

# Evaluating LLMs' Generation of Growth-Mindset Supportive Teacher Language

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**Abstract.** Growth mindset-supportive practices and language have been shown to decrease academic achievement disparities [1]. However, instructors do not always recognize and monitor their growth mindset-supportive language. It can be difficult to use growth-mindset language in classrooms [5, 13]. Here, we evaluate whether LLMs are capable of recognizing and generating growth mindset-supportive language, and subsequently providing feedback on mindset language generated by educators. To evaluate these models, we prompt-tuned LLMs on previously written speeches from educators identified as having a growth mindset (GM) and used zero-shot, non-prompt-tuned LLM-generated speeches as a control. School-aged research participants rated the speeches for perceptions of the teacher's GM and reported hypothetical challenge-seeking behaviors (CSB) in this teacher's class. Results showed that human-expert-generated teacher speeches were rated as conveying strong GM messages ( $M = 4.67$ , 6-point scale). But the prompt-tuned AI models were not significantly different from human teachers' speeches on perceived GM ( $M = 4.55$ ,  $p = .191$ ). Further, prompt-tuned speeches did not disrupt the link between students' prior GM beliefs and CSB relative to human teachers' GM speeches (interaction  $p = .306$ ). Both GM conditions were significantly different from speeches generated by a non-prompt-tuned LLM. Results were robust across OpenAI's GPT-3 and Google's LaMDA. Thus, LLMs were able to produce GM supportive language similar to humans, with sufficient prompting. Future research will examine the role of LLMs in providing automated feedback on GM-supportive language to human educators, to scalably promote educational equity.

**Keywords:** Growth Mindset, Large Language Models, Education, Classroom Cultures, Inequalities, GPT-3, GPT-4.

## 1 Introduction

The practice of growth mindset-supportive language has been a growing technique studied and utilized by educators [12], that has been shown to significantly improve disparities based on prior achievement, race, ethnicity, and social class in the classroom [1]. Growth mindset is communicated via language; therefore, educators can

use language communication practices to show students their capacities for growth, for example by encouraging students to take on classroom challenges as a method for continued development. In particular, Canning et al. found that compared to their fixed mindset counterparts, growth-mindset teachers in STEM had halved their racial achievement gaps. Additionally, previous research has found that an educator's growth mindset and their effective messaging of growth mindset that leads to greater effects of mindsets on achievement [13].

Though teachers generally believe in using growth mindset supportive language and may espouse the principles, many teachers find it difficult to generate and adopt such language in their daily teaching (e.g., see "False Growth Mindset") [5]. Even more importantly, access to training for educators on growth mindset can be costly and resource intensive because it requires personalized coaching [8]. Programs to train a teacher on growth mindset practices will need to think about scalability, cost, heterogeneity, and many other obstacles due to a need for significant human labor [4].

The present work aims to evaluate the use of artificial intelligence, specifically LLMs, to support equity in classrooms via increasing teachers' use of growth mindset-supportive language. Our focus is on a language practice that could, in principle, be implemented by any educator: communicating a growth mindset culture via a "First Day of Class Speech". In the speech, educators can tell students about their practices and beliefs, with the goals of signaling to students that the class operates under a growth mindset. Through the speech, educators can set expectations for the classroom, students, and teachers themselves. This could allow the educator to begin to build a growth mindset classroom culture, that will affect their students' beliefs and motivations in the course. Many teachers, however, may not know what to say in such a speech, aside from "I have a growth mindset," which may not have rhetorical force to overcome a culture of fixed mindset. Thus, AI-powered virtual coaching tools might provide teachers with concrete, actionable guidance on their speeches.

For this to work, two questions need answering. First, could LLMs generate language that is rated as growth-mindset supportive from students? Second, can LLMs then recognize growth-mindset unsupportive language, and provide feedback to the user in real time? We begin by analyzing two LLMs capabilities of generating growth-mindset supportive language. Then we use the knowledge gained to build a coaching tool for educators that helps to initialize growth-mindset supportive language in their first-day-of-class speeches.

Current research on Large Language Models (LLMs) has focused primarily on their generation capabilities. Researchers have identified LLMs abilities to rate qualitative language, learn new contexts, and have examined the fine-tuning and prompt-engineering necessities [3, 10, 11]. In non-academic spaces, these models are often playfully tested on their abilities to respond to jokes, write creative fiction, or provide recommendations on care in sports medicine [2, 7, 8]. However, little research has tested these models' capabilities to access and generate more nuanced psychological variables, such as its generation of growth mindset-supportive language.

