

Instructions:

In this phase of the process we ask candidates to share more about the course that they would like to teach at BEAM Discovery if hired as faculty. This stage not only helps us to assess skills needed for faculty positions at BEAM but also allows candidates to learn more about our expectations and typical classes as well as envision themselves in the role. The course proposal is broken up into three main sections:

1. Type of Course
2. Course Description
3. Example of a Lesson

Expectations:

- We are looking for **first draft quality**, not a polished final product in your responses to the prompts. We will dive deeper into your course description and lesson example during the final interview.
 - We expect and anticipate that faculty members hired to work for BEAM this summer will spend time pre-camp preparing their course materials. We expect all faculty to be ready to teach during week 1 (3-6 hours of class).
- We understand that each teacher has their own process for developing lessons and courses so we encourage you to create them using the process that works for you. Once you have created the lesson materials, please answer each of the questions we have provided individually. This helps us significantly given the high volume of projects we review.
- For each of our questions, we include space for you to add your answer along with some guidelines about our expectations for length/format. This is just meant as a guideline and you may use a different format if you wish.

Resources:

The following document is aimed to support you in aligning your course and lesson to BEAM's goals for our students, we ask you to read and use it in your process:

- [BEAM Discovery Classes Overview](#)

As a reminder, our main goal at BEAM is for **students to be doing mathematics** (rather than hearing about mathematics) so as you develop your course proposal, it's important for us to be able to understand what students will be *doing* in your course.

Type of Course

Instructions:

Before we ask about details for your course, we need to establish what category your course would fall into. There are four course types to consider:

- Logical Reasoning
- Math Fundamentals
- Creative Problem Solving
- Applied Mathematics

Notes about course logistics:

- All courses span over 5 weeks. Each course that you teach will have two sections. You will meet with each of those sections for an hour every other day (during weekdays), alternating between one another. In total you will have 12 hours of class for each of your sections.
- Logical Reasoning and Math Fundamentals courses happen in the morning and Creative Problem Solving and Applied Math courses happen in the afternoon.
- Faculty that work full time teach 2 courses (4 sections total, 2 for each course) during the program. If you are applying to teach full time, we're only asking for a course proposal for 1 of the courses.
- For the purposes of this application, you can expect your classroom to be set-up with a projector, a computer, group tables or desks (whichever you prefer) and two walls of whiteboard.
- Courses typically have about 12 to 18 students and you will have one Teaching Assistant who is usually a college student with a strong background in mathematics.
- At BEAM Discovery there are two 1 hour-long blocks of independent student work time each day (we call these periods Open Math Time). Students use this time to work on camp-wide problems and problems from their classes. For your class, this translates into students having around 15 minutes between each of the times you meet with them to work on problems from your course. Please consider the following two things:
 - There is **no** homework at BEAM Discovery. Beyond Open Math Time students will **not** have time outside of class to work on other tasks.
 - Problems from your course that are given to students to work during Open Math Time **should not be central to understanding the next class**. Open Math Time is a space for students to have choice and learn about how to make good decisions in the way they manage their time. This means that Open Math Time is also a space for them to make bad choices and learn from them. You should design your course in a way that allows for students to work on tasks that are central to the class in the time you are together during the class period.

In the space below, please share which of the following types of classes are you interested in teaching this summer?

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Course Description

Instructions:

In this section you will answer questions about the goals and outcomes of your course, including how you sequence those goals and support students' understanding of the concepts covered in your course.

1. What are **one or two** big mathematical ideas/concepts that students will be exploring and understanding in your class?

1-2 bullet points with explanations of each of the big ideas.

Example of a Lesson

Instructions:

In this section you will answer questions about a particular lesson you want to facilitate as part of the course you described in the previous section. We want to understand the mathematics that students will be doing during the lesson and how you will set them up to do so.

2. What understandings will students take away from this lesson? These can be understandings about mathematical ideas, concepts or strategies

3-5 bullet points description

3. About the main activity:
 - a. What is the main activity (or activities) that students will be working on in this lesson? To answer this question you should lay out the tasks that students will be performing/solving during the lesson giving a clear idea of "what students will be doing"

Please respond in no more than 4 paragraphs

- b. What tools or resources will be available to give students entry to- and help them reason through- the activity?

2-4 bullet points each with a tool. Briefly explain how these tools help students in the activity

- c. How will you introduce and set up the task to ensure that students understand it and can begin productive work, without giving away the main items that make it challenging/interesting?

1-2 paragraphs

4. What prior knowledge or experience will students draw on in their work on the activity you described above? How will you check that students are accessing that knowledge?

1-2 paragraphs

5. How would you assess/observe that students have met the learning goal or reached the understanding that you shared in question 2? How would they demonstrate understanding?

1-2 paragraphs

6. What learning goals will you have for the next class, given that students demonstrate the understanding you were looking for?

3-5 bullet points describing the learning goals