change in the outcome? Some of what I'd like to see you do is play with the exercise a bit. Can you come up with your own plan that would do better than this one?"

"Take a step back and think about how this connects to X."

As a coach, you can help the mentees get more out of the exercise. You might see that they are very focused on being done with the given maps or that it "always works." Maybe you know this isn't how it always is. You can decide to push them to go a little deeper or see some complexities.

Emphasize the topic

"There is so much going on in the news and I have so much homework. Why are we doing this activity again?"

I did want to suggest one way we can think about this activity beyond if "the plan worked." In the video, it's also about stepping back to study ourselves systematically.

I'd love to hear how people are coping with constant news. Are you scheduling a time for news or removing certain apps from your phones? What plans work for us and which ones do not serve us? How do we keep pushing when things get tough-- even if this particular thing wasn't tough for us?

One additional way to coach is to emphasize the topic. As a coach you can remind them of the topic. You can also take what they are bringing up -- the news- and link it to the session's topic.

Pull the cohort together

Thank you for sharing. While this may have been easy for some, it could have raised challenges for others.

This is an opportunity -- for us to reflect on the exercise! We all have different life experiences and some things that come easily or not. Part of why we try activities like this in the mentoring program is to practice navigating these collaborative experiences.

This is also relevant in my work at Microsoft where people have different experiences and our users' perspectives may differ from the developers. We often have to come to understand why the tech was challenging in order to improve the experience of using it. I think this conversation is useful for the cohort before we move on and I'd like all of you to be part of that.

We also want to raise one additional way to coach. That is to remind them that their participation matters but also to recognize what they are learning about their peers. We want mentees to see how they are part of a collaborative, rather than alone. We understand how important collaborative team members are. This is a good time to help your mentees see themselves in connection to others. For example, how do some people approach the problem differently? Why is this important to pay attention to?

Take away messages

The collaborative exercises promote team interaction, communication, and reflection on how one approaches problem solving.

- Mentors frame the exercise
 - Bring your expertise to this discussion to make the exercise relevant
 - Use the exercise to pull the cohort together; the exercise is not only about one mentee's interest

There is no one way to effectively frame the collaborative exercises, although we recommend your own reflection on your experience. We believe you can make the exercise relevant by tying to something you are reminded of at work, from when you were in school, or in life. Remember, this is about pulling the whole cohort together, not just one mentee's interests.

We also encourage you to adjust the exercise to what makes sense for your group. Serve as a mirror where you reflect back what they are saying and see if you fully understand it. If helpful, make space for a mentee's request for time for something top of mind.

Take away messages

The collaborative exercises promote team interaction, communication, and reflection on how one approaches problem solving.

- Mentors frame the exercise
 - Bring your expertise to this discussion to make the exercise relevant
 - Use the exercise to pull the cohort together; the exercise is not only about one mentee's interest
- Stay flexible
 - Maybe you adjust the exercise to what makes sense for your group
 - Serve as a mirror and a coach; see where mentee interest takes you
 - You and your co-mentor use your judgement to steer

Stay flexible and do not shy away from serving as a coach. One mentee may be impatient because they do not see the purpose. You might be able to help them go deeper or see a different perspective.

We are confident and your co-mentor, with your different sets of interest, prior experiences, and areas of expertise, will help make the group sessions relevant. We see the s as affording rich opportunity to collaborate, practice teamwork, and reflect on how/why they approach problems in the ways they do. This is such an important component of the program, and you have the flexibility to steer in a direction that makes sense for your cohort.



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