## 2 Methods

### 2.1 Data

Through previous work, researchers had access to human speeches that had previously been identified as growth mindset supportive by the research team. Each speech contained seven sections: 1) What Learning Math is Like, 2) Struggling in Class, 3) Asking Questions, 4) Revising or Redoing Your Work, 5) Tests and Exams 6) Previous Students' Performances and 7) Final Thoughts. These speech parts were previously identified as being the most effective way to signal growth mindset to students. In each section, teachers explain such things as the idea that mistakes are a key part of learning, that growth and improvement are more important than any one exam score, and that struggling is part of challenge taking. These are key ideas of growth mindset, which aims to tell students that regardless of past experiences or identity, each student can individually grow in any given subject.

### 2.2 Generating First Day of Class Speeches

With these human speeches ( $n=6$ ), we prompt-tuned two LLMs (Google's LaMDA and OpenAI's GPT-3). At the time of the research, GPT-4 was not yet available. We then prompted both the prompt-tuned models and the zero-shot, non-prompt-tuned models to produce a first-day speech (see Table 1). The prompt contained all six examples of the human speeches as examples (see supplemental materials). Each speech was generated by section and then compiled into a large total speech. For the zero-shot model prompt, some of the language is changed (see full changes in supplemental materials). This is because some phrases in the sections made by mindset experts, such as "struggling in class", infer a supportive environment (by recognizing failure as a struggle). We instead changed these to more generic phrases, such as "what happens when a student fails in class", which keeps the same intention with less mindset-specific language as a control.

The outputs from the models and the human speeches were then minimally edited for clarity. Context-specific phrases that would not make sense to a random participant, such as a human teacher writing "message me on Remind," a messaging app that is not used by many schools, were replaced with more generic phrases such as "message me via email." Additionally, each model was asked to write each section separately, and these were combined to create one speech. Some phrases, such as "Welcome to Algebra 1" were removed if they fell in the middle of a speech. For an example of a human written, zero-shot model written, and a prompt-tuned model written speech, see supplemental materials. It took researchers approximately twenty hours of work, from starting the prompt-engineering to editing the speeches for clarity, to produce the prompt-tuned first-day speeches. By contrast, the teachers who wrote the speeches were trained in a separate fellowship for a full summer before writing their speeches.

### 2.3 Evaluation

After speeches were edited for clarity, they were then rated by participants (n= 989, aged 13-17) on the participants’ perceived ‘teacher’ growth mindset and their hypothetical challenge-seeking behavior in the course. These measures allow researchers to see both whether the student believes the teacher to have a growth mindset, and the related outcome of their behaviors within the course. In the challenge-seeking measure, students are given a hypothetical situation where they have the opportunity to complete a classroom homework. They are given the option to either complete the difficult homework, where they will receive a lower grade but they will learn more, or the easy homework, where they will not learn much but will receive a higher grade. Student choice is highly correlated with the perceived teacher mindset, where students who perceive a teacher as having a growth mindset are more likely to choose to complete the more difficult homework option. These measures were created by a previous study examining growth-mindset supportive practices [6]. Participants’ own growth-mindset beliefs were also collected.

Each participant rated one human speech and either a zero-shot model speech or a prompt-tuned model speech. The order of viewing the human vs AI speech was counterbalanced, and participants were not told the speech they were viewing might have been written by AI until the end of the study. For clarity of the analysis, we only compare the first speech seen by participants.

**Table 1.** Example output from zero-shot, untrained models and prompt-tuned models.

Model	Prompt	Example
Zero-Shot, untrained	Write a speech for the first day of Algebra class that tells your students what learning math is like.	Hello students! Welcome to Algebra! For those of you who are new to this class, Algebra is all about solving equations. We will be using algebraic methods to solve equations and to find out information that is not given to us in the equation. Algebra is a challenging class, but it is also a lot of fun. I promise that if you put in the work, you will be successful.
Prompt-Tuned	Write a speech for the first day of Algebra class that tells your students what learning math is like.	Welcome to Algebra 1! This class is a great opportunity for you to get your first high school credit and set you up to have excellent opportunities in high school and beyond. As we start learning together, I want to make sure you know that you all belong here. No matter how you feel about math or have done in math classes in the past, you have the ability to master Algebra 1. The material we learn may seem difficult at first, but we are going to work together to understand it and feel comfortable with it. By the end of the year, problems that once seemed impossible will come as second nature to you. Each day, we will learn techniques and formulas to solve problems, but you will also gain a deep understanding of the concepts.

### 3 Results

All statistical significance testing was conducted using multiple regression. In the regression models, each outcome (i.e., perceived teacher mindset and choice of a challenging assignment, standardized) was regressed on a condition, students' growth mindset motivation framework (standardized), and the two Condition \* Motivational Framework interactions. The primary models (Table 2) treat the non-prompt-tuned LLM condition as the reference group. However, we also conducted the secondary models in which the human teacher condition was treated as the reference group in order to make pairwise comparisons between the human and prompt-tuned conditions. Effects of the dummy-coded contrasts can be interpreted as differences between a given condition and the reference condition (i.e., the non-prompt-tuned condition in Table 2) in *SD* units. Effects of motivational framework can be interpreted as a standardized Beta coefficient (i.e. the expected change in the outcome, in *SD* units, associated with a 1 *SD*-unit change in motivational framework). The Condition \* Motivational Framework interactions can be interpreted as the difference in the motivational framework outcome association between a given condition and the reference condition.

**Table 2.** Multiple regression models. Each outcome is regressed on condition (two dummy-coded contrasts, with the zero-shot condition as reference groups), growth mindset motivational framework (standardized), and the two Condition \* Motivational Framework interactions.

Regression Term	Perceived Teacher Mindset			Choice of Challenging Assignment		
	$\beta$	t(1015)	P	$\beta$	t(1015)	p
Prompt-tuned vs zero-shot	.35	4.09	<.001	.12	1.43	.153
Human vs zero-shot	.47	6.13	<.001	.19	2.40	.017
Motivational Framework	.19	3.13	.002	.02	.26	.798
Prompt-tuned * Motivational Framework	.03	.40	.692	.07	.83	.408
Human * Motivational Framework	-.07	-.91	.365	.17	2.26	.024

Human teacher speeches were rated by students as conveying strong growth mindset (GM) messages ( $M = 4.68$ , 6-point scale), and there was a significant relationship between students' reported GM beliefs and their choice of a challenging assignment in this hypothetical teacher's class ( $r = .19$ ,  $p < .001$ ). Results indicate that the non-prompt-tuned LLMs were perceived as having less of a growth mindset ( $M = 4.16$ ) than the human teacher ( $p < .001$ ). These speeches also produced a weaker relationship between students' GM beliefs and their challenge-seeking choices ( $r = .02$ ,  $p = .749$ ), as compared to the association in the human teacher condition (*interaction*  $p = .024$ ). This finding indicates that students with more of a growth mindset were more willing to act upon these growth mindset beliefs by choosing a challenging assignment in the context of a growth mindset teacher than in the context of the non-prompt-tuned LLM teacher. By contrast, LLMs prompt-tuned on human teacher speeches were rated as not significantly different from human teachers' speeches on perceived growth mindset ( $M = 4.55$ ,

$p = .106$ ). In addition, the association between student's growth mindset beliefs and choice of a challenging assignment was not significantly different between the prompt-tuned model condition and the human teacher condition (*interaction*  $p = .191$ ). In some instances, the AI-generated speeches were rated as individually better than some of the human speeches. Importantly, while the human speeches were significantly higher rated than the zero-shot, untrained LLM outputs, they were not significantly better than the prompt-tuned model outputs.

#### 4 Discussion and Future Recommendations

Our results indicate that with the correct prompt-tuning and training, LLMs can generate growth-mindset supportive language that rivals that of a human teacher's. This is especially significant when accounting for the importance of growth mindset language in classrooms that aim to mitigate equity concerns. As growth-mindset can help to reduce disparities, it is important that educators are able to get timely feedback on their language in the classroom. When accounting for the time difference between the prompt-tuned and human-generated responses, it took researchers significantly less time to produce and edit the LLM generated speech than to train a set of human writers to produce growth-mindset text. While the prompt-tuned AI speeches did not beat out the human-written ones overall, the shortened time to production is important. In training teachers to use growth-mindset supportive language and behaviors, teachers often have to opt-in to labor intensive and timely workshop sessions or interventions. The use of LLMs can reduce the cost input for educators by allowing real-time feedback.

As always, there are some limitations to this work. First, the present research only uses prompt-tuned models over fine-tuned models. This is because we did not have a large enough annotated dataset of teacher speeches to fine-tune a model. Future research could address these concerns with utilizing a larger dataset of teacher speeches, and then annotating and training a model on them. Additionally, the present research does not account for the newly produced model, GPT-4. At the time of research, only GPT-3 was available. Further research, such as the tool described below, could test the generative capabilities of more recent models, such as GPT-4. While these findings are significant on their own, they do not answer the second research question. It is still unclear whether LLMs can recognize nuanced language, such as growth mindset supportive language, and then provide feedback based on training.

Thus, the research team is currently in the development process for a tool that teachers can use to get immediate feedback. Through the tool, teachers input their first-day speeches in sections. This is then fed to a prompt-tuned model of GPT-4, which rates the speeches on pre-defined metrics and then provides feedback to encourage the teacher to re-write the speech in a more growth mindset-supportive way. By initiating growth mindset language early, educators can get a head start on achievement gaps and disparities that occur earlier in the year, helping to mitigate these issues.

The research team plans to test this tool during the summer of 2023, via an educator fellowship geared towards practicing and learning growth-mindset behaviors and language.

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## Supplemental Materials

### 2.1 Measures

#### Perceived mindset affordances

This math teacher makes me feel like I would be able to learn the material in their class, even if I struggle sometimes.

This math teacher seems like they would reward students for trying hard and improving.

This math teacher seems like they would only give good grades to students who have a natural “talent” for math.

#### Perceived mindset beliefs

This math teacher seems to believe that only some students will understand the hardest problems.

This math teacher seems to believe that students can’t really change how good they are at math.

#### Comfort with academic risk-taking

If I were in this teacher's class, I would feel comfortable raising my hand when I am confused.

If I were in this teacher's class, I would feel comfortable going to the teacher for help after class.

If I were in this teacher's class, I would feel comfortable volunteering to solve a problem on the board in front of my classmates.

#### Hypothetical assignment choice (binary: hard = 1, easy = 0)

Imagine that, later today or tomorrow, this math teacher handed out two extra credit assignments. You got to choose which one to do. You get the same number of points for trying either one. One choice is an easy review—it has math problems you already know how to solve, and you will probably get most of the answers right without having to think very much. It takes 30 minutes. The other choice is a hard challenge—it has math problems you don’t know how to solve, and you will probably get most of the problems wrong, but you might learn something new. It also takes 30 minutes. If you had to pick right now, which would you pick?

(The easy math assignment where I would get most problems right.) / The hard math assignment where I would possibly learn something new.)

### 2.1 First Day Speech Example

#### Human Speech

##### Learning Math

I strongly believe there is no such thing as a “math person”. Everyone has the ability to learn math and to be successful at it as long as you work hard and persevere when things get tough. Math can be scary and intimidating at first, but by the end of this year I will make sure you feel confident in math and are able to solve these types of problems with ease. You will learn formulas and techniques; however you will also gain a deep understanding of why these formulas and techniques work and will be able to apply them to other math classes in the future!

##### Struggling in Class



Everyone makes mistakes, but that is how we learn! In this class, we will use our mistakes as opportunities to learn from. If we can understand where we went wrong in our problem solving, we will have a deeper understanding of the material and can discover why certain things work while others don't. Your mistakes also tell me what I need to spend more time on teaching you, and what I need to explain in a different way.

#### **Asking Questions**

I want everyone to feel comfortable asking questions in my class. Asking questions is a great learning tool! You never know who else in the class also has the same question! I love it when you ask questions because they help you learn; however, they also help me be a better teacher! When you ask questions, it shows me that you're trying to learn the material and it shows me where your struggles are. If I know you find a certain topic a little confusing, then I know what I need to explain in another way. You can also email me with a question or message me on remind and I will answer it anonymously in our next class period.

#### **Revising or Redoing Your Work**

After I grade your assignments, you will be able to revise your work and turn it in again. Remember when I said we learn best from our mistakes?! This is a great opportunity to exactly just that! Revising your work will help you learn from and correct your mistakes, which will help you remember the problem-solving process of what works and why! You will be able to apply these problem-solving skills even after you leave my class.

#### **Tests**

In our class, we will have three tests (one for each major unit) and a final exam that covers all of the units. I care about seeing improvement and hard work, so if you show improvement in your exam grades over the course of the term, I'll raise your final grade. Learning is what matters to me!!

#### **How Students Usually Perform**

Some students will begin the year strongly, however others may struggle at first. However, by the end of the year, everyone will show growth and improvement! No matter how strong your math skills are at the beginning of the year, all students typically improve on each test! By the end of the year, everyone will feel more confident in their math skills!

#### **Final thoughts**

So, this class is set up the way it is because I believe that all students can learn and do well in the class, no matter where they started out. If you are willing to put in the work, I promise I will help you leave this class with a better understanding of math. I am here to help!!!

### **Zero-Shot Speech**

#### **Learning Math**

Hello students! Welcome to Algebra! For those of you who are new to this class, Algebra is all about solving equations. We will be using algebraic methods to solve equations and to find out information that is not given to us in the equation. Algebra is a challenging class, but it is also a lot of fun. I promise that if you put in the work, you will be successful.

#### **Struggling in Class**

If you get a failing grade in this class, it means that you didn't do the work required to pass. This is serious because if you don't pass, you won't be able to move on to the next level of math. You'll be stuck in this class until you do the work and get a passing grade. So, it's important that you take this class seriously and do your best.

#### **Asking Questions**

I'm so excited to have you in my class this year. I know that we are going to learn a lot and have a lot of fun together. One of the things that I want to make sure that we all understand is when and whether you can ask questions of me. I'm happy to answer any questions that you

have during class, but I also want to make sure that you are respectful of my time and the time of your classmates. So, here are a few ground rules. First, if you have a question, please raise your hand and wait to be called on. I promise that I will get to your question, but I want to make sure that everyone has a chance to participate in the lesson. Second, if we are working on a problem together as a class and you still don't understand it, please wait until after class to ask me. I don't want to hold everyone else up while we work through your question. Finally, if you need help with your homework, please come see me during office hours or after class. I'm happy to help, but I want to make sure that you are really trying to do the work on your own first. I hope that this clears up any confusion about when and whether you can ask me questions. I'm really looking forward to a great year together.

**Revising or Redoing Your Work**

If you get a problem wrong in Algebra, it's not the end of the world. You will just have to work a little harder to get it right. Keep trying and you will eventually get it.

**Tests**

Algebra students, I'm sure you are all wondering what exams are going to be like. Well, let me tell you. Exams are going to be tough, but I promise you that if you study and try your best, you can do it! I know it seems like a lot of material, but you can do it. I believe in you!

**How Students Usually Perform**

If you're like most students, you probably think that algebra is going to be really difficult. And, to be honest, it can be. But, if you're willing to put in the work, you can definitely succeed in this class. I've seen it time and again - students who come into this class thinking that they're going to fail, but then they end up getting good grades and doing really well. So, if you're feeling a little bit unsure about this class, just know that you're not alone. And, if you're willing to put in the effort, I'm confident that you'll do great.

**Final Thoughts**

I'm excited to get started on this journey with all of you. Let's dive in and learn some algebra!

**Prompt-Tuned Speech****Learning Math**

Welcome to Algebra 1! This class is a great opportunity for you to get your first high school credit and set you up to have excellent opportunities in high school and beyond. As we start learning together, I want to make sure you know that you all belong here. No matter how you feel about math or have done in math classes in the past, you have the ability to master Algebra 1. The material we learn may seem difficult at first, but we are going to work together to understand it and feel comfortable with it. By the end of the year, problems that once seemed impossible will come as second nature to you. Each day, we will learn techniques and formulas to solve problems, but you will also gain a deep understanding of the concepts. I am looking forward to a great year together!

**Struggling in Class**

Mistakes are a part of life, and they are especially a part of learning. In this class, we will use our mistakes as opportunities to learn and grow. If we can understand where we went wrong in our problem solving, we will have a deeper understanding of the material and can discover why certain things work while others don't. Your mistakes also tell me what I need to spend more time on teaching you, and what I need to explain in a different way. So please don't be afraid to make mistakes – they are an essential part of the learning process!

**Asking Questions**

We learn best by doing and by asking questions. You should never be afraid to ask a question in class. I love questions. I need you to ask questions the moment you have one or something does not make sense. You are never wasting class time with questions. I guarantee you are

not the only one with that question. I will be grateful if you ask a question in class. Questions show me you are taking ownership of your learning.

### **Revising or Redoing Your Work**

In this class, you are encouraged to redo any assignment. You can redo homework, quizzes, and tests. You only have to redo the problems you got wrong and are able to recoup half your points back. A 30 can become a 65, a 50 can become a 75, and a 90 can become a 95. No matter how low or high of a grade you receive, you are welcome to redo the work. Analyzing your mistakes is an important step in learning in order to not make that mistake again. Mistakes are learning opportunities, so redoing your work is highly recommended.

### **Tests**

In this class we have three tests (one for each unit) and a final exam that covers all units. I want to see progress and hard work, so if your exam scores go up during the term, I will raise your overall grade. Your learning is what matters to me in this class.

### **How Students Usually Perform**

No matter where you start in this class, everyone typically improves by the end of the year. Whether you're struggling at first or you're a math whiz, everyone grows and learns new things in this class. By the end, you'll all be more confident in your math skills!

### **Final Thoughts**

I know you can all succeed in this class if we work hard and help each other.

## **2.1 Prompts Used**

Note: Each speech was generated with individual sections, and then compiled into a full speech.

### **Zero-shot Prompt**

Write a speech for the first day of Algebra class to tell your students [what learning math is like/what happens when students get a failing grade/what happens when they get a problem wrong/about when and whether they can ask questions/how students usually perform/what exams are like]. Respond like you are talking to the students.

### **Prompt-Tuned Prompt**

The user would first select a section for the prompt based on the following: what learning math is like/what struggling in class is like/what revising or redoing your work in class is like/what asking questions is like/how students usually perform/what exams are like. When the user picks the selection, they would then follow the outline below, reiterating completion and prompt until all human speeches have been entered for the selected section. Finally, leave an empty completion line for the model to infer completion. For example, here is the prompt for the section "what learning math is like".

Prompt: Write a speech for the first day of Algebra class to tell your students what learning math is like. Respond like you are talking to the students.

Completion: I strongly believe there is no such thing as a "math person". Everyone has the ability to learn math and to be successful at it as long as you work hard and persevere when things get tough. Math can be scary and intimidating at first, but by the end of this year I will make sure you feel confident in math and are able to solve these types of problems with ease. You will learn formulas and techniques; however you will also gain a deep understanding of why these formulas and techniques work and will be able to apply them to other math classes in the future!

Prompt: Write a speech for the first day of Algebra class to tell your students what learning math is like. Respond like you are talking to the students.

Completion: I am so excited to have you in my Algebra 1 class. This class is a great opportunity for you to get your first high school credit and set you up to have excellent opportunities in high school and beyond. As we start learning together, I want to make sure you know that you all belong here. No matter how you feel about math or have done in math classes in the past, you have the ability to master Algebra 1. The material we learn may seem difficult at first, but we are going to work together to understand it and feel comfortable with it. By the end of the year, problems that once seemed impossible will come as second nature to you. Each day, we will learn techniques and formulas to solve problems, but you will also gain a deep understanding of the concepts.

Prompt: Write a speech for the first day of Algebra class to tell your students what learning math is like. Respond like you are talking to the students.

Completion: As we begin, here is what I want you to know. You belong here and I fully believe each of you here today have the ability to learn this material. The material we will cover through this course is going to strengthen your brain and equip you to pursue your passions and make a difference in the world. This class is not about getting 100%, memorizing steps, or reciting formulas. Mathematics has been described as the language with which the universe was written. In this class, you will learn the building blocks of this beautiful language.

Prompt: Write a speech for the first day of Algebra class to tell your students what learning math is like. Respond like you are talking to the students.

Completion: Before we start learning together, I want you to understand something: you belong here, and you are capable of learning math. You have your own opinions of math and learning it before you come here, but I want you to understand that this class will be difficult at first, but if you put in efforts and with the support from me and others in this class, together, you will feel better. This class is not about getting the right answer, memorizing steps, or memorizing formulas. If you can understand the concepts, you will not need to memorize steps as much.

Prompt: Write a speech for the first day of Algebra class to tell your students what learning math is like. Respond like you are talking to the students.

Completion: Everyone in this class comes here with different experiences and beliefs about math. I want you to know that every one of you belong here and have the ability to learn and succeed in this class, regardless of previous experiences. This material will be challenging, and it will take time and effort. I will be here to support you the entire way. By the end of the year it is my goal that you do not see this class as memorizing steps and formulas, but as being able to understand and apply concepts to a variety of problems.

Prompt: Write a speech for the first day of Algebra class to tell your students what learning math is like. Respond like you are talking to the students.

Completion: As you start your learning journey in this class, I want you to know something very important. You belong here and you have the ability to learn this material. The material we will cover in this class will be difficult at first, but with effort from you and support from me, it will start to feel better. By the end of the year, problems that once seemed impossible will look manageable and you will understand them. This class is not about getting the right answer, memorizing steps, or memorizing formulas. In this class, you will learn concepts that you can apply to any situation. If you can master the concepts, you will not need to memorize steps.

Prompt: Write a speech for the first day of Algebra class to tell your students what learning math is like. Respond like you are talking to the students.

Completion: